

University of Central Missouri

Energy efficient upgrades will save UCM approximately \$3,083,000 a year

In the spring of 2009, the University of Central Missouri (UCM) embarked on a \$36.1 million energy savings contract (ESCO) with Trane. The ESCO addressed \$20 million in needed but deferred maintenance, and \$16.1 million in energy efficient upgrades on the campus.

Construction was scheduled to last through the spring of 2011, but the project was completed in the fall of 2010, six months ahead of schedule. By June of 2010, 100 percent of the lighting retrofits were complete and the geothermal heating / cooling system was fully operational. These projects generated \$500,000 in energy and operating cost savings before the project was complete in the fall.

The improvement projects were achieved by utilizing the Missouri statutory fiscal tool RSMO 8.231 & 640.651 and a performance contract with Trane. The total project will be paid for over a fifteen year period

UCM now has a sustainable, high performance campus and will see approximately \$735,000 in annualized consumption savings, \$848,000 in operating and maintenance savings, and \$1.5 million in avoided annual capital improvements.



Administration Building North Mechanical Room: Replaced old air handling units with new Water Source Heat Pumps (WSHP) tied to a hybrid WSHP loop combining new geothermal wells, existing equipment and new high efficiency supplemental hot water boilers.



Upgrades at University of Central Missouri Included:

- Installation of 150 geothermal wells for high-efficiency heating and cooling of three main buildings on the UCM campus
- Energy efficient window and roof replacements
- High-efficiency lighting upgrades
- Replaced power plant and boiler system with sustainable geothermal heat pump system
- Air handling systems and acoustical improvements
- Laboratory air systems and controls installed
- Campus-wide building automation system installed

AFTER



Administration Building: Upgraded the old single pane windows with double pane, low-E, energy efficient windows.



BEFORE

AFTER



Mechanical Room and Heating Plant: Removed old steam boilers from the heating plant and installed modular hot water boilers in Grinstead.



BEFORE

BEFORE



Heating Plant & Main Entrance to the Campus: The geothermal heating/cooling system eliminated the need for the old steam boilers housed in the heating plant. Removed heating/electrical feeds from heating plant and demolished the building. The rendering below is the projected new entrance to the campus featuring beautiful views of the historic Administration and Dockery buildings and a glimpse into the heart of the Quad.

PROJECTED AFTER



CONSTRUCTION



North Parking Lot: Installed 150 geothermal heating/cooling wells to serve three main buildings on campus.



AFTER

About University of Central Missouri

UCM offers 150 study programs on a beautiful campus serving more than 11,000 graduate and undergraduate students from forty states and more than fifty countries. Founded as a teacher's college in 1871, UCM has maintained a commitment to excellent teaching. UCM has 437 full-time faculty members, 68 percent with a PhD or other terminal degree. The student-to-faculty ratio is 17:1 and the average undergraduate class has twenty-two students. UCM's six-month job placement rate for undergrads is 94 percent. Graduating students also benefit from one of the lowest student debt ratios in the state.