Book review

Architectural Engineering and Design Management: Integrated Design and Delivery Solutions

Matthijs Prins and Robert Owen (eds). Routledge Taylor & Francis Group, Abingdon, UK, 2010, ISBN 978-1-84971-275-0, £51.99, 80 pp.

This book introduces the evolving disciplines of integrated design and delivery solutions (IDDS) and building information modelling (BIM). It contains six papers: the challenges for delivering IDDS; supplier-driven integrated design; tools for benchmarking BIM performance of Dutch consultants; the challenges of process change to deliver IDDS; the attribution of information to BIM objects and how it can be used and exchanged; and attributes of BIM models in various countries.

The papers highlight

- progress in integrating meta-objectives with effective design processes
- the need for efficiencies through standardisation across different building needs
- the requirement for all parties in a supply system to work consistently in a clear framework
- the need to adapt traditional methods and processes to encourage project managers to exploit the potential efficiencies of new design technologies
- the need to link BIM models, which are essentially three-dimensional design models, to operational lifecycle information models
- the benefits inherent in a strong, clear government direction in regulation.

The editors' main findings are

- technology leads practice. There is too much reliance on information and communications technology and not enough emphasis on developing appropriate practices
- IDDS assumes there is integration between design and delivery, but the field is immature. Elements are developing in isolation and are yet to become a coherent system of tools and techniques.

Owen *et al.* explain that IDDS lacks a needed holistic approach. It has yet to make the transition from discreet elements to an encompassing system.

There are still too few competent people to deploy these new systems effectively.

Nederveen *et al.* support a supplier-driven model to improve efficiencies. They suggest some principles, but show only limited case studies (essentially a modular car park). The quality of editing suggests that the key points could have been better emphasised.

Sebastian and van Berlo propose a BIM quick scan tool to benchmark BIM performance between Dutch design, engineering and construction firms. Consistent qualitative and quantitative assessments allow comparison between organisations across elements of BIM implementation, and from corporate to modelling level. The lack of sample assessment criteria hinders obtaining a detailed appreciation of the tool.

Rekola *et al.* highlight that BIM/IDDS demands early participation for full benefit. There needs to be better understanding, plus consolidation and rationalisation, of tools and systems to permit individuals to make beneficial, quick and reliable decisions.

Hjelseth builds on the same model as Owen *et al.* to show how IDDS elements impact on processes, technology and people. They flag the need to: specify information in BIM objects and object libraries to ensure the exchange of relevant and reliable information between BIM-based software; account for role-based information across different professionals; and address lifecycle considerations. The profusion of terms across BIM/IDDS must be rationalised.

Wong *et al.* summarise how BIM implementation varies globally. The regulatory background, the strengths and emphases of the various interested bodies, and the underlying conditions and challenges make each implementation unique.

This is a good introduction to the various issues concerning the evolution of clear, consistent and widely applicable BIM systems and the challenges of moving to the more lifecycle-oriented IDDS models.

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