Book review

RAMMED EARTH: DESIGN AND CONSTRUCTION GUIDELINES

Walker P., Keable R., Martin J. and Maniatidis V. Building Research Establishment, 2005. ISBN 1 86081 734 3, £35, 166 pp.

Rammed earth is a building technique that uses moist sub-soil compacted inside temporary formwork to produce (thick) walls. The beauty of the method is that it does not need to include energy-intensive raw materials. Small amounts of cement may be added to produce stabilised rammed earth, but this impairs its sustainability credentials a little. The technique is not new. The Romans probably introduced it to the UK 2000 years ago, and it was used in the nineteenth century to build quite large and elegant houses. In recent years it has been used on a number of projects where reduction of the environmental impact of the building materials has been an important consideration.

This book is the product of a Partners in Innovation project 'Developing rammed earth wall construction for UK housing' funded by the Department for Trade and Industry. Principally the work of researchers at the University of Bath working with the In Situ Rammed Earth Co. Ltd, the book is the first to give practical guidance on how to design, specify and construct rammed earth walls. According to the sleeve notes the aim of the book is to inform, develop and encourage the use of rammed earth wall construction for housing and other low- and medium-rise buildings. It achieves this aim with a very practical presentation of the key information required by designers. Although it may have been acceptable to have an element of trial-and-error in earth building in the nineteenth century, in today's world where designers design, contractors

build and clients might sue, it is essential that designers have full confidence in the construction method before it is used. To this end the book provides detailed guidance on the selection of materials, construction, design and detailing, and maintenance and repair. As a structural engineer, I was particularly interested in an appendix that gives guidance on structural design, which in the absence of a national standard is particularly welcome. The book is very well illustrated (there are over 85 figures, many of which are good quality colour photographs) and clearly written. It is also balanced; although its aim is to promote the use of rammed earth it does not hide nor seek to minimise the disadvantages and problems associated with the method. There is an extensive bibliography and reference list for the benefit of readers who may want to delve a little deeper into this interesting environmental alternative to more conventional building materials.

I showed the book to a Chinese student. Thinking that I was showing her a new construction method, she expressed surprise and told me that rammed earth was used extensively in her home village. Clearly, this is a book about a very traditional, ancient building method but it provides the twenty-first century designer with the necessary guidance to convince sceptical clients and building control officers that this tried and tested method of building has a role to play in the modern world, where consideration of environmental impacts is becoming ever more important. This excellent book has certainly raised my awareness of this interesting alternative to conventional building materials and I plan to include some information about it in my design courses.

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