DeKalb County Court House
Maysville, Missouri

Retrofit of Existing Building

- *Three story historic building*
- *16,500 square feet*
- *One-pipe, ground source geothermal exchange HVAC system installed*
- *Designed for ease of maintenance*
- *Combination of console and ducted heat pumps*
- *Individual temperature controls*
- *12-month heating and cooling cost prior to retrofit: $27,350 ($1.70 / sq. ft.)*
- *Projected cost after: $18,816 ($1.17 / sq. ft.)*
- *Projected annual savings: $8,480*

CM Engineering was asked to evaluate the energy efficiency of this aging facility and recommend cost-effective improvements. The historic Court House is a three-story, 16,500 square foot facility. During our study, we determined that the building was an excellent candidate for ground source, geothermal heating and cooling.

We designed a One-pipe geothermal exchange HVAC system to serve the structure, with console heat pumps or ducted units in each of the work spaces. Individual temperature controls were also installed. This system provides quiet, comfortable working conditions in each space, with temperatures set at the preference of the occupants. Energy is not wasted in unoccupied spaces, but temperatures may be brought to desired levels in a matter of minutes.

The system was put into service during the late summer of 2013. During the twelve months prior to installation, the County's heating and cooling cost was $27,350. The building is on track for a current annual cost of $18,816--a savings of approximately $8,500.

Above: One-pipe system requires less pumping power, fewer parts, is easier to maintain
Left: Console heat pump units provide quiet comfort

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