

Education for a Good Foundation

Site Engineering for Developers and Builders by Thomas L. Brown, P.E. National Association of Home Builders, 15th and M Streets, N.W., Washington, DC 20005; 1988, 167 pages; \$30.40, members; \$38, nonmembers; 8 1/2x11, paperback.



Despite the fact that snafus such as leaky basements sometimes seem inevitable, problems related to site work can usually be prevented by proper analysis and planning. That's the message that Thomas Brown offers in his book *Site Engineering for Developers and Builders*. He recommends that the first step for developing your site is to study topographical maps, aerial photos, applicable regulations, and the like, to familiarize yourself with the situation before you even walk the site. Once this preplanning reconnaissance is done, a detailed study of actual site characteristics is then in order.



To aid in this analysis, Mr. Brown discusses, in general engineering terms, the subjects of soils, their types, classification systems, "index tests" for shear strength, compressibility, and other factors. He also covers rock, groundwater, land forms (slope, flood plains, surface drainage), and regional factors such as climate and natural hazards. Then, in more detail, he describes field investigation procedures, grading, earth work, roadways, fill, foundation design, erosion control, landslide prevention, and other practical matters.

As a broad overview of the engineering factors that must be considered in site planning, *Engineering* will serve as an adequate introduction, but it is far from a complete site-planning manual. Many related issues are ignored, such as views or solar siting. Mr. Brown is generally strong on providing engineering background and suggesting sources of information, but weak on practical elements of how to apply the material he presents. Sometimes the formulas he includes are valuable; they enable you to calculate cut/fill quantities, for instance. But I wonder how many readers will need to know how to calculate soil shear strength. In other cases, I found the author goes beyond the needs of his readers, as when he points out that salt water with a specific gravity of 1.025 is "hence 41/40 heavier than fresh water." Is that useful information?

Another serious drawback of *Site Engineering* is the illustrations. First, they are inconveniently located at the end of each chapter. Second, they are

among the most bland drawings you'll ever see, and sometimes the printed type on charts is nearly illegible. Nonetheless, this supplemental material is often quite necessary for understanding the text.

Finally, there is no index. When discussing soil compaction, Mr. Brown refers to "standard" and "modified" Proctor tests, without describing them or noting their practical differences. In a footnote he refers to applicable ASTM standards, but I was unable to explore the subject any further (if indeed it was discussed elsewhere), due to the lack of indexing.

These shortcomings make the price tag look more than slightly high, but if you want to get a handle on the myriad issues involved in site engineering, this book will introduce you to the turf and probably help you avoid some pitfalls along the way.

Site-Planning Insight

The motto of American Technical Publishers, producers of *Concrete Formwork*, is "building the skills that build America." Veteran readers of JLC will likely recall that I feel there is perhaps no subtrade as much in need of skill building as foundation workers. *Concrete Formwork* is just the reference they need for that purpose.



Concrete Formwork by Leonard Koel, American Technical Publishers, 1155 W. 175th St., Homewood, IL 60430; 1988, 275 pages; \$23.96, 8 1/2x11, paperback.

Leonard Koel has done an outstanding job of researching and presenting his material. Each chapter opens with a boldface summary of the concepts to be presented. New terms in the text are highlighted and clearly defined. Koel's writing is crisp, to the point, and illustrated with hundreds of sharp, detailed photos and drawings (mercifully without the obnoxious orange ink that detracted from the graphics of his previous book on carpentry). Review questions end each chapter.

Koel begins with discussion of the building site, including an introduction to soils, frost, drainage, excavation to soils, frost, drainage, excavation, and grading. Notably absent is preliminary layout, but this is more than adequately covered in both a

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Underground Vid: For \$20, you can order an eight-minute VHS videotape, titled *Comfortable Living: The Permanent Wood Foundation System*, from the Southern Forest Products Association. This video describes and promotes the full basement permanent wood foundation (PWF) system, and comes with a booklet. The Homebuyer's Guide to the Permanent Wood Foundation System. By sending \$10, you can "borrow" the video for seven days. For more information and to order, write to SFFPA, Box 52468, New Orleans, LA 70152; or call 504/443-4464.

Soil, Toil, Cement, and You: An 11-page brochure, *Soil-Cement Slope Protection for Embankments: Construction*, is offered by the Portland Cement Association. This brochure covers the steps involved in the construction of soil-cement slope protection. Both the central-plant mixing method and the mixed-in-place method of construction are described, as well as moisture-density testing, compaction, density testing, and curing. To obtain a copy, send \$3.80 to: Order Processing, Order #IS167, Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077; 312/966-9559.

Coming Clean: Removing Stains From Concrete is a 28-page brochure which describes several methods of removing specific stains from concrete surfaces. A general introduction is given, followed by methods for removing various stains, such as asphalt, blood, epoxy coatings, mildew, and smoke. To order, send \$10, plus \$2 for shipping and handling, to: Concrete Construction Publications, Inc., 426 South Westgate, Addison, IL 60101; 312/543-0870.

Assessing Site Assessments: Preacquisition Site Assessments: Recommended Management Procedures for Consulting Engineering Firms, is a new, 14-page brochure from the Association of Engineering Firms Practicing in the Geosciences. This guide describes what a preacquisition site assessment (PSA) is, its purpose, the state of the PSA market, and a run-down on how to participate in this market. A checklist and "decision tree," and a summary of state regulations concerning real estate transfers are also included. Send \$25 per copy requested to: ASFE, 8811 Colesville Road, Suite G106, Silver Spring, MD 20910; 301/565-2733.

Concrete Products: Free from W.R. Bonsal Company is *Specialty Concrete and Masonry Products Brochure*, an eight-page source of technical information on decorative and waterproofing products, sealing and conditional products, and restoration and other specialty products. To order, contact Customer Service Dept., W.R. Bonsal Company, P.O. Box 241148, Charlotte, NC 28224; 800/334-0784 or 704/525-1621.

- Josie Masterson

later chapter and an appendix on leveling instruments.

Thorough coverage likewise is given to site-built and prefabricated wall forms, numerous types of residential foundations, flatwork (including interior and exterior slabs), and proper mixing, place, and curing of concrete. Other sections cover heavy construction (columns, beam/girder forms, highways), and precast construction. Math problems, print reading, estimating, and several appendices end the book.

Shortcomings are few but notable. Koel states that backfilling is done after stripping forms, but entirely neglects to state that the basement slab and wood subfloor should be installed first to prevent possible collapse of the walls. This is a significant oversight.

Similarly, when discussing curing technique, Koel first says that forms should be left in place to prevent rapid drying, while in a subsequent chart he says to strip wall forms after 12 hours - hardly enough time to develop full strength. This wouldn't have been so bad if he had recommended covering the walls with poly after stripping but he doesn't. He describes several methods of curing slabs, but doesn't mention associated drawbacks. Koel also recommends the common practice of placing poly directly under a slab, but seems unaware that it's a better detail to cover the plastic with a layer of sand to encourage equal drying and prevent curling.

Despite these oversights, which presumably would be corrected by an

astute teacher or experienced contractor, *Concrete Formwork* is close to the ideal reference work on the subject.

- Paul Hanke