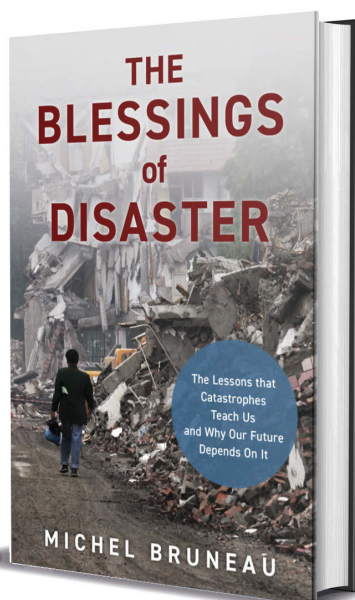


Review

Citing case studies from the Kobe and Christchurch earthquakes in 1995 and 2011, respectively, as well as category five hurricanes in the USA's south, this book will appeal to both engineers and the general public, writes **Alex Hu**.

The blessings of disaster: The lessons that catastrophes teach us and why our future depends on it

Author: Michel Bruneau
Publisher: Rowman & Littlefield
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THE BLESSINGS OF DISASTER

is not only a book that engineers will enjoy reading, it is also a book that engineering firms might consider giving to all their clients. First, I would say this is an entertaining book for the general public written by a world-renowned scholar in seismic engineering. Second, and most importantly, the book provides a comprehensive review of many hazards our modern infrastructure is exposed to and many factors that contribute to creating disasters.

According to the first canon of engineering codes of ethics worldwide, engineers shall hold paramount the health, safety and welfare of the public. However, when it comes to extreme events, this sometimes seems like protecting the public against something it does not know exists. Rare are the clients who ask what level of protection they should purchase against extreme events. Everyday functionality is the priority, and understandably so, but not every day is a sunny day. A more knowledgeable public is a more resilient public, and the book goes to work here.

The first part of the book 'seeks to explain why John and Jane bought a bungalow straddling the San Andreas Fault, Jim and Janet retired to a beach villa that will fly away in the next hurricane, Julio and Juliet reside on the slope of Mount Vesuvius, and Jack and Jill went down the hill and built their dream home there, in a flood zone. It may not make sense, but at the same time, it makes perfect sense.'

The second part reviews the multiple factors that contribute to explain this behaviour in depth, including human behaviours, how the brain works, shortcomings of probabilities and statistics, political constraints, as well as limitations of building codes and self-regulating industries. It also demonstrates that most extreme events might not be 'black swan' events – even pandemics – and debunks the myth that calling everything resilient will save the day.

Finally, making the book unique and thought-provoking, the third part advances the view that the way society deals with current disasters can provide clear and direct insights into how future

existential threats will be addressed – be it monetary collapse, climate change, overpopulation, nuclear holocaust. This is done while weaving the entire story into a coherent narrative that connects disasters with crooks, cows, hijackers, the Three Little Pigs, movie reviews, scapegoats, trading stamps, estate agents, Chinese hockey sticks, and many more.

Engineers are some of the 'silent heroes' mentioned throughout the book, working behind the scenes to create a more resilient world. Yet, over the centuries, as well documented through the book, engineers have generally had to decide what could be considered adequate levels of safety on their own.

In the daily fight against gravity, this was resolved centuries ago, but against lesser-known phenomena, particularly extreme events, this has evolved by trial and error and quite slowly. As a result, there is still a major disconnect between what engineers and the public see as appropriate, although this is not typically realised until after a disaster.

A case in point cited in the book is that engineers saw the thousands of damaged buildings that did not collapse during the 2011 earthquake in Christchurch, New Zealand as a success story: the buildings behaved exactly as they were supposed to, given that the building code philosophy for seismic design is one of life safety and not one of asset protection. This is quite a contrast with a surprised and stunned public that watched more than 1000 damaged buildings being demolished as they were deemed too expensive to repair.

In short, *The blessings of disaster* is a must read by all – engineers and non-engineers alike – as it is a story of our relationship with disaster.

Alex Hu

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Alex Hu, a Fellow of both IStructE and SEI/ASCE, and a vice-president at Thornton Tomasetti, is an experienced structural engineer who serves on multiple engineering code/standard committees in the USA and Canada.