

Lake Land College

Phases 1-17

Mattoon, IL

PROJECT SAVINGS

1,005,279



Miles driven by an average passenger vehicle

136



TONS of waste recycled instead of landfilled

490



Acres of US pine forest sequestered in one year

DECARBONIZATION



Goals: Carbon Neutral Campus & Address Deferred Maintenance

Type: Guaranteed Performance Contracts

Grants/Incentives: >\$2.3M

Cumulative Savings: \$52,300,000 in Energy & Operational Savings

Cumulative CO₂ Savings: 400 Metric Tons

Length: 17 Phases/14 Year \$70 Million

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The success of the five-year plan allowed Veregy to be recognized as a valuable partner in reaching the College's goal of a carbon neutral campus. Veregy became the College's Life Cycle Infrastructure Program Manager.

PROJECT OVERVIEW

Lake Land Collage developed a long-range infrastructure master plan with the goals of addressing deferred maintenance problems and developing a carbon neutral campus that is self-sustaining through renewable energy. These goals have been achieved through energy saving initiatives, many of which, through Veregy's experience, were implemented starting in 2008 through 2021 and beyond. Lake Land also wanted a turnkey solution with guaranteed performance to avoid the hidden costs of growing permanent staff.

Lake Land needed a responsible and accountable resource for every detail of the project and also one that had the expertise to develop a valuable program. Veregy initially developed a four-phase, five-year plan totaling \$20 million. At completion in 2012, Veregy's work saved ~850,000 kilowatt hours (kWh) of electricity and nearly 70,000 therms of natural gas each year due primarily to the geothermal heat pump system. Lake Land also updated school buildings with modern electrical, mechanical, plumbing, LED lighting, HVAC, roofing, windows, IT outlets, cabling, ADA compliant restrooms, and building automation systems.

Lake Land also implemented solar photovoltaic arrays and saved ~\$50K annually. Lake Land continues to work with Veregy—in 2020, Veregy is managing the new Foundation & Alumni Center and the Workforce & Community Ed building. In 2021, Veregy installed a 60KW generator.

PROJECT HIGHLIGHTS

- Geothermal diversification loop
- LED lighting/dimming controls
- Solar Photovoltaic arrays
- Water flow controls
- Energy efficient HVAC systems and Chilled Beam systems
- Energy efficient windows and insulation, daylight harvesting
- Environmentally safe floors, walls, and ceilings
- Extensive renovation of campus facilities



Lake Land College

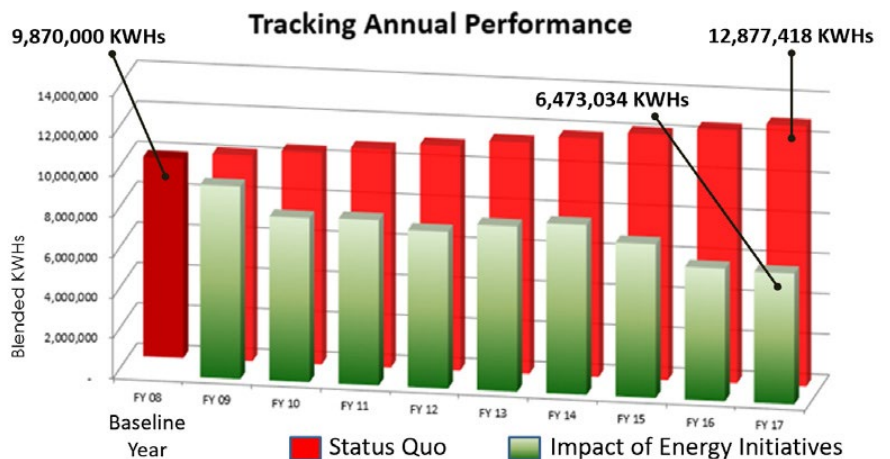
A Carbon Neutral Campus becomes a reality through Energy Saving Initiatives



Solar photovoltaic arrays were installed on campus building rooftops. Each array's electrical output has the ability to exceed the building loads on sunny days.



The Luther Student Center incorporated **natural light** to maintain lighting throughout the day. With sensor controls, additional **LED lighting** turns on when light levels are low. **Sensors** also determine if lights are needed when no occupants are present.



The savings over ten years from the hybrid geothermal field, the solar arrays, the chilled beam, and other energy efficiencies are highlighted in this graph.

While Veregy utilized the **hybrid geothermal loop** to provide heating and cooling to each campus building, there was an additional need to control temperature, ventilation, and humidity within each classroom. Veregy researched **Chilled Beam** technology for Webb Hall and Northeast Buildings. The result of this technology is an extremely comfortable and quiet environment, 40% decrease in building energy usage, and \$32,000 in annual savings.

Lake Land's life cycle infrastructure master plan has been the backbone for the energy saving renovations that continue to take place, transforming Lake Land College into a model for other campuses across the country. Together, Lake Land College and Veregy continue an ongoing partnership of sustainable renovations to the 317-acre campus, turning Lake Land's vision into reality.