

2012 Case Study

Via Christi Hospitals, Inc.

Intern: Angela Forrest
Major: Earth, Environment, and
Physical Science
School: Wichita State University

Wichita, Kansas



Company background

Via Christi Hospitals Wichita, Inc. is the local conglomerate of Via Christi Health, one of the largest health care providers in the state of Kansas. With three acute-care hospitals and more than 30 specialty centers and walk-in clinics throughout the city of Wichita, Via Christi Hospitals Wichita, Inc. is a significant presence in the community and has a marked impact on the health and well being of its citizens. The first hospital campus, a level 1 acute-care hospital on St. Francis, was constructed in 1927, and additional campuses were built to expand the coverage and capabilities of Via Christi: a second level 1 acute-care hospital on Harry in 1973, the Behavioral Health Center in 1984, the Rehabilitation Center in 1991, and a level 2 private-bed hospital on St. Teresa in 2010.

Project background

Via Christi Hospitals Wichita, Inc. has a long tradition of utilizing E2/P2 interns to identify areas of potential energy efficiency improvement. This summer, Angela Forrest was tasked with completing a set of energy policies that adhered to newly developed international standards for energy management (ISO 50001:2011) that would help pave the way for future improvements. In addition to this work, Ms. Forrest was also able to devote time to beginning a thorough energy audit of the St. Teresa campus, developing and completing a pavement audit at the St. Francis campus, collating and analyzing water consumption data for select meters at the St. Francis and Harry campuses, and completing Via Christi's application for the 2012 KDHE Pollution Prevention Award.

Incentives to change

Via Christi has participated in the Kansas State Pollution Prevention Institutes E2/P2 program every year since 2008, and in each of those years the interns have identified facility changes that resulted in an increase in facility energy efficiency and a reduction in waste and emissions. Often considered

“low hanging fruit,” these improvements have had a favorable payback period (less than two years) and have netted Via Christi significant cost and energy savings. In 2012, Via Christi sought to develop a methodology that would allow for ever-improving energy efficiency at all campuses, with the ultimate goal of being a leader in energy efficiency and environmental stewardship in the health care field.

Projects

The primary project involved synthesizing energy management requirements outlined in ISO 50001:2011 and adapting those standards into a set of energy policies tailored to Via Christi Hospitals Wichita, Inc. These policies would provide a framework for not only identifying and prioritizing improvements to equipment at each campus, but would also implement recordkeeping and archiving guidelines, facilitate opportunities for employee education, and explicitly support purchasing practices that weigh a product's capital cost against its impact on long-term environmental sustainability. Ms. Forrest prepared drafts of 17 energy policies, along with recordkeeping templates, for review by her manager. Edits are pending, but implementation has been recommended.

The second project involved beginning a thorough energy audit of the St. Teresa campus. St. Teresa, the youngest hospital in Via Christi Hospitals Wichita, Inc., was designed to be the most energy efficient; however, there was some concern that it was not operating at peak design efficiencies. Ms. Forrest reviewed historical energy use for the campus and those results, coupled with the benchmarking tools provided by EPA's Energy Star program, indicated one building was using significantly more electricity during the hot summer months than expected. A review of the equipment and processes identified as major electrical consumers yielded no obvious sources of excessive consumption. Ms. Forrest then looked at other processes deemed to be smaller

electricity consumers to see if those, combined, could account for the power draw. At the time of the internship cessation, Ms. Forrest had begun to look at lighting and window shading automation as a way to mitigate cooling and lighting loads. Continuation of this work has been recommended.

The third project involved developing and implementing a pavement audit at the St. Francis and Harry hospital campuses. Ms. Forrest created a set of pavement quality standards and, using recordkeeping sheets created specifically for this project, visually inspected the pavement on the St. Francis campus and recorded her findings. The resulting analyses were quantified and prioritized, and the most necessary improvements were presented to both Via Christi project engineers and a private engineering consulting firm. Construction of these “priority one” improvements is slated to begin within the year, pending approval of submitted bids. Continuation of this auditing process beyond the original St. Francis project boundaries, including at the Harry campus, has been recommended.

The fourth project involved collating and analyzing water consumption data for meters at the St. Francis and Harry campuses. Working with at least four years of water-use data, Ms. Forrest identified meters that registered the highest volumes of water usage; it was recommended this water-use data be included in Energy Star for benchmarking purposes. This water-use information was then filtered to include only dedicated lawn irrigation meters. Resulting tables and

graphs were presented to a facility employee who will use that data to justify implementing a water conservation program for the facility’s green space.

The fifth project involved completing an application, on behalf of Via Christi, for the 2012 KDHE Pollution Prevention Award. Ms. Forrest had several recent projects to choose as the focus of the application, owing to the tremendous breadth of energy efficiency work that Via Christi Hospitals Wichita, Inc. has completed. At the behest of her manager, she chose two equipment retrofits – installation of a high-efficiency, low-emission Limpsfield burner; and replacement of pneumatic controls on an air-handler unit with direct digital controls – that are designed to lower natural gas consumption. Both of these installations were completed in 2011, and energy trends during peak natural gas consumption months (November – August) showed an overall decrease in natural gas consumption of more than 4,000 MMBTUs. This energy savings, coupled with a history of improving energy performance, earned Via Christi Hospitals Wichita, Inc. the 2012 KDHE Pollution Prevention Award in Energy Savings.

Summary of 2012 work for Via Christi Hospitals Wichita, Inc.

Project Description	Status
Energy management system draft	In Review
St. Teresa energy audit	In Progress
<u>Pavement audit</u>	
St. Francis	Completed
Harry	Recommended
<u>Water consumption analysis</u>	
Facility-wide benchmarking	Recommended
Lawn irrigation conservation program	Recommended