

LED Retrofit Shines a Light on Savings at U.S. Toy Company

U.S. Toy Company was recently recognized for excellence and leadership in interior lighting by the Interior Lighting Campaign (ILC) for savings achieved from a troffer lighting retrofit project at its 48,000-square-foot corporate office building located in Grandview, Missouri.

- Exemplary Performance Recognition in the Retail, Food Service, or Grocery Sector: U.S. Toy Company cut lighting energy use by 53 percent, from 102,500 kWh to 48,500 kWh, through lighting upgrades that involved replacement of 470 84-W fluorescent troffers with 40-W LED troffer retrofit fixtures. Lighting controls were included in a few of the locations. The reduction in energy use translated into an annual cost savings for this project of \$4,300.

U.S. Toy determined that the project had a payback of 2.9 years, when energy cost savings, maintenance savings and utility incentives are included. The fast payback can be attributed to the fact that Orion Energy Systems' lights have a long-rated life of 125,000 hours, and lighting controls were implemented in the restrooms.

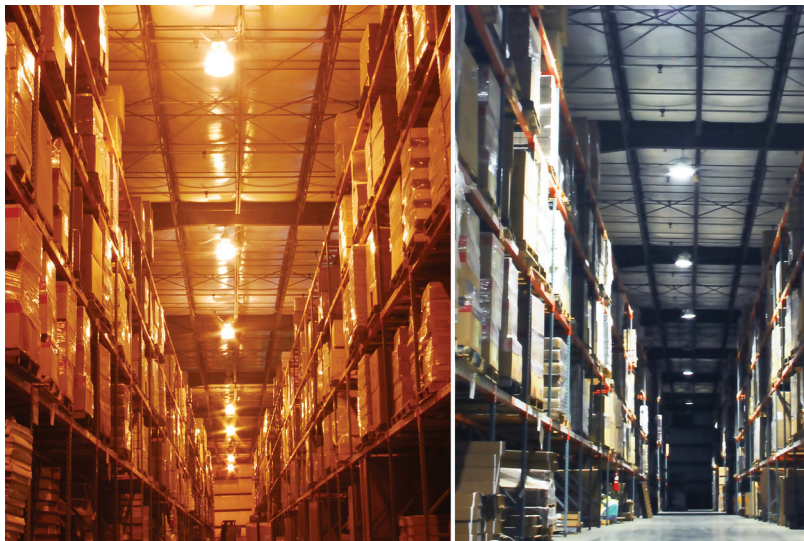
More offices have been upgraded since the data was submitted to the ILC. Lighting upgrades at the headquarters facility are now complete. With seven retail locations across the country from Los Angeles to Philadelphia, U.S. Toy Company still has great potential to reduce its carbon footprint.



U.S. Toy retrofitted 470 troffers at its corporate headquarters, as part of a lighting upgrade that cut energy use by 54,000 kWh and improved employee satisfaction with work space lighting. Photo courtesy of U.S. Toy Company.

2016 Exemplary Performance Recognition in the Retail, Food Service, or Grocery

Energy Savings	54,000 kWh, an average savings of 53%
Troffers Upgraded	470
Total Area of Project	48,000 ft ²
Annual Energy Cost Savings	\$4,300
Payback	2.9 years
Location	Grandview, MO



Troffers were not the only luminaires replaced. Outdated high-bay luminaires were also replaced as part of the overall lighting upgrade. Photo courtesy of the U.S. Toy Company.

Keys to Success

U.S. Toy Company considered energy cost savings to be the primary driver for the project.

The local utility, Kansas City Power and Light, had begun phasing out incentives for high-efficiency fluorescent lights and offering incentives for LEDs instead. This was an additional motivating factor for moving to LED troffers.

Another consideration for U.S. Toy was the environmental benefit of using LEDs. Although the 65-year-old family-owned company built their business on toys and games, they are serious when it comes to sustainability. “The owners are very concerned about meeting environmental and sustainability initiatives. We are always looking at what we can do to make our planet better for future generations,” said Robin Simpson, Vice President of Distribution for U.S. Toy Company.

U.S. Toy’s current employees are very happy with the lighting upgrade. “I love the lighting. I love being able to have clarity of vision. It is much better,” were among the employee comments received on the new lighting.

Project Methodology

U.S. Toy hired BioStar Lighting, a division of BioStar Renewables, to identify cost-effective lighting options to replace aging fluorescent troffer lights in both their office and warehouse buildings. BioStar tested several lighting options on site and recommended Orion Energy Systems’ LED Troffer Retrofit Fixtures for the troffer upgrades. These retrofit lights are adjustable to fit existing troffers so the existing troffers could be retrofit rather than replaced, saving money and time on the job site. The entire headquarters building was upgraded in one weekend. BioStar installers started Friday evening and had all 470 troffers retrofitted before U.S. Toy staff returned to work Monday morning.

Tips and Best Practices

- ▶ Consider using an LED retrofit kit that switches out fluorescent technology but allows existing troffers to be re-used, since this approach offers considerable savings on purchase costs, installation labor costs and time.
- ▶ Combining new lighting with controls extends demand reduction and cost savings.
- ▶ Testing potential lighting fixtures onsite is an important step for ensuring color quality.
- ▶ Check with your local utility for LED lighting incentives.
- ▶ When evaluating proposals from retrofit lighting installers, consider installation schedules. The vendor’s ability to conduct installations at night or on weekends to avoid disruption of production or retail hours may be critical to project success.

Learn More

Through the [Better Buildings Alliance](#), members across different market sectors work with the U.S. Department of Energy’s (DOE) exceptional network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to better technologies, more profitable businesses and better buildings in which we work, shop, eat, stay and learn.

Learn more about how to join the Better Buildings Alliance’s Interior Lighting Campaign (ILC) at <https://interiorlightingcampaign.org/>. The ILC is a recognition and guidance program designed to help facility owners and managers take advantage of savings opportunities from high-efficiency interior lighting solutions. As of January 2017, ILC participants are collectively saving close to \$13 million annually across approximately 95 million square feet by upgrading to high-efficiency interior lighting solutions.

Find more resources and guidance on lighting in the [Better Buildings Solution Center](#).