Book review

Practical Building Conservation: Building Environment

Historic England (formerly English Heritage), Pender R, Ridout B and Curtels T (Eds), Ashgate, Farnham, UK, 2014, ISBN 978-0-7546-4558-0, £65.00, 651 pp.

This excellent book is the last to be published in a magnificent ten-volume series by Historic England (formerly English Heritage) on building conservation. The series covers all aspects of conserving the structure, fabric and decoration of virtually all types of building, from cathedral to bungalow. Aside from the overview volume on conservation and this volume on issues concerning the internal and external environment of buildings, each volume treats various construction materials. The full series contains the following volumes: *Conservation Basics*; *Concrete*; *Earth, Brick and Terracotta*; *Glass and Glazing*; *Metals*; *Mortars, Renders and Plasters*; *Roofing*; *Stone*; *Timber*; *Building Environment*.

The readership for this book, indeed the whole series, will be very diverse, including not only engineers, architects and surveyors with many years' experience of extending the life of historic buildings, but also building owners, university lecturers, students and others who may be less experienced and technically knowledgeable. For this reason, a good deal of introductory material is included.

Despite the title, this volume mainly addresses the building envelope which is, arguably, the most complex element in a building, or rather an entire building system. The book deals with a wide range of issues that impact on and interact with the building envelope, including the weather, the physics of heat, movement of fluids, humidity and moisture, as well as the architecture and engineering of building envelopes, how people use buildings, and how the environmental building systems need to be assessed, monitored, maintained and repaired.

After a short introduction, the 'Building science' chapter describes the physical processes that underline and explain the many links between the building and its environment. 'Interactions with the environment' shows how these links affect the way building envelopes are designed and constructed to work, and the impact of their surroundings. The role played by the building occupants – particularly when trying to

control the interior conditions – is covered in 'Controlling the interior environment'. The following section on 'Deterioration & damage' looks first at the environmental degradation of individual building materials, and then considers how the envelope as a whole can fail. 'Assessing the building environment' covers the actions needed to understand how a particular building is functioning and how it is failing, including specialist investigations such as environmental monitoring. A short chapter discussing approaches to 'Diagnosis' is followed by 'Care & repair', which introduces the various maintenance and remedial works developed to address problems with environmental performance. Finally, the 'Special topics' chapter addresses three important issues associated with the building environment: human health; disasters such as floods and fires; and reducing energy use and carbon emissions. The book concludes with a comprehensive glossary and index.

A book such as this is not intended to be read from cover to cover and the structure of the book has been well conceived to make it easy to access individual topics. The book is intended to be comprehensive and, very largely, it is, in the sense that the reader does not need to refer to elsewhere to understand the themes being addressed. Nevertheless, the book also includes many cross-references within the text to the other nine volumes of the series where subjects are dealt with in greater detail. Each chapter also contains a modest list of books, articles and websites for further reading.

The colour illustrations are generally excellent, although I would very much have liked the many interesting-looking buildings and their locations to have been identified in the captions. Such information would help the reader understand the climatic conditions to which the building is subjected, and sometimes the type of owner. Also, I prefer when illustrations are numbered so that the reader knows when an image is relevant to the story, and also allows better cross-referencing to images elsewhere in the book.

Overall, this is an excellent book and continues the high standards set in the other nine volumes in the series. Although £650 for the set may sound a lot, that represents only a day or so of a consulting engineers' fees and will quickly pay for itself in the time saved to access the huge quantity and range of information they contain.

Bill Addis