

Building Construction Handbook

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Third Edition

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Preface

The Third Edition of the *Building Construction Handbook* is virtually a new book. It contains several new sections and almost complete revisions of previous sections to include important new developments. Many of the revisions were necessary because of drastic changes in the specifications for design and construction with commonly used construction materials.

In preparing this edition, we maintained the same objectives as for the previous editions: We set out to provide in a single volume information that would be of greatest usefulness to everyone concerned with building design and construction, and especially to those who have to make decisions affecting building materials and construction methods. We wanted it to meet the needs of owners, architects, consulting engineers of various specialties, plant engineers, builders, general contractors, subcontractors of various trades, material and equipment suppliers, manufacturers, financiers, building inspectors, construction labor, and many others, all of whom may have different problems and different interests in building design and construction. As before, we were faced with an extremely difficult problem in selecting subject matter since there was such a wealth of material available that each section could readily be expanded into a thick handbook.

We decided to adopt the same solution that gained ready acceptance for the previous editions:

- The handbook is comprehensive, but each topic is treated as briefly as clarity permits.
- Information incorporated is of a nature that should be valuable in making decisions—characteristics of building materials and installed equipment, essentials of stress analysis and structural design, recommended construction practices and why they are used, cost estimating, and construction management.
- Frequent reference is made to other sources where additional authoritative, detailed information can be obtained.
- Each section is written for the nonspecialist in the field, on the theory that the specialist prefers to seek answers to his problems in a more detailed text dealing exclusively with his own field. Emphasis is placed on fundamentals rather than on tables of design data.

- Tables of design data, building codes, standard specifications, and similar material that may be obtained easily from trade associations, technical societies, and government agencies are referred to but not reprinted in this book.

- The practical approach is stressed throughout. Methods are presented that are as simple and short as possible.

Some of the new sections in the third edition were added to present new developments in design and construction. Other new sections resulted from contributions of new authors, who brought a fresh viewpoint, new ideas, and additional information to the treatment of their subjects. In addition, the other authors took advantage of the opportunity opened up by publication of a new edition to update and improve almost all parts of the book and to add material on other new developments. To make space for the new material without allowing the handbook to grow into a cumbersome size, obsolete and less important information in the earlier editions has been deleted. As a result, the Third Edition is almost entirely new.

Some of the new sections resemble the older ones, at least in title. Section 1, Business, Art, and Profession of Architecture, like the former Section 1, deals with the responsibilities of architects. But the new section puts more emphasis on how to obtain new design contracts and execute them profitably. Completely rewritten Sections 5 through 8 reflect the changes that have occurred in specifications and construction practices in recent years. Section 17, Acoustics, emphasizes basic principles of sound control and presents information on sound measurement. Section 25, Estimating Building Construction Costs, presents the fresh viewpoint and efficient methods of a new author. Similarly, Section 26, Construction Management, introduces the new ideas and practices of a new contributor.

Other sections are completely new to the handbook. Section 11, Engineered Brick Masonry, presents rational design of brick walls, including their use as shear walls. This presentation supplements the treatment of masonry walls in the revised Section 10, Walls, Partitions, and Doors, which deals with design and construction of nonengineered masonry walls. Section 20, Fire Protection, offers practical methods for prevention of fire damage and for insuring life safety if fires occur.

Many significant changes have been made in the sections that have been retained. Most noteworthy are the addition of structural dynamics and an introduction to the finite-element method to Section 3, Stresses in Structures; the slurry trench method for constructing foundations and prestressed anchorages for sheeting to Section 4, Soil Mechanics and Foundations; and new glass materials and new methods of installation to Section 9, Windows.

The authors and the editor hope that you will find this edition even more useful than the previous one.

Frederick S. Merritt

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