Book review

Fluid Structures: Adventures in Engineering

D. Crookes. Watermark Publications (UK), Haslemere, Surrey, UK, 2011, ISBN 978-1-873200-72-8, £24.50, 248 pp.

On a first glance this book looks like an attractive 'coffee table' book, or alternatively the type of glossy catalogue of projects that is sometimes found in the reception of the larger consultants. It could be both of those things, but, in fact, it is also much more in that it covers in some depth the structural engineering thinking applied to a series of small private projects. It is a book that is worth a closer study for its structural engineering content.

The book describes a series of projects undertaken by the author's London-based practice. As well as the structural engineering design details of the projects, the important relationships with the architects and builders are also described in some depth; all of which appear, in hindsight at least, to have been positive experiences. The use of three-dimensional physical models to help explore the structural layout and form was applied to a number of projects; clearly the author found this to be a useful tool adopted from the various close collaborations with architects. A common theme throughout the book is the structural engineer's contribution to, and facilitation of, the creative process – a theme more often found in books on architecture rather than structural engineering. The book is very well illustrated throughout with a generous number of high-quality photographs, appropriate extracts from engineering conceptual sketches and detailed design drawings.

Following a brief introduction to the historical context and the author's approach to the design process, the main body of the book is organised into a series of chapters by material type. These materials are aluminium, glass, masonry, steel and timber. Each chapter is further subdivided into

sections covering a range of projects that illustrate the application and versatility of each of those materials. All of the chapters are well written and very readable, maintaining the reader's interest throughout. The appendix at the end of the book dutifully gives credit to the author's colleagues and various consultants and contractors that have been involved in the projects described; however, the book would benefit from references, where interested readers could find further technical details about the materials being used.

The chapter on the structural use of glass is of particular interest; it covers in detail the properties of this fragile material, which is unfamiliar to many structural engineers, including the different treatments that can be applied to improve its performance. The chapter also covers the use of the material with regards to structural form and the detailed stress analysis required to demonstrate its safe use. The other chapters adopt a similar informative approach, all well illustrated by their application to a range of interesting real projects.

This is an excellent book and can be highly recommended to students of structural engineering (including architectural students) and practising structural engineers. It provides an insight into the practical aspects of the understanding of structural materials and forms that are not normally well covered on university courses but come from experience gained on real projects. So the reader could simply just flick through this book and admire the photographs, but they would gain much more if they put in the effort to read it more closely.

Steve Jones