Guest editorial

Sustainability: business drivers and managerial implications

Given the importance of sustainability as one of the critical considerations in the built environment, mainstreaming sustainability into business and managerial activities is crucial to successful implementation of the sustainability agenda. This special issue identifies the variety of business drivers that should justify and motivate through-life sustainability of built assets, as well as the wide range of managerial implications in achieving such sustainability – at strategic and/or operational levels. Among the many facets of sustainability, the papers included in this special issue cover the sub-themes of "green buildings and sustainable infrastructure", "procurement, processes and performance" and "sustainable construction".

The first three papers of this special issue address the key issues pertaining to green buildings and sustainable infrastructure. In the first paper, Cheng and Venkataraman analyse the impact of project team composition on green building certification. Having collected the project data including the team composition and green building certification grades, the organisations' green rates were evaluated through PageRank algorithm. The results explain a positive relationship between the green building certification grade and the number of organisations with more green building experience in a project team. The study further highlights the importance of integrating green building experience towards achieving the sustainable goals.

The second paper by Mallawaarachchi *et al.* explores the relationship between indoor environmental quality and occupants' productivity improvements in green buildings. The study was limited to green certified office buildings in Sri Lanka and the data were collected from a survey and semi-structured interviews. The findings revealed seven significant indoor environmental quality factors that will influence occupants' productivity. The study further confirmed that these factors provide a guide to enhancing the national green certification criteria.

Organisations are increasingly recognising the importance of considering sustainability within their products and services, thereby making changes to the business models. The third paper in this special issue by Abuzeinab *et al.* highlights the importance of green business model transformation towards achieving sustainability and value creation. Having analysed the interview data through thematic analysis, the authors identified five essential elements to green value creation. The findings of this study assist construction managers to review their current practices and align their current business models with green activities. Furthermore, findings aid in improving the environmental and economic positions of the value chain within the construction sector.

The next three papers of this special issue focus on aspects related to procurement, processes and performance in relation to sustainability in the built environment. In this regard, the public private partnerships (PPP) have emerged as one of innovative approaches to deliver the sustainability goals. However, there are limitations. The fourth paper by Patil and Laishram discusses the strategies to enhance the sustainability of Indian PPP procurement process. Having undertaken a content analysis-based literature review and focussed interviews, the authors have developed

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a framework to integrate the principles of sustainable development in PPP procurement process.

Similarly, Zin Zawawi *et al.* also investigated avenues for integrating sustainability criteria when managing unsolicited proposal within Malaysian PPP practices in the fifth paper of this special issue. A case study was undertaken and the findings highlight the absence of a transparent mechanism for handing such unsolicited proposals. The authors further noted that the lack of competition in unsolicited proposals is a major concern in achieving sustainable targets in PPP procurement. To bridge the existing gap in the current practice, the paper suggests that a competitive element should be integrated within those unsolicited proposals.

Time management of construction projects is a key contributor to the sustainability agenda especially when seeking economic efficiencies. In this regard, Ekanayake and Perera explore the use of delay analysis techniques in Sri Lankan road construction projects in the sixth paper of this special issue. Research methodology included an extensive literature review, expert interviews and a questionnaire survey. The study reveals that five types of delay analysis techniques are mainly used in Sri Lankan road projects, and highlight that the "As-planned vs As-built Analysis" technique is the most commonly used technique, while "Window Analysis" is the least used technique. Another significant finding from this research is that the most important criterion for selecting a delay analysis technique is the acceptability of the technique to courts and tribunals. The study also found that the "Window Analysis" approach as the most appropriate delay analysis technique that can be used in road construction projects in Sri Lanka.

The final two papers address the issues relating to sustainable construction, in particular, paying attention to the operational implementation of sustainable practices. Positive strategies and major constraints to sustainable management of backlog maintenance across the NHS assets were investigated by Pantzartzis *et al.* in the seventh paper. Their research methodology is a combination of literature review, qualitative data analysis of interviews and a best practice detailed case study. They conclude that sustainable management of backlog maintenance is achievable if there is a consistent, pro-active and long-term strategic approach where critical levels of backlog maintenance are prioritised. This paper offers original insights to the variables influencing backlog maintenance in healthcare estates in a time in which the UK policy agenda is targeting infrastructure operational efficiency.

In the final paper, Waidyasekara *et al.* explore the ways to enhance water use efficiency in construction sites based on project stakeholder perceptions. Main empirical data collection method was a questionnaire survey. The study highlighted cost of water and sources of water as the main drivers that promotes water uses efficiency on sites. Lack of priority for water management among a host of other managerial functions was identified as the main hindrance. This study makes a key contribution to the relatively understudied topic of water sustainability in construction projects, and should serve as a platform to develop improved and appropriate techniques.

It is pleasing to note that this special issue offers a series of papers covering the main areas of environmental, economic and social aspects of sustainability in relation to the built environment. Research papers cover issues pertaining to several countries namely, Hong Kong, India, Sri Lanka and UK.

Furthermore, the authors also represent a number of institutions in countries, thereby highlighting the truly global nature of this special issue. It is hoped that this special issue will further stimulate further research and innovative practice in relation to sustainability in the built environment. We specially thank Professor Mohan Kumaraswamy, Editor-in-Chief, *BEPAM* journal for the assistance, advice and support throughout the setting up, processing and finalisation of this special issue.

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