



Concrete Construction Details

Structural Details for Concrete Construction by Morton Newman (New York: McGraw-Hill, 1988); 231 pages; \$28, paper.

In April of 1989, I reviewed Morton Newman's *Standard Structural Details for Building Construction*, a 350-page compendium of generic construction details taken from the author's files. The present slimmer volume focuses on the concrete details. Companion books are available on wood, masonry, and steel.

A brief text outlining strength, ingredients, stress design methods, and reinforcement opens the book. This is followed by detailed drawings for various kinds of continuous footings, grade beams, basement walls, retaining walls, concrete joists, spread footings, slabs, steps, caps, and precast walls. Each page contains one or two details and a short caption. The facing page, in every case, is a piece of graph paper for "notes and ideas." (Hence the book's page count is rather exaggerated.)

In most instances, the details lack explanatory notes, specs, or dimensions. The apparent lack of technical data is not consistent however. In one case, the reader is informed exactly how many bar diameters are required for a splice

(although typical rebar sizes or grades are almost never provided), and there are a full 50 pages of very specific details for what seems like every conceivable retaining wall. There are also little jewels like the proper way to put a pipe sleeve through a footing.

If you don't have much detailing experience or a file of your own, *Structural Details for Concrete Construction*, like its parent volume, might be a useful reference.

Concrete Reinforcing Techniques

State-of-the-Art Report on Fiber-Reinforced Concrete, by the American Concrete Institute, Report No. ACI 544 IR-82 (Detroit: ACI, 1982); 21 pages; \$6.95, members; \$9.50, nonmembers.

Reinforcing Steel: Its Use and Benefits in Concrete by the American Concrete Institute, Education Bulletin No. E2-78 (Detroit: ACI, 1978) 17 pages; \$7.50, members; \$11.50, nonmembers.

Fibers have been used throughout history to reinforce masonry products (straw in mud bricks, horsehair

in plaster), but concrete reinforced with short steel or plastic fibers instead of woven wire mesh is a relatively new application. The ACI's 1982 report on this innovative material will be of interest to engineers, specifiers, and concrete plant operators, but of less value to the troops in the field because of its technical nature and language: To read it, you've got to have a taste for concepts like "proportional limit" and "modulus of elasticity," and descriptions of how "the load-deflection curve of the composite beam deviates from linearity."

If that style of writing suits you, you'll learn about the difference between "first crack" and ultimate strength, variables that affect fiber and concrete properties, formulas for optimum fiber spacing, preparation tips (batch plant and ready mix), and curing. You'll also read about the resistance of various fibers to alkali attack, case studies of field applications, traction tests, and where more research is needed. Sadly, all this technical verbiage doesn't clearly address shrinkage cracking, placement (always a problem with wire), possible cost savings, or how fibers perform vis-a-vis wire mesh — matters of concern to anyone wondering whether to make the switch.

Reinforcing Steel: Its Uses and Benefits takes the exact opposite approach — offering the most basic, easily grasped, nontechnical presentation of the hows and whys of steel reinforcement you could possibly imagine. You'll quickly receive basic training in where the tension zone is in concrete, types and grades of reinforcing steel, storage and handling advice, as well as information on making lap splices and on the importance of correct placement and cover.

As the authors say, "Reinforcing for slabs should never be laid at the bottom of the slab... and then lifted into position... This is extremely poor practice and should not be permitted."

Have you ever seen that done on a job? Maybe your crew needs this booklet.

— Paul Hanke

Free & Cheap

Asbestos Training: The *Asbestos Safety Procedures Training Manual* is a comprehensive safety guide and training manual for anyone planning or performing asbestos abatement.

The manual covers the technical aspects of asbestos safety, including general health effects of asbestos, and current regulations. It also provides a step-by-step guide for understanding air monitoring and inspections, abatement procedures and practices, and waste handling. Quizzes are included to test your understanding of the material. The 232-page book costs \$29.95 (plus shipping and handling), and is available from UBX Information Services, P.O. Box 1018, Hadonfield, NJ 08033-0594; 609-429-4483.

Excavation Regs: The Association of Engineering Firms Practicing in the Geosciences (ASFE) has published *The New OSHA Excavation Regulations*, which includes a summary and history of the regulations; definitions of terms; requirements for protective systems, soil classification methods; and information on sloping and benching, timber shoring for trenches, and aluminum hydraulic shoring. A number of illustrations and tables are included. Send \$7.50 to ASFE, 8811 Colesville Road, Suite G106, Silver Spring, MD 20910.

Historic Preservation: The U.S. National Park Service has published a free catalog, called *The Catalog of Historic Preservation Publications*, which includes resources for current guidelines, preservation technology, and research results. To order, write to National Park Service, Preservation Assistance Division, P.O. Box 37127, Washington, D.C. 20013-7127.

Stop decay and insects: The *APA Product Guide: Preservative-Treated Plywood* is available from the American Plywood Association. The eight-page publication discusses the benefits of preservative treatment, which include protection against decay and attack by wood-destroying insects. Sections covering technical data, specifications, precautions, and finishing recommendations, along with informational tables are also provided. The guide is available from the APA for \$1 per copy (APA charges a \$2 minimum on all literature orders). Order form #Q220. Write to Publications Dept., APA, P.O. Box 11700, Tacoma, WA 98411.

For those who prefer to learn by listening, two audiotapes — *Customer Service for Homebuilders* and *How to Subcontract and Supervise Hired Personnel* — are available from the National Association of Home Builders. *Customer Service for Homebuilders*, 90 minutes long, explains why customer service is important and what customers expect from a builder. Techniques for operating an effective customer service program are explained. Topics covered include working with subs, quality control, handling complaints, and when to say no. *How to Subcontract and Supervise Hired Personnel*, 60 minutes long, helps builders evaluate subcontracting needs and manage for results. Supervision techniques and practices are explained and tips on avoiding problems with subs are included. Both tapes are available from Home Builder Bookstore, 800/223-2665. *Customer Service for Homebuilders* costs \$9, *How to Subcontract and Supervise Hired Personnel* costs \$10.

— Susan Saunders