

Book review

SEEING AND TOUCHING STRUCTURAL CONCEPTS

T. Ji and A. Bell. Taylor & Francis, 2008. ISBN 978-0-415-39773-5, £66.50, 272 pp.

There are few educational texts that seek to promote structural understanding through physical models and the ones that do exist (such as Barry Hilson's *Basic Structural Behaviour: Understanding Structures from Models*) tend to be aimed at the initial stages of an undergraduate course. Ji and Bell, in contrast, attempt to cover all levels of an undergraduate programme and, indeed, include material that would often be limited to postgraduate study. For example, more than 40% of the book is concerned with structural dynamics. Although the coverage ranges widely, some of the content is distinctly specialised and drawn from the authors' research interests. There is no general examination of truss structures, for instance, rather a study of scaffolding bracing systems is presented in order to expound direct force path principles. Similarly, the treatment of framed structures is directed solely to horizontal movement features.

The book is given a strong unifying and logical structure by dividing each chapter into four sections: concepts, theoretical background, model demonstrations and practical examples. In each concepts section, particular features of the aspect of structural behaviour that the chapter covers are summarised; a

virtue of this text is the effort that goes into the enunciation of patterns of behaviour. The theoretical background is given in outline, summary form for the more elementary material but is expounded much more fully for the more advanced topics, in particular for dynamics. The theoretical treatment is quite formal and something of a contrast with the general tenor of the remainder of the book. There are also several errata, which, on occasion, can make the material difficult to follow. The model demonstrations and practical examples are extensively illustrated but, for this reviewer at least, were sometimes predictable and failed to spring to life from the printed page. Although, I must confess to being a computer-based learning sceptic, I found that the accompanying website (www.structuralconcepts.org) demonstrated the models, in particular, with much greater impact than was possible in the book. The website has been produced to a high standard and is well organised along the same lines as the book. However, the addition of colour and, especially, the use of video clips for the buckling and dynamic models give it a distinct edge on the text.

It is therefore something of a surprise to conclude a book review by unreservedly recommending regular use of the website to all students and staff, but suggesting that the text is perhaps best treated as an occasional resource.

DAVID JOHNSON