

PCI Awards Program Winners

Twelve outstanding projects have been named winners in the 1985 Prestressed Concrete Institute Awards Program.

Five prominent architects and engineers selected the winners on the basis of exceptional achievement in aesthetic expression, function and economy, as well as ingenuity in the use of materials, methods and equipment.

The PCI Awards Program has been held each year since 1963 to recognize excellence in design using precast prestressed concrete and/or architectural precast concrete. Because the design problems faced by engineers and architects are so diverse, no single first place award is given; each winning project receives equal recognition.

Jury chairman this year was **R. Bruce Patty**, FAIA, president, American Institute of Architects and principal of Patty Berkebile Nelson Associates, Inc. Mr. Patty was assisted by Awards Jurors **Brian E. Eldred**, MRAIC, president, Royal Architectural Institute of Canada and principal of Eldred Barr Architects; **Gerald Horn**, partner, Holabird & Root; **Wayne Henneberger**, bridge engineer, Texas Highway Department; and **Richard W. Karn**, president, American Society of Civil Engineers and principal of Bissell & Karn, Inc.

Designers of the award-winning projects were honored at the PCI Convention in Nashville, Tennessee. Project descriptions and jury comments are included on the following pages.



1985 PCI Awards Program Jury, left to right: Wayne Henneberger, Richard W. Karn; R. Bruce Patty, FAIA, jury chairman; Gerald Horn; Brian E. Eldred, MRIAC.



Broward County Main Library Fort Lauderdale, Florida

Architect: A joint venture by Gatje Papachristou Smith, New York, New York and Miller & Meier & Associates, Fort Lauderdale, Florida.

Structural Engineer: Weidlinger Associates (structural concept), New York, New York.

General Contractor: The George Hyman Company, Hollywood, Florida.

Owner: Broward County Board of Commissioners, Fort Lauderdale, Florida.

Precast Concrete Manufacturer: Meekins-Bammen Prestress, Inc., Hollywood, Florida.

This eight-story urban reference library is a total precast concrete structure. The design solution of precast prestressed concrete offered flexibility in providing a 150 psf (7.2 kPa) load factor, fewer supporting columns with 55 ft (16.8 m) spans, and the architectural element of an attractive exposed structure.

The use of double tees created regular coffer patterns that were used to run ducts and lights in a pattern exposed to view. The long spans were also a factor in the architect's overall conception of the library as a public gathering place in the center of a growing governmental/business district.

Jury Comment: "A total piece of architecture. Another project where precast concrete is used both as an architectural expression and as a structural system. It turns out to be a very nice marriage of interior elements. The solids that form the street side are very strong, very consistent. It reads as a total building."

IBM Field Engineering & Training Center Atlanta, Georgia

Architect: Cooper Carry & Associates, Inc., Atlanta, Georgia.

Structural Engineer: Bennett & Pless, Inc., Atlanta, Georgia.

General Contractor: Dawson/Winter (a joint venture), Atlanta, Georgia.

Owner: Wildwood Office Park, Inc., Subs. of Cousins Properties, Inc., Atlanta, Georgia.

Precast Concrete Manufacturer: Cook & Ingle, Dalton, Georgia.

This facility will provide the practical needs for training within the Field Engineering Division of IBM. Historically, this division has been housed in factories and warehouses.

This building establishes a new image for the division and reflects to the general public IBM's corporate standards of excellence in design.

Due to the fast-track nature of the project, architectural precast concrete was a natural solution to achieving construction schedules. Precast concrete was used as a primary exterior cladding material and as a facade for the interior public space.

Jury Comment: "We all enjoyed this project — from the detailing to the massing to the overall context. It's a place where people would enjoy working. Relates well to its site and has nice interior space. It was pleasant to see a project you can understand from one end to the other, including the context. A nice integration of the site and the building. Very well done."





Montreal Convention Center Montreal, Quebec

Architect: A joint venture by Victor Prus; LeMoyné & Associates; Labelle, Marchand, Geoffroy; Hebert & Lalonde, all of Montreal, Quebec.

Structural Engineer: Martineau, Vallee et Deslauriers, Mercier, Montreal, Quebec.

General Contractor: Formco Inc.; Jean Mailhot Inc., and Janin Construction, Montreal, Quebec.

Owner: La Société du Palais des Congrès de Montreal, Montreal Quebec.

Precast Concrete Manufacturer: Francon Lt'ée, Montreal, Quebec.

This convention center is built above an urban highway and allows clearance for two overpasses spanning the roadway. Thus the primary challenge faced by the designers was constructing the 696,500 sq ft (64,774.5 m²) facility with minimal traffic disruption.

Precast prestressed concrete provided the designers with the best solution for meeting the challenges of the site while creating a high quality, durable-finished structure. In addition, precast prestressed concrete permitted exposing the structure on the interior, thus economizing the ceilings. Also, the exposed concrete complements many of the older buildings in the area.

More than 500 prestressed concrete components and 48,000 sq ft (4464 m²) of architectural precast concrete were used to complete the facility.

Jury Comment: "A good application of precast elements in a large building project. A massive facility spanning a major roadway with exposed precast elements. A particularly good example of precast concrete in both structural and architectural use. Precast elements made the building very functional and is well-suited for this type of project."

Denver Technological Center Parking Garage Englewood, Colorado

Architect: C. W. Fentress and Associates, P.C., Denver, Colorado.

Structural Engineer: KKBNA, Inc., Wheat Ridge, Colorado.

General Contractor: Al Cohen Construction Company, Denver, Colorado.

Owner: The Travelers Insurance Companies, Englewood, Colorado.

Precast Concrete Manufacturer: Stanley Structures, Denver, Colorado.

The architect of this parking structure designed it to fit into and contribute aesthetically to the high-image office park that it serves.

Using an internal ramp system allowed the exterior to continue the smooth horizontal bay system of neighboring office buildings. Step backs and terraces further enhance the design of the structure.

The building corners and step backs feature planters, which will eventually result in softening the overall angular presence of the garage and to further integrate it into the office park environment.

More than 1100 precast prestressed concrete components were used in the structure.

Jury Comment: "Very simple and straightforward parking structure. An elegant building. As a parking garage, it received more careful detailing and sensitive handling of the facade than we often see on buildings. It's a relief to see something done simply and yet retain its interest. This project demonstrates a greater level of care and concern in the design than one would normally expect for this type of project."





TransAlta Utilities Corporation Calgary, Alberta

Architect and Structural Engineer: J. H. Cook Architects & Engineers, Calgary, Alberta.

General Contractor: PCL-Maxam (a joint venture), Calgary, Alberta.

Owner: TransAlta Utilities Corporation, Calgary, Alberta.

Precast Concrete Manufacturer: Supercrete, a Div. of Canfarge Ltd., Calgary, Alberta.

When TransAlta Utilities Corporation needed a major expansion of their corporate headquarters, the owners required an economical, efficient cladding material that would allow them to match the finishes of existing structures on the site.

The initial choice of architectural precast concrete arose from the design freedom it offered in terms of color, texture, and the almost limitless number of shapes and configurations.

The material also offered excellent properties in relation to the designer's desire for an environmentally efficient building envelope. Of particular concern were solar and noise protection and the development of an effective rain screen wall system.

Through the use of precast elements, with delicate and careful detailing, the project was completed quickly and economically.

Jury Comment: "We like the big, strong forms. Everything about this project said precast concrete. The joints are well articulated. The forms that developed were left intact without altering them because of the facade. Nice handling of the joints. The column to spandrel beam is nicely executed, especially where it goes up to the top and then comes down. Well handled infill to the structural system. It's nice to see a straightforward, clean infill when we see so many skins. A good, solid, consistent job."



Robert L. Millender Center Detroit, Michigan

Architect: The Ehrenkrantz Group, P.C., New York, New York.

Structural Engineer: Ohlin & Higgins, Akron, Ohio and Williams & Hach, Cleveland, Ohio.

General Contractor: Forest City Dillon, Inc., Cleveland, Ohio.

Owner: Millender Center Associates, Detroit, Michigan.

Precast Concrete Manufacturer: Forest City Dillon Precast Systems, Inc., Stow, Ohio.

The Millendar Center exemplifies the use of precast prestressed concrete in a large, multi-purpose housing facility.

This high density, mixed-use development combines a prestigious 258-room, 20-story hotel; a 32-story, 339 unit luxury apartment tower (one of the tallest totally precast structures in the United States); a seven-story 1850-car parking structure; a full service health club; and 38,000 sq ft (3530 m²) of retail space.

All elements of this project are built with precast prestressed concrete components. A total of 12,500 plant produced precast components were used to complete Detroit's newest downtown development.

Red granite aggregate in the architectural precast concrete provided an economical way to introduce two different colors and textural treatments to the exterior walls. The two different shades of red bands were achieved using light or deep exposure of the aggregate.

Jury Comment: "The designers should be commended for their thoughtful detailing and use of color in this project. Color not only makes this a very attractive building, but also complements the surrounding historical buildings. The project is very solid, yet the designers have effectively used the horizontal spandrels to lighten it up. Sensitivity to the surrounding buildings and the integration of varying uses within the project indicate the designers' real understanding of how to get the most out of precast prestressed concrete components."

Angelus Plaza Elderly Housing Los Angeles, California

Architect: Dworsky Associates, Los Angeles, California.

Structural Engineer: John A. Martin & Associates, Los Angeles, California.

General Contractor: Campbell Construction Company, Sacramento, California.

Owner: Retirement Housing Foundation, Los Angeles, California and Los Angeles Community Redevelopment Agency, Los Angeles, California.

Precast Concrete Manufacturer: Forest City Dillon, Los Angeles, California.

This complex is composed of four total precast high rise structures and a five-story, multi-purpose building/parking structure. The design for the 4.6 acre, sloping site includes 1093 one-bedroom units, plus a multi-purpose social and medical service center.

A precast concrete system was chosen for the project because of its fast erection time. Typically, a 12-story structure can be erected in 24 working days after the foundations are installed.

This system, according to the designers, has an excellent record for producing a relatively trouble-free building in record time and at a competitive cost.

Jury Comment: "Housing for the elderly is a modern design challenge. This project shows an innovative approach to solving a high rise, high density problem. Anticipating that not all elderly people need special facilities, this project provides enjoyable living space for senior citizens desiring to remain active in a large urban city. We appreciated the total community concept, variety of units, and the whole idea of giving options to the elderly to be in either high rise or low rise units. The project makes excellent use of the sloping site. A very strong statement for the use of precast concrete in large housing developments."





Whitehead Institute Cambridge, Massachusetts

Architect: Goody, Clancy & Associates, Inc., Boston, Massachusetts.

Structural Engineer: Zaldastani Associates, Inc., Boston, Massachusetts.

General Contractor: Turner Construction Company, Boston, Massachusetts.

Owner: Whitehead Institute, Cambridge, Massachusetts.

Precast Concrete Manufacturer: Beer Precast, Ltd., Scarborough, Ontario, Canada.

The designer of this biomedical research institute enclosed the facility with smooth and exposed aggregate architectural precast concrete panels. The exposed aggregate panels are used as the major cladding material, with the smooth panels acting as trim at the building's base, windows, and at a band near the top of the building.

By casting reveals, sills, spandrels, and soffits into the precast panels, on-site fabrication was minimized. According to the designers, construction time was significantly shortened by the choice of architectural precast concrete panels.

The panels also resulted in cost savings. The distinctive appearance was achieved at less cost than stone, metal, or other materials considered. By using aggregate combinations of granite and natural gravel, precise color control was easily accomplished. And, the precast panels did not require a separate structural support system.

Jury Comment: "An easy building to read and understand. The designer took three elements and made the most of them — the white columns coming through, the precast concrete in front and the curving ceramic shape at the bottom. The color of this job is important for this project to blend in with the neighborhood. At first glance, it appears to be a masonry building, which says a lot about the detailing and quality of the color in the architectural precast concrete."

Consolidated Edison 40th Street Substation New York, New York

Architect: Beyer Blinder Belle, New York, New York.

Structural Engineer: Consolidated Edison of New York, New York, New York.

General Contractor: ECI Building Corporation, Elmont, New York.

Owner: Consolidated Edison of New York.

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

Integrating an electrical substation into an urban neighborhood is always a difficult design challenge. Substations have the potential for being overpowering in sheer bulk — a windowless building overlying half a city block.

Close collaboration between the architect and the owner assured that this facility's industrial requirements and environmental constraints were achieved in the design and the building would be an attractive neighbor to this high rise, residential neighborhood in midtown Manhattan.

The variety of color, texture, and molding possibilities inherent in precast concrete provided the designers with the perfect material to create a great asset to the architectural fabric of the area.

Architectural precast concrete panels will require minimal maintenance and are demountable to permit future replacement of transformers. The definition of scale and proportion is extended into each precast panel — texture and color are varied along with jointing to allow one type of scale at a distance as well as a more intimate scale overall.

Jury Comment: "It's nice in a purely utilitarian piece of work to see this type of finesse brought forward in the totalness of it. It's all been very carefully considered and very nice. When you have to have substations, this is the way they should be done."





East Huntington Bridge Over the Ohio River Between Huntington, West Virginia and Proctorville, Ohio

Structural Engineer: Arvid Grant and Associates, Inc., Olympia, Washington.

General Contractor: The Melbourne Bros. Construction Co., North Canton, Ohio.

Owner: State of West Virginia — Department of Highways, Charleston, West Virginia.

Precast Concrete Manufacturer: The Melbourne Bros. Construction Co.

The East Huntington Bridge is a large segmental prestressed, cable stayed bridge over the Ohio River between the states of West Virginia and Ohio. The bridge was authorized for construction after bids for the concrete option came in \$10 million below a steel box girder alternate design.

The bridge was opened to traffic on August 8, 1985. Spans are 158, 300, 900, 608 ft (48, 91, 274, 185 m) for a total structure length of about 2000 ft (610 m).

Approximately 650 ft (98 m) of the girder was built with the cast-in-place, segmental cantilever method, and the remainder assembled from precast prestressed concrete components. Each segment was 45 ft (14 m) long and weighed about 250 tons (227 t) each. The two main spans are supported from a stay cable system and one concrete tower.

Use of high strength concrete will result in long-term durability, a very long service life and a low maintenance cost. Precasting of the girder elements in the cable stayed portion permitted a very high level of quality and geometry control, imperative for meeting all structural function objectives.

Jury Comment: "A handsome bridge. The approaches are handled well and integrated with the bridge. Closeup, the bridge is very masculine, but overall it's very delicate in the landscape. A modern design concept using high strength concrete for slender sections. The shape of the tower blends the cable stays with the rest of the structure. An economical span solution."



MARTA Rapid Transit Bridges Atlanta, Georgia

Structural Engineer: Figg and Muller Engineers, Inc., Tallahassee, Florida.

General Contractor: J. Rich Steers, Inc., New York, New York

Owner: Metropolitan Atlanta Rapid Transit Authority, Atlanta, Georgia.

Construction of a transportation network through a highly congested urban area entails a multitude of considerations. A prime consideration is to minimize traffic disruption during construction.

The MARTA bridges combined precast concrete segmental construction technology and an innovative truss system to allow traffic to move alongside and underneath both projects during construction. In addition, more than 370 ft (113 m) of one structure had to be built over an operational railway line with no disruption to the schedule.

Significant economies were achieved on the construction of the two structures, and their graceful curves and strong lines provide pleasing aesthetics in the busy metropolitan area.

Jury Comment: "A very large, sweeping line cut through a significant piece of landscape that is beautifully done. This is an excellent use of meeting technology with an expandable concept. It represents a solution to a national need to expand capacity of transportation facilities within existing right of ways. At the edge of technology in elevated bridge work, the designers have made an elegant statement for continuing this solution for other transportation problems in difficult, congested urban areas."

S-1369/Watauga River Washington County, Tennessee

Structural Engineer: Tennessee Department of Transportation — Division of Structures.

General Contractor: McKinnon Bridge Company, Franklin, Tennessee.

Owner: State of Tennessee.

Precast Concrete Manufacturer: Eastern Concrete Products, Inc., Kingsport, Tennessee.

The Austin Springs Road Bridge, towering 64 ft (19 m) above the Watauga River, is a graceful six span precast prestressed concrete box beam bridge with a composite concrete deck. The superstructure is fully continuous for live loading.

The 607 ft (185 m) long bridge was constructed in just 195 days, proving the speed of construction advantage of using prestressed concrete.

Jury Comment: "We all appreciated this clean, simple, straight-forward bridge. It appears to work well with the landscape with prestressed concrete construction minimizing damage to the surrounding area. The design takes advantage of the economics of continuity to eliminate joints in the bridge and to prevent interruptions of the smooth flowing lines. It looks like it would be a joy to drive on this bridge. The railway and structure work together to create a light, delicate profile."

