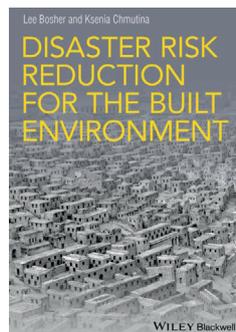


Review

 This interesting, well-illustrated book provides a general introduction to disaster risk reduction. It will be useful to engineers as a means of knowing what is important to consider in a holistic risk-based design against different natural hazards, but it is not a design guide, concludes **Gerard Canisius**.

Disaster risk reduction for the built environment

Authors: Lee Boshier and Ksenia Chmutina
Publisher: Wiley-Blackwell
Price: £45.00 (paperback); £40.99 (e-book)
ISBN: 978-1-118-92149-4



The authors' aim is to raise awareness and inspire various parties to think of disaster risk reduction (DRR) from the outset of a project. They consider our multi-hazard environment and address the relevant threat issues holistically, going beyond construction-related aspects. The authors provide a multidisciplinary perspective, so that DRR can be considered with a multi-stakeholder approach to disasters. They highlight that natural hazards give rise to high consequences not only because of what they are, but also because human activity usually exacerbates situations.

The authors promote resilience of the built environment as a key ingredient of sustainable development. Hence, they stress that it is insufficient to have buildings 'sustainable' if they are not made resilient via DRR. The authors discuss both structural and non-structural means of decreasing the vulnerability of buildings and the need to have the right balance between these. They request that buildings be future-proofed against climate change, and even raise the prospect of it being a business opportunity for those involved.

The book is well structured, first introducing the reader to disaster risk concepts and terms that are applicable across disciplines and in a global context. It explains the principles of effective risk management and illustrates them with a

broad range of the more prominent hazards and some human-induced threats. The hazards considered are divided into two groups: hydro-meteorological (floods, hurricanes and tornadoes) and geological (earthquakes, landslides and tsunamis). The book contains well-spaced 'Thinking Points' designed to allow the reader to reflect on the chapters and to provide specific examples. It concludes with an explanation of some key principles and a discussion on why DRR is important for sustainable development.

With respect to each considered hazard, the book deals with its causes, risk management, historical approaches, 'hazard identification', assessment of vulnerabilities, detection and mitigation (of the hazard), determination of the risk, identification and prioritisation of risk reduction options, and emergency response.

While the intentions and the contents of the book are good, it could have been much improved by better editing for grammar and technical content.

Risk could have been defined scientifically from the outset, as the product (or the result of multiplication) of the likelihood of the event (the hazard) and the expected undesirable consequences. While the above definition has been used in later chapters, the initial chapters have treated risk variously as equivalent to a 'hazard',

'consequences' and 'the negative impact of disasters'. Even a stated definition, '*Risk is a probability of an event and its negative consequences*', does not mention that the two terms are to be multiplied together.

The information presented in some graphs and tables could also have been normalised to provide a better picture of the relevant situations. For example, many data show an increase in casualty numbers from hazards over several years. They could have also been presented normalised, in relation to the global or local population. With the global population said to have increased from 1bn to 7bn in the last 100 years, the relevance of a disaster can also depend on the population size at the time. Similarly, the considered economic losses could also have been presented normalised in relation to GDP.

There are many very long sentences that are difficult to grasp. These could have been separated into shorter, easily manageable ones.

The book has simple errors that could have been easily corrected. For example, Section 4.11 says that risk reduction measures should adopt five interrelated stages, whereas six are given in the relevant tables. Sections 6.6 and 6.7 are both titled 'Risk Management', whereas the latter should be 'Hazard Identification'. Unfortunately, the presence of these could create doubts in readers' minds about the accuracy of the other information presented.

Notwithstanding the above correctable shortcomings, the authors have achieved their aim of making readers familiar with, and see the importance of, DRR.

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