

# Town of Tonawanda, NY

Improving community buildings and saving energy with performance contracting

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Located at the northern border of Erie County, the Town of Tonawanda is populated by more than 74,000 people and has been recognized as one of the best places to raise children in the state of New York. The local government is committed to providing quality environments that serve its residents. To continue this mission, the town took stock of its real estate portfolio and recognized the need to improve conditions in community buildings.

## Client Background

The Aquatic and Fitness Center, which is managed by the Youth, Parks and Recreation Department, is a marquee building for the town. Over its 20-year life, the quality of the indoor environment deteriorated. Much of the facility's HVAC system was nearing (or past) its useful life. In improving facilities such as this one, the town hoped it would not only provide better indoor environments for the community's use, but also reduce utility costs.

The town did not want to raise taxes for its citizens to pay for the improvements. Funding projects through energy savings via a performance contract was a budget-neutral solution. Before the contract was drafted, a thorough assessment of what improvements could be made and how much each would save was necessary. In February 2008, Town of Tonawanda lawmakers unanimously agreed to authorize an energy audit of 20 town facilities.

## Objectives

In partnership with Siemens, a program of projects was created that first addressed a need for facility improvements at the community's aquatic center, and was expanded to take advantage of various other energy opportunities elsewhere.

Among the long list of goals for the performance contract, the main priority was providing better environments for the citizens of the Town of Tonawanda. Additional objectives included streamlining building operations and reducing the town's dependency on energy from the utility, both by improving the efficiency of building equipment and producing energy via rooftop solar panel installations.

These strategies would cut energy bills to stabilize expenses for taxpayers. Town of Tonawanda Councilman Daniel Crangle was quoted in the *Tonawanda News* in 2008 explaining it like this: "We have no control over rising energy costs," he said. "The best thing we can do as a town is take a proactive approach to see where we can cut these costs."

Projects completed under a performance contract addressed all of these priorities. When the projects launched, Town of Tonawanda Supervisor Anthony Caruana explained, "These steps will not only help control town government costs for taxpayers, they'll make our public buildings more comfortable for the people who work and visit there."





### Siemens Solutions

The total cost of the projects completed via a performance contract with Siemens exceeded \$3 million. In addition to the energy savings paying for the cost of the projects, the Town of Tonawanda was awarded an Energy Efficiency and Conservation Block Grant for \$544,700.

#### Demand-Side Facility Improvement Measures

Improvements were made to 18 of the town's 20 facilities, impacting more than 1 million square feet of space. The vast majority of facility improvement measures were demand side in nature, aimed at updating equipment that was outdated and/or inefficient. As an example, lighting retrofits were made at nearly all of the town's buildings, many of which also received building envelope improvements, such as weatherization.

Numerous controls upgrades were also implemented. Siemens installed or replaced existing direct digital control (DDC) systems with the new Apogee control system in four facilities: the Aquatic and Fitness Center, Senior Citizens' Center, Municipal Building and Highway Department facility. Programmable thermostats were installed in nine of the town's facilities to implement unoccupied space temperature setback during heating months.

Several older rooftop units were replaced at the Aquatic and Fitness Center. Older boilers serving the heating and domestic hot water systems were replaced with high efficiency condensing boilers. The old Natatorium air-handling system was struggling to maintain appropriate humidity and temperature levels and air starvation issues resulted. Due to compressor failures and overheating issues, the air conditioning, dehumidification and heat recovery had not been operational for several years on the existing system.

Siemens replaced the existing units with new custom-designed air-handling systems capable of bringing in 100 percent outside air and heat recovery coils to reclaim heat between the exhaust and intake air streams. "We had concerns from patrons," notes Dave Decker, Senior Engineer Assistant and Stormwater Management Officer, Town of Tonawanda, NY. "The work that was done at the Aquatic and Fitness Center has made the facility more comfortable for patrons and easier to manage."

The Aquatic and Fitness Center wasn't the only facility where HVAC and mechanical work was done. A new air-cooled, rotary lobe instrument air compressor was installed at the Wastewater Treatment Plant.

#### Solar Photovoltaic Installations

To bring the town into the solar age, Siemens provided and installed a grid-connected solar photovoltaic system at the following locations:

- Water Treatment Plant
- Water Sewer Maintenance building
- Wastewater Treatment facility
- Highway Department building
- Senior Citizens' Center

The new solar panels were installed on the existing roofs and the energy generated has been tied directly into the site's power grid.



## Customer Results

These projects have had a significant environmental impact. The demand-side facility improvement measures will reduce annual emissions of CO<sub>2</sub> from electricity and natural gas by 1.8 million pounds. The solar installations will contribute an additional 204,817-pound annual reduction. Nitrous oxide (NO<sub>x</sub>) emissions resulting from all of the projects have been reduced by more than 2,200 pounds annually, and sulfur dioxide (SO<sub>2</sub>) emissions have been cut by an excess of 5,100 pounds each year.

The emissions reductions over the contract's term are equivalent to:

- 6.5 acres of forest preserved from deforestation.
- 4.8 railcars of coal not consumed.
- 170.2 cars removed from the road.

These efforts have helped the community reduce its consumption of fossil fuel and shrink its carbon footprint.

Utility costs are shrinking too. From the demand-side, facility improvements alone are saving the town \$167,924 annually, which over the entire term of the performance contract will exceed \$3 million.

The community is enjoying more comfortable environments in the Aquatic and Fitness Center, as well as ice rinks and other facilities. Building operations have been streamlined as well. Performance contracting has truly enabled the Town of Tonawanda to leverage green to the bottom line while improving building conditions.

## Siemens Industry, Inc. Building Technologies

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