University of Missouri - St. Louis

LinmoreLED®
ULTRA PERFORMANCE LIGHTING

CASE STUDY

Location: St. Louis, MO
Application: University Rec Center

Essentials Series 4.0 (ES4)

The ES4 delivers superior performance, quality and versatility in low bay and high bay applications. Designed with an even higher efficacy and a best-in-class thermal management, the Essentials Series 4.0 provides the highest reliability and best lumen maintenance in the industry while providing the lowest TCO.

RESULTS

University of Missouri - St. Louis installed Essentials Series High Bays in their rec center. The installation created uniformity and the right illuminance in both horizontal and vertical planes. The installation was part of their LEED certification and was all about energy conservation.

$18,000
ANNUAL SAVINGS

12,500
ANNUAL kWh SAVINGS

101,000
SQ. FT. FACILITY

OVERVIEW

The new, three-story rec center, which opened in Fall of 2015, is flooded with natural light that floods the building from floor-to-ceiling windows on each floor. “It’s a very open design with a lot of open space and a huge atrium,” Kell says. “From the lobby, you can see all three floors. There’s a lot of natural light that comes deep into the building and helps create the open feel students envisioned.”

CHALLENGE

When students at the University of Missouri - St. Louis voted to tax themselves to build the Student Recreation and Wellness Center (RWC), one of the reasons they did so was so they could workout in a more light-filled environment.

For nearly five decades, UMSL’s campus recreational programs shared space with its athletic teams and athletes in the Mark Twain Athletic Complex. Both operations outgrew the shared space a long time ago and, according to Yvette Kell, director of campus recreation, that’s why the RWC is benefiting everyone. “Students have this great new space for recreation, while athletics has been able to renovate the space we vacated to benefit athletes,” Kell says.

The new, three-story rec center, which opened in fall of 2015, is flooded with natural light that fills the building through floor-to-ceiling windows on each floor. “It’s a very open design with a lot of open space and a huge atrium,” Kell says. “From the lobby, you can see all three floors. There’s a lot of natural light that comes deep into the building and helps create the open feel students envisioned.”

The 101,000-square-foot facility includes a three-court gymnasium (including a one-court MAC), an indoor fitness and recreation pool, expansive weight and fitness areas, and four group exercise rooms. It has a three-lane jogging track that provides an optional two lane extension with elevation changes. Other amenities including a juice bar, a bouldering wall, a wet multipurpose room, two saunas, a spa, and administration offices.

“We often see gyms used as gathering spaces for events, and LEDs offer lighting flexibility that’s simple and energy efficient. For example, when bright sun streams into the building, the lights can be shut off, providing energy savings.”

- Sara Schonour, CannonDesign Lighting Studio

SOLUTION

"The building's design concept features the activity in the space and we wanted the lighting to support that mood and atmosphere," says Sara Schonour, CannonDesign associate vice president, which provided integrated architecture, engineering and lighting services for the UMSL building. Traditionally, the design team would have considered metal halide fixtures.

In the main gyms, CannonDesign created a design of dashes of light - not a grid or an array - to help reflect the activity in the space. "This plays off movement and motion, and is a design departure from the more regular, repeated rhythms in the surrounding weights and circulation areas," says Schonour. Instead of uniformly lining up long rows of 2 by 4 fixtures or creating an array, CannonDesign mixed longer and shorter fixtures for a dynamic look. "We placed fixtures in a random-looking pattern, carefully tuned to ensure good uniformity and the right illuminance levels in both horizontal and vertical planes," she says.

"While we had been thinking of LED high bays for mostly warehouse applications at the time we designed the project, mock-ups showed us we could get nice glare control, output and adjustability to enable daylight harvesting, something metal halide doesn't do well," Schonour adds.

RESULTS

Essentials Series High Bays were among the first to offer an LED with a nice efficacy and glare control, Schonour says. "The lighting design of dashes and movement and the idea of doing something that creates visual excitement wasn't limited to the gym, but was an architectural feature that originated in the lobby and is carried through the different spaces, as well as provided a way to integrate the aspirations of the architect from a visual standpoint."

In addition to the anti-glare benefits, LEDs are also more energy efficient, easier to maintain, and can be controlled and actively dimmed depending upon the available natural light and for different uses, such as event gathering spaces. When bright sun streams into the building, the lights can be shut off, providing energy savings. Additionally in emergency situations, LEDs provide instant light where metal halide and fluorescents can take a few minutes to get up to full power.

Using LED lighting was part of the building's LEED certification and was all about energy conservation, Kell says. "It's the cutting edge, lowers our energy use and offers a high lifespan, which helps with the budget all around," she says. "The lighting really compliments the windows and has been relatively maintenance free."

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