Lighting the Path to Victory

By John Casadonte

When the Milwaukee School of Engineering (MSOE) began designing a new home field for its men and women's soccer teams, it was ready to push the limits on what an athletic field could be – and where it could be located.

In 2013, the private university cut the ribbon on a state-of-the-art athletic facility built on top of an in-ground, 780-car-capacity parking deck in the heart of downtown Milwaukee, WI.

With Viets Field, MSOE sets a new standard for sustainability on university campuses, constructing one of the first 100% LED-lighted competitive athletic fields in the country.

When selecting lighting for the athletic field, MSOE engineers and designers turned to Cree Inc. to provide the crisp, clear light needed to lead the MSOE Raiders to victory.

SOLUTION

Founded in 1903 in the center of downtown, the Milwaukee School of Engineering is an independent, nonprofit university with about 2,600 students. It has a national academic reputation and longstanding ties to business and industry.

"We recognize that LED is the future of lighting, and are committed to changing to LED campus-wide," said Scott Ramlow, AIA, a Partner at Uihlein/Wilson Architects and Architect for MSOE.

To maximize the light distribution across the large athletic field, the university installed Cree Edge high-output-area fixtures on 70-foot poles across the field. The company says the luminaires redefine high-output illumination performance, delivering significant reductions in energy and maintenance costs, with unprecedented color quality.

"The light quality is much better than any other field I've seen before," said Jon Jansen, VP/Project Executive with Hunzinger Construction Co. "When you're watching people on the field, it's much clearer and brighter."

In addition to the outdoor lighting, parking structure LED luminaires were installed in the parking deck under the field, the company said, providing improved illumination performance over traditional lighting options, while significantly reducing energy and maintenance costs.

Fixtures installed throughout the facility include high-bay LED luminaires, security LED luminaires and LED light engines.

BENEFITS

Building such a large, unique structure in the middle of a heavily populated city such as Milwaukee surely turns heads, but it doesn't come without its obstacles. City and county building guidelines created design challenges that MSOE Architect Ramlow found easier to manage with the use of LED lighting.

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"Whenever you design such a large structure in an urban setting, there is a complicated set of rules you have to follow," Ramlow said. "We had to be very particular about photometrics, and we had restrictions from the city in terms of 'light spill,' glare and light pollution.

"The spread and control of the light that we found with the LED fixtures were much better than traditional lighting options," he said.

Energy usage and maintenance savings were key benefits considered by MSOE when evaluating its lighting choices for the 10,000+-square-foot athletic facility. By using 100% LED lighting, the university was able to reduce energy costs and consumption — in the parking deck alone, the university anticipates energy usage savings of 200,000 kW-h annually — while also saving time and money earmarked for maintenance needs.

Photo courtesy of Milwaukee School of Engineering

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"The maintenance savings we anticipate will be a huge benefit to us," said Tom Barsokine, Director of Facilities at MSOE. "With 70-foot-high field lights, the savings from not having to get up that high to change bulbs will be a major plus. We can reduce the amount of equipment we need to access the lighting to change the bulbs, since they don't require nearly as much maintenance as other lighting options."

According to Jansen, installation was an important factor as well: "The high-output fixtures were easy and quick to install. They came pre-fabricated, which was a big advantage when you're talking about 70-foot poles and larger fixtures. Also, the parking deck fixtures were straightforward and systematic to install, which saved us a lot of time."

But the benefits to the 304 Series fixtures used in the parking deck didn't stop at easy installation and energy usage savings. The step-dimming feature of the luminaires allows the fixtures to dim or brighten based on occupancy in the building.

"We use step-dimming in the parking luminaires, which makes a big difference," MSOE Architect Ramlow said. "It's a great energy saver and an important passive security measure.

"The dimming capability makes it easy to tell if someone is in the decks or in the stairwells, which is key to making visitors feel safer in such a large space, and helps the security team keep a better eye on what's happening throughout the facility."

With its Viets Field, the Milwaukee School of Engineering continues to make strides toward whole-campus sustainability and has provided its students with a beautiful, 100% LED-lighted field to compete on for years to come.

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