Abstracts of PCI Special Publications

Architectural Precast Concrete

The long awaited *PCI Manual* on *Architectural Precast Concrete* is now off the presses. Prior to publication, the *Manual* underwent several critical reviews. Uniquely, the editors worked closely with PCI's Architectural Division Design Manual Committee, and with the Professional Members of the Institute. The technical accuracy of the *Manual* was reviewed by architects, engineers, precast producers, material and equipment suppliers, and affiliated industry organizations. This unique combination of various disciplines and viewpoints provided a very comprehensive state-of-the-art document on architectural precast concrete. This book is the first in any language to accomplish this goal.

The *Manual* is architect-oriented and is purposely elegant in format having more than 150 halftones and 130 line drawings of details. Although the *Manual* is intended primarily for the architect it will also be of vital interest to engineers, precasters, sales personnel, and even students. One might say that this book is intended for the decision maker.

All of the guidelines and recommendations presented show current practices in the precast concrete industry. The material, is however presented in a way that will not act as a barrier to either architectural creativity or to potential innovations by the precaster.

The format of the *Manual* attempts to follow the path of usage within an architectural office:

Chapter 1—Exposition

Chapter 1 provides a general background concerning the state-of-the-art of architectural precast concrete. The major emphasis here is photographic—with many illustrations of buildings in the United States and in Canada.

Chapter 2—Economics

This chapter contains design concepts related to usage and economics for the initial evaluation and selection of architectural precast concrete for a project. Many drawings and photographs supplement the text.

Chapter 3—Design

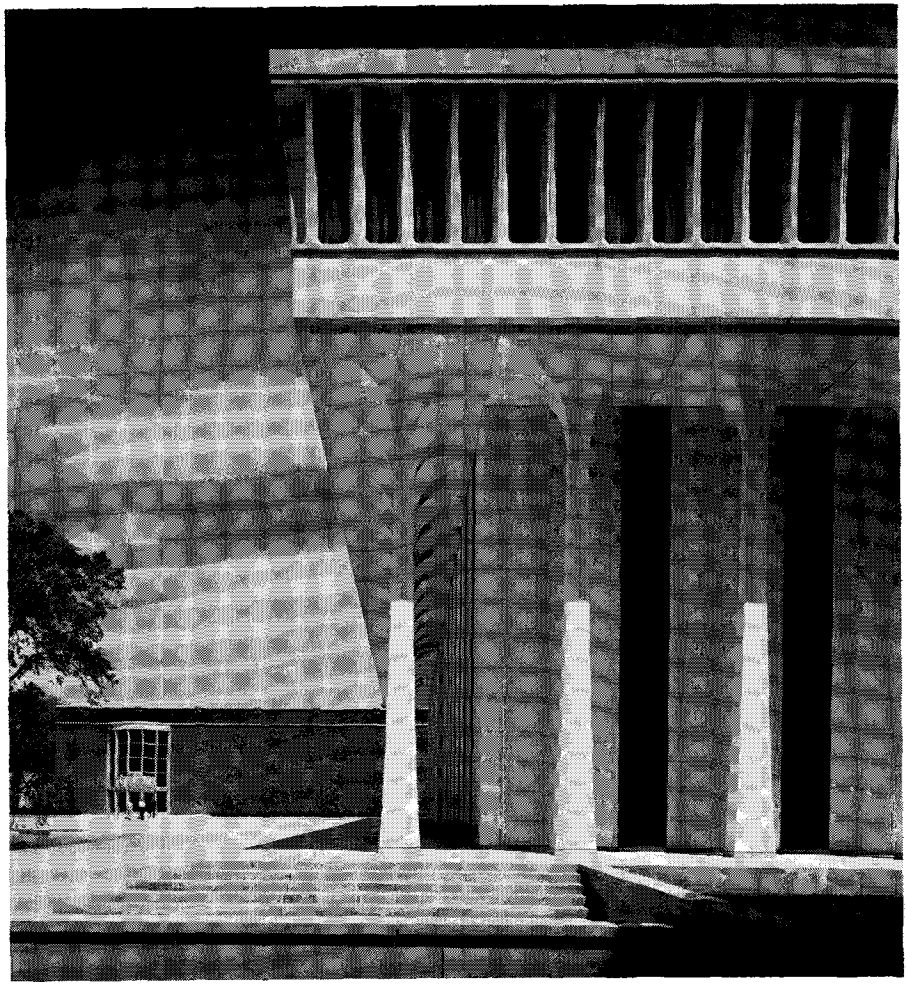
Chapter 3 is directed to the design sections and concerns the critical decisions which the architectural designer must make among the many available options. Here too, the emphasis is visual as well as textual.

Chapter 4—Working drawings

This chapter is written for production and is to be carefully considered by the job captain, draftsman, and detailer. This chapter is also closely related to both Chapters 2 and 3, so that the drawings relate to earlier considerations and the design process.

Chapter 5—Specifications

Chapter 5 concerns itself with specifications and the specifications writer. The information contained within it is related to quality and its control, within the project and contract documents.



Woodrow Wilson School at Princeton University (Architect: Minoru Yamasaki). This picture is typical of the buildings illustrated, and of the high calibre of photography used throughout the Manual.

Chapter 6—Short form specifications

This chapter relates closely to both the new usage of performance specifications, and gives a carefully edited outline for the small project, where a refined specification might not be needed.

An index is provided at the end of the *Manual* to facilitate finding the material.

Type face, size, and cost

The type face in the *Manual* is the contemporary Helvetica. The feeling of the format is very precise, though open and airy. The *Manual* is hard bound in dark blue, 8½ by 11 in., and contains 192 pages of extremely valuable material. The price of the *Manual* is $15.00, which is relatively economical for a book of this character and quality.

PCI Post-Tensioning Manual

The *PCI Post-Tensioning Manual,* which is now available to the prestressed concrete industry, was developed to provide a comprehensive coverage of post-tensioning applications, post-tensioning hardware or systems, design, detailing, and construction procedures. The *Manual* is primarily intended for practicing engineers, architects, and contractors. However, the *Manual* will also be a useful reference for senior and graduate students in schools of engineering and architecture. Because of the increasing importance of post-tensioning in concrete construction, it is probable that this is the first edition of a new and basic *Manual* that will find continued use by the construction industry.

The *Manual* contains six chapters and an appendix as follows:

Chapter 1—Applications

Illustrates pictorially the full range of post-tensioning applications including parking garages, apartment and office buildings, dams, bridges, tanks, nuclear containment vessels, shells, foundations, columns, tiebacks and retaining walls, and nonstructural slabs on grade.

Chapter 2—Post-tensioning systems

Gives comprehensive design and detailing data for commercially available post-tensioning systems in the United States and Canada. Includes data for wire, strand and bar tendon capacities, anchorage hardware dimensions, as well as information related to jacking and grouting equipment.

Chapter 3—Specifications

Presents "Guide Specifications for Post-Tensioning Materials," and a "Recommended Practice for Grouting of Post-Tensioned Prestressed Concrete." Also includes ASTM Specifications for wire and strand materials used in post-tensioning tendons.

Chapter 4—Analysis and design of post-tensioned structures

Provides essential background information on analysis and design of post-tensioned structures. Analysis and design procedures are illustrated by typical design examples.

Chapter 5—Detailing and construction procedures

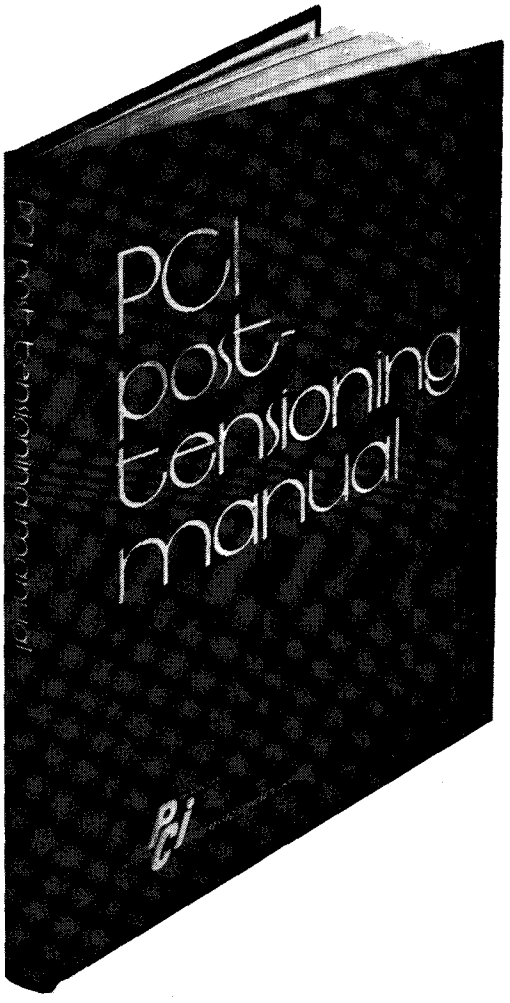
Includes detailing illustrations for various types of post-tensioned structures. Describes good construction practices in reference to formwork, tendon and concrete placing, stressing, grouting, and form removal.

Chapter 6—Fire resistance of post-tensioned structures

Describes and analyzes fire tests of post-tensioned construction as well as basic properties of steel and concrete at high temperatures. Presents recommendations for minimum cover and member thickness dimensions for various fire resistive classifications.

Appendix—Design aids

Includes design aids for calculating post-tensioning moments in continuous structures, friction losses, determination



of tendon requirements, materials properties of concrete, and materials properties of both post-tensioning and conventional reinforcement.

Size and cost

The *Manual* is published with a hard cover, is 8½ x 11 in. in size, and contains 216 pages. Its price is $10.00.