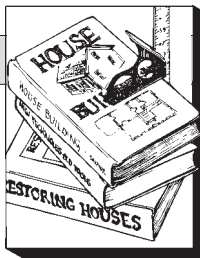


## Foundation Treatise Dense Reading

**Design and Repair of Residential and Light Commercial Foundations** by Robert Wade Brown. New York: McGraw-Hill, 1990. 232 pages. Hardcover. \$34.95.



One might expect a book titled *Design and Repair of Residential and Light Commercial Foundations* to be a practical manual on how to design light foundations, and repair those that have failed. However, a quick scan of the back cover gives a better inkling of what you'll find in the contents, which include soil engineering, site preparation, drainage, and "basic" foundation design for structural and "geotechnical" engineers. The author's tone is academic and scholarly, and I would think that technical readers or students would get the most out of this volume.

The scope of the text is also not as broad as the title suggests. The author mainly focuses on two specific foundation types (pier-and-beam and slabs) and on the role of clay soils in the distress (not ultimate) failure of foundations.

To avoid failure, proper consideration must be given to soil mechanics, and Mr. Brown devotes his first three chapters to this and related topics. He describes capillary draw from the water table, the effects of plant transpiration and permeability on soil moisture, grading of streets and mowed banks, strategies for building on sloped fill, and the elements of foundation drainage systems. The author looks at the characteristics and behavior of various cohesive and noncohesive soils, especially the shrinkage and swelling of expansive soils, which the author claims may account for more than 70% of all foundation failures (as opposed to settlement from frost heaving). The arguments are often technical, including formulas for run-off calculations or the loading requirement to control swelling, a discussion of ionic bonding between soil particles, and an introduction to Atterberg limits.

The same is true for the discussion of the properties of concrete (including analysis of why fiber reinforcement provides shrinkage crack control while wire does not). But when the practical matter of foundation design comes up, Mr. Brown initially sidesteps the issue by saying that the necessary engineering is beyond the scope of the book. Later it seems he reconsiders in a lengthy appendix on design methodology, replete with myriad formulas, charts, and graphs.

The book's main purpose, according to the author, is to understand and prevent (or remedy) failures. Several methods of soil stabilization are discussed, with emphasis on the author's own proprietary product,

along with repair of settlement or uplift damage by mudjacking (the author openly disagrees with other authorities on its effectiveness), jackhammering and excavation, sub-grade waterproofing, and soil watering. Special problems such as permanently warped wood members are also considered, as are preventive measures such as French drain construction.

Diagnostic and field inspection are also considered, but these admittedly very important aspects of foundation repair are the weak link in the author's exposition. Mr. Brown's primary message here is that "extensive experience" is the key to success. Beyond that, he provides a short inspection checklist, a scattering of diagnostic tips, and a few murky photos.

Not exactly what I'd call "highly readable" (to quote the back cover again), but "packed with practical information" if you're a design professional.

### Vintage Carpentry Text Still Top of the Class

**Fundamentals of Carpentry: Practical Construction** by Walter Durbahn and Elmer Sundberg. Homewood, Ill.: American Technical Publishers, 1977. 516 pages. Hardcover. \$23.48.

My very first, and still my all-time favorite carpentry book is the venerable *Fundamentals of Carpentry* by Walter Durbahn and Elmer Sundberg, first published by the American Technical Society in 1947 and reissued in its 5th edition in 1977. Its glossy green-and-white cover is the first to get my attention whenever I turn to my bookshelf for an answer to a question about framing or finish work, despite the presence there of several other "standard" texts such as Willis Wagner's *Modern Carpentry* and Leonard Koel's *Carpentry*.

Why this unfading fondness? I'm not sure; the other books are certainly competent, well illustrated, and understandable. Perhaps it's just a sentimental attachment to the book from which I first learned some details of the trade.

Or perhaps it's the comprehensive scope of *Fundamentals*, which ranges from the most fundamental question of "What is carpentry?" to reading drawings, using tapes and laser transits, regional formwork practices,

rough framing (from floor to roof), and interior and exterior finish work.

This latest edition also includes chapters on industrialized building and metric measurements, as well as comments on energy conservation. Framing topics are each divided into two chapters, one on theory, followed by a "practice" chapter which sets out practical problems in wood-frame layout, constructing roofs of unequal pitch, and the like. Tables, charts, and hundreds of drawings and photos expand upon and clarify the text. There may be other good carpentry books, but you'd be hard pressed to find one better than this old-timer.

— Paul Hanke

### Free & Cheap

**The NAHB Remodelers Council 1991 Catalog:** is chock full of resources for the professional remodeler. The catalog lists inexpensive pamphlets and info packets on a variety of legal and business issues, as well as codes and industry statistics. Topics include business letters for remodelers, estimating, legal basics, and insurance restoration. Members of the National Association of Home Builders and the Remodelers Council receive discounts on all items. Free from the NAHB Remodelers Council; 800/368-5242 ext. 216.

**Answers about pressure-treated southern pine:** The Southern Pine Marketing Council has published a six-page consumer safety booklet that answers frequently asked questions about CCA-treated southern pine. *Answers to Consumer Questions about CCA Pressure-Treated Southern Pine* explains how southern pine treated with chromated copper arsenate (CCA) provides a defense against decay and termite attack. Guidelines for the safe use and handling of treated wood are included, along with an EPA Consumer Information Sheet. A free copy of the booklet can be obtained from The Southern Forest Products Assn., P.O. Box 52468, New Orleans, LA 70152; 504/443-4464, request publication #301.

**Wood I beams:** Information about how to save time, money, and labor with wood I beams made by Georgia-Pacific can be found in the *Wood I Beam Reference Guide*. The free, 28-page full-color guide provides roof and floor details, maximum load charts, span charts, and general installation information. Write to Georgia-Pacific Corporation, Dept. WDILR-C, P.O. Box 2808, Norcross, GA 30091.

**Walk Through to Success: The Positive Walk-Through: Your Blueprint for Success,** from the National Association of Home Builders stresses the importance of a good walk-through program that leaves customers feeling good about the builder and generates new business through word-of-mouth advertising. The book is geared to larger building companies that have customer service representatives and salespeople, but the points covered apply to all builders. Examples of inexpensive programs in the book can help builders improve customer satisfaction and sales. How to train staff to do walk-throughs is outlined. To order, send \$22 (\$17.60 for NAHB members) to NAHB Bookstore, 15th & M Streets NW, Washington, DC 20005; 800/223-2665.

— Susan Saunders