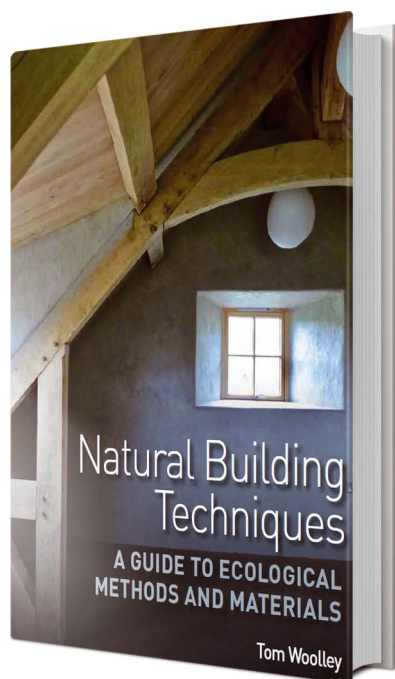


Review

As readers of this publication will be all too aware, our need to act collectively to fight climate change is urgent. Tom Woolley's latest book is therefore an important and timely reminder that building with low-carbon materials can and has been done, and should not be seen as a future panacea but instead a realistic ambition, writes [Philip Isaac](#).

Natural building techniques: A guide to ecological methods and materials

Author: Tom Woolley
Publisher: Crowood Press
Price: £20.00
ISBN: 978-0-71984-047-0



POTENTIALLY AIMED MORE AT those looking to build their own home or architects looking to boost their knowledge of low-carbon materials, the book nevertheless should have appeal to the structural engineering community.

It's rare that after proposing them, low-carbon materials are dropped for structural reasons, instead issues with unfamiliar detailing, worries on durability, perceived lack of suppliers or competent installers, and cost worries are the factors that tend to put people off. In this regard, engineers, as part of a design team, can greatly assist the adoption of low-carbon materials through better knowledge and awareness to counter the main hurdles.

Woolley's book combines an encyclopaedic knowledge of natural building materials and techniques with a generous sprinkling of good humour, making the book simultaneously enjoyable and informative. Early chapters of the book focus on building with the primary low-carbon materials, namely: earth, timber, lime and masonry, strawbale, and hemp/hempcrete. The book concludes with important chapters covering manufactured natural materials, paints/finishes, retrofit/renovations and challenges for the future.

One of the real triumphs of the book is the frank assessment of the challenges of natural building materials (lack of breathability comes up numerous times). This frank admission allows the book to counter many of the points detractors like to make against using low-carbon materials, with the information provided on dealing with planning, building control and obtaining mortgages and insurance particularly useful.

The book even goes as far as to conclude with a form of myth-busting, lamenting the number of reports that identify the need to reduce carbon without providing any advice on actually achieving this and providing a viewpoint on the merits of the much-lauded Passivhaus standard.

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ENGINEERS, AS PART OF A DESIGN TEAM, CAN GREATLY ASSIST THE ADOPTION OF LOW-CARBON MATERIALS THROUGH BETTER KNOWLEDGE AND AWARENESS TO COUNTER THE MAIN HURDLES

While the book covers myriad low-carbon materials, it avoids the trap of trying to be everything, instead referencing more exhaustive and detailed texts on specific subjects. It is this approach that should substantially enhance its appeal for engineers who won't learn how to calculate the racking resistance of a hempcrete wall, for example, but will develop a much greater appreciation of when and where to use low-carbon materials and any technical challenges to look out for. This should hopefully give us all the confidence to propose natural building materials and have the resources to back up their inclusion on a project, achieving the main goal of reducing the embodied carbon of every structure we build.

Philip Isaac
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Philip is a co-founder of Simple Works and a visiting research fellow at the University of Bath. His interests include the use of new materials in construction and the historical development of the structural engineering profession.