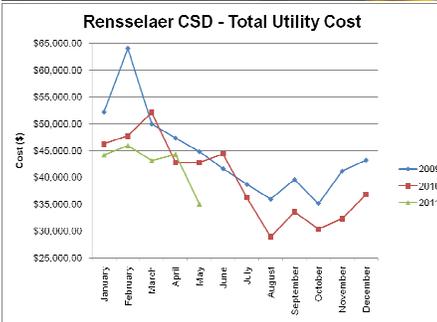


Rensselaer City School District

Rensselaer, New York



Under NYSERDA's FlexTech program, **Novus Engineering, P.C.** was selected to conduct an energy audit of the Rensselaer City School District's K-12 school building in Rensselaer, NY. Constructed in 2007, the building is divided into elementary, middle, and high school wings, totaling 289,000 ft². The school serves approximately 1,100 students and is used year-round. The entire building is heated and cooled using roof-top air handling units. A boiler plant provides hot water to the air handlers and to reheat coils in zone VAV boxes throughout the school.

Novus provided energy management assistance over the course of the 2010 – 2011 school year in an effort to reduce the school's energy consumption. Since the school was relatively new with state-of-the-art systems, the project focused on identifying no-cost/low-cost

measures that could be quickly and easily implemented using existing systems. The project included a detailed review of the energy management system (EMS); investigation of the air handling units, boiler plant, and zone control systems; a survey of computer use; and a room-by-room lighting audit. Novus also assisted in the development of an educational program at the school related to energy efficiency in building systems.

Over the course of the project, Novus' recommendations included the following energy conservation measures. The first seven measures were immediately implemented:

- Implement holiday schedules in the EMS;
- Adjust equipment operating schedules;
- Lower AHU minimum damper positions;
- Adjust boiler reset schedule;
- Adjust zone temperature setpoints;
- Revise cooling control scheme for central network room;
- Increase zone CO₂ setpoints within safe limits to reduce conditioning loads;
- Adjust and/or replace lighting occupancy sensors, where necessary; and,
- Replace inefficient gymnasium lighting with high efficiency systems.

Project success was tracked through the review of monthly utility bills since May 2008. During the course of the project, the school saw a reduction in electricity consumption of approximately 20%, and a reduction in natural gas consumption of 46%. The dramatic reduction in gas consumption was due to a reduction in the use of reheat resulting from control setpoint changes. Comfort conditions did not change. At the conclusion of the project, the school saved approximately 11.5% in utility costs in comparison to the year prior to the start of the project.



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