

Energy Audit and Renewable Energy Feasibility Study

Hospital Complex

This hospital complex provides comprehensive inpatient and outpatient mental health treatment services for children, adolescents, and adults. The facility consists of 39 buildings ranging in size from 556 ft² to 17,130 ft², which were constructed from 1902 to 1992. In general, the buildings are used for patient housing, offices, and residences for workers or ancillary services including a dining hall, gymnasium, and conference center. HRP assisted the hospital with obtaining a grant to complete a comprehensive study to:

- Identify and evaluate Energy Conservation Measures (ECMs) associated with building envelopes;
- Determine the feasibility of using geothermal as a source of building heating/cooling and wind energy to supplement electricity use; and
- Complete EECBG reporting and measurement and verification requirements.

In summary, the study determined that the hospital typically consumes 10.5 MW-hr/year of electricity and 120,000 gallons of #2 fuel oil per year.

Visual inspections and blower door testing of on-site buildings determined that the buildings were “excessively leaky.” In particular, drafty windows and doors and attics and walls lacking insulation were noted. Typical Energy Conservation Measures (ECMs) included: replacing windows, weather-stripping doors, adding spray insulation to the attic, and insulating walls.

The geothermal review indicated that the campus could expect a significant energy savings as a result of the installation of the geothermal heat pumps. In particular, two buildings have paybacks of less than four years with expected energy savings of \$10,500 and \$14,000 per year in heating and cooling costs.

Based on weather data and wind maps, the site is located within an area mapped at Power Class of 1. It was determined that since the hospital site does not meet typical minimal wind requirements, the site’s wind is not expected to be sufficient to power a wind turbine.

HRP is currently working with the hospital to identify ECMs for implementation and to secure funding and incentives to complete the selected ECM projects.

Throughout the process, HRP completed the EECBG reporting requirements.

FIRM

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VALUE

\$30,000

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