



Book Review

Risk Management for Design and Construction

Ovidiu Cretu, Robert B. Stewart and Terry Berends, John Wiley and Sons Inc. 2011, 288 pages, ISBN: 978-0-470-63538-4 AUD 155.00, NZD 175.00, GBP 85.00, USD 125.00, EURO 100.00

This book is written by three highly experienced professionals who appear to work primarily in the transportation sector. It describes a highly quantitative approach to risk management and will be of interest to anyone who is responsible for delivering design and construction projects or indeed, projects of any kind. While written in a clear and easy-to-follow style with plenty of real-life examples and anecdotes to enliven the text, the book will suit those with some prior knowledge of quantitative techniques. The content becomes quite technical in parts and would likely overwhelm the layperson tackling this subject for the first time.

The book's focus is on risk-based estimating and it starts with a brief introduction to risk management and with some basic definitions used in the estimating arena. While promoting quantitative probabilistic methods the book does not seek to argue that they are panacea for every situation and to its credit regularly points out the limitations of the approach. In the early chapters, readers are also taken step-by-step through traditional deterministic and risk-based estimating processes and the documentation and sources of data needed to ensure it is reliable. Ideas of cost and schedule risk are integrated and many figures, illustrations and case study examples are used to illustrate points being made. Some of these rather idiosyncratic figures are quite complex and hard to follow, nevertheless they do help to lighten what would otherwise be a rather heavy text. Ideas of risk correlations and inter dependencies are also introduced as critical elements of reliable risk models, as are discussions about the wide range of distributions which can be used to represent risk-based data and form the basis of Monte Carlo simulations and sensitivity analysis.

Later chapters go into the practicalities of collecting risk data to populate the models described. Different methods of data collection are discussed here, as are the potential cognitive biases which can distort it. This recognition of the psychological limits of quantitative analysis is a strength of the book which continues to make extensive use of examples, case studies, scenarios and figures to illustrate points being made. Issues of risk appetite, risk tolerance and risk attitude are also considered in some detail in how they can influence the risk-based estimating process.

The penultimate chapter of the book shows how the principles explained in the previous chapters can be applied in practice using a proprietary risk-based estimating software called RBES. This chapter goes into great depth, taking the reader step-by-step through the whole process of building a model, simulating it and then interpreting the results using real-life examples from the authors' significant experience of using this software.

The final chapter is somewhat out of place in that it tackled the risk workshop process used to identify and collect risk-based data. Once cannot help feeling that it would be better integrated in chapter four on risk elicitation techniques which covers some of the same ground.

In conclusion, this is an excellent book for those with a keen interest in quantitative risk-based estimating. It is well balanced, although quite complex in parts, and is written in a clear and lucid style by three authors who clearly have a deep understanding of their subject matter.

Martin Loosemore
The University of New South Wales
Sydney, Australia