2013 IDEAS² awards

INNOVATIVE DESIGN in ENGINEERING and ARCHITECTURE with STRUCTURAL STEEL

THE DESIGN AND CONSTRUCTION INDUSTRY recognizes the importance of teamwork, coordination and collaboration in fostering successful construction projects today more than ever before. In support of this trend, AISC is proud to present the results of its annual IDEAS² Awards competition. This program is designed to recognize all team members responsible for excellence and innovation in a project's use of structural steel.

Awards for each winning project were presented to the project team members involved in the design and construction of the structural framing system, including the architect, structural engineer of record, general contractor, detailer, fabricator erector and owner. New buildings, as well as renovation, retrofit or expansion projects, were eligible. The projects also had to display, at a minimum, the following characteristics:

- A significant portion of the framing system must be wide-flange or hollow structural steel sections;
- Projects must have been completed between January 1, 2010 and December 31, 2012;
- Projects must be located in North America;
- Previous AISC IDEAS² award-winning projects were not eligible.

The judges considered each project's use of structural steel from both an architectural and structural engineering perspective, with an emphasis on:

- Creative solutions to the project's program requirements;
- Applications of innovative design approaches in areas such as connections, gravity systems, lateral load resisting systems, fire protection and blast;
- The aesthetic and visual impact of the project, particularly in the coordination of structural steel elements with other materials;
- Innovative uses of architecturally exposed structural steel;
- Advances in the use of structural steel, either technically or in the architectural expression;
- The use of innovative design and construction methods such as 3D building models; interoperability; early integration of specialty contractors such as steel fabricators; alternative methods of project delivery; sustainability considerations; or other productivity enhancers.

Both national and merit honors were awarded. The jury also selected one project for the Presidential Award of Excellence in recognition of distinguished structural engineering.

2013 IDEAS² AWARDS JURY

- **Paul Dannels**, FAIA, is a founding principal of sdi structures, Ann Arbor, Mich., where he develops innovative structural systems for buildings on behalf of numerous aspiring and accomplished architects. His designs have received several awards and recognitions, including three AISC IDEAS² awards. His completed projects include the Broad Art Museum at Michigan State University, the Law Commons at the University of Michigan and the Lamar Corporate Headquarters in Hudsonville, Mich. Dannels is the 2013 President Elect of AIA Michigan and has served in leadership roles with several nonprofits, including Habitat for Humanity of Huron Valley and the Center for Faith and Scholarship. He studied engineering and architecture at the University of Michigan and worked as a construction engineer in northern Michigan before founding sdi structures with his business partner, Andy Greco, P.E.

- **Anne Lewison**, AIA, senior architect and senior design leader with Snøhetta, New York, was initially drawn to the city to focus on social housing and pursued subsequent opportunities for institutional buildings, including the Children's Hospital of Philadelphia and NYU's Vanderbilt Hall Law School with Kohn Pederson Fox. In her early years in New York, she specialized in waterproofing repairs for existing buildings, a technical skill that has remained influential in all subsequent projects. From 1989 to 2000 she worked on the United States Holocaust Memorial Museum. Prior to Snøhetta, Anne worked with Santiago Calatrava on the PATH Station for the WTC Transportation Hub. In addition, she serves on the Board of cultureNOW, which has produced the downtownNOW MAP of art and cultural institutions for Lower Manhattan as well as the Manhattan ARTNOW. She is currently working on apps for cultural mapping across the U.S. and in Canada.

- **Chris Olson** is chief content director of BUILDINGS Media, Cedar Rapids, Iowa, where he focuses on digital and print content for facilities professionals who operate commercial and public buildings. He has more than 22 years of experience in the facilities management and nonresidential architecture/engineering/construction industries. He

The 2013 AISC IDEAS² Awards jury, from left: Chris Olson, Charles Porter, Mark Simonides, Brian Raff, Paul Dannels, Anne Lewison, Dave Olson and Jacob Schueller.

graduated with a B.A. and M.A. from the University of Michigan and a Ph.D. from Northwestern University.

Dave Olson's career with AISC member fabricator Olson Steel, San Leandro, Calif., began in 1970 as a project manager and estimator. He progressed to the position of COO in 1995 and in 2002 became president and CEO as well as the sole owner of the company. His career has included founding and/or leading several corporations engaged in diverse businesses, including real estate and shipyards. During the last 15 years, Olson has served as director and trustee of organizations including the Tahoe Maritime Museum, the Tahoe Yacht Club Foundation, the Ironworkers International Apprentice Trust, the Western Steel Council, Orinda community fundraising committees and the San Leandro Vocational Education Committee. He holds a B.S. degree in business administration from California Polytechnic University in San Luis Obispo.

A panel of design and construction industry professionals judged the entries in three categories, according to their constructed values in U.S. dollars:

- ✓ Less than $15 million
- ✓ $15 million to $75 million
- ✓ Greater than $75 million

Charles C. Porter is principal and cofounder of Development Management Associates, LLC, Chicago, a developer and property manager of regional retail and mixed-use centers. With more than 30 years of leadership experience in real estate development and construction, Porter has played a primary development role, working as an owner and on behalf of client owners, for several properties, including the 900 N. Michigan Ave mixed-use project, the Houston Galleria expansion and renovation, the Tabor Center redevelopment in Denver and expansion work at the Old Orchard Center in Skokie, Ill. He holds a Bachelor's degree in architecture from the Illinois Institute of Technology and is a member of the International Council of Shopping Centers (ICSC), the Council on Tall Buildings and Urban Habitat (CTBUH), the Urban Land Institute (ULI) and the Chicago Architecture Foundation (CAF). As an adjunct professor at Northwestern University, he teaches a course in commercial real estate development for the Master of Project Management program.

Brian Raff is the marketing director for the National Steel Bridge Alliance and is responsible for providing strategic leadership and executing the national marketing program that builds market share for steel bridges. Raff worked as a structural engineer before joining AISC in 2005 as its certification manager of business development. He received his Bachelor's degree in architectural engineering from Penn State University and his MBA in entrepreneurship and economic business strategy from DePaul University.

Jacob Schueller, a senior in the civil engineering program at Marquette University, has been interested in structural engineering since early childhood. Now specializing in structures, one of his primary focuses at Marquette has been Engineers Without Borders. He has made three trips to Guatemala with the program, most recently to construct a 270-ft suspension bridge. This past year, Schueller tried his hand in research for the first time by determining the classification, rot sensitivity and strength characteristics of Guatemalan lumber with Marquette professor Chris Foley and fellow classmate Tim Lewis.

Mark Simonides joined Turner's Chicago business unit in 1982, where he has served as project engineer, superintendent, project manager and project executive on several of Chicago's premier projects. He currently serves as vice president and operations manager for Turner's Great Lakes Region. In this role, he oversees the operations for the Illinois, Indiana, Michigan and Toronto offices and is responsible for the oversight and management of the region's 300 professional personnel.

Chelsea Piers Connecticut accommodates pretty much all sporting tastes. The 400,000-sq.-ft facility in Stamford, Conn., opened to the public in the summer of 2012 and features two NHL regulation ice rinks, enormous turf fields (for soccer, lacrosse, football, field hockey, softball and baseball), a 20,000-sq.-ft gymnastics center, an aquatics center with an Olympic-sized pool, seven tennis courts, twelve squash courts, a trampoline center, a baseball/softball training area, childcare/preschool, food service, pro shop, catering and party/special event spaces.

The building housing this state-of-the-art sports facility is a 45-year-old manufacturing plant previously used by Clairol as the facility for manufacturing Herbal Essence shampoo. The adaptive reuse saved the old building from being demolished and ending up in a landfill; Clairol maintained the building well, keeping it in excellent condition.

Although the building square footage met the project's requirements, the lack of large column-free spaces created a potential roadblock. Professional quality sports facilities such as swimming pools, hockey rinks and tennis courts require large column-free areas in excess of a 100 ft wide. This criterion required the removal of 23 columns from the building in order to achieve the column-free zones. Determining an economical method for removing the existing columns while leaving the entire roof structure in place was the principal challenge. The solutions selected by WSP Cantor Seinuk were extremely creative, economical and highly sustainable, resulting in reuse of the existing roof structure, limited demolition and minimization of new materials.

The proposed structural system was based upon the use of king post trusses constructed out of the in-place existing roof structure. Leaving the existing beams, which formed the top compression chords of the truss, in place and using a portion of the existing columns as the king posts, only a relatively small amount of steel had to be added to form the tension cords of the truss. Upgrading of the in-place top chord members was accomplished via composite action with the new concrete slab poured on the existing in-place metal roof deck. Steel angle members were used for the tension chords of the trusses. Although the simple and basic "off the shelf" structural members remain exposed, their aesthetically pleasing form is apparent. The positive effect of the forms on the facility's

Presidential Award of Excellence in Engineering
CHELSEA PIERS CONNECTICUT, STAMFORD, CONN.


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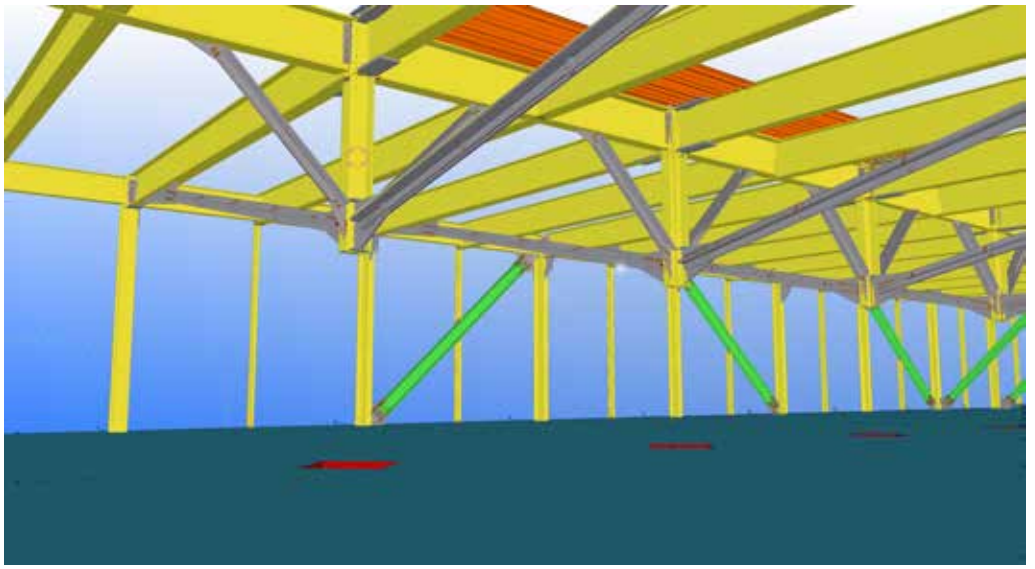

architecture is further testament to the economic and sustainable accomplishments achievable via innovative engineering. It is an excellent example of form following function.

The design met all the criteria—with the exception of being able to achieve a flat floor after the concrete was poured. Since the existing roof, which was supported upon the new king post trusses, was slated to become additional space for the new sport facilities, there was a requirement for a very flat floor structure. The proposed eloquent solution, calling for the cambering of the trusses prior to pouring the concrete slab, was accomplished via jacking of the existing roof structure prior to the installation of the new truss members. After the installation of the truss steel, the existing columns were cut out and removed. Upon pouring the new roof concrete the trusses deflected precisely as designed, leaving a flat surface for the tennis courts and soccer area to be located above.

Chelsea Piers Connecticut embodies innovative, sustainable engineering for building reuse and development. A forward-thinking design team coupled with a supportive and motivated owner allowed this project to reach its full potential. The result is a state-of-the-art facility serving the athletic needs of the community while forming a viable anchor business in a once abandoned industrial facility. MSC

Owner
Chelsea Piers, New York

Architect
James G. Rogers Architects, South Norwalk, Conn.

Structural Engineer
WSP Cantor Seinuk, New York

General Contractor
AP Construction, Stamford, Conn.

Steel Detailer
WSP Mountain Enterprises, Inc., Sharpsburg, Md. (AISC Member)

Photographs
Chelsea Piers
WSP Mountain Enterprises, Inc.