

# Performance Contracting

## Walter Reed Army Medical Center Washington, DC and Silver Springs, MD

**Project Cost:** \$21.5 million

**Annual Cost Savings:** Over \$1.2 million

**Cooling Capacity:** 8000-tons

**Facility Description:** Medical Center comprised of over 50 buildings and more than 9,500,000 square feet of facility space

**Contract Term:** 25-Year Energy Savings Performance Contract



NORESCO has implemented \$21.5 million in energy efficiency and infrastructure solutions for Walter Reed Army Medical Center's Washington, DC and Silver Springs, MD facilities designed to save more than \$1.2 million annually in energy and operating costs.

Walter Reed Army Medical Center is an integrated health care delivery system offering military families, in and around Washington, D.C., access to quality, comprehensive medical care, and is the Army's largest health care delivery system providing over 1,500,000 outpatient visits, over 15,000 ambulatory surgeries and almost 15,000 inpatient admissions to beneficiaries from the National Capital Area (NCA) and from around the world.

NORESCO's project involves a four-phase effort consisting of a total redesign of the heating, ventilating and air conditioning (HVAC) system, central cooling plant upgrades, steam distribution upgrades and various energy efficiency improvements to the mechanical, electrical and building shell systems.

NORESCO designed a comprehensive program that involved the redesign of the HVAC system including replacement of the existing equipment with energy efficient equipment, reduction in the operating hours of the equipment by employing occupancy-based controls, connection of twelve air handling units with heat/cooling recovery systems to existing ductwork, and overall HVAC system maintenance. This phase of the program is currently under design review by the Army.

In 1999, NORESKO implemented innovative solutions in two phases. Valued at over \$7.6 million, the projects involved proven energy infrastructure upgrades including an 8000-ton central cooling plant, installation of a new 900-ton electric centrifugal chiller, steam distribution system upgrade, installation of piping and equipment insulation, high-efficiency motors and lighting retrofits.

*"NORESCO accomplished significant improvements contributing to our efficiency goals; their personnel conducted themselves professionally and competently. I unreservedly recommend them to any installation wanting to establish an ESPC partnership."*

Ronald Scott  
Energy Conservation Officer  
Walter Reed Army Medical Center,  
Silver Springs, MD

In 1996, NORESKO implemented a \$1.5 million comprehensive energy efficiency upgrade at Forest Glen Annex in Silver Springs, MD, a location that has a commissary, laboratories, daycare facilities, laundry, research and maintenance facilities. The project, constructed over a two-year period concluding in 1998 served 23 buildings, and entailed lighting upgrades, constant-volume to variable-volume conversions, heating system improvements and motor, boiler and window air conditioner replacements.

An energy management system (EMS) was also installed during this Phase along with heat pump controllers and a laundry heat recovery system. NORESCO replaced electric hot water heaters with gas-fired units. As part of the project, gas service was installed to each of the units. Two inefficient heating boilers were also replaced with three new high-efficiency boilers staged by the EMS to optimize their energy usage.

PROJECT PHASE	ENERGY EFFICIENCY AND INFRASTRUCTURE IMPROVEMENTS
I	Energy management system to control space temperatures and set points for boilers, chillers and variable speed drives
I	Heat reclamation of an inoperable waste heat recovery system
I	Heating and piping insulation
I	Electric to gas water heater conversions of nine water heaters
I	Variable speed drives to modulate the speed of AHU, pumps and exhaust fans
I	High-efficiency motors on fans and pumps
I	Heat pumps upgrades and controls to optimize operations
I	Boiler upgrades including replacing 2 boilers with 3 efficient boilers staged by the EMS
I	37 high-efficiency window air conditioners
II	Upgrade 8000-ton central plant including new chillers, piping and automation systems
III	Sprinkler system
III	900-ton electric centrifugal chiller, 3 new primary chilled water pumps and cooling tower
III	Steam distribution system upgrade including replacement of 338 traps with steam condensate removal systems
III	770 linear feet of piping and equipment insulation
III	24 high-efficiency motors installed
III	Lighting retrofits for over 5300 fixtures
IV	Total redesign of HVAC system

Overall, NORESCO has identified more than \$70 million in improvements which, if fully implemented, will save the Walter Reed Army Medical Center over \$8 million in energy and operating costs per year, including more than \$1.9 million in annual operations and maintenance savings.

NORESCO is the nation's most experienced energy service company providing comprehensive and proven energy-efficiency solutions and infrastructure development and operations strategies to a wide range of customers. A recognized industry leader installing and operating over \$1.4 billion of proven energy solutions in diverse markets across the nation, NORESCO has built on-site energy infrastructure generating more than 300 megawatts of power, and has helped customers improve energy efficiency saving over 31 billion-kilowatt hours of electricity and 71 trillion Btus of fuel.

