Review

This book offers a good introduction to the philosophy and drivers for off-site manufacture, but may be less relevant to those interested in the structural and constructional issues that will affect the next generation of this form of manufacture, finds Mark Lawson.

Offsite production and manufacturing for innovative construction

Editors: Jack S. Goulding and Farzad Pour Rahimian
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THIS BOOK IS A COLLECTION of 21 separate chapters from 40 authors, which focus on the philosophy of off-site manufacture. It is based on the work of CIB Task Group and Working Commission W121. The book identifies opportunities for innovation and change, and addresses the 'drivers' and 'blockers' for off-site construction.

It takes a world view and the authorship and many of the case examples that are presented are from the USA, Sweden, Japan, Malaysia and China. Because the book is a collection of different chapters and authorship, the themes of each chapter are quite disparate.

For a reader with an interest in structural engineering, there is less of a focus on the construction products and structural systems that are most appropriate for off-site manufacture and their implications for manufacturing processes. Therefore the missing aspect of the book, which has quite a grand title, is an assessment of the different structural systems that constitute off-site manufacture and some perspective on how they will be developed in the future.

The book presents a tacit understanding that modular construction is the most relevant form of off-site manufacture. It is a rapidly developing technology, particularly in high-rise residential buildings, but I did not see any description of the modular systems that would facilitate this expansion. In the future, modular construction will involve 'mixed' construction systems, such as an on-site concrete core and possibly a steel frame with braced transfer levels, but I saw no mention of the mixed technical solutions that are required.

On the positive side, extensive reference lists are provided for each chapter, which is useful for researchers active in this field. Interesting chapters are included on 'Industrialised House Building: Concepts and its Application in Sweden', and 'A Study of Offsite Construction in the United States', which present examples of modular systems and the sectors in which they are used in these countries.

A further chapter addressing 'Core Offsite Manufacture Industry Drivers' focuses on the UK. A chapter on 'Offsite Construction Capability and Sector Resilience in the UK' focuses on the training and education requirements in this new sector, which is not yet part of the mainstream educational process.

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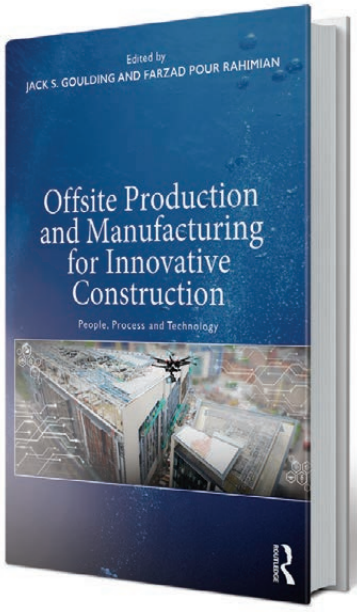

Other chapters address robotics in manufacture, the use of building information modelling (BIM) and legal and contractual issues in off-site construction, and also disaster resilience using prefabricated systems.

Overall, the book is interesting to those wishing to develop a good understanding of the philosophy and drivers for off-site manufacture, but is less relevant to those wishing to understand some of the structural and constructional issues that will affect the next generation of this form of manufacture.

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