

Construction Disasters: Causes & Cures

Construction Disasters: Design Failures, Causes, and Prevention by Steven Ross and the Editors of Engineering News-Record. McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020-1095; 1984, 406 pages; \$47.50, hardcover.

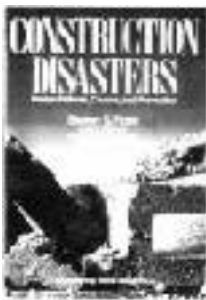


In his introduction to Construction Disasters, Steven Ross quotes St. Paul's famous dictum that, "The love of money is the root of all evil." Ross quickly follows that with an observation from N.Y. consulting engineer Jacob Field, who says that, "The fear of losing it is the root of good inspection."

Sadly, good inspection doesn't always prevail, especially under economic and schedule pressures. Major structural failures are few, says Ross, but when they do occur they can be real doozies. Construction Disasters brings you the grim stories of dozens of notable examples, including the Anchorage Earthquake (1964), MGM Grand Hotel fire in Las Vegas (1980), Tacoma Narrows Bridge collapse due to harmonic vibration (1940), Boston's Hancock Tower window shower (1972-76), the Hartford Civic Center roof collapse (1978), and the Hyatt walkway disaster (1981).

Each case study is presented through articles excerpted from the pages of Engineering News-Record. Sometimes these amount to little more than general field observations on generic types of failures, as in the Anchorage quake. In other cases, like the MGM Grand Hotel fire, the main cause (an electrical short circuit) and contributing factors (no sprinklers in the casino, manual alarm system failure, lack of a

proper smoke control system, and hundreds of minor code violations) are well documented. Other examples present varied theories on the probable causes of failure—such as the disputes between consulting engineers in the aftermath of the Hartford Civic Center collapse. The mysteries behind the four-year struggle to abate the cascade of the windows from the Hancock Building seem to be forever buried in the court-ordered silencing of all parties as part of the pretrial settlement.



From such a collection only so much can be gleaned about real-world causes of structural failure. Moreover, Construction Disasters doesn't live up to the promise of its

subtitle by showing us how to prevent such occurrences in the future. The main effort in this regard is Ross' argument for introduction of a European-style inspection system, where structural insurance is purchased and the insurance companies finance strong field inspection services through independent technical control bureaus. According to Ross the program works well in Holland, Belgium, and France, but to date has not caught on in the U.S. despite periodic major disasters. Construction Disasters offers some interesting reading and insights for engineers, corporate developers, and the like, but I'd definitely try the library before purchasing it.

ers, such as a caption on page 14 that indicates V-groove T&G plank should be laid with grooves up (a real "crud-catcher" if you do), and I doubt that laying a sheet vinyl would be as easy as the editors lead one to believe.

Absent is any mention of formaldehyde outgassing from carpet and some sheetgoods, and I couldn't quite swallow the use of hardwood flooring in a bathroom shown in one illustration (although later they do tell you exactly how to replace damaged wood strips, which is likely to result from such a poor choice). On the other hand, the editors have included some innovative applications of particle-board, and even brown wrapping paper, for finish flooring. I'd give it an A-.

Tile Remodeling isn't as exhaustive as Michael Byrne's book (reviewed in the October 1988 issue of NEB/JLC, but it too will get you there with ceramic, resilient, or wood parquet "tiles." I was able to use the directions to repair a self-destructing ceramic tile floor in my in-laws' entry. (Matching the grout was another story though.)

Typically beautiful color photos show

applications ranging from "ethnic" geometric patterns to "permanent Persian." Other applications range from hand-painted breaching whale in a boy's shower stall to ceramic lavs, fireplace surrounds, ceilings, and even tile stair risers.

Home Lighting will lead you through the sometimes arcane world of home illumination, from the basics of task, accent, and ambient lighting to reflectance, color rendition, bulb and tube types (for those who don't know an R from a PAR), and fixture selection. Room-by-room inspirational photos include lighting schemes and devices for entries, living, kitchen and dining rooms, stairs, halls, bedrooms, baths, and outdoor areas. Some of my favorites were mini-lights outlining soaring, peaked windows by architect Charles Moore, a stunning neon tube behind a stark arrangement of branches in a glass vase, and soy tube converted into giant recessed downlights for a wine cellar. A final chapter provides the rudiments of wiring various fixtures. Pay your \$6.95 and take your choice.

—Paul Hanke

Free & Cheap

Drainage Low-Down: A two-part product brochure on Hitek prefabricated drainage systems is available from Burcan Industries Ltd. A four-page installation guide and four-page design chart describe steps for installing fully wrapped drains, laminated drains, and other general procedures. To order a free copy, write to Burcan Industries Ltd., 111 Industrial Drive, Unit #19, Whitby, ONT L1N 5Z9; 416/668-3131.

Venting Guide: Wasco Products, Inc. offers a four-page brochure, *Heat and Smoke Vents*, which explains the functions and benefits of their lines of single-leaf and double-leaf vents. To get a free copy, contact: Wasco Products, Inc., Commercial Skylight Division, P.O. Box 351, Sanford, ME 04073; 800/522-1181

Vinyl Vid: Just slightly above the 'free & cheap' price range is a 17-minute video from the Vinyl Siding Institute. How to Apply Vinyl Siding covers a spectrum of application techniques, step by step, by showing the siding of one home from start to finish. This

VHS video costs \$30 and can be ordered from the Vinyl Siding Institute, 355 Lexington Ave., New York, NY 10017; 212/351-5400.

Behind the Aluminum Curtain (Wall): Installation of Aluminum Curtain Walls is a 30-page publication from the American Architectural Manufacturers Association. This guide not only gives in-depth installation details, but also covers issues such as the responsibilities of the architect, general contractor, and curtain wall contractor. To order, send \$10 to AAMA, 2700 River Road, Suite 118, Des Plaines, IL 60018; 708/699-7310.

Help With Your Windows: A free guide, *Design Drawings of Anderson Windows and Patio Doors*, can be ordered from Anderson Corp. This 35-page booklet, aimed at both architects and builders, contains detailed drawings, photographs, and product specifications. Write to Anderson Corporation, Design Drawings, P.O. Box 12, Bayport, MN 55003.

—Josie Masterson

Inside Information



The Inside Scoop From Sunset:

Flooring, 1982, 111 pages; **The Remodeling Handbook**, 1987, 79 pages; **Home Lighting Handbook**, 1988, 95 pages; all 8 1/2 paperbacks from Sunset Books, Menlo Park, CA 94025; \$6.95 each.

Sunset Books is one of my favorite sources of how-to information. Whatever the subject, it's hard to beat the information, pizzazz, and inspiration they manage to put in a small package at an affordable price. Here are three good ones.

Flooring covers planning, selection,

installation, finishing, and repair of all types of wood, and resilient, masonry, and carpet floors. Perhaps you won't find quite as much detail as you would in specific articles or from the Hardwood Flooring Association guidelines, but the technical information is almost as good. There are a few bloop-