

2019 the facility produced 166,412 kilowatt-hours plenty while the building used only 122,315 kWh—far surpassing the zero-energy goal.

Ensuring that a building maintains zero-energy performance requires a robust monitoring system that shows the stark balance of energy supply and demand. The REC's still achievement required validation of on-site energy production and usage throughout a 12-month performance period, post-occupancy.

REC's custom electrical power monitoring system provides granular, real-time detail on the facility's energy

usage and production. Continuous, site-wide monitoring at the subsystem level helps site operators verify that the facility's zero-energy goals are being met each year.

Electricity usage is measured separately and tracked over time for heating, cooling, ventilation, lighting, domestic hot water, elevators, plug loads, and other systems. A public web portal (see Figure 3) provides data on building energy usage and trends. Staff can download selected data series for analysis and for comparison to solar production data or energy use in a prior year (at the system or sub-system-level).

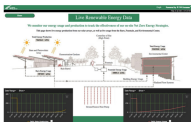


Figure 3. A public web portal provides access to detailed data on the REC's energy usage and generation. Source: Pittsburgh Public Conservancy

GeoThermal Cooling System at the Frick Collection

United States

The Frick Collection in New York City installed a GeoThermal Cooling System system using 60 wells drilled into the bedrock beneath the museum, allowing for efficient cooling without the use of conventional air conditioning systems.

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