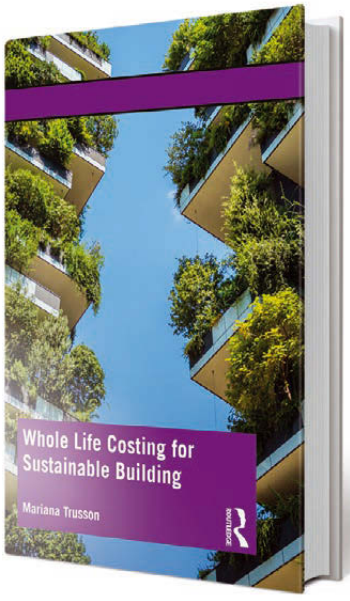
Review

This book provides a high-level introduction to whole-life costs in building design, explains Paul Astle, and will be of most use to students or junior engineers seeking to broaden their understanding of other disciplines and influences.

Whole life costing for sustainable building

Author: Mariana Trusson
Publisher: Routledge
Price: £27.99 (paperback/e-book)
ISBN: 978-1-138-77555-8



THIS BOOK AIMS TO TACKLE A COMPLICATED TOPIC: how to bring together the multitude of often competing design factors to make informed decisions. It seeks to advocate an approach which places emphasis on whole-life value benefits and savings, which may be otherwise unnoticed when making decisions on whole-life cost alone.

In order to provide context, Trusson initially sets out background information on the standard whole-life costing process. This results in a series of very brief summaries into almost every aspect of building design and what influences it. The book covers topics from the calculation of net present value to the calculation of insulation U-values, and many things in between. It is disappointing, however, that the building structure was under-represented in this part of the book. This is surprising given how significant the opportunity for sustainability gains is, by providing a sensible and efficient structure.

The subsequent section provides an overview of some often-overlooked savings and costs in building design. These relate to user well-being and comfort, and building resilience. Some figures are provided which set out the potential importance of these items and, conversely, the cost of not addressing them. Ensuring that our buildings are desirable and comfortable is a prescient argument, as we seek to extend their life and avoid the waste of unwanted structures.

The result of having decided to provide so much high-level information is that the majority of the 139 pages are made up of it, and there are few pages left to present the principle idea which is being promoted. Indeed, readers who already have a good knowledge of the broader influences to a design may wish to skip to the last 10 pages of the book, which outline and advocate 'the incorporated approach'.

The incorporated approach seeks to assist clients in making the most appropriate decisions in building design. Trusson discusses how to analyse the design variables which are important to a client using decision hierarchies and multi-criteria decision making. There is a brief reference to some of the software packages that can be used to assist in making these complex decisions. However, in the age of parametric analysis and optimisation algorithms, a greater discussion on how this field might develop would have been helpful.

There is a simple example and some sample hierarchies for design choices in the last chapter, but what this book really needs is a more detailed case study which sets out how this different approach was adopted, or perhaps could have been adopted, and what the benefits were or could have been. In the absence of this, it is difficult to understand the subtleties of this different approach and the potential benefits to a client.

> **"TRUSSON DISCUSSES HOW TO ANALYSE THE DESIGN VARIABLES WHICH ARE IMPORTANT TO A CLIENT USING DECISION HIERARCHIES AND MULTI-CRITERIA DECISION MAKING**

There are, unfortunately, some disappointing aspects of this book. There are many images and diagrams with no titles or citation. Where there are citations in the text, they are confusing and inconsistent. The layout of the text, headings and subheadings is poor, such that it is sometimes difficult to discern if you are reading a subclause or have moved on to another topic. Finally, there is a plethora of bullet-pointed lists, often appended with, 'this list is not exhaustive', an assertion I would challenge.

The book, in general, seems rather rushed and I fear this detracts from some of the sensible ideas and useful information within it. It may be a beneficial text for students or junior engineers seeking to broaden their understanding of other disciplines and influences in building design. For more experienced engineers seeking deeper guidance in this field, this book may provide an introduction into the topic.

Paul Astle

Paul Astle is a chartered structural engineer with more than 10 years' experience in the UK and abroad. Paul leads the structures sustainability network for Ramboll UK and is a passionate advocate for sustainability in building structures.