

ENGLISH HERITAGE
PRACTICAL BUILDING CONSERVATION

GLASS & GLAZING

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THE PRACTICAL BUILDING CONSERVATION SERIES

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This series of *Practical Building Conservation* technical handbooks supersedes the original five volumes written by John and Nicola Ashurst, and published in 1988.

The series is aimed primarily at those who look after historic buildings, or who work on them. The ten volumes should be useful to architects, surveyors, engineers, conservators, contractors and conservation officers, but also of interest to owners, curators, students and researchers.

The contents reflect the work of the Building Conservation and Research Team, their colleagues at English Heritage, and their consultants and researchers, who together have many decades of accumulated experience in dealing with deteriorating building materials and systems of all types. The aim has been to provide practical advice by advocating a common approach of firstly understanding the material or building element and why it is deteriorating, and then dealing with the causes. The books do not include detailed specifications for remedial work, neither do they include a comprehensive coverage of each subject. They concentrate on those aspects which are significant in conservation terms, and reflect the requests for information received by English Heritage.

Building conservation draws on evidence and lessons from the past to help understand the building, its deterioration and potential remedies; this encourages a cautious approach. New techniques, materials and treatments often seem promising, but can prove disappointing and sometimes disastrous. It takes many years before there is sufficient experience of their use to be able to promote them confidently. Nonetheless, understanding increases with experience and building conservation is a progressive discipline, to which these books aim to contribute.

The volumes also establish continual care and maintenance as an integral part of any conservation programme. Maintenance of all buildings, even of those that have deteriorated, must be a priority: it is a means of maximising preservation and minimising costs.

Most of the examples shown in the books are from England: however, English Heritage maintains good relations with conservation bodies around the world, and even where materials and techniques differ, the approach is usually consistent. We therefore hope the series will have a wider appeal.

Dr Simon Thurley
Chief Executive, English Heritage

ABOUT THIS BOOK

This volume of *Practical Building Conservation* covers glass used for windows, roofing and cladding, as well as for architectural decoration. Glass is an unusual building material. Compared to others such as brick, plaster or metal, it is very resistant to moisture, as indeed to most agents of environmental deterioration, but on the other hand it is extremely susceptible to catastrophic fracture. Also, in architectural applications it is never used alone, but is always held in some type of framework; together, the glass and frame make up the 'glazing'. Survival often depends more on the condition of the framework than on the condition of the glass itself: for example, glass in a timber sash window will be at risk of fracture if the putty or glazing sprigs fail, or the timber decays, or the lift mechanism stops working correctly.

Although there is a long tradition of conservation of stained and painted glass, the conservation of plain glazing is still in its infancy. It is nevertheless of great importance: the glazing is usually one of the most noticeable elements of a façade, so ill-matched replacement glass can alter the whole character of a building. Unfortunately, many historic types of glass are no longer manufactured; if a crown-glass window pane is lost, it is lost forever, and the machine-made glasses used in early modern glazing can prove almost as difficult to replace. Preservation is therefore a priority.

There are almost as many different approaches to building conservation as there are different applications, but although it is true that every situation is unique, and must therefore be considered on its own merits, there are some general principles that – thoughtfully applied – will allow a building custodian to plan effective treatment and long-term care of architectural glass, and it is these that are described here.

The book is divided into four sections, the first of which looks at glass as an architectural material, and at the basics of its deterioration and conservation. The two subsequent sections deal with the main systems of glazing, which deteriorate in rather different ways and have different demands for care. **Windows** covers the deterioration and conservation of casement and sash windows of all types and periods; this section is followed by a detailed introduction to the conservation of stained glass (which must be undertaken by specialist conservators). **Modern Glazing** considers glass used as a material for roofing and for curtain walling. Each of these sections is divided into five chapters: an **Introduction** (which includes a brief history of the material and its use); **Deterioration & Damage** (which covers common causes of decay and failure); **Assessment**; **Treatment & Repair**; and last, but by no means least, ongoing **Care & Maintenance**.

The final section of the book, **Special Topics**, introduces two other areas of specialist glazing conservation: **Ornamental Architectural Glass** (including cut glass and mirrored glass) and **Special Types of Architectural Glass** (including vitrolite, cloisonné glass, prismatic glass and glass blocks). Each special topic incorporates brief summaries of the deterioration and conservation issues specialist conservators may have to consider, and also of the possible approaches they could take to care and repair.