EARTHSHIPS IN EUROPE

SECOND EDITION

Mischa Hewitt and Kevin Telfer

IHS

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Second edition

Mischa Hewitt and Kevin Telfer

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EARTHSHIPS IN EUROPE


Earthship France, Normandy © Kevin Telfer

For Gilbert and Mia

Oscar Briz levels rammed tyres at Earthship Valencia, 2005 © Lisa-Jane Roberts and Oscar Briz

PREFACE

This new edition sets out to be rather different to the first edition. To begin with, we have widened the scope of the book to include the whole of Europe, rather than just the UK. Second, we have told the stories of the people who have built earthships in Europe in order to gain both practical insights and to learn more about them, their motivation and experiences. Third, we have interrogated in much more detail whether the US-developed earthship paradigm has been translated into genuinely effective building performance in built European examples. We aimed to be as objective as possible in doing this: no sacred cows. Fourth, we have been more comprehensive and detailed across the board with the information and analysis we present, especially after studying the thermal performance of Earthship Brighton. Only in this way could we come to any meaningful conclusions. And, last of all, this has been an ideal opportunity to evaluate a more general 'ten years of earthships in Europe' (when we started work on this new edition – in 2010 – precisely a decade had passed since Mike Reynolds first spoke in Brighton and kick-started the European earthship movement).

TV presenter, architectural pundit and self-build guru Kevin McCloud wrote the foreword for the first edition and there is an element of *Grand Designs* in this one too – one of the buildings featured herein was also on the 2009 series of the Channel 4 show, and the review of earthship projects are also case studies focusing on people's personal self-build stories.

Grand Designs is all about individual aspiration (collective, at a stretch, in the sense of most of the participants are couples). But is it possible to find a housing model that satisfies intensely personal dreams and desires while at the same time delivering outcomes that benefit the wider population and environment by being genuinely sustainable? After all, legislation and planning from governments can only go so far in countries with market economies where people are as commonly referred to as consumers as they are citizens. People need to want to live in sustainable buildings as well as being told that they should. But choice is restricted by what is available in the marketplace and, so far, very few low carbon homes have been built, and certainly not in a way that reflects the complexity of what different people want from a house. It means that, for most people, the aspiration remains out of reach. Self-builders, though, are people who decide to take matters into their own hands: 'forget about what the government wants us to do; forget about the rubbish that housebuilders are putting up: we're going to do it ourselves.' Earthships are entirely representative of this independent attitude.

Earthships are generally individualistic buildings, even if their construction often involves a great deal of communal effort; yet they claim to deliver benefits for the wider environment. In some cases, as we demonstrate in this book, people's motivation for building their own earthship is not at all about environmental sustainability, but for other reasons, like long-term financial security. These things *are* linked but this is not always obvious and most people would accept that doing something for money or doing it to save the planet should be regarded as different types of rationale. Although this in itself is a way of thinking that needs to change: earthships suggest that people can both be more financially free and more socially responsible at the same time. And this in turn suggests that certain forms of sustainable housing are not, in fact,

part of some illusory, wishy-washy left-wing dream in the way they are often portrayed to be by critics.

But whatever the motivation for building an earthship, you need, to begin with, a building that works, or you'll waste tonnes of money and burn carbon like it's going out of fashion (which, of course, it is). This book is not a campaigning screed: 'build an earthship; they're the future.' Nor does it aim to be a glossy consumer pitch, saying 'look how cool you could be if you lived in one of these tyre homes'; nor is it a coffee table book nonchalantly surveying the scene. Instead, we explore – as objectively as possible – the pioneers' stories to examine whether the first generation of earthships built in Europe do work, and if not, then what can be done to make the next generation work better. Buildings that function effectively can dramatically improve people's lives in many different ways. Nice ideas that don't work are a waste of everybody's time. We – the authors – passionately believe in many of the visionary ideas that have gone into creating earthships. And we hope that this book helps to develop the vision of what earthships can achieve so that more people in Europe – and the environment as a whole – can benefit from them.

Mischa Hewitt and Kevin Telfer,
July, 2012

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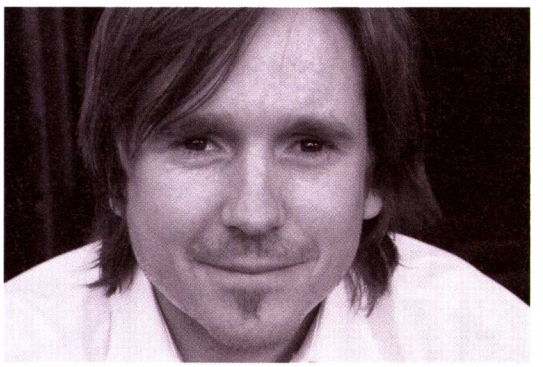
Hybrid earthship hut at night (Taos, New Mexico)
© Kirsten Jacobsen

ABOUT THE AUTHORS



MISCHA HEWITT is a sustainability consultant and project manager. He has MSc Architecture: Advanced Energy & Environment Studies from the Centre for Alternative Technology/University of East London and is also a Certified Passivhaus Designer. He is also director of Low Carbon Trust (www.lowcarbon.co.uk) where he project managed the award winning Earthship Brighton project, and runs a range of sustainable construction courses.

Mischa runs the sustainable building company Earthwise Construction (www.earthwiseconstruction.org) based in Sussex and in recent years has organised many environmental events, including the 'Eco Open Houses' weekends in Brighton & Hove and several conferences. He is also a trustee of the AECB – the Sustainable Building Association (www.aecb.net).

In his spare time he plays the piano and composes classical music.

KEVIN TELFER is an author and journalist. He first found out about earthships when he interviewed Mike Reynolds at Earthship Brighton on an assignment for *The Architects' Journal* in 2003. He has been fascinated by them ever since. He has also written about earthships for *The Guardian* and *The Idler* and was the co-author of *Earthships: Building a Zero Carbon Future for Homes* published in 2007 with Mischa Hewitt.

He is the author of *Peter Pan's First XI*, nominated as one of the 2010 books of the year in *The Guardian*, *The Telegraph* and *The Sunday Times* and shortlisted for the Independent Booksellers book of the year award in 2011. He also co-wrote *Grand Designs Abroad* with Kevin McCloud and *The Remarkable Story of Great Ormond Street Hospital*. As a journalist he has written for *Green Building Magazine*, *Grand Designs* magazine, and *Green Futures*, among others.

He is married and lives in the New Forest.

Entrance to Earthship France, Normandy
© Kevan and Gillian Trott

CONTENTS

1 INTRODUCTION

BACKGROUND

The first edition of this book was written when the construction industry and legislators in the UK were, for the first time, having to engage seriously with sustainable building and the challenges of a low-carbon economy. The 2006 UK government-commissioned Stern Review, *The Economics of Climate Change*, was one of the main catalysts for this engagement. It recommended that early action to try to both minimise and mitigate the damaging impacts of climate change was economically far preferable to inaction. In terms of housing, the report stated that 'It is vital that homes and other buildings are as sustainable and eco-friendly as possible. Further tough action is still needed to deliver significant energy use reductions in existing homes, but within a decade [we] want every new home to be zero carbon'. Policy initiatives such as the Code for Sustainable Homes[1] and the Climate Change Act[2] soon followed. The first edition of this book published in 2007 argued that there were difficulties in using earthships as the prototype for the required new wave of zero-carbon, sustainable mass housing in the UK. But, nonetheless, we suggested that many aspects of earthship design could inform architects, legislators, housebuilders and others on the road to achieving this goal.

The prophecy that earthships would not become an integral part of plans for sustainable housing has so far been fulfilled. A small number of earthships, though, have been successfully completed across Europe. And it is these European builds that form the focus of this book – they essentially remain prototypes of a building approach that was first developed in the arid, high-altitude desert of New Mexico, and has now been translated to a variety

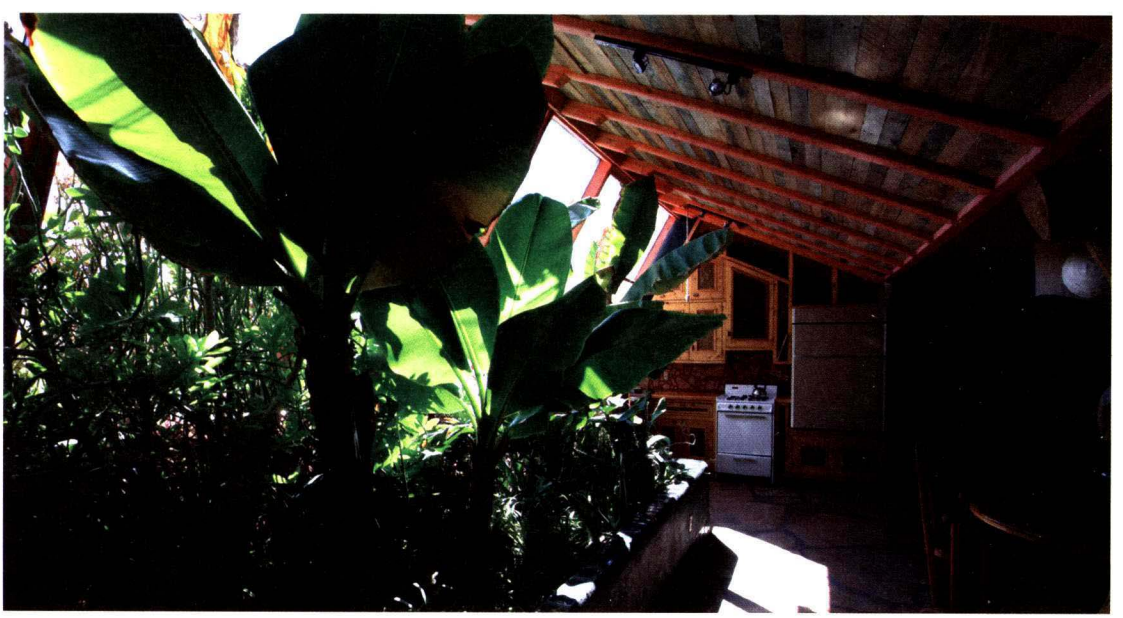


Figure 1: Hut House kitchen (Taos, New Mexico) with bananas growing in greywater planter © Kirsten Jacobsen

of European climates. The key question is whether or not this transition has been successful, and if the future of earthships in Europe can now extend beyond a few high-profile projects.

THE EARTHSHIP DREAM

The people who have undertaken builds so far are pioneers – what Kevin McCloud, in his foreword to the first edition of this book, called 'first adopters and adventurers'[3]. Their experiences offer a fascinating insight into whether the earthship dream can actually be realised in Europe.

In the first edition, the earthship dream was defined by the writers of this book as being something like this[4]:

'Envisage a building that is, without exaggeration, a passport to freedom, where it is not necessary to work to pay utility bills, because you have none. Your home effortlessly heats itself in winter and cools itself in summer, harvests water every time it rains and recycles that same water for multiple uses. Whenever the sun shines and the wind blows electrical energy is pumped into your house and stored for your use.

'The water recycling system allows for the cultivation of numerous edible plants within the building itself, and you are able to live happy in the knowledge that your footprint on the earth produces a negligible level of carbon emissions and uses only bountiful and renewable resources that are flowing freely from nature to sustain your life.

'The building you live in looks after you and cares for your needs. Ecological living through earthships is not about privation but about an improvement of the quality of life for its inhabitants and descendants.'

This second edition follows the stories of a number of European builds to see whether this dream has materialised for those who have reached for it. In some ways this is a qualitative rather than a quantitative assessment – a question of people's experience rather than anything that can be nailed down with facts and figures. Anecdotal reports based on real-life experience are important – and the reality of what it is like to build, and then live, in an earthship in Europe is exactly the kind of insight that was lacking in the first edition of this book and one of the main reasons for this second edition. But interviews are also not the whole story either; more than two years of detailed thermal monitoring and other data taken at Earthship Brighton has been analysed to provide an in-depth study of the performance of an earthship in a temperate climate for the very first time. This analysis has

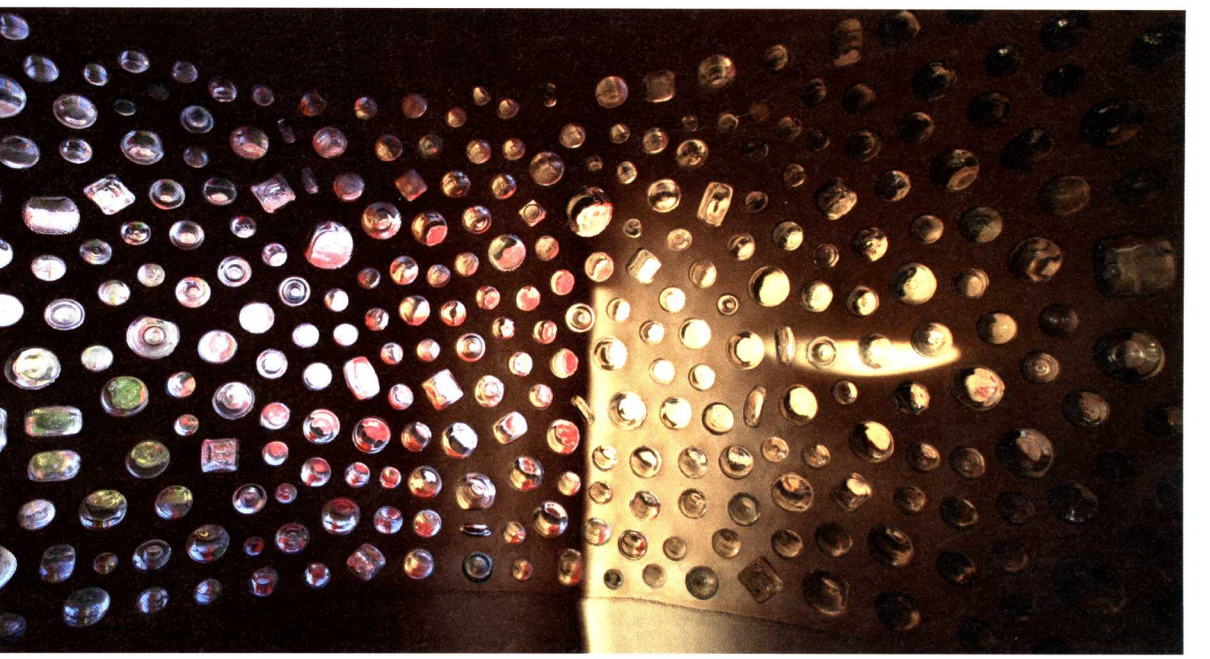


Figure 2: Reusing bottles in walls can create a beautiful visual effect (Taos, New Mexico) © Kirsten Jacobsen

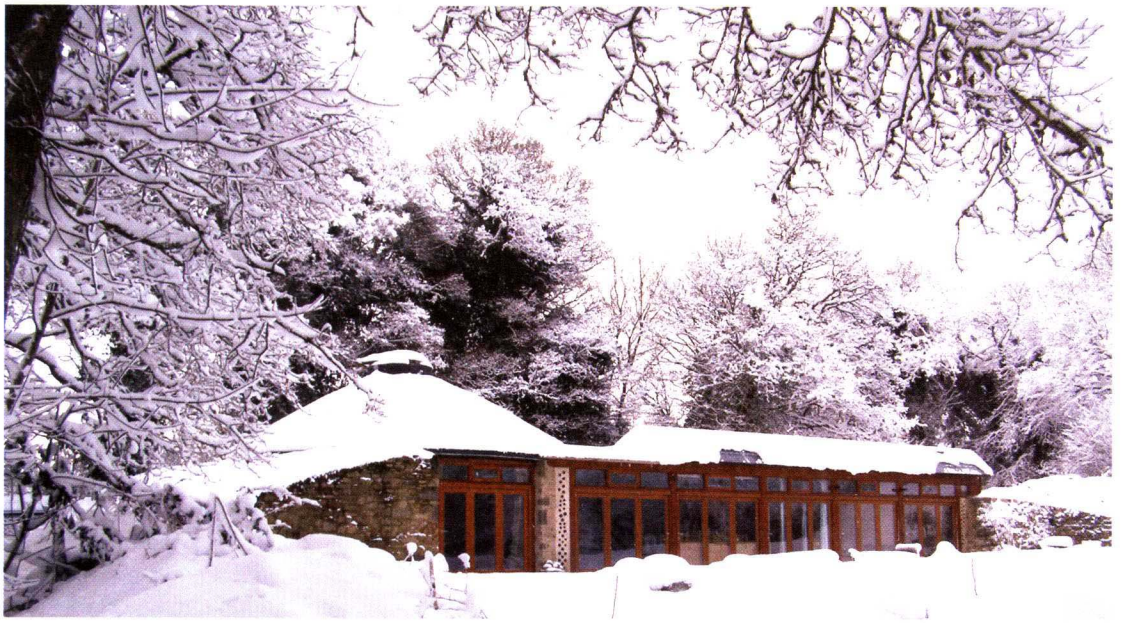


Figure 3: The Groundhouse (Brittany) in the snow © Daren Howarth

been used as the basis to inform a series of design recommendations for future projects.

'GREEN DREAM' OR 'AUTONOMOUS SURVIVALISM'?

Earthships retain their appeal more than 10 years after their introduction to Europe, and more than 30 years after they were first built, because their implicit critique of wasteful, inefficient houses in a society powered by expensive, polluting and vulnerable energy infrastructure remains as relevant now as it was then. In the recent economic climate of instability across Europe and fear of even more widespread economic meltdown, against a background of fuel prices continuing to rise beyond the rate of inflation in some countries, the dream of no utility bills is a doubly attractive one[5]. And it is the economic factor that has proved to be as appealing, if not more so, than any environmental concerns with a number of earthship builders. Lisa-Jane Roberts and Oscar Briz built their earthship near Valencia in Spain, completing construction in 2009. Oscar said, when he was asked why they decided to build one in the first place, that: 'We found [the idea] inspirational and challenging. We like challenges. And also, the economic side of it. The possibility of building our own house by ourselves … trying to get away from mortgages … it's a question of freedom'[6].

The idea that people are drawn to earthships not because they represent an opportunity for low-carbon living, but for completely different reasons, is interesting. This is especially the case when earthships are predominantly represented as ecological housing. So it raises the question about the design rationale of the buildings in the first place. Were earthships designed as environmentally-friendly structures, or was this an incidental by-product? Were they, in fact, developed merely to fulfil an inexpensive and independent off-grid lifestyle – autonomous survivalism in the high desert mesa of New Mexico for Mad Max-style refugees fleeing from the dying cities to live in post-industrial, tyre-walled enclaves?

Perhaps it does not matter. After all, if earthships offer successful strategies for environmentally-friendly living, then surely the origin and motivation behind the design of the building is irrelevant. And there is also a clear link between low-cost living and low-energy living; energy is not just environmentally damaging, it is also expensive.

Mike Reynolds, the American architect who invented earthships, claimed that his original inspiration came from news stories. He said that