



A Study in Energy Efficiency: New York State Department of Corrections, NY

Dramatic Energy Cost Savings at NY Correctional Facilities.

Customer Profile

The New York State Department of Correctional Services (DOCS) is responsible for confining and rehabilitating approximately 65,000 inmates held at 70 state correctional facilities located across New York State.

The Challenge

Not only was DOCS looking to develop energy conservation projects at their facilities across the state, but they also needed a company familiar with the corrections environment where safety, security and adherence to procedures are as critical as meeting deadlines and budgets.

The Solution

Constellation has a long history of providing customized engineering services and cost saving projects throughout New York state and its success with DOCS began in 2001. The first project was facilitated by New York State Energy Research Development Authority (NYSERDA) and focused on the Green Haven Correctional Facility in Stormville. Deliverables for the \$2.9 million project included the installation of a 500 HP summer boiler at the central plant, the commissioning of a condensing heat exchanger in the boiler plant, expansion of the heating controls system and improvements to the steam heating controls system and improvements to the steam



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distribution system. **The project was completed both on time and within budget.**

The next successful project was at the Bedford/Taconic Correctional Facilities. Highlights of the **\$3.4 million initiative include 11 conservation measures** in several facilities, with the most notable being the installation of a new 500 kilowatt (kW) combined heat and power plant. The expected savings from this energy conservation measure alone make up over a third of the project's total expected annual savings of \$450,000. The project also included: condensate system improvements which dramatically reduced plant make-up; #6 to #2 fuel conversion at the central plant; energy-efficient lighting; and enhanced boiler and HVAC controls.

Lastly, there was a design/build project for the Sing Sing Correctional Facility in Ossining. **The highlight of the \$2.0 million project** was the expansion of the existing controls system to provide service to 17 additional buildings totaling 744,000 square feet. The system included all valves, actuators, sensors, panels, fiber, Ethernet cabling, hubs, switches, front-end control and graphics enabling the facility to have temperature control over the buildings. Efficiency upgrades to over 2,300 light fixtures and the replacement of failed variable speed drives on a hot water heating system serving three buildings totaling 145,000 square feet were also included.

Project costs were covered by guaranteed savings through an energy savings performance contract. With the help of Constellation, NYSEEDA facilitated a third-party financing arrangement with GE Capital. Projects will be paid off over a 14-year period.

The Results

Project costs totaled over \$8 million with **total cost avoidance/energy savings projected at over \$1 million annually.** Plus, energy savings are exceeding guarantees.

Highlights

- Three major projects in the Greenhaven Hub
- Majority of work done at maximum security facilities
- Over \$8 million in project costs
- **Over \$1 million in expected savings**
- Energy savings exceeding guarantees

Technical Highlights

- 500 kW combined heat and power plant
- 500 HP summer boiler with auxiliary equipment
- Boiler and steam system upgrades including condensate recovery, steam traps, insulation and consolidation of steam lines
- Energy management and control system expansions at all three facilities, covering 34 buildings and over 1.5 million square feet
- Energy-efficient lighting improving over 4,500 fixtures



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