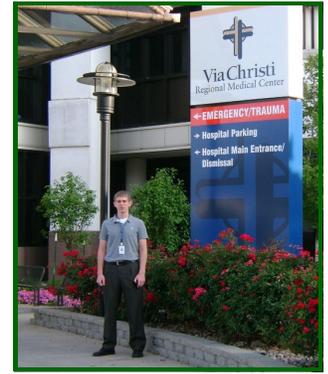


2009 Case Study

Via Christi Health System

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Company background

Via Christi is the largest health care organization in Kansas and employs more than 9,000 people throughout the state. Two acute-care facilities, St. Joseph (SJC) and St. Francis (SFC), merged to form Via Christi in 1995.

These facilities combine have more than 1,400 licensed beds. In addition to the two acute-care facilities, it has a behavioral health campus and a rehabilitation campus in Wichita. Other facilities are located throughout Kansas and Oklahoma.

Project background

St. Francis and St. Joseph each has its own “energy center” that produces all of the steam for the facility. A steam trap is an “automatic” valve that removes impurities from a steam line. These devices normally increase heat-transfer efficiency, but can waste significant amounts of steam if they are not functioning properly.

Hand washing is an important infection-control method used throughout the hospital. Previously, most of the public faucets used 2.0 or 2.2 gpm aerators. Via Christi pays \$4.45/1000 gallons of water received from the city main and \$1.89/1000 gallons of water sent to the sewer. Low-flow aerators are an effective way to reduce the amount of water used in hand-washing stations.

Incentives to change

Via Christi Health System is dedicated to implementation of energy conservation techniques. The facility expects its efforts to procure and implement “green” applications to continue to lower operation costs and enhance the overall healing experience of its patients.

Projects reviewed for E2/P2 potential

1. Steam-trap survey

Two different types of steam traps are available,

continuous flow or intermittent flow. Each type has distinct operating noises that can be heard with the aid of an ultrasonic gun. A steam-trap survey project was created to ensure that each steam trap is routinely inspected and working properly.

Steam lines, condensate lines, and steam-trap locations were mapped on floor prints so they could be drawn in AutoCAD. Each steam trap received a metal tag with a number. Location, manufacturer, model number, line size, and operating pressure were recorded for each steam trap and entered into an Excel spreadsheet.

The steam-trap survey program has been started at the St. Francis campus. Five floors have been completed and 389 steam traps have been located. Eleven of these steam traps were not functioning properly. Each defective steam trap received an additional repair tag. However, many of the steam traps found were inactive during the summer months. The spreadsheet automatically calculates annual steam loss and savings available based on the model number, operating pressure, and a steam-loss table from UESystems. The 11 defective steam traps were estimated to waste 3.8 million pounds of steam and \$45,083 each year.

2. Aerator replacements

Low-flow aerators (.5 gpm) that were installed reduced water consumption by 75%. In order to simplify the calculations, it was assumed each faucet was used four times per hour during the work day and two times per hour for the rest of the day. It was assumed each hand washing took 20 seconds.

This project has been completed at the St. Francis and St. Joseph campuses. A separate database was created in Microsoft Excel for each campus.

There were 323 aerators replaced at the SFC. Annual savings are estimated to be 4.4 million gallons

of water and \$28,489. There were 140 aerators replaced at SJC. Estimated annual savings are 2.0 million gallons of water and \$12,658.

Summary of 2009 E2/P2 intern recommendations for Via Christi Health System

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Steam-trap survey	283,939 lb natural gas/	\$45,083	Recommended
Aerator replacement	6,399,360 gal	\$41,147	Implemented
Total savings *	6,399,360 gal, 283,939 lb natural gas, 1,797,034 kWh	\$86,230	
GHG reductions *	341.2 metric tons CO2e		

* Does not include projects that are “not recommended” or “further research is needed.”