



Siemens helps BAE Systems reduce energy costs and make infrastructure improvements with Siemens ConservTM program

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Greenlawn, New York – BAE Systems, Inc., is a global defense and security company that develops solutions for air, land, and naval forces, including the design, development, and manufacture of electronic systems with military and civilian applications. The company's U.S. operations are headquartered in Arlington, Virginia, with operations in 38 other states.

In the fall of 2010, BAE Systems realized the need for infrastructure and energy efficiency improvements at its Greenlawn, New York facility. These projects needed to be completed without diverting funds from the company's capital budget. Siemens Industry, Inc., partnered with BAE Systems to implement the necessary energy efficiency and infrastructure improvements, as well as to secure funding for the project through the Conserv program.

Objectives

In the Greenlawn physical plant, some of the mechanical and HVAC equipment dated back to the 1960s, and BAE Systems recognized the need for upgrading this

equipment to be more energy-efficient and reliable. BAE Systems had a variety of business goals for its energy efficiency and infrastructure improvement project for Greenlawn's 250,000-square-foot facility, including:

- Implement energy efficiency and CO₂ emissions improvements
- Maintain facility's physical plant at required and desired level through infrastructure improvements
- Reduce operating costs associated with maintaining and servicing aging infrastructure
- Make above changes without spending funds from the company's capital budget
- Complete project on an aggressive timeline to protect business continuity

By making the desired and necessary energy efficiency and infrastructure improvements without diverting funds from the company's capital budget, BAE Systems would be able to use those funds for more strategic investments that will lead to top-line growth for the company.



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“The energy savings are very apparent in our monthly utility bills, and today, we have much more control over variables that we couldn’t previously control. In addition, our indoor air quality is much improved.”

—Steven Hannwacker
Facilities Manager, BAE Systems
Electronic Systems
Greenlawn, New York

“Everyone who worked on our project understood our short timeline and went above and beyond to ensure our deadlines were met. That was an enormous advantage for us.”

—Michael Catalano
HVAC Specialist, BAE Systems
Electronic Systems
Greenlawn, New York

Solutions

To achieve BAE Systems objectives for the energy efficiency and infrastructure improvement project, Siemens designed and implemented the following solutions on a five-month construction schedule:

- Upgraded existing, aging central boiler and chiller plant, including the use of magnetic bearing chiller technology, one of the most efficient chiller technologies available on the market today
- Installation of ultraviolet (UV) lighting systems on all air handlers to improve indoor air quality
- Installation of variable frequency drives (VFDs) on all air handlers and return vents, as well as chilled and condenser water pumps
- Upgraded existing building management system (BMS) on air handlers in the mechanical room
- Installation of new high efficiency domestic hot water heating system, including three modular hot water boilers to replace the existing fire tube steam boiler
- Project funding through Siemens Conserv program

BAE Systems recognized that the necessary energy and infrastructure improvements must be completed without having an impact on the company’s capital budget. As such, BAE Systems took advantage of the Siemens Conserv program. Conserv is a “pay-the-savings” Energy Services Agreement (ESA) that offers Siemens customers access to capital to make investments in

facilities that would generate energy and operational savings, for which customers make ongoing payments to a third-party financial partner based on actual, realized energy savings.

Through Conserv, BAE Systems entered into an 11-year ESA with Siemens and a third-party financial partner, who financed the Greenlawn project, including design, engineering, implementation, and commissioning. Siemens worked with the financial partner under an Energy Service Performance Contract to conduct all engineering analysis and to act as a general contractor through the construction phase of the project.

Results

With the help of the Siemens Conserv program, BAE Systems implemented energy efficiency and infrastructure improvements with the following results for the Greenlawn facility:

- Reduced operating costs associated with maintaining and repairing equipment, including a 40-year-old boiler and chiller plant
- Reduced carbon emissions of up to 1,814,000 pounds per year, the equivalent of removing 592 passenger vehicles from the road every year
- More effective equipment and energy management through improved control strategies
- Improved indoor air quality, removing 99.9% of airborne pollutants and bacteria as a result of the UV system
- Increased reliability of physical plant, with equipment that will last up to 30 years

Siemens estimates that BAE Systems will save approximately \$300,000 annually through energy and operational savings. These savings are attributed to a 5% reduction in electrical costs and a 69% reduction in natural gas usage.

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