

Energy Conservation Audit and Renewable Energy Feasibility Study

New York State Township

HRP Associates, Inc. was selected by a New York State town to complete an Energy Conservation Audit and Renewable Energy Feasibility Study of the town buildings under the EECBG funding program. The primary purpose of these studies was to:

- Identify and Evaluate Energy Conservation Measures (ECMs);
- Determine the feasibility of using Geothermal and Wind Turbine technology as a source of building heating/cooling and electricity to reduce the overall dependence on purchased energy; and
- Complete required EECBG reporting and measurement and verification.

HRP collected relevant energy consumption, building characteristics, and equipment data. Initially, EPA's Portfolio Manager was utilized to benchmark each building based on an operational characteristic to assist in the building evaluation and prioritize potential energy savings. Following the completion of the benchmarking process, an inspection of each building was completed to collect relevant information including: Lighting system and controls; Plug loads (i.e., computers, and general electrical outlet loads); Building envelope; HVAC systems and controls; and Motors and pumps.

Each of the identified ECMs was evaluated using appropriate software and Energy Estimators to evaluate potential savings under various operating or equipment modification/replacement scenarios. Each of the identified ECO's was reviewed to identify:

- Life expectancy;
- Projected lifetime energy and cost savings;
- Annual CO₂ equivalent savings in pounds;
- Implementation costs;
- Available rebates and grants;
- Total project cost and estimated annual energy and cost savings based on:
 - Simple payback;
 - Return on investment; and
 - Site and source energy input.

HRP recommended various lighting retrofits, operational modifications, and equipment upgrades. In addition, HRP completed a Renewable Energy Feasibility Study including: wind, solar, and geothermal. The study determined that, due to the relatively low energy usage per square foot, its accessibility, and lack of shading, the Town Hall offered the best location for the installation of a solar system and geothermal system. After discussion with the town, it was decided to pursue a solar system due to the availability of funding. Subsequently, HRP completed a grant application to obtain funding. Upon approval of the grant application, HRP completed a solar design and specification for the installation of a solar system. The proposed system will include a monitor to collect all relevant measurement and verification information. HRP is currently overseeing the installation of the solar PV system. Throughout the process, HRP completed the EECBG reporting requirements.

FIRM

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VALUE

\$28,600

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■ *HRP completed a Conservation Audit and Feasibility Study of the town buildings under the EECBG funding program.*

■ *EPA's Portfolio Manager was utilized to benchmark each building based on an operational characteristic to assist in the building evaluation and prioritize potential energy savings.*

■ *The Feasibility Study determined that the Town Hall offered the best location for the installation of a solar system and geothermal system.*