

Top quality construction

Quality in the Constructed Project: A Guide for Owners, Designers and Constructors (second edition) **ASCE Manuals and Reports on Engineering Practice No.73; US \$48.00 paper 0-7844-0506-9, 228 pp., www.pubs.asce.org**

Published by the American Society of Civil Engineers, this manual is an update of the first edition, which was published in 1990. It leads the reader through the various roles and responsibilities of the members of the project team: the planning, execution and documentation aspects of typical construction projects, as well as the risk, review and value/partnering aspects of them.

The manual is intended for use by the team's principal members: the owner, the design professional and the constructor. The format is geared predominantly to the traditional project delivery method (design-bid-build), although it also discusses alternative project delivery systems in Chapter 3. The layout facilitates review and referencing by readers interested in specific topics relative to construction projects. The diagrams are clear, and margin notes provide useful cross-references to publications, websites and related sections in the manual.

The authors point out that this manual is intended to be an "aspirational" guide, with the goal of educating readers in an effort to stimulate enhancements in over-all project quality. They are careful to note that the guide is not a technical standard, nor a compilation of standard industry practices.

The guide addresses the owner's selection of the design professional (or design-builder) and the major impact the process has on project quality. It suggests that qualifications-based selection provides the most flexibility for addressing design problems, ultimately helping to control project cost and improve quality. The guide also provides a thorough discussion of agreements for professional services, with cross-references to examples produced by the Engineers Joint Contract Documents Committee (EJCDC) and the American Institute of Architects (AIA). The authors point out that the key to successful agreements is in the clear expression of the roles, responsibilities and expectations of each party.

Planning and "team assembly" aspects of a project are addressed in Chapters 9 through 14. In these sections, the guide reviews elements of coordinating the design group, planning for design management and construction, and selecting the constructor. The guide provides an overview of the construction phase of the project, where the constructor assumes the key role in sequencing work, establishing the means and methods of achieving construction and managing suppliers and subcontractors. The guide outlines the process through which

the constructor (typically) assumes responsibility for site safety during construction, as well as the owner's responsibilities to the contractor with respect to issues that directly affect project quality.

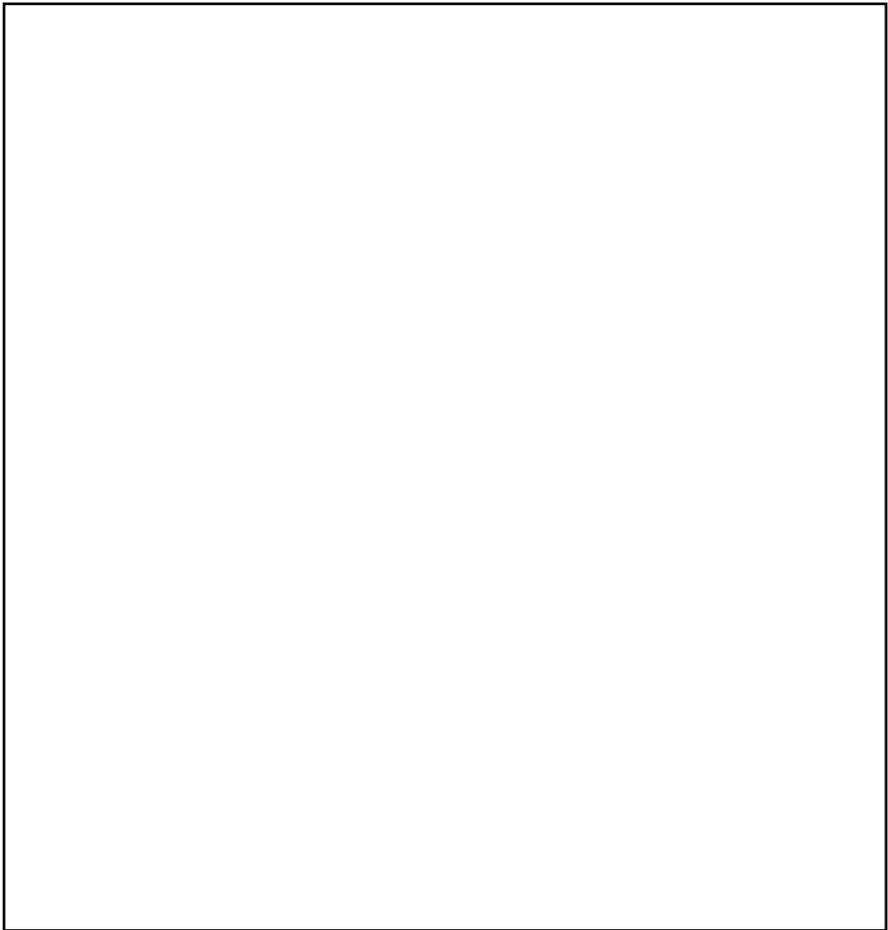
Chapters 15 through 18 review construction contract issues including documentation and contract administration. Distinction is made between the differences of construction contract administration (the responsibility of the owner) and managing construction (the responsibility of the constructor).

The final six chapters address issues of operations and maintenance, quality assurance, peer review, risk and liabilities, partnering and value engineering.

A brief but necessary discussion of computers and project quality is included in Chapter 21. Several common computer uses are reviewed. In addition, the guide reviews web-based project data sharing and communications resources in common use, but tempers this discussion with cautions to users that the "mis-use" of information becomes easier as data transfer is simplified. The final chapter provides a discussion of value engineering with illustrations of the benefits of this approach to project deliverables. Value engineering focuses on improving the relationship of function, performance and quality to cost.

This manual appears to be a timely and relevant guidance document that will benefit owners, design professionals and constructors. It is recommended for any reader who desires a better understanding of the fundamental elements of the construction project, and how to improve and harmonize these elements for better quality in the final product.

Reviewed by Steven Rose, P.Eng.



Text demystifies telephone network technology

Digital Telephony, 3rd Edition, John C. Bellamy, PhD; \$146.95 hardcover 0-471-34571-7, 664 pp., John Wiley & Sons.

This hardcover is an excellent, general overview of telephone networks. Starting with the background of telephony, it describes the application and operational aspects of digital voice and data communications networks.

In both qualitative and quantitative terms, the book details the design and implementation of the three main areas of telecommunications: cellular systems (North American and European standards), radio and fibre (asynchronous and SONET) transmission systems, and switching systems, right down to the methods of digitization, multiplexing, modulation and transmission formats. Traffic analysis is divided into loss and delay, and appendices give the derivation of equations, voice coding, digital communication theory and traffic tables.

There are numerous references given to possibly all of the accurate books and articles ever written on telephony. Some problems are listed at the back of each chapter, to turn *Digital Telephony* into a textbook. Examples used from the U.S. network are still valid and true in Canada, except for the specifics of the breakup of the Bell monopoly.

What's missing is information on how to design peculiar systems, such as a cellular system with missing and odd-shaped cells.

But this is what more specialized texts would offer the reader.

It's unfortunate the book's readership doesn't go beyond its intended primary audience of graduate electrical engineers to include technicians, engineers and managers at all levels in communications companies. Widespread understanding of this book in the industry might lead to the elimination of dropped calls, interference and dead lines for the calling party. There are no guarantees on people communicating effectively, though.

"How to" misses the mark on corporate communications

Message Received and Understood: How to Communicate Effectively in Today's Business World, Helen Wilkie; \$19.95 paper 0-9684686-0-X, 152 pp., MHW Communications.

Don't judge this book by its title. Using everyday English, it attempts to bring written and oral communication in a business environment down to a friendly and easy-to-understand level. Unfortunately, the whole book reads like a compressed excerpt from a communications workshop.

Each chapter itemizes important points for five areas of corporate communication: business writing, presentations, meetings, effective listening and magazine writing. But an entire book could be written to expand on each of these areas. Instead, the author doesn't give enough description, or she strays to another point that, although still valid, belongs in another area. Sometimes the tangent is so far out that it doesn't belong at all. For instance, comparing a business meeting to an interview between a social worker and a mother regarding her son is definitely a stretch.

In order to digest this gross amount of information, the author suggests incorporating "Helen's 9 Rules" for effective communications one at a time. For example: Improved writing starts with proper grammar and the use of words; a business meeting or presentation runs smoothly with an agenda clearly stating the topic and timeframes; and listening is a conscious effort.

Anyone can use this book to brush up their communication skills, but a novice communicator would gain more insight with other reference books found at your local bookstore.

Both books reviewed by Donna Wedgbury, P.Eng.

Engineering Dimensions reviews books of general interest to professional engineers. Comments made are the opinion of the reviewer.



Professional Engineers
Ontario



Professional Engineers Ontario celebrates
its partners' contributions to the successful launch of
"Engineers are Everyday Heroes" Year 2 during
National Engineering Week, March 3 to 11, 2001:

Government of Ontario
Ontario Power Generation
TVOntario

Canada Science and Technology Museum
Canadian Space Resource Centre

National Post
National Research Council of Canada
Nortel Networks
Ontario Centres of Excellence
Ontario Science Centre
Science North

Watch for the new series of "Engineers are Everyday Heroes" educational shorts on TVO Kids.