

### CHRISTUS Health Saves with LED Troffer Retrofit

CHRISTUS Health was recently recognized for excellence and leadership in interior lighting by the Interior Lighting Campaign. CHRISTUS Health is an international Catholic not-for-profit healthcare system that operates hospitals, long-term care facilities, clinics, outpatient centers and other health ministries in Texas, Arkansas, Louisiana, Georgia and New Mexico; its corporate headquarters is in Irving, Texas. CHRISTUS Health worked with CBRE Group, Inc., a real estate services firm that manages facility operations for CHRISTUS.

- 2016 Exemplary Sector Recognition: CHRISTUS Health completed lighting upgrades at St. Michael Hospital, which cut lighting energy use by 61 percent. This project was one of 10 campus upgrades that were considered for recognition.

CHRISTUS is considering additional projects possibly targeting areas of hospitals that do not operate around the clock. Retrofits are likely to include more T8 linear fluorescent conversions to LEDs as well as replacement of CFLs with LEDs in downlights.

CHRISTUS has received no external financing to date; however, they are still waiting for the funds to arrive from the utility company AEP-SWEPCO. They also applied for rebates from the utilities AEP-Central, Entergy, CLEAResult, and CPS Energy. CHRISTUS found that although utility incentives can be important in making a retrofit project economically feasible, project coordinators have to factor in the time needed for the application and approval process. They also found that an accurate, comprehensive pre-retrofit audit is a necessity for participation in utility rebate programs.



CHRISTUS Health replaced the fluorescent lamps with LED lamps in 16,400 troffers across 10 hospital sites, totaling 5.5 million square feet of facility area, for annual energy savings of 4.71 million kWh and cost savings of \$300,000. Photo courtesy of CHRISTUS Health.



St. Michael Hospital in Texarkana, Texas, was included in a larger lighting retrofit where 16,400 troffers were retrofitted with LED lighting to achieve a 58% reduction in energy use. Photo courtesy of CHRISTUS Health.

### Interior Lighting Overall Results

<b>Energy Savings</b>	4.71 million kWh annually, a savings of 58%
<b>Troffers Upgraded</b>	16,400
<b>Total Area of Project</b>	5.5 million square feet across 10 campuses
<b>Annual Energy Cost Savings</b>	\$300,000
<b>Payback</b>	1.6 years

CHRISTUS cut lighting energy use 61% at St. Michael Hospital when they replaced fluorescent lamps with LEDs.

## Keys to Success

The project was proposed by CBRE to meet cost savings goals for the year, and energy cost savings were the biggest driver. Other drivers were maintenance savings, improved lighting quality and overall environmental goals. Although maintenance labor savings were not included in the payback calculations, they did include estimated utility cost savings and maintenance savings from not having to store lamps. Estimated utility incentives of \$140,000 are also expected, but were not included in the calculations.

## Project Methodology

The project focused on areas operated around the clock, including lobbies, corridors, nurses' stations, hallways, offices, breakrooms, labs, waiting areas, surgery areas, mechanical areas and stairwells. The lighting manufacturer (Philips) and the distributor (Grainger) were partners on the project and were instrumental in its success. They conducted a no-cost detailed lighting audit of all of the facilities. This enabled CHRISTUS to develop a comprehensive scope and budget for the project.

Project costs were reduced by replacing just the lamps, not the entire fixtures. CHRISTUS made that decision in part to minimize disruption in the hospital environment. Philips Instantfit "plug-and-play" LED lamp models were selected for quick installation.

## 2016 Exemplary Performance in the Healthcare Sector

Location	Texarkana, TX
Troffers Upgraded	4,800
Energy Savings	1.45 million kWh
Payback	1.5 years

## Tips and Best Practices

- ▶ In hospital settings, lamp-only retrofits with plug-and-play replacement lamps may work best due to the limited time available to access these areas, and the dust containment procedures that many hospitals require for construction projects.
- ▶ When considering lamp-only retrofits, ensure that existing ballasts are in good shape and will be compatible with new lamps, or factor in the extra time and cost for ballast replacement.
- ▶ Lamp-only retrofits can be cost effective even without incentives, since LED product quality has been improving while prices have been decreasing.
- ▶ Contact utilities and take advantage of incentives offered for energy efficiency.
- ▶ Because of the directional nature of LED lamps, certain existing fixtures may not be a good match.

## 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](#).