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UTHealth to win award for energy conservation efforts

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Members of the Facilities, Planning and Engineering Department's Energy Conservation team review data.

UTHealth's Facilities, Planning and Engineering Department was recognized by an outside agency for its efforts to lower its energy consumption.

For two years, the Facilities, Planning and Engineering Department has actively worked to monitor and lower energy consumption in the university's academic and research buildings. Its Energy Conservation Team meets bimonthly to go over goals and discuss opportunities for energy consumption reduction.

The energy conservation team is comprised of professionals from the department's maintenance leaders, project managers, planners, digital control technicians and members of facilities leadership team.

The team's efforts resulted in a 3.2 percent decrease on energy usage from Fiscal Year 2017 to Fiscal Year 2018, or more than \$300,000 in savings, according to William "Wes" Stewart, vice president of Facilities, Planning and Engineering.

UTHealth's energy conservation team will be recognized on Wednesday, Nov. 14, by Centerpoint Energy for achieving the most kilowatt hour reduction for a non-school district participant in Centerpoint's SCORE program.

UTHealth participates in two Centerpoint Energy programs. The SCORE program gives financial incentives to agencies that reduce energy costs. Another program provides UTHealth with a consultant who helps the energy team brainstorm, benchmark and implement energy conservation ideas. This consultant meets with UTHealth's team bimonthly. The university has a second consultant on the team, separate from the Centerpoint programs.

Other energy conservation concepts came from UTHealth's technicians and ideas from their respective trade organizations, while others were adapted from other institutions in the University of Texas System.

"Energy conservation is one way that we can save the university money," Stewart said. "We don't make money for the university, but we can significantly reduce the cost of maintaining and operating the facilities through good stewardship. The Energy Conservation Opportunities program shows measurable results that the technicians can take pride in and know that their skills helped accomplish a goal."

Centerpoint's programs offer UTHealth rewards for initiatives the department was already doing.

Stewart said the facilities department set a goal in 2016 to reduce energy use by 5 percent over five years. The department took 2017's usage and used it as a benchmark to gauge progress, and all data was normalized to account for variables that could influence the data, including market fluctuation in energy prices and temperatures.

“Our goal was 5 percent, and I think before we reach the end of the fifth year we will significantly exceed that 5 percent,” Stewart said. “In the first year we already reached 3.2 out of 5 percent. Only 40 percent of the cost savings are realized in the first year. Sixty percent of fees are demand charges, and those are based on the previous year's peak demands. It takes a while to realize all of the returns.”

Overall, UTHealth's energy bills dropped from \$12.5 million in Fiscal Year 2017 to \$11 million in 2018. In addition to the energy team's efforts, there are several external factors that attribute to the overall decrease including the price of electricity and chill water, which were lower in 2018, and cooler temperatures, which meant the air conditioning systems did not have to work quite as hard to cool buildings.

Actual savings

Stewart said the buildings that use the most electricity have the greatest opportunities for reducing costs. For UTHealth, that means looking at research buildings.

“The largest opportunities are in the research buildings because of the extensive (air conditioning) requirements and air exchange requirements in the laboratories. It has to run 24 hours a day and it has to have a higher air exchange rate,” Stewart said.

The facilities department is installing occupancy sensors that can control lighting and air conditioning. If labs are unoccupied, the sensors tell the systems to turn off the lights and reduce the air.

Zone presence sensors are also being installed on chemical hoods, which will reduce negative exhaust airflow when nobody is standing near them. In addition, stickers are being installed to remind users to close hood sashes when not in use. These hoods directly exhaust conditioned air at high velocities, and they significantly increase energy consumption if left open when not in use

Stewart said technology and the “ingenuity of the controls team” has also allowed facilities to develop custom graphics that show HVAC equipment functionality throughout a building in a single screenshot. This allows operators to immediately identify trouble spots that can impact conditioning requirements and energy cost. Such items may could include a sensor or control

point not working properly, portions of the air conditioning system that need servicing or temperature, and airflow out of a designated range.

Other energy saving opportunities are in UTHealth's oldest buildings – primarily University Center Tower, the School of Public Health and McGovern Medical School. There, the facilities department is replacing major mechanical infrastructure with newer systems that are more efficient.

Energy conservation is an ongoing process. Stewart said once the department completes its task list, new technologies will likely be developed to curate further savings, and, inevitably, some of the current systems will need replacement due to age.

“It’s a challenging time for the facilities department overall,” he said. “It will be several years before we finish retro commissioning the current facilities. By the time you finish, it’s time to do it again. It’s a continuous cycle.”

Current members of the Energy Conservation Opportunities team:

Digital Control Technicians

- Bernard “Bernie” Hanus, senior digital control technician
- Mark Morvant, senior digital control technician and data analyst
- Byrne "Gil" Wilson, senior digital control technician
- Louis Allen, digital control technician I
- Terry Albright, senior digital control technician
- Terry Knowles, senior digital control technician
- Julio Lucadou, senior digital control technician
- Pedro Villarreal, senior digital control technician
- James Dawn, senior digital control technician

Maintenance Leaders

- Phillip Dugas, maintenance leader
- James "Fred" Mcmanus, maintenance leader
- Larry "Gene" Miller, maintenance leader

Engineers:

- Heather Camden, engineering consultant with Engineers and Consultants, Inc.
- Jim Watt, engineering consultant with Greenstar Engineering

Project Management

- Steven Bennett, senior facilities construction project manager

Scheduler/Planner

- Paul Jose, maintenance planning and scheduling specialist

UTHealth Leadership

- William "Wes" Stewart, vice president of facilities planning and engineering
- Mark Feguson, director of maintenance, operations and contract services
- Bobby Watson, director of utilities, controls and energy management

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Chad Austin | Posted Nov 13, 2018 02:36 PM

Kudos to the Facilities team! Excellent work

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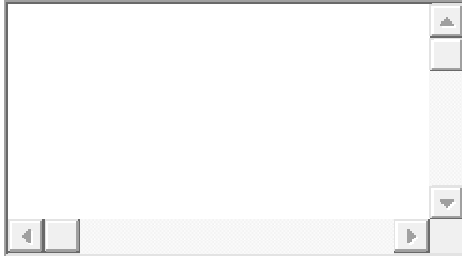
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