

Post-Tensioning Institute 2017 Project Awards

The Post-Tensioning Institute (PTI) announced its 2017 Project Awards during the 2017 PTI Convention Awards Dinner in Atlanta, GA, in May. Thirteen projects were recognized.

Project of the Year

The Ritz-Carlton Residences Waikiki Beach, Phase 1, Honolulu, HI

This project is a 38-story, 459-unit luxury tower in the center of Waikiki. The design was encumbered by height limits, numerous easements, and truck maneuvering areas under the building, and the only way to meet project requirements was with post-tensioning.

To keep the building within height limits, most floors were 7 in. (178 mm) thick post-tensioned slabs. To optimize sellable residential area, the tower podium incorporated 17 post-tensioned transfer girders to transfer the loads from tower walls and columns onto a different grid of podium and parking level columns and walls. To provide column-free truck maneuvering areas at the ground floor loading dock, the podium's vertical elements were supported by a two-story, post-tensioned concrete truss spanning 120 ft (37 m). Lastly, the penthouse levels were designed with large, double-story atrium spaces. The atrium openings were achieved by hanging partial-floor post-tensioned slabs with steel hanger columns

from the roof level. A post-tensioned roof slab was designed to support the loads from the hanging columns, heavy mechanical loads in the center, and landscaped rooftop terrace loads on the perimeter.

“The PTI 2017 Project of the Year is an excellent example of the advantages of using post-tensioning,” said David Martin, PTI President. “Baldrige & Associates Structural Engineering (BASE) created a beautiful structure that is not only functional but innovative and perfectly illustrates the benefits of post-tensioning in tall buildings. Without it, this building would have needed to be much taller, much heavier, and much more expensive. Congratulations to BASE and all the contributors to this project for your outstanding efforts.”



The Ritz-Carlton Residences Waikiki Beach, Phase 1, Honolulu, HI, was the PTI 2017 Project of the Year

The Ritz-Carlton Residences Waikiki Beach, Phase 1



The Ritz-Carlton Residences Waikiki Beach, Phase 1

Project credits: Baldrige & Associates Structural Engineering, submitter; and Guerin Glass Architecture; Albert C. Kobayashi, Inc.; Suncoast Post-Tension; and Associated Steel Workers, Ltd., project contributors.

Awards of Excellence Buildings

Kellogg School of Management, Evanston, IL

Post-tensioning used in this project supports 169 transfer columns that behave like foundations in the air and allow for long spans and cantilevers. The curving nature of the floor plates also called for post-tensioning to accommodate the geometric changes.

Project credits: Thornton Tomasetti, submitter; and KPMB, Power Construction, DYWIDAG Systems International, AEI Affiliated Engineers, Erikkson Engineering, Transsolar, Hoerr Schaudt, HJ Kessler Associates, Tillotson Design Associates, Construction Cost Systems, CM Architects, Threshold, Soberman Engineering, S20, Desman, Brian Ballantyne Specifications, and Cini Little, project contributors.

Bridges

Dresbach Bridge over Mississippi River, Dresbach, MN

This post-tensioned concrete segmental bridge met or exceeded all project constraints, criterion, and goals. The use of post-tensioned segmental concrete enabled the bridge to be built from above and minimized construction impacts to the environment and river users.

Project credits: FIGG Bridge Engineers, submitter; and Ames Construction and Schwager Davis, project contributors.

Parking Structures

Miami Design District City View Garage, Miami, FL

This project achieved long-span, column-free parking modules with minimal concrete slab thickness and beam depth, resulting in a highly efficient parking layout, lighter structural framing, and smaller foundation members. In addition, better visibility and user-friendliness is achieved with slender columns and the absence of solid, obtrusive walls.

Project credits: Timothy Haahs & Associates, submitter; and KVC Constructors and Suncoast Post-Tension, project contributors.

Slab-on-Ground

James Pascoe Group Distribution Centre, Auckland, New Zealand

The floor was constructed as a series of large-bay post-tensioned floors, coupled together so that there were only two opening joints located within the 25,000 m² (269,100 ft²) ground floor. This solution minimized joints, allowed fast construction, was more sustainable by reducing concrete volumes, and resulted in an overall cost reduction of about 25%.

Project credits: BBR VT International, Ltd., submitter; and TSE Architects; BGT Structures; James Pascoe Group; BBR Contech; Conslab, Ltd.; and Concrete Structures, project contributors.

Industrial/Special Applications

Manhattan West Platform, New York, NY

This project is a 110,000 ft² (10,220 m²) segmental post-tensioned platform made of 16 adjacent bridges with a record length of 240 ft (73 m). The use of post-tensioning was crucial for this platform to be built over 15 live metro tracks, without any supports between the tracks, and provide a complete covering of the railway area as required by the client.

Project credits: Tensa America, submitter; and SOM; McNary Bergeron Associates; Entuitive Corp.; and Rizzani de Eccher USA, Ltd, project contributors.

Repair, Rehabilitation, and Strengthening

Dolphin Tower Emergency Repairs and Rehabilitation, Sarasota, FL

During the summer of 2010, this 15-story condominium building was evacuated after a structural engineer confirmed a major failure and incipient collapse. The initial design of this project required removal and replacement of the fourth-floor slab and installation of exterior shear walls. The design evolved to the installation of post-tensioned drop panels combined with a structural overlay and interior shear walls. This approach resulted in the project being completed on time and with a cost savings of approximately \$3 million.

Project credits: Concrete Protection & Restoration, Inc., submitter; and Morabito Consultants; PTE Systems International, LLC; Karins Engineering Group; and CEMEX, project contributors.

Awards of Merit

Six Awards of Merit were also presented to outstanding projects, which include:

- **Buildings**—Roy & Diana Vagelos Education Center, in New York, NY, submitted by Leslie E. Robertson Associates (LERA). Other contributors included Diller Scofidio + Renfro, Gensler, Sciam Construction, VSL/Structural Technologies, Urban Foundations/Engineering, Difama Concrete, Bethlehem Precast, Jenna Concrete, Raul Herrera, COLE Technologies, Steve Zimmerman, Titan America, STI Construction, Tilcon New York, Roanoke Sand & Gravel Corp., BASF, Euclid Chemicals, DOKA, EDC, CFS Steel, Weidlinger Associates, Cobiax USA, and United Structural Works;
- **Bridges**—South Norfolk Jordan Bridge, VA, submitted by FIGG Bridge Engineers; VSL/Structural Technologies, post-tensioning supplier;
- **Bridges**—Metro Line 15 (Silver) Monorail, submitted by Innova Technologies. Additional contributors included Metrô São Paulo, Planservi, Proenge, Bombardier Transportation, Construtora Queiroz Galvão, OAS Engenharia, Protende Sistemas e Métodos de Construções, Planvia, Setepla, Zamarion e Millen Consultores, ENGETI Consultoria e Engenharia, ConduTix-Wampler, and Helser Industries;
- **Slab-on-Ground**—Truck Maintenance Facility, Elkford, BC, Canada, submitted by DSI Canada. Other contributors included J.R. Spronken & Associates and Graham Construction;
- **Industrial/Special Applications**—Adams Precast Segmental Tower, Adams County, IA, submitted by Wind Tower Technologies. Additional contributors included Siemens Wind Energy, Baker Concrete, Schwager Davis, EFCO Forms, Thornton Tomasetti, and International Bridge Technologies; and
- **Repair, Rehabilitation, and Strengthening**—GMBC Daffodil Garage Emergency Repairs & Waterproofing, Towson, MD, submitted by Concrete Protection & Restoration, Inc. Other contributors included Morabito Consultants and DYWIDAG Systems International.

PTI's Project Awards are presented every 2 years and recognize excellence in post-tensioning applications. Structures using post-tensioning as a structural component and were completed or rehabilitated in the past 7 years are eligible. Entries are judged by a jury of industry professionals and on seven different traits: creativity, innovation, ingenuity, cost-effectiveness, functionality, constructability, and aesthetics. Visit www.post-tensioning.org for more information.



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