

Lincoln Land Community College - Ph 1

5250 Shepherd Rd.
Springfield, IL 62794

Contact:
David Bretscher
Director of Maintenance
217-786-2200

DESCRIPTION Three Campus / Nine Building / 281,485 Sq. Ft. Energy Retrofit Project
FAST-TRACK CONSTRUCTION TIMELINE Feb - Sep 2013
TYPE Guaranteed Performance Contract
TERM 10-Year Term
GRANT \$229,581 Energy Grant & Incentives through the IL DCEO
ANNUAL SAVINGS Energy \$127,914 / Operational \$9,710



Menard and Sangamon Halls - Main Campus



Background

Lincoln Land Community College is actively striving to cut back on energy and water use, reduce waste, and make decisions that take into account our finite natural resources and the impact the campus has on the environment. For this reason, LLCC signed on to the American College and University Presidents' Climate Commitment and the Illinois Sustainable University Compact, both promote energy efficiency on campus and implementing a comprehensive plan to pursue climate neutrality.

The College selected CTS Group through a competitive Request for Qualifications process to act as the College's Energy Conservation Consultant. CTS Group provides an alternative approach to traditional construction that embraces strategic planning with an integrated team where client expectations, project costs and implementation plans are developed before the construction process begins. The immediate goal was to complete this ASHRAE level two energy audit to identify areas of need, which led into the Performance Contract Life Cycle Infrastructure Program Management Services agreement.

CTS Group elected to focus our initial recommendations on projects that will have an immediate impact on your utility budget while improving the classroom environment by better control of the existing mechanical HVAC systems. More extensive mechanical HVAC renovations in the future can be planned around the College's capital and PHS funding cycles.

Defined Objectives

The following objectives were identified for the initial energy audit:

- / Evaluate condition and efficiency of complex heating and cooling systems which include a mix of boilers, centrifugal chillers, air handling units, circulating pumps, gas rooftop units, and electric rooftop units.
- / Analyze current domestic hot water heating systems to determine efficiency.
- / Analyze current energy management systems including controls, hardware, and software.
- / Analyze current interior and exterior lighting to determine efficiency.
- / Analyze current utility bills to determine if LLCC utilities are metered appropriately.

Lincoln Land Community College - Ph 1



- / Analyze water usage, review water using fixtures/appliances and formulate recommendations to conserve water usage.
- / Evaluate insulation, building envelope, windows, etc. to determine efficiency and advisable upgrades.
- / Estimate remaining life of heating and cooling systems, energy management systems, controls, air handlers, etc. and recommend a schedule for replacement by priority.
- / Explore the practicability of installing Wind Turbine on the Main Campus to generate electric and consider CWLP role in Wind Generation.
- / Investigate Solar Voltaic Leasing programs and CWLP role in electrical generation for the Main Campus.
- / Analyze the viability of installing Solar Thermal to heat domestic hot water for Cass Gymnasium.
- / Make recommendations to LLCC Administration on energy saving upgrades including projected costs, and estimated time to recover cost through energy efficiency.

Project Scope

The Phase 1 project scope saves the College \$127,914 each year in energy savings and an additional \$9,710 in operational savings. The savings are redirected to pay for the cost of the project. The annual energy savings translate to:

- / 882 metric tons of CO₂ being kept out of the atmosphere
- / 98,913 gallons of gasoline
- / Carbon sequestered by 188.4 acres of pine or fir forests

Energy Conservation Measures

ECM 1: Lighting and Lighting Control Upgrades

- / Light Fixture Replacements
- / Vending Miser Implementation

ECM 2: Building Automation System Upgrades

- / Demand Controlled Ventilation
- / Equipment Scheduling
- / Demand Response/Occupancy Based HVAC Control
- / Dual Maximum Control for VAV Boxes
- / Discharge Air Temperature and Duct Static Pressure Reset Scheduling

ECM 3: Domestic Hot Water System Upgrade

- / Domestic Hot Water Heater Implementation
- / Solar Thermal Domestic Hot Water Heating System Implementation

ECM 5: HVAC System Upgrades

- / Install a Dedicated HVAC System for the Computer Lab