



TOLEDO PUBLIC SCHOOLS

Toledo, OH

Focusing on energy optimization, Cree makes the grade with highly efficient lighting that provides rapid payback and long-term savings.



CREE'S FAVORITE SUBJECT SHEDS LIGHT ON ENERGY CONSERVATION

Opportunity

Toledo Public Schools (TPS) turns lighting upgrade into a teachable moment for students

The TPS Maintenance and Operations Department supports 42 schools. As the Director of Maintenance and Operations, Quintin Reynolds is responsible for finding new ways to save energy. Mr. Reynolds along with key staff member, Ron Miller, and TPS's energy consultant, Palmer Conservation Consulting, worked to save energy by replacing 2,553 outdoor metal halide and high pressure sodium lights with Cree® LED luminaires.

In addition, TPS wanted to turn the opportunity into a teachable moment for students by building an interactive energy dashboard providing real time energy usage data.

"We are conducting energy usage programs within five schools, enabling students to monitor energy usage in real time, learn how to optimize it and compete for the lowest energy efficiency," said Miller.

"Although we used existing poles, the Cree® fixture matched up really well. It doesn't look like a retrofit – the lights look like they were meant to be engineered that way."

Rhys Petee | Owner and Sales Manager, Peak Electric, Inc.

Solution

Team effort selects "star player" lighting

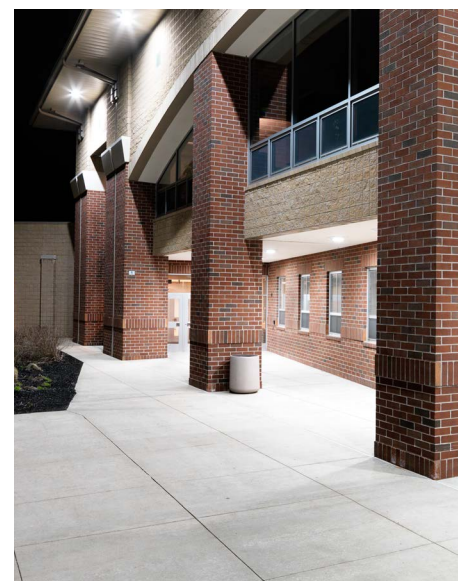
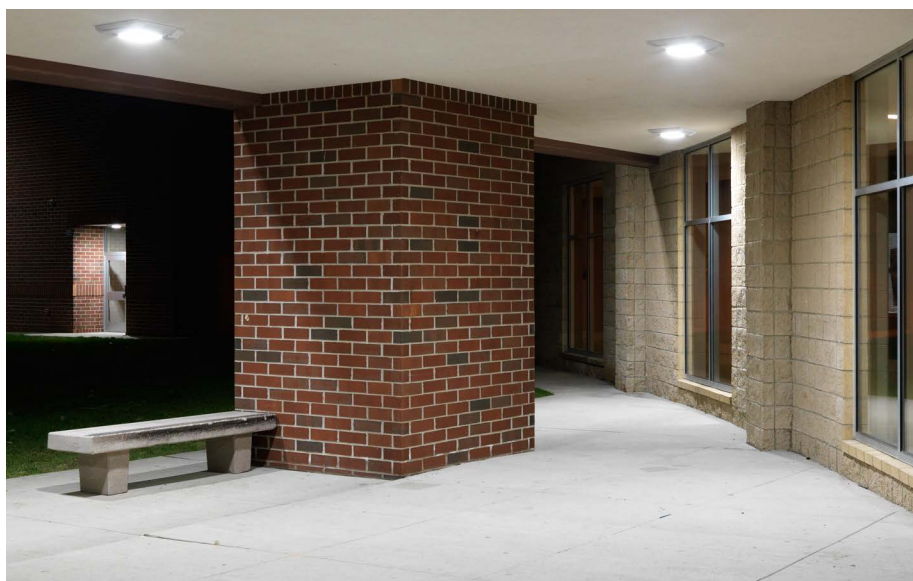
The Maintenance and Operations Department with Palmer Conservation Consulting chose Cree LED lights because of the product longevity, low maintenance and the 10-year limited warranty.

"Cree had a 10-year warranty when everyone else offered seven years or less," said Miller. "The lighting quality is there and the fixtures are good quality — well built."

"TPS likes the performance, price point, and how it looks compared to other lights on the market," said Ron Miller. "In addition, the lighting enhanced the look of the schools. Cree® luminaires come in many colors so we could choose colors to complement the architecture of each school."

During the lighting project, outdoor lighting at 42 schools was upgraded in a one-to-one replacement with Cree LED lights. Using existing poles, OSQ Series luminaires replaced flood and area lights in the parking lot, CPY Series replaced canopy lights at the school entrances, Cree Edge™ Series replaced walkway lights, and XSP Series Wall Packs replaced existing accent lighting.

The crisp, white light of Cree's luminaires can create a safe atmosphere for students, administrators and visitors. As important, the Cree luminaires are backed by Cree's 10-year industry-leading limited warranty, providing investment protection.



 <p>2.8 Million kWh REDUCED ENERGY CONSUMPTION</p>	 <p>\$356K LIFETIME SAVINGS FOR START H.S.</p>	 <p>10 Years VIRTUALLY MAINTENANCE FREE</p>
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Benefits

Switching to Cree® LED Lighting reduces energy consumption and maintenance costs while creating well-lit exteriors and increasing safety

By upgrading the outdoor lighting at all 42 schools with Cree® LED luminaires, TPS reduced energy consumption by 2.8 million kWh - equating to \$254,000 annual savings.

Looking at Start High School, Cree is estimating that they will see a 69 percent energy savings* based on watt reduction. Since Cree LED lights are virtually maintenance-free for 10 years, TPS expects a lifetime savings of \$125,072 on maintenance costs by not having to send staff and trucks out to replace bulbs. Energy and maintenance combined, the savings equates to a 1.8 year payback period.

In addition to energy and maintenance savings for all 42 schools, TPS was able to secure \$140,000 in utility rebates from First Energy improving the overall payback.

“Most schools are progressive on energy savings. People care and like to see projects that have an obvious payback,” said Miller. “The initial cost of a large LED project like this seems high; however, when you look at the energy numbers, the payback time and the maintenance savings — it was clearly the right type of project for TPS to take on. Any savings on energy can then be directed toward the classroom.”

The advantages of Cree LED lighting don’t stop at cost savings — the schools are also benefiting from the crisp white light creating excellent visibility and a safe atmosphere in parking lots, entrances, walkways and building perimeters.

“There was a dramatic increase in the quality of light and LED lighting makes pictures more visible on security cameras,” said Petee.

Pleased with the results, cost savings and positive feedback received about the outdoor Cree LED lighting, Miller said he is looking into the possibility of installing Cree LED lights inside the schools for even greater energy and maintenance savings.

“Funding is always an issue, but upgrading to LED lighting is a clear decision. I don’t want to say it’s a no brainer, but the numbers are what they are and it just makes sense,” said Miller.

“When you are looking to save energy, upgrading to LED lighting is a good route to take — especially when you currently have metal halide and high pressure sodium lights,” said Petee.

“The main factors driving the upgrade are the energy savings, reduced maintenance costs, longevity and the warranty of the Cree® LED lights.”

Ron Miller | Network Operations and Energy Efficiency Mgr,
Toledo Public Schools

*Payback and energy savings are based on the national average electricity rate, recommended maintenance schedule, and typical maintenance costs over common assessment periods (application life) for Start High School.



Education



Cree® LED Lighting Used

- OSQ Series Area
- XSP Series Wall Mount
- CPY Series Canopy/Soffit
- Cree Edge™ Area & Pathway

Participants

End User: Toledo Public Schools (Maintenance and Operations Department)

Energy Consultant: Palmer Conservation Consulting

Distributor: Peak Electric, Inc.

Agent: Michigan Lighting Systems/Ohio Lighting Systems

Visit www.cree.com/lighting or contact a Cree lighting representative to learn more.

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