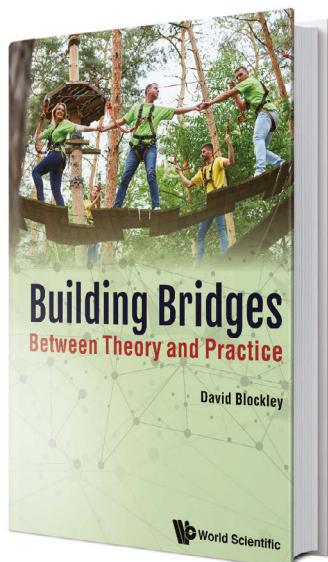


Review

This personal story from IStructE Past Present, David Blockley, on rising aspirations, awakening determination and stimulating interactions with inspiring individuals provides structural engineers with a valuable approach to understanding the link for building bridges between theory and practice, says **Toby Mottram**.

Building bridges: between theory and practice

Author: David Blockley
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THOSE READING THIS REVIEW who are familiar with the previous seven books authored by Emeritus Professor David Blockley FEng will recognise the quality of the writing, with both depth and importance in the content. His latest offering with the catchy title, *Building bridges: between theory and practice*, is not about the building of bridge structures.

The title is a clever use of words, because David is using this book to give a personal story of 'building bridges' between the 'social science' of engineering, which in practice inherently goes alongside our well-developed 'physical science of engineering', which is at the core of engineering higher education.

David's story, developed over 50 years and starting with him studying for a first degree in Civil Engineering in the early 1960s, is one of rising aspirations, awakening determination and stimulating interactions with inspiring individuals. By way of a whole series of unintended consequences, David has been able to learn and reflect so that his journey on applying theory and practice became richer and more exciting. In this book, he tells his story by bringing together, with slight modifications, 12 publications, including his Presidential Address in 2001, published between 1977 and 2014. His writing approach gives the advantage that each chapter can be read independently.

The structure of the book is that the 13 chapters are grouped into five parts, with David using the active heading of the 'ing' form of the present participle to emphasise the importance of 'doing' a process. They are:

- | Part I: Learning from failures (Chapters 1 to 3 and Learning Points 1 to 3)
- | Part II: Joining-up theory and practice (Chapters 5 to 6 and Learning Points 4 to 6)
- | Part III: Understanding process and classifying uncertainty (Chapters 7 and 8 and Learning Points 7 to 12)
- | Part IV: Managing risks to find resilience (Chapters 9 and 10 and Learning Points 13 to 15)
- | Part V: Systems thinking (Chapters 11 to 13 and Learning Points 16 to 20).

To every part there is a several-page preamble that, because it sets David's context to what follows, should be read first. After Part V, we have a helpful glossary of terms and a comprehensive index. On the two pages immediately before Part I, David tabulates 20 'learning points' that are established from the chapters' content and are introduced in the five preambles to the five parts.

As a reader of this book, I gained new knowledge and personal understanding, and was able to connect all 20 learning points to my journey as a professional academic. Although extremely difficult to choose from, for myself, the key learning points are:

- | 1: Failure is an opportunity to learn
- | 3: We should consciously try to minimise any unintended consequences of a decision
- | 5: Academic institutions are currently dominated by technical rationality
- | 7: Change is a 'new' process of becoming different
- | 11: Soft systems are difficult to predict – use dependable evidence to achieve purpose
- | 15: Complex systems may contain new risks through unknown dependencies
- | 19: Bridges are built by people for people.

I know that had I been working in practice, I would equally, although differently, have found connections and taken messages from the learning points into my future working practices.

Because the book is founded on research-based publications, it could be a set book in the teaching of a research-led module at Level 7 (final-year MEng or MSc programme) that has a syllabus to building bridges between theory and practice.

J. Toby Mottram
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Toby Mottram is a Professor and Head of Civil and Environmental Engineering in the School of Engineering at the University Warwick. He been a researcher-teacher for 36 years, with a broad range of interests connected to the activities of the Institution of Structural Engineers.

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