



Case Study

U.S. Coast Guard Integrated Strategic Command Boston, MA



PROJECT HIGHLIGHTS

Environmental Benefits

2,933.49 tons of harmful greenhouse gas emissions reduced annually

Equivalent to:

- Preserving 19.7 acres of forest from deforestation* or
- Conserving 5,627 barrels of oil*

Capital Costs

\$5,755,000

Annual Savings

\$369,661

Schedule Compliance

Completed on time

Budget Compliance

Completed within budget

* Sources:

- Leonardo Academy's Cleaner & GreenerSM Emissions Reduction Calculator
http://www.cleanerandgreener.org/resources/emission_reductions.htm
- U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator
<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

PROJECT DESCRIPTION:

Energy Savings Performance Contract

Challenge: The United States Coast Guard (USCG) operates an Integrated Support Command ("USCG ISC") in the North End of Boston, Massachusetts and needed to upgrade the bases' facilities to achieve a higher energy efficiency level with a trustworthy, tested and qualified "partner." This highly-secure, mission-critical facility is a multi-building campus comprised of offices, berthing areas for servicemen, boat maintenance facilities including sandblasting and painting operations, and recreational facilities.

PROJECT SCOPE

Solution: ConEdison Solutions helped the Coast Guard achieve more energy-efficient heating and cooling of the buildings. The water-cooled centrifugal chillers installed to replace the DX cooling units help to reduce cooling costs by approximately 75%. This installation was done during normal business hours without disturbing the building occupants. Lighting fixtures were upgraded for improved energy efficiency. Inconsistency in water heating was addressed through the installation of three, more efficient DHW boilers. To centralize the monitoring and control of energy, remote control of all air handling and cooling units was established. The Coast Guards' boat grit-blasting room was retrofitted with updated makeup air systems, exhaust systems, and heating systems to reduce energy use during non-production hours, and increase energy efficiency during grit-blasting and painting operations. The winter-cooling air handlers were upgraded to allow free cooling during winter operations. The compressed air systems were upgraded with improved controls, heat recovery for space heating, better compressed air storage and distribution, and leak repairs.

ConEdison Solutions provided all the energy savings performance contracting services to the USCG ISC under the Department of Energy's Super-ESPC Contract.

ENERGY CONSERVATION MEASURES

Lighting Upgrade

- Installed occupancy sensors in offices and common areas
- Converted incandescent exit signs to LED
- Installed T-8 lamps and electronic ballasts

Multi-building Central Chilled Water Cooling System

- Installed a high-efficiency central plant sized for four of the major buildings
- Installed a chilled water distribution system throughout the four buildings

High-efficiency Condensing Domestic Hot Water (DHW) Boilers

- Installed three innovative condensing DHW boilers
- Re-piped the entire DHW system eliminating the need to operate existing large boilers

Energy Management and Control System (ECMS)

- Installed a remote control system for all air handling and cooling units
- Replaced local thermostats with temperature sensors and enable/disable controls

Air Distribution Systems

Installed new variable air volume dampers and updated controls for improved energy savings

Compressed Air System Upgrades

Winter-Cooling Air Handling Unit Upgrades



Clients: Government & Non Profit Groups

FEDERAL

Federal Aviation Administration
New England Region,
Burlington, MA

General Services Administration (GSA),
New York, NY

GSA Department of Justice, Dallas, TX

GSA Federal Court House Building,
Fort Lauderdale, FL

GSA Internal Revenue Service,
Farmers Branch, TX

GSA Northeast Region, Boston, MA

GSA R.L. Timberlake, Jr. Federal Building,
Tampa, FL

National Archives & Records Administration
Boston, MA

Veterans Administration (VA)
VA, Bronx, NY
VA, Queens, NY
VA, Westchester, NY
VISN #3, New York City Medical Center
New York, NY

STATE AND MUNICIPAL

Alexandria Sanitation Authority, VA

Arlington County, VA

Bergen County Utility Authority,
Little Ferry, NJ

Buchanan County, MO

City of Boca Raton, FL

City of Charlottesville, VA

City of Ft. Myers, FL

City of Hialeah, FL

City of Pittsburg, KS

City of Tallahassee, FL

City of Temple Terrace, FL

City of Winter Haven, FL

City of Ybor, FL

Essex and Union Counties, NJ

FL Dept. of Environmental Protection,
Tallahassee, FL

FL Department of Management Services,
Miami, FL

Hernando County Government,
Brooksville, FL

Kansas Insurance Department,
Topeka, KS

Loudoun County, VA

Miami-Dade County, FL

Middlesex Water Company, NJ

Missouri State Fairgrounds,
Sedalia, MO

New York Power Authority, NY

Plant City Public Works, PA

Polk County Government,
Bartow, FL

Southbridge Water Department,
Southbridge, MA

St. Lucie County,
Fort Pierce, FL

FL Division of Fruits & Vegetables,
Winter Haven, FL

Suwannee County,
Live Oak, FL

Trenton Water Works, NJ

CORRECTIONAL FACILITIES

Arlington County Justice Center, VA

El Dorado Correctional Facility, KS

Lansing Correctional Facility, KS

Norton Correctional Facility, KS

Winfield Correctional Facility, KS

U.S. POSTAL SERVICE

Atlanta Bulk Mail Center, GA

Barrigada Main Post Office (MPO), Guam

Billings Processing & Distribution Center (P&DC), MT

Central Florida District, FL

Chattanooga P&DC, TN

Cheyenne P&DC, WY

Denver, P&DC, CO

Dominic V. Daniels P&DC, Kearny, NJ

Eugene P&DC, OR

Grand Central Station MPO, New York, NY

Honolulu P&DC, HI

JFK Air Mail Facility, New York, NY

Kilmer P&DC, Edison, NJ

Los Angeles, P&DC, CA

Manasota P&DC, Sarasota, FL

Miami, P&DC, FL

Morgan P&DC, New York, NY

Phoenix General Mail Facility, AZ

Reno P&DC, NV

San Francisco, P&DC, CA

San Juan P&DC, Puerto Rico

Spokane P&DC, WA

Springfield P&DC and National Distribution Center, MA

Suncoast District, FL

Teterboro P&DC, Teterboro, NJ

Trenton P&DC, NJ

Westchester P&DC, White Plains, NY

Whippany P&DC, Kearney, NJ

SES Contracts awarded for: AK, AZ, CA, Caribbean Region, CO, Guam, HI, ID, NJ, NV, NY, OR, UT, WA, and WY

U.S. MILITARY

Florida Department of Military Affairs,
St. Augustine, FL

Hanscom Air Force Base,
Bedford, MA

MacDill Air Force Base,
Tampa, FL

National Naval Medical Center,
Bethesda, MD

Naval Air Station,
Jacksonville, FL

Tyndall Air Force Base,
Panama City, FL

U.S. Army Garrison at Fort Hamilton,
Brooklyn, NY

U.S. Army Reserves,
New York, NY

U.S. Coast Guard,
Boston, MA

U.S. Navy, District of Washington

Anacostia Annex,
Washington, D.C.

U.S. Navy, Washington Navy Yard,
Washington, D.C.

MUSEUMS

John F. Kennedy Presidential Library and Museum,
Boston, MA

Museum of Science and Industry,
Tampa, FL

U.S. Naval Museum,
Washington, D.C.

USS Intrepid Sea, Air and Space Museum,
New York, NY