

Overview

This volume contains papers about the preservation and rehabilitation of buildings. The papers are in two groups: Theme A, to improve overall building performance, and Theme B, for historical buildings and building materials. The thirteen papers included here were among those presented at a symposium held at Bal Harbour, Florida on 17 Oct. 1983, sponsored by ASTM Committee E-6 on Performance of Building Constructions, with leadership from what have since become Subcommittees E06.24 and E06.25.

For Theme A, the scope and structure of total building performance is explained, several approaches to functional and technical evaluation are presented, and the differences in overall building performance that are required by an organization at various stages of its life history are considered. Although the subjects of total building performance and building diagnostics have been addressed at previous technical conferences, such as those of the International Council for Building Research, Studies and Documentation (CIB), the U.S. National Institute of Building Sciences, and the U.S. National Research Council's Advisory Board on the Built Environment (ABBE), this was the first symposium leading to standards development for measuring overall *functional* performance.

Theme B deals with a more established field: historical buildings and building materials. The properties of masonry, stone, and wood and their rehabilitation are discussed, and two approaches to nondestructive testing are presented. The two final papers discuss energy conservation, rehabilitation, and damage to the building fabric.

The symposium was organized for two main purposes: to elicit new methods and data and to provide a starting point for standards development work on the two themes. It was successful in both efforts. Immediately following the symposium, a decision was made to establish ASTM Subcommittee E06.25 on Overall Performance of Buildings, with the task group that had led Theme A providing charter members. Contributors to Theme B have been active in the standards development work of ASTM Subcommittee E06.24 on Building Preservation and Rehabilitation.

This book gives convenient access to the new ideas presented at the symposium and to those papers which contain reference information, checklists, procedures, and the like. It therefore will appeal to three groups:

1. Those concerned with the methods and materials of building preservation and rehabilitation, for whom all the papers in Theme B should be helpful.

2. Those who are developing standard guides and procedures in this area, who will find all the papers in Theme B to be useful, plus some of the papers in Theme A, particularly those by Jockusch, Stern, and Farbstein et al.

3. Those who are developing methods and standard guides for evaluating or improving overall performance of buildings, for whom the material in Theme A will be of primary importance, but for whom all the material in Theme B also will be relevant.

Although the papers in this book present the state of the art for many aspects of the practice and technology of building preservation and rehabilitation, they do not provide a comprehensive review of the subject.

Overall performance of buildings is covered at the general level, but specific methods for assigning comparative numerical performance scores are not covered. Life safety issues are mentioned in several papers, but rating overall life safety performance for purposes of building regulation is not discussed. The papers in Theme B discuss the testing and preservation of masonry and stone facades, and wood structures and structural members, but there are many other building materials which are not considered. Two papers describe experiences in improving energy conservation and raise issues for consideration, but a comprehensive framework for energy management in rehabilitation projects is not included.

From the material presented at the symposium and printed in this volume, it is evident that, though the technology of building preservation and rehabilitation is sophisticated, there is not yet a general framework of standard guides for improving overall performance of existing buildings through preservation and rehabilitation. That work is now proceeding within ASTM Subcommittees E06.24 and E06.25.

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