



# CASE STUDY

## BUILDING AUTOMATION CONTRACTORS

# CASE STUDY

### General Services Administration

#### *Building an Efficient Infrastructure*

The General Services Administration (GSA) procures and manages the buildings, products, technology, and other essentials federal agencies need. They are responsible for securing space, furniture, equipment, computers, and telecommunication systems from federal and commercial

communities – including courthouses, post offices, and assorted federally owned buildings. The Federal Building at 201 Varick Street in New York City is one of several in the region. As control systems in that facility began to reach the limits of their useful life, management at the GSA looked for a vendor who could



### Project Team

**Owner:** United States General Services Administration, NYC

**Prime Contractor:** Con Edison Solutions, Westchester, NY

**Design Engineer:** Atkinson Koven Feinberg Engineers, LLP, NYC

**Mechanical Contractor:** JDP Mechanical, Inc., NYC

sources at the best value. The agency is also tasked with the liquidation of surplus federal property, such as real estate and vehicles, to the public.

The GSA is the nation's largest public real estate organization. As a technology leader, and stakeholder, it has an interest in integrating systems and automation technologies, which monitor and manage energy consumption within its facilities. Its Public Buildings Service has an inventory of more than 300 million square feet in about 8,300 buildings in nearly 2,000

upgrade the capabilities while making use of existing field devices. What the facility needed was a building automation system that could simplify maintenance and minimize costs.

#### Primary areas of concentration

- a) Improve the efficiency of chilled water plant
- b) Install Variable Frequency Drives (VFD's)
- c) Augment antiquated mechanical components with a computerize

(Continued)

## Key Benefits

- Achieved greater energy efficiency from the mechanical system upgrades and Honeywell Excel 5000® Facility Management System.
- Increased energy tracking capabilities and system monitoring functions while maintaining system uptime.
- Increased equipment reliability, flexibility and cost effectiveness.

configuration which allows engineers to operate the facility from a central location.

Initially 201 Varick Street was monitored and controlled by a pneumatic control system with authority over the heating, ventilation, and air conditioning (HVAC) system. In 1999, GSA managers decided to proceed with the modernization of the automation system in the facility. Westchester based Con Edison Solutions Inc. was selected to lead the installation of a Direct Digital Control (DDC) system. Con Edison performed energy system surveys, and in concert with the GSA selected the best available system from the marketplace.

In conforming to the objectives, Con Edison retained the services of AKF Engineers, LLP, of New York City, experienced in the area of mechanical and electrical systems design, and JDP Mechanical, LLC, of Astoria, proficient in the area of mechanical systems installations.

The efficiency improvements in energy converting equipment (Chillers, Variable Frequency Drives, Industrial Motors) and energy transporting equipment (Pumps, Fans) offer a significant energy cost saving potential. To that end, the GSA has proceeded to replace inefficient single stage absorption chillers with new efficient centrifugal and gas fired chillers (1,175-ton plant). In addition, 66 Variable Frequency Drives (VFD), and 69 high-end motors were also installed throughout the facility. This unique system integrates all the modern control equipment with the older field panels and provides seamless integration.

To bring into line the newly installed devices, Con Edison engaged the services

of T.E.C. Systems, Inc. for a solution to integrate them into a single, manageable, graphical user interface system. T.E.C. Systems complemented the installations to include a state-of-the-art building automation front-end with graphic capabilities and modern software programming support. The configuration is standardized to Honeywell's EXCEL-5000® Building Management System (BMS), inclusive of an Excel Building Supervisory (XBS) Graphical User Interface (GUI), and capable of interfacing with other building systems and provides even more options to supplement the facility's growing energy needs.

In sum, 48 Honeywell control panels were added, and all operator work is done through the GUI, which provides a uniform look and feel to the entire system and greatly improves productivity of the building operators and managers.

The Honeywell system was chosen based on its flexible architecture, graphical programming methods, distributed nature, and its ability to interoperate with other building automation system points via any preexisting architecture.

### Benefiting the Bottom-line

Reducing energy use and improving the efficiency of existing facilities can be a challenge. But, according to the United States Department of Energy, in existing buildings, renovations that replace older systems with more efficient technology can yield savings of up to thirty percent with the same positive impact on building comfort. Automated controls like occupancy sensors, programmable thermostats, and the various mechanical and functionality enhancements implemented at 201 Varick Street ensure reduced energy use in such facilities.

### T.E.C. Systems Incorporated

54-08 Vernon Boulevard, Long Island City, NY 11101

09/03 Printed in the USA

©T.E.C. Systems 2003 All rights reserved

