

Laclede County

200 N Adams Ave.
Lebanon, MO 65536

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Presiding Commissioner
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PROJECT COST \$4,426,036
TYPE Guaranteed Performance Contract
TERM 15 Year Term
GUARANTEED ANNUAL SAVINGS \$282,353 Energy / \$45,238 O & M



Project Background

Located in south central Missouri, Laclede County serves over 35,000 residents. The 1924 courthouse was rebuilt in 1998 with traditional roof top air handling units. Even though the systems were only thirteen years old, utility costs were extremely high at \$4.51 a sq. ft. and escalating. Additionally comfort in many areas was an issue, and increased maintenance costs were causing maintenance to be deferred. The commission knew that improvements were needed for fiscal responsibility and comfort of the occupants.

Self Funding Solution

The Commission looked to CTS for options and to identify the best potential choices available to the County. After extensive analysis of the existing systems, CTS was able to develop an improvement plan which would pay for itself with energy savings alone. Factoring in annual operations and maintenance savings at a very conservative level of \$45,238 results in positive cashflow.

The following project scope will result in the County reducing their annual kWh usage by 57% from 201.84 kbtu/sq. ft. to 87.12 kbtu/sq. ft.:

- / Hybrid Geothermal VAV HVAC System: The system includes 54 wells drilled 330 ft.
- / Temperature Control Building Automation System: The web based system can be controlled remotely from any computer with internet capability. Automatic scheduling allows for conservation when the building is not occupied.
- / CO₂ Demand Control Ventilation: Occupancy based ventilation approach
- / Lighting and Lighting Control Upgrades
- / Fire Alarm System Replacement
- / Domestic Hot Water Plant Replacements at the Correction Center and Administration Area and water softener upgrades



Well Field Drilling. The field is comprised of 54 wells drilled 330 feet deep.



Well Field Piping which is a continuous loop from the building, through the well field, and back to the building.

Results

A formal audit of the energy usage for the first year following installation of the improvements showed that the County saved \$297,656 in energy costs. Additional savings were also realized for operational and maintenance costs, and reduced salt usage.



Geothermal loop piping showing out/in water lines