

TECHNICAL ACTIVITIES COUNCIL NEWS

More than 300 enthusiastic participants gathered at the Holiday Inn-Mart Plaza in Chicago on April 30 to May 3 for PCI Committee Days. During some 50 committee meetings over the course of four days, committee members addressed many topics related to the technical, marketing and administrative affairs of the Institute.

Among the highlights were the presentations of awards for meritorious service to PCI. Member Services Director **John S. Dick** was presented with an Award of Special Recognition for his role as Editor-in-Chief of the new PCI Bridge Design Manual. In addition, the Prestressed Concrete Poles Committee (**Fouad H. Fouad**, chairman) was presented with a Certificate of Merit Award for the report "Guide for the Design of Prestressed Concrete Poles," published in the November-December 1997 PCI JOURNAL.

The following is a brief summary of some of the actions and decisions of committees under the Technical Activities Council (TAC) (**Ned M. Cleveland**, chairman).

Building Code Committee — The Building Code Committee (**Leslie D. Martin**, chairman) remains very well organized and active. With the addition of **Dr. S. K. Ghosh** as PCI's Building Code consultant, the impact of recent efforts in this area is already being felt. At its meeting during Committee Days, the Building Code Committee discussed the recent hearings at which the first draft of the International Building Code was publicly debated. Dr. Ghosh attended these sessions on behalf of PCI, addressing several issues pertinent to the precast/prestressed concrete industry.

Walter J. Prebis of the Colorado

Prestressers Association also attended the hearings in Alexandria, Virginia, and addressed many issues including live load reduction for parking structures. Mr. Prebis was successful in maintaining the current provisions from the Uniform Building Code. These provisions will continue the allowance of live load reduction for precast/prestressed concrete parking structures.

Mr. Martin presented many of the code changes that are being proposed for the ACI 318 1999 Building Code. The most important of these code changes regarding the precast concrete industry is a proposal to add a com-

plete chapter to the ACI Building Code on "Anchorage to Concrete." This extensive code change is the result of many years of research done at the University of Stuttgart in Germany. The proposal covers a broad spectrum of anchorage devices, including drilled-in expansion anchors and cast-in-place headed studs. If approved, the proposal would result in overly conservative designs for headed stud connections than are currently recommended in the PCI Design Handbook.

Several PCI Professional Members are also members of the ACI 318 Building Code Committee and will

New Appointments to PCI Committees

The following individuals have recently accepted appointments to PCI committees. We appreciate their interest and voluntary participation.

- *PCI Technical Activities Council*

Kenneth Baur

High Concrete Structures, Inc.
Denver, Pennsylvania

Todd G. McCoy

H. Wilden & Associates, Inc.
Macungie, Pennsylvania

- *PCI Committee on Building Code*

Darren R. Adams

Sirko Associates, Inc.
Denver, Colorado

Te Lin (Terry) Chung

Spancrete Industries, Inc.
Waukesha, Wisconsin

- *PCI Committee on Computer Software*

Zhongguo (John) Ma

University of Nebraska-Lincoln
Omaha, Nebraska

- *PCI Committee of Hollow-Core Slab Producers*

Anthony Carlson

Consultant
Winnipeg, Manitoba, Canada

- *PCI Committee on Parking Structures*

James Clark

Master Builders
Falmouth, Virginia

- *PCI Committee on Parking Structures*

Joey D. Rowland

Carl Walker, Inc.
Dallas, Texas

- *PCI Committee on Precast Sandwich Wall Panels*

Doug Anderson

Spancrete Inc.
Green Bay, Wisconsin

PCI CONVENTION/EXHIBITION UPDATE

Because of the large turnout expected, **it is critical that you make hotel room reservations as soon as possible** for the 1998 PCI Annual Convention and Exhibition, scheduled for October 18-21 in Atlanta, Georgia.

To reserve a room at the Hyatt Regency Atlanta, call Hyatt's Central Reservations System at 800-233-1234 or call the Hyatt in Atlanta directly at (404) 577-1234. Room rates are as follows: Single \$138/Double \$155/Club Level Rate add \$35/Suites start at \$550. Sales tax is 14%; one night deposit is required. All major credit cards are accepted. While the cut-off date for room reservations is September 13, it is expected that all rooms will be reserved well before that date. **Assure yourself a reservation by calling today!** Be certain to mention that you are attending the PCI Convention.

Delta Airlines is the official airline for the Convention. Delta can be contacted at 800-241-6760. Be sure to mention the Convention plus Delta File 115427A to take advantage of the special meeting saver fare.

For additional information on the PCI Annual Convention and Exhibition, contact PCI headquarters at (312) 786-0300.



Members of the Prestressed Concrete Poles Committee received the Certificate of Merit Award at Committee Days. Shown above are: **Fouad H. Fouad (chairman)**, **George D. Nasser**, **Richard R. Imper** and **Brad Fossum**. Not pictured: **Thomas A. Barbour**, **W. Vincent Campbell**, **Jeffrey M. Davis**, **William Y. Ford**, **Terry Johnson**, **Michael McCafferty**, **Alain Peyrot**, **Morris S. Stover**, **Joe Spring** and **Jerry Tang**.

vote on the approval of a new anchorages chapter. If the proposal is to be included in the 1999 Code, it will need to be completely approved at the special ACI 318 Committee Meeting in June of this year.

Connection Details Committee — The Connection Details Committee (**Jagdish C. Nijhawan**, chairman) continues to work on a substantial publication covering standard precast concrete connections. This publication will contain details and capacities for connections built with the recommended details. The connections in-

cluded in the report have been recognized by the committee as being "standard" in the industry. TAC has approved the publication of a summary report of this work, titled "Standard Precast Connections," in the July-August 1998 PCI JOURNAL. It is hoped that this report will generate feedback from the design community on both the connections included in the report and the document itself.

JOURNAL Advisory Committee — The JOURNAL Advisory Committee (**Donald C. Raths**, chairman) discussed future plans for the searchable

database of PCI JOURNAL articles on the PCI website. At this time, abstracts and reference information are available on-line for all PCI JOURNAL articles dating from the present back to 1972. It is expected that reference information for the remainder of the JOURNAL's archives will be available on-line by the end of the year.

Prestressed Concrete Piling Committee — The Prestressed Concrete Piling Committee (**Saad E. Moustafa**, chairman) agreed to hire a consultant to author a section for Phase 2 of the PCI Bridge Design Manual on precast, prestressed concrete piling. The Producer Members of the committee present at the meeting all pledged funding for the project. The Producer Members on the committee not present at the meeting will also be contacted to request financial support.

The committee also heard a report on the ATLSS (Advanced Technology for Large Structural Systems) research program underway at Lehigh University, Bethlehem, Pennsylvania, on the appropriate design yield strength for high strength steel spirals. The preliminary report indicates that designers should be able to use design yield strengths higher than 60 ksi (413 MPa) for high strength spirals.

The committee decided to begin a survey of PCI producers and non-member producers of prestressed concrete piling to compile market statistics on the dollar volume of prestressed concrete piling produced in the United States.

Prestressed Concrete Poles Committee — The Prestressed Concrete Poles Committee (**Fouad H. Fouad**, chairman) has finished balloting the report titled "Specification Guide for Prestressed Concrete Poles" and will submit the report to TAC for technical review and publication. The committee also received a Certificate of Merit Award for the report titled "Guide for the Design of Prestressed Concrete Poles" at Committee Days. The Certificate of Merit Award is given for a PCI Committee report judged to be technically outstanding and most worthy of special commendation for its merit as a contribution to the advancement of precast/prestressed concrete.

Professional Members Committee

— This newly organized committee, co-chaired by **Donald C. Rath** and **Thomas J. D'Arcy**, met and discussed several interesting goals and projects. One project involved organizing a "Professional Members Day" during the PCI Annual Convention in October in Atlanta, Georgia. The idea was suggested as a method of encouraging some of the professional engineers from the Atlanta area to attend the convention in order to acquaint themselves with PCI and to experience the convention activities, particularly the technical sessions. The long-term goal is to introduce new engineers to the PCI community and to encourage them to become active Professional Members.

Also discussed was the possibility of organizing continuing education opportunities over the Internet. Some design firms specializing in precast concrete have expressed interest in educating and qualifying their employees in precast concrete design. An education unit with a testing program

JOSEPH N. MALLAMO (1936-1998)

Joseph N. Mallamo, former PCI chairman, died after a very brief illness at the age of 62 in Charlotte, North Carolina. Active for much of his professional career with the precast, prestressed concrete industry, Mr. Mallamo was for the last few years vice president of Whelchel and Associates, Inc., a local general contractor.

A native of Calabria, Italy, he grew up in Youngstown, Ohio, where he later graduated from Kent State University with a degree in architecture (1962). He was for 25 years vice president-general manager of Concrete Materials, Inc. (a PCI Charter Member) and was also vice president of marketing for Tindall Concrete Products, Inc.

Mr. Mallamo served on the PCI Board of Directors in the 1980s and as chairman of PCI in 1986. He was a member of the first Industry Handbook Committee and was chairman and a long-time member of the Marketing Committee. Mr. Mallamo was instrumental in organizing and later promoting the Georgia/Carolinas regional marketing association. In 1996, he was conferred a PCI Fellow.

Apart from his professional responsibilities, Mr. Mallamo was active in several civic and charitable organizations. One of his widely recognized achievements was in founding the Carolinas Athlete of the Year Awards. His family, professional colleagues and friends will remember Joe as a faithful friend and true gentleman.

[GDN]



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that can be downloaded from the Internet would be of benefit to these design firms.

The possibility of organizing regional professional technical activities has also been discussed. Because of the high cost of traveling to national meetings, there is some merit in offering technical programs tailored to local needs.

Tolerances Committee — The Tolerances Committee (**Kim Sorenson**, chairman) has presented to TAC a final draft of the tolerances manual. The present version contains 19 chapters and is approximately 120 pages in length. The intent is to have all the PCI tolerances information in one document, which could then be referred to by other PCI publications.

In other TAC news, **Jagdish C. Nijhawan** and **Gerald E. Goettsche** have retired from the Technical Activities Council after numerous years of meritorious service. Replacing them are new TAC members **Todd G. McCoy** and **Kenneth Baur**. We appreciate their voluntary service and many contributions.

PCI COMMITTEE ELECTRONIC MAILING LIST PROGRAM

PCI Associate Member PTAC (Precast Technical Assistance Corporation), Pensacola, Florida, under the direction of **Larbi Sennour**, is hosting and managing an electronic mailing list program that will enable PCI members to participate and discuss issues relating to the precast, prestressed concrete industry.

The mailing lists that are currently operational (PCI committees on which Sennour serves) are as follows:

Durability: pci-durability@ptac.com

High Performance Concrete: pci-hpc@ptac.com

Computer Practices: pci-computer@ptac.com

Connections: pci-connections@ptac.com

Parking Structures: pci-parking@ptac.com

By sending e-mail to these addresses, a participant can simultaneously communicate with all the members of the committee involved with each topic. Further topics and mailing lists will be developed as the chairmen of other committees request them.

Signing up to be on a mailing list is simple. Send an e-mail message to pci-request@ptac.com and include a statement of which list or lists you would like to be on in the body of the message. Once the request has been received, your e-mail address will be added to the distribution list or lists you have chosen.

An information package will be e-mailed to you after you have been approved. You can then send and read mail from all the members of the mailing list. Note also that the respective committees can keep in touch and discuss progress and projects on the committee's agenda. Messages or inquiries can also be sent to any of the committees without formally signing up to be included on the mailing list.

For more information on the mailing list program, contact Sennour at larbi@ptac.com.

R & D COUNCIL NEWS

Daniel P. Jenny Research Fellowships Awarded for 1998-99

Earlier this year, PCI solicited proposals for Daniel P. Jenny Research Fellowships from the civil engineering departments of universities in the United States and Canada. Out of 21 high quality proposals received on topics pertinent to PCI's interests, the R & D Committee (**Helmut Wilden**, chairman) selected three fellowships at the PCI Committee Days meeting in Chicago.

The selection process was based on the timeliness of the proposed research and its potential benefit to the precast/prestressed concrete industry as well as on the research capabilities of the investigator and additional industry support available from producers or state associations. The following three fellowships have been approved for an award of \$10,000 each:

- "Seismic Behavior and Design of Unbonded Post-Tensioned Concrete Walls with Large Openings," at the University of Notre Dame, Notre Dame, Indiana. The research will be conducted by **Jason Dill** under the direction of **Professor Yahya (Gino) Kurama**. The objective is to investigate the seismic behavior of unbonded post-tensioned precast/prestressed concrete walls with large openings and to develop recommendations for the seismic design and detailing of precast walls for the various seismic regions in the United States. Previous research at Lehigh University has shown that unbonded post-tensioned precast walls offer many significant advantages as primary lateral load resisting systems. Openings in the walls are often required to accommodate doors, windows and mechanical penetrations, and in the parking structures for safety and security. Additional support in terms of funding, materials and techni-

cal assistance will be provided by the University of Notre Dame, High Concrete Structures, Inc., Denver, Pennsylvania, Blue Ridge Design, Inc., Winchester, Virginia, and The Consulting Engineers Group, Inc., San Antonio, Texas.

- *"Reassessing Compressive Stress Limits,"* at the University of Nebraska, Omaha, Nebraska. This study will be conducted by **Marty Kopplin** under the supervision of **Professor Maher Tadros**. The objective is to provide documentation to eliminate limitations on allowable concrete compressive stress due to prestress plus unfactored service loads, and to set realistic design criteria for allowable compressive stress due to creep effects and concrete compression at release. These limitations have been imposed by AASHTO (American Association of State Highway and Transportation Officials) for no convincing reasons. Additional industry support in terms of test specimens and technical guidance will be provided by the Prestressed Concrete Association of Nebraska, Lincoln, Nebraska.

GHOSH TO REPRESENT PCI'S CODE INTERESTS

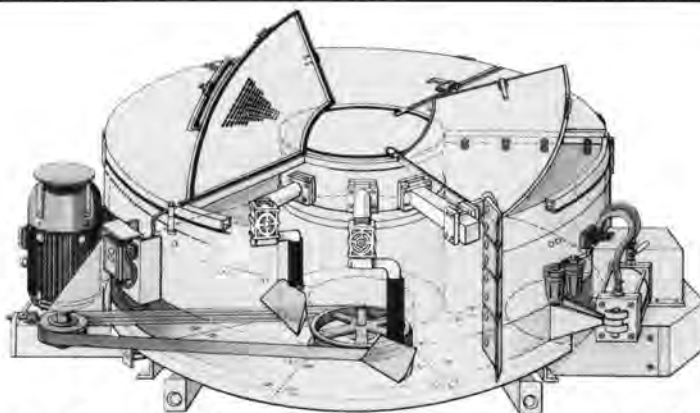
PCI has retained the services of **Dr. S. K. Ghosh** to work on a consulting basis as PCI's code representative. Dr. Ghosh recently resigned as Director of Engineering Services/Codes and Standards for the Portland Cement Association. He began his activities for PCI in early April, representing PCI's interests in the International Building Code, the National Earthquake Hazards Reduction Program, and other important code issues related to the precast/prestressed concrete industry. He attended the International Building Code hearings in Alexandria, Virginia, where the first full-fledged challenge agenda to the Code was presented.

Dr. Ghosh recently formed his own consulting firm, S. K. Ghosh Associates, Inc., Mt. Prospect, Illinois, which offers design, analysis and code related consulting services.



- *"Repair of Precast/Prestressed Concrete Using Fiber Reinforced Plastic (FRP) Materials,"* at the University of Wyoming, Laramie, Wyoming. The research will be carried out by **Amber Holberg** under the guidance of **Professors Charles Dolan** and **H. R. Hamilton**. The research will examine three different

connection repair systems: strengthening of a simple beam end with deficient shear friction reinforcement, strengthening of column corbels, and increasing the flexural and shear capacity of beams using low-bond strand. Sika Chemicals, Inc. has agreed to supply the carbon FRP materials. The Composite Institute will



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The PCI Research Fellowship program was established in 1972 to support graduate students in civil engineering interested in research related to precast and prestressed concrete. Fellowships generally conclude with an MS degree thesis and a summary paper published in the PCI JOURNAL. For further information on the Daniel P. Jenny Fellowship program, contact PCI's Research Director, **Paul Johal**.



PCI DESIGN AWARDS PRESENTED IN MEXICO CITY

On April 1, PCI President **Thomas B. Battles** was the guest of **Mario Fastag**, president of PRETECSA, S.A. de C.V. in Mexico City, at an evening event to honor the architects who won the 1997 PCI Design Awards for two of PRETECSA's projects — the Calakmul Corporate Center and the French Embassy in Mexico City. Pictured above are Mr. Fastag, **Agustin Hernandez**, architect for the Corporate Center, and Mr. Battles. That same evening, PRETECSA also celebrated its 30th anniversary in business with more than 150 guests from the Mexico City design and construction community in attendance as Mr. Battles presented the Design Awards to the architects and PRETECSA.

CTL/ACBM to Conduct Research on Development of Lightweight Materials for Residential Construction

PCI's R & D Committee, with input from the Technical Activities and Marketing Councils, has selected a joint team of researchers from the Construction Technology Laboratories (CTL) and the Advanced Cement Based Materials (ACBM) Center at Northwestern University to conduct research on PCI's high priority topic, titled "Development of Lightweight Materials for Residential Precast Concrete Construction." The joint proposal from CTL/ACBM was judged to be the most responsive to PCI's request for proposals. The objective is to conduct literature research to identify cement-based materials that are potentially suitable for the fabrication of precast/prestressed concrete products, with special emphasis on those with lower unit weights. Then, materials criteria will be established, including weight, strength, stiffness, cost, and other characteristics necessary for the

development of a lightweight product suitable for single and low-rise multi-family precast/prestressed concrete housing construction.

A project task group is being formed to provide an in-depth review of the CTL/ACBM proposal for any comments or suggestions that would enhance the project without going much beyond the proposed scope of work. Phase I of this program is expected to be initiated shortly and completed by the end of this year.

The information obtained from this project is intended to be used for the actual development of a suitable lightweight product expected to be accomplished in the second phase of this program.

Sunder Appointed Chief of Structures Division at NIST

The Commerce Department's National Institute of Standards and Technology (NIST) recently announced the appointment of **S. Shyam Sunder** as chief of the Structures Division in the

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Building and Fire Research Laboratory. In this new position, Dr. Sunder will oversee the development of measurements and standards for technologies supporting the structural safety and serviceability of buildings and infrastructure lifelines.

Dr. Sunder joined NIST in 1994 as manager of the High Performance Construction Materials and Systems Program. Prior to joining NIST, he held various academic positions at the Massachusetts Institute of Technology, where he earned MS and doctoral degrees in civil and structural engineering.

Meadow Acquires The Burke Group

Meadow Steel Products, Tampa, Florida, a division of MMI Products, Inc., recently announced the acquisition of The Burke Group, San Antonio, Texas. Also included in the transaction are Edoco Chemicals of Long Beach, California, and Burke Engineering of Sacramento, California.

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Burke has been integrated into Meadow and the company will now be known as Meadow-Burke Products to better reflect the expanded product line. Meadow-Burke now has 16 locations throughout the United States.

High Concrete Constructs AT&T Parking Structures

High Concrete Structures, Inc., Denver, Pennsylvania, is providing precast concrete components for three new parking structures to accommodate 4000 vehicles at the AT&T Research and Development Facility in Middletown, New Jersey.

The parking complex is part of a larger AT&T project that will relocate the company's southern New Jersey research and development center and combine it with the Middletown facility. Each of the three parking structures measures approximately 245 x 362 ft (75 x 110 m) and uses 27 spandrels, 64 wall panels and 462 12 ft (3.6 m) tees. The garages consist of five levels with only the first level on grade to preserve the existing landscape. The first parking facility was completed in December 1997 with the remaining two scheduled to be completed in May 1998.

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Northeast Rail Corridor Expansion Uses Precast, Prestressed Box Beams

Current work on the busy Amtrack Northeast rail corridor expansion in New Jersey includes adding extra lines of track to the existing mainline using precast, prestressed concrete box beam structures. The Secaucus Transfer Project in New Jersey requires elevated structures on one, and in some places both, sides of the mainline.

Typical beams are a 48 in. deep x 6 ft wide (1.2 x 1.8 m) double box section. The tops of the beams are extended to 7 ft 6 in. (2.3 m) wide, with a 1 ft 6 in. (0.46 m) extension on the fascia side. The outside walls are 5 in. (127 mm) thick and the interior wall is 7 in. (178 mm) thick. Typical beams have 48 1/2 in. (12.7 mm) diameter

270K strands. The geometry is typical for American Railway Engineering Association standards.

A total of 78 spans with two beams each are required on the Secaucus project. The contractor has typically set six spans per day. The beams will carry a 1 ft (0.3 m) layer of ballast for sleepers and track. A 1 ft (0.3 m) high parapet wall will retain the ballast.

The New Jersey Transit Authority is the owner and contracting authority on the project. Unistress Corporation fabricated all of the double box beams at their plant in Pittsfield, Massachusetts.

Berger/ABAM Names Project Managers; Relocates Portland Office

Berger/ABAM Engineers, Inc. recently announced the addition of two project managers.

Jeffrey Feeney has joined the firm's Federal Way, Washington, office as a senior project manager. He is a registered civil and structural engineer with more than 28 years of experience encompassing high-rise structures, office complexes, parking structures and design/build projects.

Paul Kluvers has joined the firm's Portland, Oregon, office as a project manager. He is a registered civil and structural engineer with 24 years of experience including work with harbor facilities, containment structures and reservoirs, hydropower plants and transportation structures.

In addition, Berger/ABAM Engineers has relocated its Portland office. The new address is 830 NE Holladay Street, Suite 140, Portland, Oregon 97232. Tel.: (503) 731-6041; fax: (503) 731-8902.

1998 ACI Spring Convention

Several prominent PCI professional members were among those honored at the American Concrete Institute's (ACI) Spring Convention, held March 22-27 in Houston, Texas. The theme of the convention was "Structural Design," with an interesting keynote presentation on "The State of Sports Construction in the United States" made by **David Grusel**, chief engineer of HOK Corporation, Kansas City, Missouri. Many of these new stadiums are being built with precast, prestressed concrete.

James R. Libby was elected as

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Mary K. Hurd



Paul Zia

ACI's 75th president. Mr. Libby served on PCI's Board of Directors from 1988-1989. His firm, James R. Libby & Associates (which he founded in 1960), has been responsible for designing many innovative prestressed concrete bridges in North and South America and Asia. His interest in prestressed concrete goes back to the publicity surrounding the construction of the Walnut Lane Bridge (1950) and his subsequent employment by Freyssinet Company.

James O. Jirsa of the University of Texas, Austin, Texas, was elected to a two-year term as vice president. He has contributed to the PCI JOURNAL and is active in reinforced and prestressed concrete research as well as code related issues.

Mary K. Hurd was named an Honorary Member of ACI. Ms. Hurd is the principal of Engineered Publications, Farmington Hills, Michigan, and is a writer, engineer and consultant specializing in concrete construction. In addition to her contributions to ACI, she has been active in PCI for many years, authoring numerous papers for the PCI JOURNAL.

Paul Zia was also named an Honorary Member of ACI. Dr. Zia is a distinguished professor emeritus at North Carolina State University, Raleigh, North Carolina. He has authored more than 100 technical papers, many of which have appeared in the PCI JOURNAL. He received PCI's Martin P. Korn Award in 1974 and was named a PCI Fellow in 1996. His interest in prestressed concrete came about while he was a professor at the University of Florida at Gainesville in the mid-1950s. He is co-author of an article that appears in this issue of the PCI JOURNAL.

Sharon L. Wood received the Arthur J. Boase Award from the Rein-

forced Concrete Research Council. Dr. Wood is an associate professor of civil engineering at the University of Texas, Austin, Texas, and is currently serving on the ACI Board of Direction. She is a contributor to the PCI JOURNAL and is active in prestressed concrete research work.

George B. Barney was elected a member of the ACI Board of Direction. Dr. Barney is vice president for market development, Portland Cement Association, Skokie, Illinois.

Randall W. Poston received the Construction Practice Award for the paper he co-authored on "Unbonded Post-Tensioned Concrete Corrosion: Myths, Misconceptions and Truths," which appeared in the July 1996 issue of *Concrete International*. Dr. Poston is a principal of Whitlock Dalrymple Poston & Associates.

Michael P. Collins and **Denis Mitchell** received the Structural Re-

search Award for the paper they co-authored, with Perry Adebar and Frank J. Vecchio, on "A General Shear Design Method," which was published in the January-February 1996 issue of the *ACI Structural Journal*. Dr. Collins is the Bahen-Tanenbaum Professor of Civil Engineering at the University of Toronto. Dr. Mitchell is a professor in the Department of Civil Engineering and Applied Mechanics at McGill University, Montreal, Canada.

ACI executive vice president **George F. Leyh**, who will retire in early July, was honored for his dedicated service to the Institute and the concrete industry with an honorary dinner during the ACI Convention. He has held the position of executive vice president for more than 22 years. Under his leadership, ACI's annual budget has increased six-fold and the number of staff and chapters have more than doubled.

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Riverfront Parkway Undercrossing

Eugene, Oregon



When Riverfront Parkway in Eugene, Oregon, was extended as part of a research facility development project, it became necessary to build a bridge for one of the main lines of the Southern Pacific Railroad.

In the earlier planning stages of the project, designers concluded that the structural alternative chosen for the undercrossing must meet three particular criteria: (1) the new bridge needed a shallow superstructure to maximize vertical clearance; (2) aesthetic considerations had to be satisfied due to the scenic location; and (3) railroad traffic disruption had to be kept to a minimum.

A precast, prestressed concrete box girder bridge proved to be the best alternative in meeting these design criteria. The finished structure, completed

in December 1996, comprises two lines of 30 in. (762 mm) deep, 6 ft 9 in. (2.1 m) wide precast, prestressed double cell box girders. Four spans of 32 ft, 29 ft 6 in., 29 ft 6 in. and 32 ft (9.8, 9.0, 9.0 and 9.8 m) make up a total length of 123 ft (37.5 m). The finished width of the bridge is 20 ft 4 in. (6.2 m), including 3 ft 10 in. (1.2 m) wide walkways on both sides.

The shallow depth of the box girders was essential to the design of the undercrossing. The location near a river with the presence of gravel and cobble layers in the soil posed the problem of a high ground water table. To avoid the problem of groundwater settling in the roadway during winter months, a shallow superstructure was needed in order to maximize vertical clearance. The use of box girders allowed for a minimum of 14 ft 6 in.

(4.4 m) of vertical clearance.

The location of the undercrossing near a scenic riverfront made aesthetic considerations important in choosing a final design. The finished structure features an attractive “fractured fin” finish that complements the natural environment. The architectural finish was cast directly onto the box girders using a manufactured form liner that matched the cast-in-place covering over the steel pile substructure.

Two problems were encountered during fabrication of the girders. First, it was thought that the high temperature steam used in curing the girders would adversely affect the formliners. However, it turned out that only one liner was necessary for all the castings. Second, there appeared to be some risk of breaking the “fins” while releasing the prestressing after the

beams were cured. Upon consultation with the precaster, it was decided that the amount of shortening that would occur would be small enough to avoid damaging the finish. Only a few minor repairs were necessary.

The rapid construction made possible by the use of precast components was important in minimizing disruption to the 38 trains that pass through the area each day. A "shoo-fly" railroad alignment to detour train traffic around the site was constructed. Disruptions to traffic were limited to the time required to make the connections between the detour line and the main line, and to reconnect to the main line after the structure was completed. The quick installation of the precast components kept the amount of time trains had to use the detour to a minimum.

The use of precast, prestressed concrete box girders proved to be essential in the successful completion of the Riverfront Parkway Undercrossing. Vertical clearance was maximized due to the shallow depth of the girders, the aesthetic considerations of the scenic surroundings were met using an architectural finish and railroad traffic construction was minimized due to the rapid erection of the components.

CREDITS

Owner: City of Eugene, Eugene, Oregon
Engineer: Obec Consulting Engineers,
Eugene, Oregon
General Contractor: KIP Construction
Company, Eugene, Oregon
Precast Concrete Manufacturer: Morse
Bros., Inc., Harrisburg, Oregon



A "fractured fin" architectural finish was cast directly onto the precast box girders to match the finish on the cast-in-place coverings of the pile substructure.



The 3 ft 10 in. (1.2 m) wide walkways were cast onto the box girders at the precasting plant after release of the prestressing.



The Riverfront Parkway Railroad Undercrossing was completed in December 1996.

Grace Appoints Schaufler Director of Global Information Systems

Grace Construction Products (GCP), Cambridge, Massachusetts, has appointed **William M. Schaufler** as director of global information systems. In this capacity, he will be responsible for the development and execution of GCP's global information strategy, including all information systems functions. Mr. Schaufler has nearly two decades of experience in directing information systems programs both in the United States and around the world. Prior to joining GCP, he was program manager at Computer Sciences Corporation for Saudi Aramco.

J. Muller International Opens New Office

J. Muller International recently opened a new office at 250 Park Avenue South, New York, New York 10003. Tel.: (212) 979-0202; fax: (212) 979-0303.

Slater Named President of CRSI

The Concrete Reinforcing Steel Institute (CRSI) recently announced that **Charles E. Slater** has been named president of the organization. Mr. Slater has extensive experience in the reinforcing steel industry, holding executive positions with numerous large firms over the course of his career.

PCA Sponsors Seminars on Design of Low-Rise Buildings for Earthquake Forces

Engineers and other construction professionals wishing to learn the latest techniques in designing low-rise reinforced concrete structures in seismic zones can attend a half-day seminar presented by the Portland Cement Association (PCA). The seminars, taking place in several cities this fall, cover practical methods for analysis, design and detailing of low-rise concrete buildings for earthquake forces according to the 1996 BOCA National Building Code and the 1997 Standard Building Code. The locations and

Owens Corning GFRP Reinforcing Bars Used in Seawall Renovation

One of the first installations of the C-BAR glass fiber reinforced polymer (GFRP) reinforcing bar developed by Owens Corning in conjunction with Marshall Industries Composites Inc. is the renovation of the seawall of the Kennedy Mansion in West Palm Beach, Florida.

The curved structure, more than 65 years old, measures 190 x 17 ft (58 x 5 m) and had numerous cracks up to 1/4 in. (6.4 mm) in width. Further examination showed that approximately 35 to 40 percent of the reinforcing bars in the wall were corroded, primarily on the lower sections exposed most frequently to waves, salt and wet/dry cycling.

C-BAR composite reinforcement



Installation of the C-BAR reinforcing bars in the Kennedy Mansion seawall.

was selected based on its superior performance and handling characteristics. In addition, the reinforcing bars have an interlocking surface that provides improved bonding between the bar and concrete. The light weight of the reinforcing bars resulted in significant savings in transportation and handling costs while the superior corrosion resistance of the composite material will significantly reduce future maintenance requirements.

dates of the seminar are as follows:

Charlotte, North Carolina	September 9
Charleston, South Carolina	September 10
Charlottesville, Virginia	September 11
Hartford, Connecticut	September 23
Philadelphia, Pennsylvania	September 24
Newark, New Jersey	September 25
Memphis, Tennessee	October 8
St. Louis, Missouri	October 9
Birmingham, Alabama	November 5
Atlanta, Georgia	November 6

PCA will keep all Continuing Education Units on file and record 0.4 CEUs for each attendee. The seminar fee is \$75, which includes a copy of the latest revised edition of the manual *Design of Low-Rise Concrete Buildings for Earthquake Forces*. All seminars take place from 8:00 a.m. to noon. Contact PCA at (847) 966-8389 for more information.

