The Alliance for Sustainable Building Products

www.asbp.org.uk

The ASBP Mission

To accelerate the transformation to a sustainable built environment and society,

by championing the understanding and use of

demonstrably sustainable building products.

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Advantages of natural, renewable and low impact materials

- Sequester CO2
- Low embodied energy
- Many have thermal mass to store heat
- Safe and healthy
- Breathable
- Able to buffer humidity
- No damage to the environment

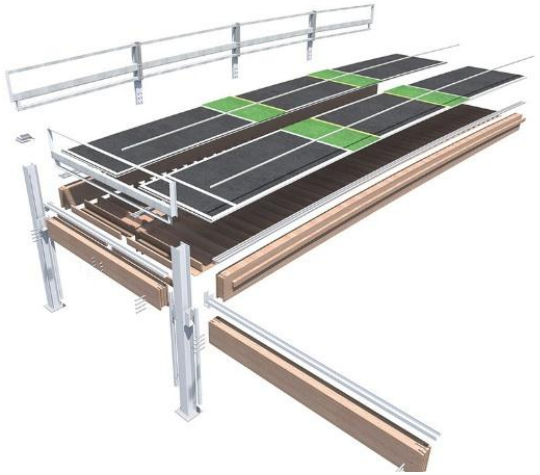
Hempcrete

Hemp Fibre

Sheep's wool

ASBP

Solid Timber Car Park



Solid Timber football stands

Solid Timber House Construction

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Disadvantages of synthetic petrochemical based materials, greenwash claims

Can be toxic in fires, high embodied energy, no thermal mass , dangerous in landfill

ASBP research - Sequestered carbon:
Bio-renewable materials typically have a carbon content between 40% and 50%

IPCC provide methodology for accounting for carbon in harvested wood products

ASBP research shows that the increase in the sequestered carbon pool is highly significant

By 2020 sequestered carbon in construction products **could** account for 90% of the Department of Energy and Climate Change (DECC's) carbon reduction target from homes and communities

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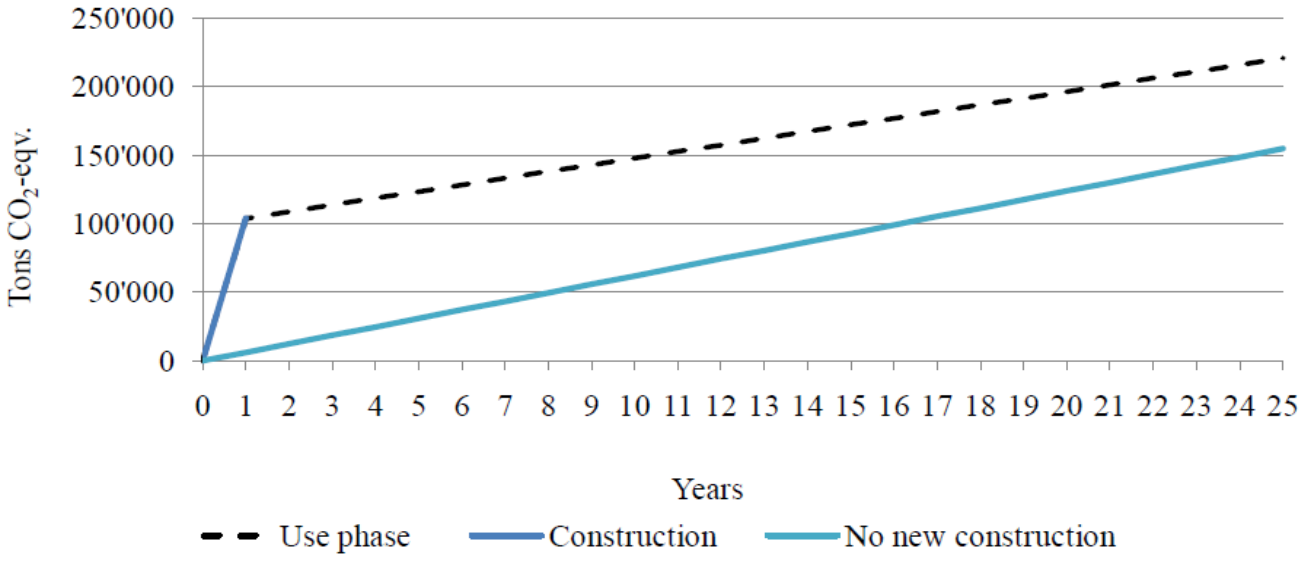
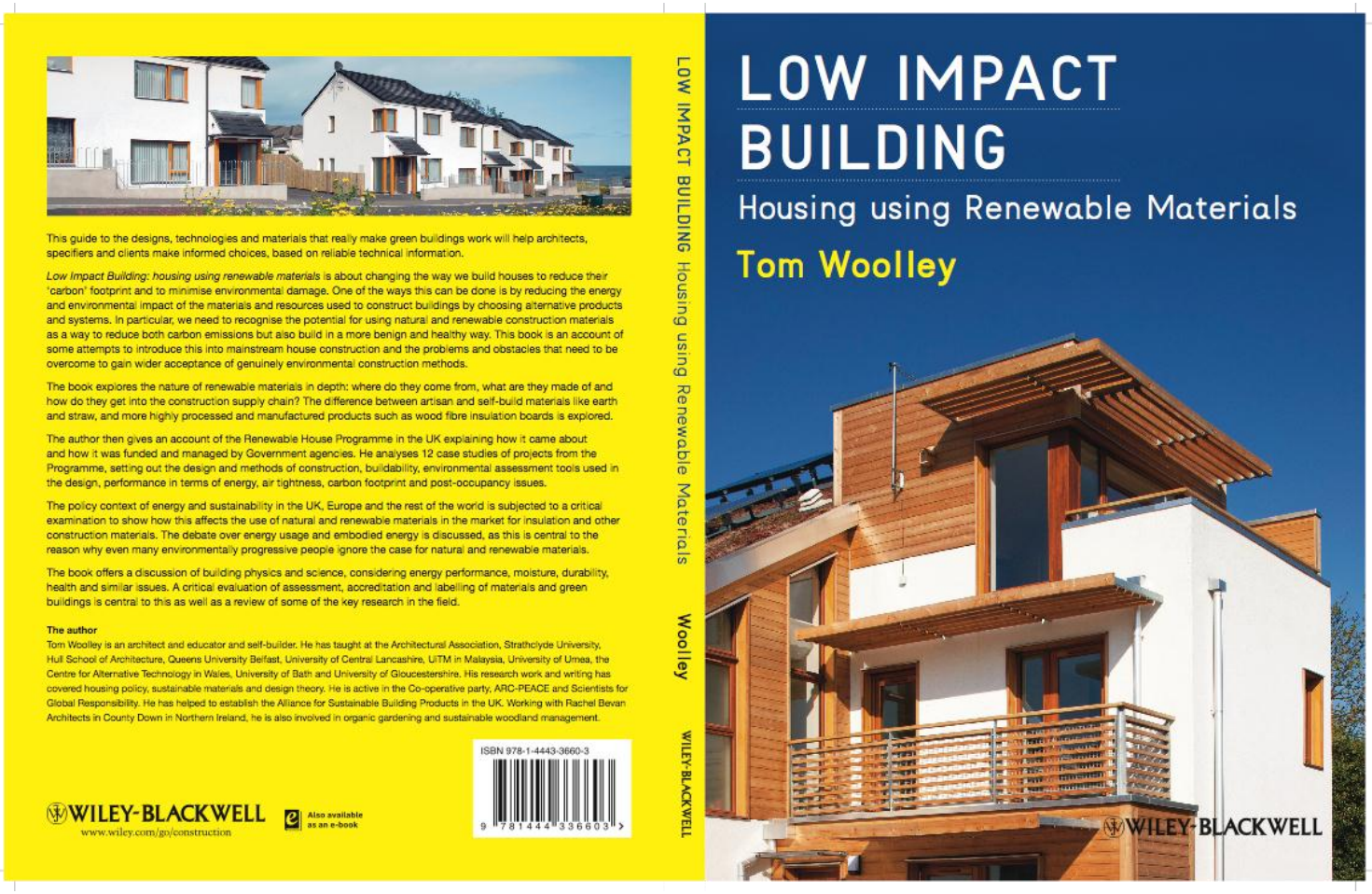
Low Impact Fabric First

- The Embodied energy of products could be 40% of the lifetime energy use of a new building – The Carbon Spike

Figure 3. Total emissions of the residential area during the 25 year life cycle.



Detailed explanation of these issues in this book



This guide to the designs, technologies and materials that really make green buildings work will help architects, specifiers and clients make informed choices, based on reliable technical information.

Low Impact Building: housing using renewable materials is about changing the way we build houses to reduce their 'carbon' footprint and to minimise environmental damage. One of the ways this can be done is by reducing the energy and environmental impact of the materials and resources used to construct buildings by choosing alternative products and systems. In particular, we need to recognise the potential for using natural and renewable construction materials as a way to reduce both carbon emissions but also build in a more benign and healthy way. This book is an account of some attempts to introduce this into mainstream house construction and the problems and obstacles that need to be overcome to gain wider acceptance of genuinely environmental construction methods.

The book explores the nature of renewable materials in depth: where do they come from, what are they made of and how do they get into the construction supply chain? The difference between artisan and self-build materials like earth and straw, and more highly processed and manufactured products such as wood fibre insulation boards is explored.

The author then gives an account of the Renewable House Programme in the UK explaining how it came about and how it was funded and managed by Government agencies. He analyses 12 case studies of projects from the Programme, setting out the design and methods of construction, buildability, environmental assessment tools used in the design, performance in terms of energy, air tightness, carbon footprint and post-occupancy issues.

The policy context of energy and sustainability in the UK, Europe and the rest of the world is subjected to a critical examination to show how this affects the use of natural and renewable materials in the market for insulation and other construction materials. The debate over energy usage and embodied energy is discussed, as this is central to the reason why even many environmentally progressive people ignore the case for natural and renewable materials.

The book offers a discussion of building physics and science, considering energy performance, moisture, durability, health and similar issues. A critical evaluation of assessment, accreditation and labelling of materials and green buildings is central to this as well as a review of some of the key research in the field.

The author

Tom Woolley is an architect and educator and self-builder. He has taught at the Architectural Association, Strathclyde University, Hull School of Architecture, Queens University Belfast, University of Central Lancashire, UiTM in Malaysia, University of Umea, the Centre for Alternative Technology in Wales, University of Bath and University of Gloucestershire. His research work and writing has covered housing policy, sustainable materials and design theory. He is active in the Co-operative party, ARC-PEACE and Scientists for Global Responsibility. He has helped to establish the Alliance for Sustainable Building Products in the UK. Working with Rachel Bevan Architects in County Down in Northern Ireland, he is also involved in organic gardening and sustainable woodland management.

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Also available as an e-book

LOW IMPACT BUILDING Housing using Renewable Materials Woolley WILEY-BLACKWELL

LOW IMPACT BUILDING

Housing using Renewable Materials

Tom Woolley

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Most low impact natural and renewable materials used in the UK are imported from other European countries

Incentive to develop the industry in the UK would be to set **significant targets to reduce embodied energy** and the use of petrochemical based materials and to support Natureplus certification in the UK

natureplus®

www.natureplus.org/en