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Cannon Design and Gilbane Building's Worcester Polytechnic Sports and Recreation Center project earns USGBC's LEED Gold certification

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Worcester Polytechnic Institute's (WPI) new Sports and Recreation Center continues to garner accolades, with its innovative natatorium structural design acknowledged with an award by the Precast Concrete Institute (PCI), and the U.S. Green Building Council (USGBC) awarding LEED Gold certification.

PCI named the Sports and Recreation Center its 2013 Best Higher Education Building award winner. The 145,000 s/f Sports and Recreation Center, which opened last year, is one of the finest higher education athletic facilities in the northeast and one of the greenest sports centers in the nation.

Development of the new center was part of WPI's seven-year capital plan. In February 2007 the WPI board of trustees adopted a policy calling for all future buildings on campus to be environmentally friendly and designed to meet USGBC's LEED certification. The center is WPI's third LEED certified building, after the Bartlett Center - home to the admissions office and the first LEED-certified building in Worcester - and East Hall, a residence hall built in 2008 that has Worcester's first "living green roof" and that received LEED Gold certification.

Sustainability is a major focus for the university. In addition to the WPI's commitment to green buildings, the university formed the WPI Task Force on Sustainability in 2008. Since then, and even preceding the formation of that task force, many activities have taken place to enhance both the sustainability of WPI itself and to embed the principles of sustainability in students' education. Faculty members have incorporated sustainability into many student projects and focused on various aspects of sustainability around the world. In the year 2012 alone, some 51 energy-related projects were completed at WPI. Topics of these projects range from those with a social focus to technical investigations. Other highlights include the Solar Decathlon China 2013 and the Electric Power Industry Symposium.

During the construction of this center, WPI also capitalized on the opportunity to provide teaching and learning opportunities for engineering faculty and students. Students of civil and mechanical engineering worked with the architects Cannon Design of Boston, and the construction managers Gilbane Building Co. of Providence, to enhance 3D Building Information Modeling (BIM) software, creating a system that integrates all design and construction data. The enhanced system enabled the designers and builders to make changes in HVAC plans and increase the height in the new robotics area, greatly improving its effectiveness and value.

"WPI is an institution that prides itself on innovation and sustainability, so for our new Sports and Recreation Center to be honored for both its design and its sustainable aspects is very gratifying," said Jeffery Solomon, executive vice president and CFO.

"WPI doesn't just teach sustainability, we live it on this campus. Not only do we strive to support the environment, but we also support the local economy whenever possible. Not only has the Sports and Recreation Center achieved LEED Gold status, but it achieved it through the engagement of many local companies and local workers. This is a proud moment for us all."

A major feature of the Sports and Recreation Center is the precast concrete natatorium structure housing a 25-meter competition swimming pool with spectator seating. The structure features five-piece precast concrete components spanning 110 feet across the pool. The five pieces include two column pieces, two corner pieces, and one center beam piece. Precast concrete double-tees span between the bents and support the four-court gymnasium above. The steel-frame structure of the third-floor gymnasium is supported on the precast concrete natatorium structure. The natatorium structure is also integrated into other surrounding steel structures. In addition to providing WPI students, faculty and staff with sports and fitness facilities, the center provides the university space for hosting regional and national robotics competitions, as well as other non-sporting events, such as admissions open houses, career fairs, and national academic conferences.

The LEED standards cover several areas of construction and maintenance, including site sustainability, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design.

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