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Saving energy, saving money at Luther Midelfort healthcare facilities



Successful energy management teams come in all shapes and sizes, but common elements include strong leadership, support from upper management, a multi-functional team made up of dedicated personnel, regular meetings, and team accountability.

Luther Midelfort – Mayo Health System is home to one successful team that is achieving its energy goals by working continually to keep projects and awareness top of mind.

A prescription for success

In 2005, Luther Midelfort of Eau Claire sought ways to combat rising operational costs. After an in-depth review of expenditures, top management pledged to develop an energy management plan to reduce costs and provide sustainable solutions for future expansion.

By 2006, the healthcare organization had created an energy management team comprised of three members — the facility director, the director of construction services, and the maintenance supervisor. Eventually, due to increasing workloads, the team expanded to 14 members, including representatives from the food and nutrition services department, an IT specialist, head of the laundry department, and managers who control site improvement, facilities,

maintenance, operations, construction, and internal capital budgets. An energy advisor from Focus on Energy and a representative from the local utility, Xcel Energy, rounded out the team to provide energy expertise.

In addition, Luther Midelfort created an energy manager position responsible for benchmarking, billing analysis, project implementation and coordination, securing financial incentives to help complete projects, public relations, and leading the team. This full-time position is dedicated to energy management and partially funded by the organization's utility provider, Xcel Energy.

Working together, the team compiled benchmarking information and set clear energy goals, including:

- Reduce annual consumption to 273,000 British thermal units per square foot (Btu/sf) by end of year 2007 (achieved).
- Reduce annual consumption to 261,000 btu/sf by end of year 2008 (achieved).
- Reduce overall consumption to 200,000 btu/sf by the end of 2010.
- Maintain high patient/visitor satisfaction standards.
- Incorporate both administrative and behavioral policies to increase energy efficiency and reduce the facility's environmental footprint.
- Maximize grant opportunities and invest incentives into energy management.

To accomplish its goals, the team meets monthly to track project progression, generate new project ideas, set additional goals, and discuss the impact of day-to-day operations with an eye toward maintaining high patient-satisfaction standards.

Since starting the team, Luther Midelfort has saved more than 1.3 million kilowatt-hours (kWh) of electricity and 1.1 million therms of natural gas annually—enough to power 118 Wisconsin homes for a year. The organization will also save an estimated \$1.1 million on its energy bills each year.

Some of the major projects Luther Midelfort has completed include:

- Installed a heat-pump chiller to capture heat loss from the constant cooling load. This project is expected to save 1.1 million therms of natural gas and \$785,000 annually.
- Professionally retrocommissioned the entire main campus, resulting in \$110,000 in annual energy savings.
- Sub-metered laundry electric meters to find demand peaks and stagger washer extractions, dryer loads, and lighting throughout the day to greatly reduce demand charges by more than \$6,000 annually with no effect on staff or production.
- Installed steam valves on dryers, which costed \$2,700 and have resulted in \$33,000 in savings a year.
- Developed new laundry processes, saving 3,600 gallons of hot water per day.
- Worked with Focus on new building plans and modifications that amount to more than \$125,000 in savings and a 12 percent reduction in building energy consumption.
- Installed variable-frequency drives on all major air handlers, reducing airflow during unoccupied hours. New scheduling resulted in savings of more than \$55,000 annually.
- Installed more than 900 occupancy sensors throughout the facility — in restrooms, conference rooms, offices, storage areas, and some exam rooms.
- Converted more than 3,000 older T12 light fixtures to new, high-performance T8s.
- Installed PC network energy-management controls on 4,556 computers to save energy on nights, weekends, and holidays. This saves more than 225,978 kWh of electricity annually
- Virtualized 25 percent of all servers, reducing electric demand by 98 kilowatts and server room cooling by 40 percent.
- Installed Tanni covers (removable/portable steam valve insulators) in all mechanical rooms, projected to result in \$39,000 of savings annually.
- Installed high-performance food service equipment, including a demand-control, variable-speed exhaust hood that can recognize heat and smoke to reduce fan speed and limit the amount of conditioned air that's exhausted from the space when not needed, potentially resulting in saving \$12,000 a year.
- Installed a new dishwasher capable of handling up to three times the capacity of the old unit while using less water. This project is expected to save \$14,000 annually.

- Installed vending misers on all cold-beverage and snack machines campus-wide. More than 40 sensors were installed to save roughly 15,000 kilowatt-hours annually.
- Installed low-flow faucet aerators and showerheads to greatly reduce hot water use.
- Replaced all incandescent exit signs with LED models.
- Worked with Focus to install compact fluorescent light bulbs, low-flow shower heads and faucets, package terminal air conditioner (PTAC) units on furnaces, and occupancy sensors in nursing-home and assisted-living rooms.
- Installed energy-efficient equipment wherever possible, including NEMA® Premium motors.

The team's efforts didn't stop there. Luther Midelfort incorporated several behavioral measures that have positively affected not only energy savings, but maintenance work and equipment costs. Some of these efforts include:

- Created an energy blog on the organization's intranet.
- Worked on cross-departmental teams charged with reducing inventory and wasteful practices. One particular project changed how linens were accessed and used, drastically reducing laundry tonnage and energy use for washers and dryers.
- Started monthly employee forums to discuss and generate ideas for energy-related improvements and issues. These sessions have generated several ideas that otherwise may not have come to light.

The energy team has also capitalized on public relations opportunities by promoting its efforts to facility staff, patients, and the community through various articles and TV news segments.

Would you like help starting an energy management team at your company? The experts at Focus can help. Call us today at **800.762.7077** or visit focusonenergy.com/energyteam to take advantage of free resources, technical expertise, training opportunities, financial incentives, and project ideas (with proven track records of success) to help you increase efficiency and boost your bottom line.