

Energy Audit – Government Offices NYPA / NYC Division of Citywide Administrative Services One Police Plaza New York, New York

Program

NYPA Comprehensive Energy Audit

Scope of Services

- Analyze Utility Data
- Review Facility Documentation
- Facility Surveys
- Perform Infrared Imaging
- Develop DOE 2.1E Computer Model
- Identify Energy Conservation Projects
- Quantify Carbon Mitigation Benefits
- Prepare Comprehensive Audit Report

Level of Involvement

Prime Contractor

Facility Size

1,000,518 sq. ft.

Facility Type

Offices, public assembly, parking, data centers

Project Recommendations

- Install Digital Addressable Lighting Interface (DALI) lighting system
- Upgrade lighting fixtures in selected areas
- Replace Incan. & HID lighting with CFL
- Rebuild main AHUs including efficient motors & VFDs
- Install BMS, replace return fan and install new dampers
- Install variable air volume terminal system
- Install efficient motors
- Install VFD on primary cooling tower
- Install water side economizer
- Upgrade snow melting system
- Install condensate heat recovery for DHW

Project Costs

Installation Cost: \$15,822,500

Simple Economic Payback: 20.1 years

The facility had undergone a lighting retrofit that upgraded the T12 fluorescent lighting to T8 lamps and electronic ballasts throughout most of the building. However, the floor plan design has changed significantly since the buildings construction so there were opportunities for building was



One Police Plaza

constructed as open floor plan with lighting switches that controlled large grids of fixtures. The space has been divided into smaller offices, conference rooms, etc. with no means for individual control. We assessed a digital addressable lighting interface (DALI) based system that would enable occupancy based lighting control throughout the building.

The facility is heated and cooled through perimeter induction units and core air handling units dedicated to each floor. These systems were largely untouched since the original construction and were in need of upgrade and enhanced control capabilities. The terminal units are self powered variable air volume devices that fail in the open position. The current generation of this equipment is configured entirely differently and cannot be retrofitted into the existing conditions. Complicating their replacements was the fact that the air system operates at high pressure, which few diffuser types can accommodate. Working with a manufacturer, we developed a custom approach that solved the problem. The building was modeled using DOE-2.1 to evaluate the energy savings. EME recommended fourteen specific energy efficiency projects that are expected to reduce total energy costs by 25%.