1988 PCI Professional Design Awards Program

Of the 150 entries reviewed in the 1988 PCI Professional Design Awards Program, 15 were selected as winners and one received a special jury award. For the purpose of judging, structures were categorized into two divisions: buildings and other structures, and bridges. Twenty-seven of the entries were submitted for bridge awards, which for the first time were separated into categories based on span length.

The purpose of the design awards program is to recognize design excellence in the use of precast prestressed concrete and/or architectural precast concrete. To be eligible for an award, a structure must utilize a substantial amount of plant-manufactured precast or prestressed concrete. Winners are selected on the basis of exceptional achievement in aesthetic expression, function and economy, in addition to ingenuity in the use of materials, methods and equipment. Because the design problems faced by architects and engineers are so diverse, no single entry is designated as the first place award winner; each winning project is given equal recognition for excellence. The special jury award is presented for projects which display an honorable mention level of achievement.

PCI also recognized two structures as having innovative technology and design solutions. These projects received Harry H. Edwards Industry Advancement Awards, which are given "for those ideas and concepts that hold the potential to move the industry to the next generation of technology." Separate judging was conducted for these awards.

On August 12, ten prominent architects and engineers met near Chicago to evaluate the entries and select the outstanding projects in the 1988 Professional Design Awards Program. The jury chairman for the buildings and other structures category was **Benjamin E. Brewer Jr.**, FAIA, president-elect of the

Awards Jury and PCI Officers (l-r): **Leslie D. Martin; Muriel Burns,** Architectural Precast Concrete Committee chairperson; **Albert A. Grant,** FASCE; **Thomas B. Battles,** PCI President; **Benjamin E. Brewer Jr.,** FAIA; **Stanley Gordon; Alfred C. Roberts,** FRAIC; **Felix Kulka; Henry T. Bollmann; Mildred F. Schmertz,** FAIA; **David W. Hanson,** PCI Chairman of the Board; **Helmuth Wilden,** PCI Technical Activities Chairman; and **Robert J. Vitelli,** PCI Marketing Committee Chairman.

American Institute of Architects. Assisting Mr. Brewer were **Albert A. Grant,** FASCE, president of the American Society of Civil Engineers; **Alfred C. Roberts,** FRAIC, president of The Royal Architectural Institute of Canada; and **Mildred F. Schmertz,** FAIA, editor in chief of *Architectural Record.*

The jury chairman for the bridge awards was **Stanley Gordon,** chief, Bridge Division of the Federal Highway Administration. Serving with Mr. Gordon were **Henry T. Bollman,** chief, Bureau of Structures Design of the Florida Department of Transportation; and **Felix Kulka,** retired past president of T. Y. Lin International.

David W. Hanson, president of Fabcon Incorporated and PCI's chairman of the board, served as jury chairman for the Harry H. Edwards Industry Advancement Awards. Assisting Mr. Hanson were **Helmuth Wilden,** president of H. Wilden & Associates Inc. and chairman of PCI's Technical Activities Committee; and **Leslie D. Martin,** managing principal—Illinois, Consulting Engineers Group Inc.

The precast and prestressed concrete manufacturers received their awards during the 1988 PCI Convention in Philadelphia, Pennsylvania. The entrants will receive plaques at their local chapter meetings of AIA or ASCE. In addition, winning entries, along with the organizations involved with the creation of the structures, will receive extensive national publicity through major architectural and industry publications, and will be featured in the PCI IDEAS direct mail program. Brief articles about some of the other significant projects in the awards program will be highlighted throughout the year in various publications including the PCI JOURNAL.

On the following pages are the descriptions, together with jury comments, of the winning projects.

Medical Education Center
Harvard Medical School
Boston, Massachusetts

Architect: Ellenzweig Associates Inc., Cambridge, Massachusetts.

Structural Engineer: Souza, True & Partners, Watertown, Massachusetts.

Precast Concrete Manufacturer: Art Cement Products Company Inc., Wilbraham, Massachusetts.

General Contractor: Gilbane Building Company, Boston, Massachusetts.

Owner: Harvard Medical School, Boston, Massachusetts.

Architectural precast concrete was the clear choice for a facade concept centered on developing an expression sympathetic to the classical origins of the 1906 Harvard Medical School quadrangle. Using a contemporary interpretation, forms and details including pilasters, column capitals, decorative fascia and cornices were created. Color compatibility was a second objective in capturing the unique character of the original facade's weathered marble. As a result of precast concrete's versatility, formulating special colors and textures was easily explored in arriving at a two-tone scheme that mirrored the patina and range of the marble, mimicking its light and dark highlights.

Jury Comment: "A real breakthrough for precast concrete . . . this well-integrated building tells the architectural concrete industry that precast concrete can be used in ways that give the same effect as classical masonry uses."

55 Stockton Street
San Francisco, California

Architect: Heller & Leake, Architects, San Francisco, California.

Structural Engineer: Cygna Consulting Engineers, San Francisco, California.

Precast Concrete Manufacturer: Terracon Corporation, Hayward, California.

General Contractor: Dinwiddie Construction Company, San Francisco, California.

Owner: Zaber Corporation, San Francisco, California.

Designed to reflect the architectural character and scale of a historic retail district, precast concrete provided the means to fulfill the contextual relationships in development of a highly sculptured and articulated facade. The quality of finish, uniformity of color, textural aspects and other distinctive characteristics of architectural precast concrete were the determinants in its selection for this mixed-use project.

Jury Comment: "The turn-of-the-century look is reminiscent of cast-iron form. The skill, thinness and delicacy reflected in precast concrete provides a unique architectural expression."

The World Bank
Washington, D.C.

Architect: Hellmuth, Obata & Kassabaum, P. C., New York, New York, and Washington, D.C.

Structural Engineer: Lev Zetlin Associates Inc., New York, New York.

Precast Concrete Manufacturer: Arban & Carosi, Woodbridge, Virginia.

Contractor: The George Hyman Construction Co., Bethesda, Maryland.

Development Consultant: Cushman and Wakefield Inc., New York, New York.

Owner: The World Bank, Washington, D.C.

A singular feature belonging to this 11-story office building is the adaptability of a typical panel design to non-rectangular and atypical panel conditions. The 600 architectural precast panels easily accommodate obtuse, acute and curved corners, along with changes in spandrel dimensions. An image of traditional solidity is provided by panel depths of 1 ft 11 in. (0.59 m) plus the added accentuation created by continuous 8 in. (203 mm) diameter half-rounds and reveals. The subtle, natural coloration of the exposed aggregate precast concrete is highlighted by alternating surface finish treatments of light and heavy sandblasting.

Jury Comment: "The material was used in a rich, refined form with good scale and contrasting textures. The structure has a very strong and interesting base and quite an elegant cornice, in addition to a beautiful scale."

Blue Cross & Blue Shield of Connecticut Parking Facility North Haven, Connecticut

Architect: Ellenzweig Associates Inc., Cambridge, Massachusetts.

Structural Engineer: LeMessurier Consultants, Cambridge, Massachusetts.

Precast Concrete Manufacturer: Blakeslee Prestress Inc., Branford, Connecticut.

General Contractor: Morganti Inc., Hartford, Connecticut.

Owner: Blue Cross & Blue Shield of Connecticut Inc., North Haven, Connecticut.

A major feature of this parking facility is the design solution that dispels the usual image of this building type. Several design features — including higher than standard floor-to-floor heights and wider structural bays for easier maneuvering—redefine the comfort levels of vehicular usage. The pedestrian experience is also enhanced with a landscaped courtyard, visual order and clarity. This four level, 1400 car garage utilizes more than 1200 precast, prestressed concrete elements, including double tees, columns, girders and spandrels.

Jury Comment: "It's taking a very utilitarian structure and ordinary need and giving it great richness with excellent detailing."

Cobo Hall Expansion Project
Helical Roof Ramp
Detroit, Michigan

Architect: Sims-Varner & Associates, Detroit, Michigan.

Prime Structural Engineer: Spronken & Company Inc., Calgary, Alberta, Canada.

Structural Engineer: B.E.I. Associates Inc. (formerly Blount Engineers Inc.), Detroit, Michigan, and August Apon Associates Ltd., Brampton, Ontario, Canada.

Precast Concrete Manufacturer: Pre-Con Company, Brampton, Ontario, Canada.

General Contractor: Turner Construction Company, Detroit, Michigan.

Owner: City of Detroit, Detroit, Michigan.

The access bridge consists of two parallel modified AASHTO girders supporting a deck of doubly cantilevered single tees. The deck of the helical ramp has cantilevered wedge-shaped single tee members that are tapered vertically and sit on rectangular precast girders supported by prestressed concrete column bents. Precast concrete transverse beams in the bents help provide stability to the structure. Columns are six-sided for aesthetic reasons and structural considerations. Cast-in-place concrete curbs are used for load distribution between members and to conceal spandrel connections. The helix and bridge consist of 200 single tees and 106 spandrels.

Jury Comment: "Innovative use of total precast, prestressed concrete elements in a difficult spiral configuration . . . a wonderful piece of sculpture."

Campanile
Atlanta, Georgia

Architect: Thompson, Ventulett, Stainback & Associates Inc., Atlanta, Georgia.

Structural Engineer: Neilsen/Uzun Structural Engineers Inc., Atlanta, Georgia.

Precast Concrete Manufacturer: Exposaic Industries, Peachtree City, Georgia.

General Contractor: Beers/TWC, a Joint Venture, Atlanta, Georgia.

Owner: BellSouth/Carter & Associates, a Joint Venture, Atlanta, Georgia.

This corporate office high-rise building features 1400 architectural precast panels with embedded polished granite to achieve a level of detail that was not practical using handset granite. As a result of an extensive value engineering exercise, precast concrete was used at exposed corners on the street level, throughout the tower where more intricate detail was desired, and to panelize flat areas of granite. The one-piece window panel system of architectural precast concrete allowed for easier erection and more structurally sound installation of the aluminum and glass window enclosures.

Jury Comment: "The relationship of the precast concrete with the glass provides an extremely interesting facade."

Juliet Nichols Classroom Building Petaluma, California

Architect: IDG Architects, Oakland, California.

Energy Consultant: Beta Associates, Emeryville, California.

Structural Engineer: Vogel & Meyer, Walnut Creek, California.

Precast Concrete Manufacturer: Campbell GFRC Systems Inc., Kent, Washington.

Contractor: Roebbelen Engineering, Sacramento, California.

Owner: The United States Coast Guard, Petaluma, California.

The use of glass fiber reinforced concrete (GFRC) was highly desirable and lent itself beautifully in expressing the building's energy-conserving design. The 150 panels are of varying size configurations, the most typical being rectangular at 10 x 13 ft (3.05 x 3.96 m). Column surrounds are 12 ft (3.66 m) long and 30 in. (762 mm) in diameter, and the curved stairway panels are 12 x 12 ft (3.66 x 3.66 m) long with a 6 ft (1.83 m) radius. The strategy of using functional elements as a means of aesthetic expression is evident in the design of a "bridge" on the third floor which aids natural ventilation.

Jury Comment: "A strong expression of a low-rise building, and an excellent use of GFRC that takes into account the surrounding terrain."

404 Wyman Street
Waltham, Massachusetts

Architect: ADD Inc., Cambridge, Massachusetts.

Structural Engineer: Souza, True & Partners, Watertown, Massachusetts.

Precast Concrete Manufacturer: New England Concrete Products, Newton Upper Falls, Massachusetts.
—Office Building: Stresscon Limited, Saint John, New Brunswick, Canada.
—Garage: Art Cement Products Company Inc., Wilbraham, Massachusetts.

General Contractor: A. J. Martini Inc., West Medford, Massachusetts.

Owner: 404 Wyman Street Associates, a Joint Venture of 400 Wyman Street Trust (a subsidiary of Arkwright Insurance Company) and IBM, Waltham, Massachusetts.

The use of architectural precast concrete provided this multi-tenant office building and parking structures with highly articulated facades and surface richness. The complex contains more than 2000 precast components, including double tees, architectural cladding spandrels and structural spandrels. Architectural precast concrete, the main cladding material, consists of exposed aggregate spandrels with polished granite medallion insets, contrasting with bands of lightly sandblasted panels. Deep-set windows and expressed columns add to the building's distinctive appearance.

Jury Comment: "The aesthetic form from the rectangular to the circular is a very orderly progression, and the textures of precast concrete make for a rich use of natural materials beautifully captured."

Clay County Administration Center Kansas City, Missouri

Architect: Abend Singleton Associates Inc., Kansas City, Missouri.

Structural Engineer: Structural Engineering Associates Inc., Kansas City, Missouri.

Precast Concrete Manufacturer: Wilson Concrete Co., Omaha, Nebraska.

General Contractor: Bishop Construction Company Inc., Kansas City, Missouri.

Owner: Clay County, Missouri, Liberty, Missouri.

Precast, prestressed concrete members and connectors in this government administration and public service building are used for both architectural means and as a structural system in the foundation, walls, roof and retaining walls. Designed to emphasize building frontage, the 140 rusticated wall panels, ranging in height from 8 to 26 ft (2.44 to 7.92 m), support long span perforated concrete girders in providing flexible, column-free interior spaces. The visual scale and appearance of the structure conveys a "sense of community importance and governmental image" in meeting the client's objective.

Jury Comment: "An excellent form and outstanding relationship of interconnecting elements and surroundings."

Pacific Presbyterian Professional Building San Francisco, California

Architect: Kaplan/McLaughlin/Diaz, San Francisco, California.
Engineer: Cygna Consulting Engineers, San Francisco, California.
Precast Concrete Manufacturer: Buehner Concrete, Murray, Utah.
Contractor: Carl W. Olson & Sons Company, Menlo Park, California.
Owner: Pan Med Enterprises, San Francisco, California.

More than 400 architectural precast concrete spandrels and columns are extensively articulated to reduce this medical office building's apparent mass. The material allows the surfaces to be strong in detail, with numerous striations, notched backs and rustications. These precast concrete panels are of a warm gray color, with a medium sandblasted finish at the base and a light sandblasted finish at the upper levels.

Jury Comment: "A nice expression is achieved with the complexity of unique forms, rich detail and a fine use of precast concrete."

The Carter Presidential Center
Atlanta, Georgia

Architect: Jova/Daniels/Busby-Lawton/Umemura/Yamamoto, a Joint Venture, Atlanta, Georgia, and Honolulu, Hawaii.

Structural Engineer: O'Kon and Company, Atlanta, Georgia.

Precast Concrete Manufacturer: Exposaic Industries, Inc., Peachtree City, Georgia.

Contractor: Beers Construction Company, Atlanta, Georgia.

Owner: U.S. Department of Archives and The Carter Presidential Center Inc., Atlanta, Georgia.

Architectural precast concrete was beautifully conceived in cladding this assemblage of four interconnected circular elements that frame and surround a courtyard, providing a dramatic entrance to the multi-faceted complex. The structures utilized 266 pieces of white precast concrete providing over 36,000 sq ft (3350 m^2) of wall surface, with the largest units being 18 ft x 18 ft 6 in. (5.49 x 5.64 m). Vertical and horizontal dimensions of the precast elements were optimized in developing as large a unit of precast concrete as possible. The open and direct material expression and detailing enhance the perception of the architectural geometry in dramatic contrast with the natural landscape.

Jury Comment: "It's a contemporary classic the way the precast concrete material was used with great restraint and used as a very quiet surface."

The Car Wash
Thousand Oaks, California

Architect: Kurt Meyer Partners Inc., Los Angeles, California.

Structural Engineer: Johnson & Nielsen Associates, Los Angeles, California.

Precast Concrete Manufacturer: Tecon Pacific, Fontana, California.

General Contractor: C. L. Peck/Jones Bros. Construction Corp., Los Angeles, California.

Owner: Galley Enterprises Inc., Thousand Oaks, California.

Close collaboration between the architect and the town's City Council ensured that this car wash and service station facility would be an attractive neighbor to a major shopping center and adjacent commercial developments. Over 100 18 ft (5.49 m) long architectural precast concrete panels were used in the construction of this project. The panels are of a light sandalwood color and have a light sandblasted finish applied to fractured ribs, creating a natural blend with the architectural fabric of the area.

Jury Comment: "An unusual amount of attention has been paid to this modest, humble building type. It fits into the environment beautifully . . . a nice place to spend a Saturday afternoon."

Bridge Spans Less Than 65 Ft

Richmond, Fredericksburg and Potomac Railroad Bridge Over Quantico Creek Quantico, Virginia

Architect/Engineer: Hayes, Seay, Mattern and Mattern Inc., Roanoke, Virginia.

Precast Concrete Manufacturer: Bayshore Concrete Products Corporation, Cape Charles, Virginia.

General Contractor: Tidewater Construction Corporation, Norfolk, Virginia.

Owner: Richmond, Fredericksburg and Potomac Railroad Company, Richmond, Virginia.

This all precast, prestressed concrete bridge replaced an existing railroad timber trestle bridge originally constructed in 1904. The 1950 ft (595 m) long structure consists of 39 spans, each 50 ft (15 m) in length. The bridge, which was designed according to a Cooper E-80 Railroad Loading, carries a single track railway line. The depth of the superstructure was controlled by vertical railroad alignment and the necessity to provide a minimum clearance of 12 ft (3.66 m) above mean high water.

Precast, prestressed concrete provided the necessary structural strength to resist high repeated loadings and the long-term durability to withstand a saltwater environment. In addition, the high quality precast components were quickly delivered by barge to the site and rapidly erected, thus creating minimal disruption to train operations.

Jury Comment: "Innovative erection methods were used to build portions of the bridge from the top . . . a nice overall treatment. It's a railroad bridge very massive in appearance."

Bridge Spans of 65 to 135 Ft

Bohemia River Bridge
Cecil County, Maryland

Design Engineer: Bureau of Bridge Design, Maryland State Highway Administration, Baltimore, Maryland.

Design Consultant: T. Y. Lin International, Alexandria, Virginia.

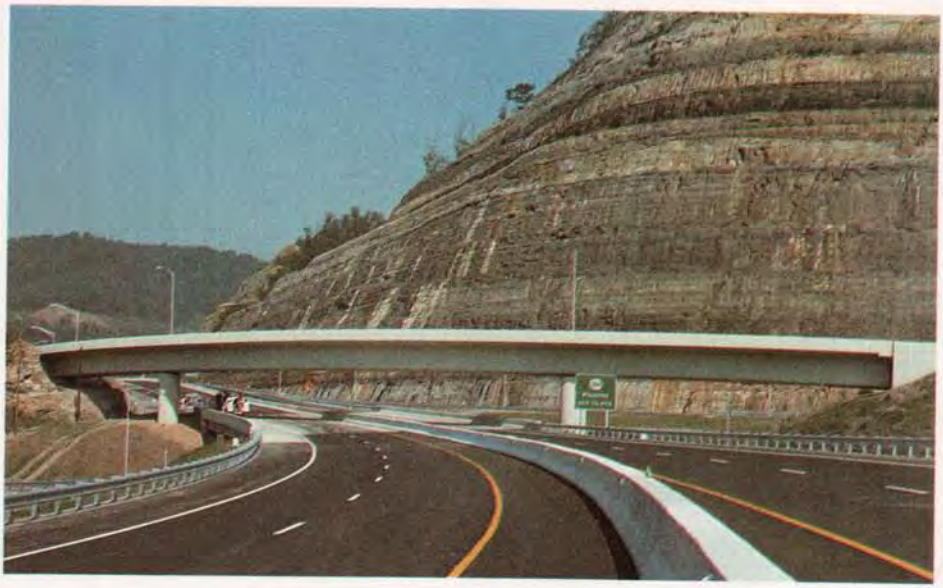
Precast Concrete Manufacturer: Bayshore Concrete Products Corporation, Cape Charles, Virginia.

General Contractor: McLean Contracting Co., Baltimore, Maryland.

Owner: Maryland State Highway Administration, Baltimore, Maryland.

The extensive use of precast, prestressed concrete enabled this 11-span, 1180 ft (360 m) long, 44 ft (13.4 m) wide, two-lane highway bridge to be fabricated and erected in an efficient, economical and simplified manner. The three main elements of the bridge utilized fifty-five 107 ft (32.6 m) long girders, thirty 54 in. (1372 mm) cylinder piles ranging from 70 to 120 ft(21.3 to 36.6 m) long, and pier caps which are 43 ft (13.1 m) long, 5 ft 5 in. (1.65 m) wide and 5 ft (1.52 m) deep. To avoid the possibility of river traffic collision, cylinder piles were filled with sand to a point below the waterline where a concrete plug was poured.

Jury Comment: "A variety of precast, prestressed elements, used with innovative construction methods, resulted in quality use of concrete. Good scale and a unique method of avoiding maritime damage."



Bridge Spans Greater Than 135 Ft

Ramp B Bridge Over U.S. Highway 23 Pike County, Kentucky

Architect/Engineer: Johnson, Depp & Quisenberry, Owensboro, Kentucky, and Janssen, Spaans & Associates Inc., Indianapolis, Indiana, a Joint Venture.

Precast Concrete Manufacturer: Construction Products Corporation, Lafayette Prestress Division, Lafayette, Indiana.

General Contractor: Melco-Greer Inc., London, Kentucky.

Owner: Kentucky Transportation Cabinet, Frankfort, Kentucky.

This precast, prestressed concrete segmental box girder system with longitudinal post-tensioning was selected primarily because of its economical benefits. The top slab of the girder section serves as the deck, with each of the 48 box girder segments measuring approximately 8 ft long x 28 ft 4 in. wide x 9 ft deep (2.44 x 8.63 x 2.74 m). The geometry of the existing highway interchange required that the bridge be horizontally curved and superelevated. The segmental bridge design easily met this requirement, in addition to providing high shear and torsion resistance. All girder segments of this three-span, 381 ft (116 m) long highway bridge were fabricated using the short line method of match precasting.

Jury Comment: "Aesthetically pleasing with clean lines, this is a well-executed solution for a difficult environment."

Special Jury Award

Kil-Cona Park Pedestrian Bridges Winnipeg, Manitoba, Canada

Engineer: Wardrop Engineering Inc., Winnipeg, Manitoba, Canada.

Precast Concrete Manufacturer: Con-Force Structures Limited, Winnipeg, Manitoba, Canada.

General Contractor: Gusco Construction Ltd., Winnipeg, Manitoba, Canada.

Owner: City of Winnipeg, Winnipeg, Manitoba, Canada.

Three multi-span precast concrete "stone arch" pedestrian bridges were designed to meet the stringent requirements of a modern bridge, yet maintained the rustic tone of a park setting. Spanning a retention pond, the bridges consisted of a total of 39 precast components, including arch span panels, end span panels and diaphragms. Only two forms were needed to produce the main arch and end span panels, resulting in considerable economy.

Jury Comment: "This is an excellent use of a precast concrete option in what traditionally would have been a cast-in-place bridge. The bridges show a great deal of innovative thought, and the detailing is aesthetically pleasing."

Harry H. Edwards Industry Advancement Award

To:

Equinox Design Inc.
Eugene, Oregon

WEGROUP pc/Architects & Planners
Eugene, Oregon

For their design of the Emerald Peoples Utility District Headquarters Facility in Eugene, Oregon, which shows the innovative use of precast concrete components in creating an energy efficient building.

Precast concrete beams and hollow-core slabs were designed to act as a duct system enabling the thermally massive structural system to be cooled by flushing it with outside air during the night. Under this system, heat absorbed by the structural frame during warm days can be flushed out at night to cool the building. On winter mornings, heat can be extracted from the structure and used to preheat the building.

Jury Comment: "An ingenious idea for saving energy consumption through the use of precast concrete elements."

Harry H. Edwards Industry Advancement Award

To:

LEAP Associates International Incorporated
Tampa, Florida

For developing an innovative construction technique to extend the spans of precast prestressed concrete bridge girders which was applied to Florida's Turnpike over I-595 and North New River Canal in Broward County, Florida.

A special touch shoring system made it possible to span 151 ft (46 m) with an AASHTO Type V simply supported beam. With shoring at midspan, slight jacking of the beam and casting of the deck, composite action would be ensured after concrete curing and load release. Substantial cost savings can be realized using this scheme.

Jury Comment: "A brilliant concept which can be applied advantageously to increase prestressed concrete bridge spans."