

REVIEWS OF CURRENT PUBLICATIONS

Comparison of Building Seismic Design Practices in the United States and Japan

Applied Technology Council

Developed under the first of a series of planned cooperative U.S.-Japan projects for the improvement of building seismic design and construction practices, this report contains the workshop recommendations and conclusions as well as detailed technical papers describing current design practices in both countries. Building types specifically addressed include: low, mid and high rise steel buildings; low, mid and high rise concrete buildings; and mid rise buildings of composite construction. The project was sponsored by the National Science Foundation.

Applied Technology Council, 2471 E. Bayshore Rd., Suite 512, Palo Alto, California 94303, 1985, 317 pp., \$35.00. Document number ATC-15.

Analysis of Partially Prestressed Composite Beams

Rajeh Z. Al-Zaid and Antoine E. Naaman

Based on equilibrium and compatibility, a general analysis procedure is developed for cracked prestressed and partially prestressed concrete composite sections in the elastic range of behavior. Direct equations are derived for the strains and stresses in the constituent materials taking into account the change in the prestressing force due to the application of loads. Solutions for the special cases of uncracked composite sections, cracked and uncracked noncomposite sections, as well as expressions for the cracking and decomposition moments are also presented. A

parametric analysis is conducted to study the effects of various parameters on the stresses and stress ranges in the constituent material. An example is developed to illustrate the application of the method.

Journal of Structural Engineering, ASCE, V. 112, No. 4, April 1986, pp. 709-725.

Ponts Haubanes (in French) (Cable Stayed Bridges)

René Walther, Bernard Houriet, Walmar Isler and Pierre Moïa

This comprehensive treatise on cable stayed concrete bridges is fully illustrated with numerous line drawings and color photographs. Topics include historical development, conceptual and structural design, parametric study, cable stay technology, static and dynamic analysis, and examples of short and long span cable stayed structures. An appendix section contains a summary of test results on cable stayed bridges.

Presses Polytechniques Romandes, Cité Universitaire, Centre Midi, CH-1015 Lausanne, Suisse, 1986, 203 pp.

Polymer Concrete—Uses, Materials and Properties

James T. Dikeou and David W. Fowler, Editors

The fifth in a series of symposia papers and reports gathered and disseminated through ACI Committee 548, this volume contains papers presented at the symposium on Polymers in Concrete held at the 1983 ACI Fall Convention. Several additional papers not orally presented at

the convention are also included.

American Concrete Institute, P.O. Box 19150, Redford Station, Detroit, Michigan 48219, 1985, 346 pp. Publication number SP-89.

Probabilistic Basis for Design Criteria in Reinforced Concrete

Reinforced Concrete Research Council

This collection of papers presents the results of research on the variability of reinforced concrete members. Basic data on the variability of concrete reinforcing bars, prestressing strands and as-constructed dimensions were collected and form the basis of analyses of the variability of concrete members loaded in flexure, shear and axial load. The results of this research have been used to propose revisions to the strength reduction factors for "Building Code Requirements for Reinforced Concrete (ACI 318)."

American Society of Civil Engineers, 345 E. 47th St., New York, New York 10017-2398, August 1985, 134 pp., \$16.00.

Cathodic Protection of Reinforced Concrete Bridge Decks

This book is a compilation of papers given at the two day conference in San Antonio, Texas, February 1985. Included are papers on the economic impact of corrosion problems, corrosion fundamentals and fundamentals of cathodic protection. The book also contains case histories and descriptions of the various cathodic protection systems being used on bridge decks. The Ontario Ministry of Transportation's "Bridge Deck Rehabilitation Manual" (Parts 1 and 2) has also been reprinted in the appendix.

National Association of Corrosion Engineers, P.O. Box 218340, Houston, Texas

77218, 1985, 163 pp., \$32.00 members, \$40 nonmembers.

Reinforced Concrete Design Second Edition

Leonard Speigel and
George F. Limbrunner

The text is primarily an elementary, non-calculus, practical approach to the design and analysis of reinforced concrete structural members utilizing numerous example problems and a step-by-step solution format. In addition, chapters use a conceptual approach on such topics as prestressed concrete, composite construction, and detailing reinforced concrete members. The metric (SI) system is introduced in a comprehensive manner with several example problems.

Prentice-Hall, A Division of Simon & Schuster, Inc., Englewood Cliffs, New Jersey 07623, 1986, 432 pp., \$33.95.

Simplified Reinforced Concrete

Edward G. Nawy

Conforming to the latest ACI 318 Building Code, this book offers a background of the behavior of concrete as a material and as a reinforced concrete structural element in a building. Flowcharts are provided for each topic to enable the student to think in terms of compiling computer programs for some of the topics in the book and for the analysis and design of the concrete element. Topics presented include the behavior flexure, shear and diagonal tension, columns and other compression members, deflection and cracking, and foundations and footings to limit the state of failure. More than 150 illustrations emphasize strain, stress and force distribution.

Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632, 1986, 318 pp., \$29.95.