



## MICHIGAN SCHOOL SYSTEM SHINES LIGHT ON SAVING ENERGY — AND MONEY

Looking to cut overhead costs and reduce energy usage, Byron Center Public Schools partnered with The Home Depot to update the lighting throughout the system, starting with Byron Center High School. The Pro Desk at the local Home Depot assisted in every step of the process, from selecting products to coordinating labor to identifying purchasing discounts. The result was a complete LED lighting retrofit for the local high school that has reduced energy usage by more than 1.5 million kilowatt hours (kWh), saved the school system more than \$170,000 over 18 months and created better visual acuity for students. **The school system estimates it will recoup installation costs in about four years — savings that will be put right back into the classroom.**

### KEY BENEFITS



More than \$170,000 saved through energy cost and discounts



Materials cost reduced by 46 percent through bulk purchasing and utility rebates



Improved visual atmosphere for students



1.5 million kWh in energy savings



Dedicated Pro Desk team ready to assist with project management and product research

## THE STORY BEHIND THE STORY

The retrofit began when Marc Faber, the CFO for Byron Center Public Schools (BCPS), and Doug Gallup, the school system's facilities director, walked into The Home Depot looking for a way to reduce energy and operation expenditures.

Of all the costs associated with operating the 3,800-student K-12 school district located southwest of Grand Rapids, there were surprisingly few areas they could lower, but in researching possibilities, they discovered lighting was one.

"The bottom line is: what's best for our students?" Gallup said, knowing that any solution would need to not only save money for the district, but also improve the learning environment for students.

That's where Trent Raab, a Pro Services Supervisor at The Home Depot store located just a few miles from the local high school, stepped in. Deciding to change the lightbulbs was merely the beginning of the process.

## RESEARCHING OPTIONS

As a first step, the group explored the addition of motion sensors and automatic switches to turn off lights when not in use. While those did result in some savings, Faber, Gallup and Raab knew there was a better option to save more.

The conversation kept coming back to a complete lighting overhaul — replacing the high school's existing fluorescent tubes with modern LED lights. So, as a next step, the team assessed options and to make a selection that made sense economically and operationally.

Through his research, Raab decided on TOGGLED, a Michigan-headquartered LED lighting company that sells its products at The Home Depot. Together, they opted to upgrade to TOGGLED's 4000k 16W LED bulbs.

## SELECTING THE RIGHT BULB



When it comes to changing lights, there are several options. One is to rip out all existing light fixtures and replace with new fixtures. The downside of this approach is cost.

Another option is to buy LED light bulbs that are compatible with existing fluorescent ballasts. That may work for the short term, but could cause future problems as technology and products changes.

The ideal option, BCPS discovered, is to remove the ballast and wire new LED lights directly into building power, eliminating ballast failures

and inefficiencies. While the process may take a few extra minutes on the front end, it is more cost-effective than replacing the entire fixture, saves money over time and reduces ongoing maintenance needs.

"The key to the entire process is the research," Raab said. "There is always a learning curve when it comes to technology since it is constantly evolving. Today's technology is tomorrow's history."

## A RETURN ON INVESTMENT

In total, the school system replaced 6,000 bulbs in 3,000 fixtures, resulting in about 1.5 million kWh in energy savings. Raab and TOGGLED further worked together to ship the LED lights in bulk using easier-to-open packaging. This resulted in lower labor costs, less packaging waste, and a nearly 46 percent reduction in material costs.

While everyone involved in the project knew the upgraded bulbs would save the school system money, but one unexpected benefit of the lighting retrofit occurred in the Aquatic Center. Due to the reduction in heat generated by the bulbs, the LED lighting system caused less water to evaporate, creating a measurable decrease in water usage.

The purchasing process was further streamlined as a result of BCPS' relationship with U.S. Communities, a national cooperative purchasing program. The program eliminates the need for an RFP, reduces the amount of paperwork that must be completed, satisfies the requirements for competitive solicitation and provides public agencies the opportunity to earn up to 3 percent cash back.

The real payoff came in a series of rebates. The local utility has been assisting the BCPS with rebate programs, including recently increased incentives for replacing linear fluorescents with LEDs.

The total savings, including energy and rebates, exceeded \$170,000 over 18 months. With initial installation costs approaching \$500,000, the school system expects to recoup its costs in approximately four years — a return on investment that goes back into the classroom.

## A BETTER LEARNING ENVIRONMENT

In addition to significantly reducing lighting electricity costs and the school's carbon footprint, the new lights deliver a better learning environment.

"The improved visual acuity is obvious to students and teachers," Gallup said. "The project really made for a win-win situation."

Since making the switch, Faber and Gallup have spoken with other school districts in Michigan about the opportunities that are available to other school systems. As Gallup noted, all a school system needs is the right team in place and the wherewithal to drive the change.

"People are taking notice of what we're doing," Gallup said. "This is not hard, this is not difficult, but it requires a change in mindset. How can you do it? How can you get there? If you have the right players on the team, you can do this, and you can make a difference."

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