Industrial Installation Sustainability

Defense Logistics Agency, Defense Supply Center Columbus

Introduction

The Defense Supply Center Columbus (DSCC) is home for approximately 8,600 personnel representing active duty and reserve components, Department of Defense civilian and contractor employees, and other federal agencies. The site covers 530 acres of relatively flat, well-drained terrain. It is bounded by Broad Street (State Route 16) on the south, James Road on the west, Yearling Road on the east, and the Norfolk-Southern/Conrail tracks on the north. The facility straddles the communities of Whitehall and Columbus, Ohio. Columbus is the capital city of the state of Ohio and the 16th largest city in the United States. The economy is based on a strong and diverse mix of state, city, and federal government, Fortune 500 companies, technology, education, and medical research. An estimated 750,000 people live in Columbus and its suburbs. The city has been considered to be a "typical" American city mirroring the racial and ethnic diversity of the United States. The median income for a household in the city is approximately $38,000.

The site where DSCC is located was originally constructed in 1917 as a warehouse and distribution facility for the United States Military. Today the facility's primary DLA missions includes Maritime (Navy) customer and supplier (acquisition) operations; Land (Army and Marine Corps) supplier customer and supplier (acquisition) operations; (military) electrical and mechanical product testing in support of weapons and weapons systems; disposal and marketing of active duty and reserve component excess inventory; and providing a safe, secure, and energy efficient facility with appropriate employee amenities and services that has minimal negative environmental impacts.

The facility has 55 buildings with an additional three buildings under construction at 80 percent complete. These buildings house multiple Defense Logistics Agency (DLA) tenants including DSCC Maritime Customer Operations, Maritime Supplier Operations, Land Customer Operations, Land Supplier Operations, Defense Reutilization and Marketing Service East Region

(DRMS), Defense Reutilization and Marketing Office, Columbus (DRMO), DLA Product Testing Center and Mechanical and Electrical Labs, DLA Civilian Personnel Support Center, DLA Human Resources Operations Center, DLA Document Automation and Production Services (DAPS), DLA Information Technology (J6), and DLA Training Center (DTC). Non-DLA tenants include Defense Finance and Accounting Service, Defense Industrial Security Clearance Office, Ohio State University Occupational Medicine, Small Business Administration, Directorate for Industrial Security Clearance Review, Defense Criminal Investigation Service, Defense Information Systems Support Activity, U.S. Army Corps of Engineers, U.S. Navy and U.S. Army recruiting offices, and the Ohio Army National Guard Readiness Center.

The site is managed by DLA Enterprise Support Columbus (DES-C). DES emergency response personnel routinely provide facility personnel and the City of Whitehall, Ohio, with fire fighting and emergency medical technicians, which maintains an excellent readiness level for these personnel. Public Safety personnel also participate in facility exercises and coordinated emergency response planning, exercises, and regional conferences with the local governments and agencies. DES Environmental, Safety and Occupational Health (DES-CE) personnel work with state, local and federal agencies, the Red Cross, and facility and community stakeholders.

Background

Electricity, natural gas, water and paper consumption; solid waste and green house gas generation; and fuel management constitute the significant DSCC environmental aspects. Procurement associates work with parts suppliers to provide military customers with green product choices, such as cadmium-connector alternatives. The facility is also faced with growing security requirements to maintain vegetation free areas while reducing or maintaining pesticide application levels.

The DSCC sustainability approach includes DLA tenant organizations and DES-C departments, and is manifested in the DSCC Environmental Management System (EMS). Organizational objectives of DAPS and J6 provide DSCC associates with goods and services that meet sustainability criterion. DSCC Public Affairs works with Morale, Welfare, and Recreation (DES-CQ), DES-CE, and Ride Share to provide facility associates with frequent messages encouraging recycling, energy and water conservation, van pooling, and double-sided printing and copying. These messages are heard over a facility wide audio system. These messages are also provided on the electronic marquis, as screen savers and on the Message of the Day website. Facility associates and other Department of Defense (DoD) employees attend a green procurement course taught on site by the DLA Training Center. EMS refresher training is also offered through the Supervisor's Tool Kit. The Senior Partner's meeting provides the DSCC EMS Management Representative (EMR) with the opportunity to provide updates and progress reports to on-site senior DLA and non DLA management. The DES-C Site Manager's meetings provide daily and weekly opportunities to discuss environmental projects managed by Installation Management and Morale, Welfare and Recreation.

Program Summary

Achievement of the sustainability objectives specified in Executive Orders (EOs) 13423 and 13514, and multiple public laws (Title IX of the Farm Security and Rural Investment Act of

2002, Energy Policy Act 2005, and Energy Independence and Security Act 2007) provide the basis for environmental projects managed by DES Installation Management (DES-CI) and DES-CQ. Old natural gas boilers have been replaced with energy efficient ones; old light fixtures and switches have been replace with new fluorescent fixtures and motion sensing switches; old building cooling systems have been replaced with energy efficient units; and old windows and insulation have been replaced or enhanced to conserve energy. These projects have reduced energy consumption by 24 percent of the 2003 consumption rates.

Morale, Welfare and Recreation manages the facility recycling program, cafeterias, Child Development Center (CDC), and Recreation Center. White paper is the single largest volume material recycled from DSCC office buildings. Other facility activities generate cardboard, metals, wood pallets, concrete, and plastic. The cafeteria operation implemented a program to reduce disposable cup volume by having customers bring their own mugs. Energy savings were also achieved by removing the lights on vending machines. The new addition to the CDC, which is under construction, will meet Leadership in Energy and Environmental Design (LEED) Silver criteria.

DSCC Maritime and Land supplier operations follow DoD and DLA guidance when working with suppliers to provide green weapon system alternatives. A major award-winning effort was undertaken to identify cadmium-plated electrical connector alternatives.

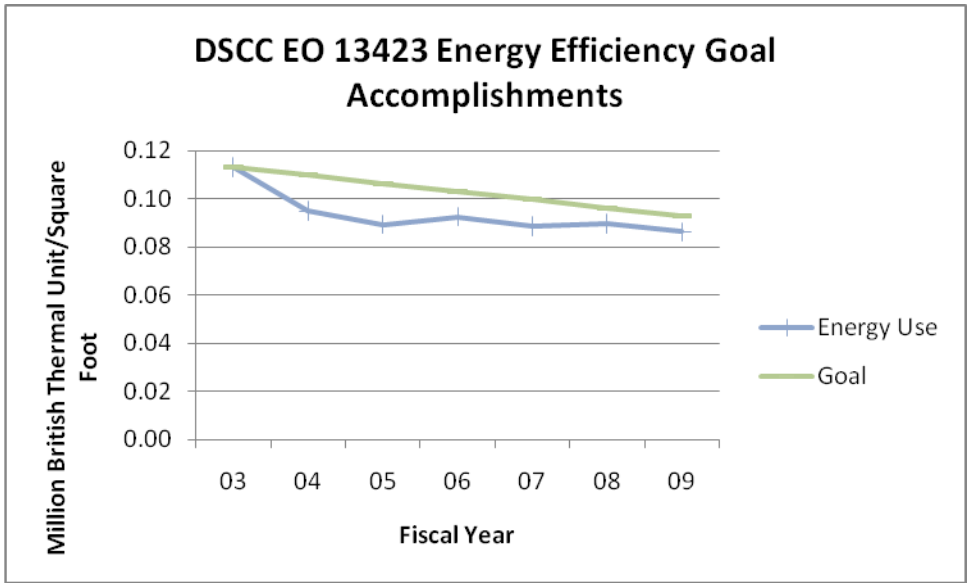
DSCC DAPS implemented their organizations' green procurement programs, which are based on referenced executive orders and public laws. Virtually all of the paper used for printing and copying has 50 percent post-consumer fiber content. Soy based ink is used and completed projects are delivered to customers utilizing the manufacturer's original packaging and pallets. When electronic equipment is replaced by DLA J6, the new equipment is Electronic Product Environmental Assessment Tool (EPEAT)-registered electronic equipment. The ENERGY STAR power management system is activated when new equipment in installed. Employees are encouraged to shut down their equipment when leaving work; and the computer network can shut down during off hours.

The two Product Test Center Labs, Electronics Test Lab and Mechanical Test Lab, at the DSCC installation built their operations reutilizing used equipment. As new testing processes, protocols, and equipment were developed for commercial use, the DLA Product Testing Center Columbus sought to improve their capabilities and testing processes by acquiring additional equipment from DRMO and other sources of used equipment. This equipment was reconditioned, rebuilt or upgraded to provide new testing capabilities. These sustainable practices have saved millions of dollars and created a DSCC testing source that competes with organic and private sector test sources on cost and lead time.

Most recently, the Mechanical Test Lab purchased for $98,000 a used Coordinate Measuring Machine (CMM) to test weapon system spare parts. The CMM measures spare part dimensional tolerances to ensure they meet military specifications. The Lab saved the government about $150,000 by purchasing the machine shown below and reconditioning it.

Accomplishments

The most significant DSCC accomplishment is exceeding the EO 13423 energy efficiency goal of 3 percent annually relative to the fiscal year 2003 baseline. Through FY09, DSCC reduced its energy intensity by 24 percent versus the 18 percent EO 13423 energy efficiency goal (i.e., 3 percent per year x (2009 - 2003) years).



Multiple energy conservation projects were designed and implemented by DES-I during FY08 and FY09. The decentralization of the facility heating system was the single largest project worth over $3,000,000. The project removed a large boiler and heat distribution system and replaced it with several building specific boilers. The result was a system that more directly meets DSCC customers' needs while reducing losses and waste, particularly on mild weather days. The construction also included recycling of the existing steel and concrete distribution

system, and therefore, reduced waste stream impact by 86 percent. The net energy savings from the project can be directly calculated by comparing the base energy consumption from FY 08 to FY 09. The result was a decrease of 28,745 MCF (thousand cubic feet) of natural gas, which when multiplied times the average purchase price for the base during FY 09 of $7.69 equals a cost savings of $221,049 and 1,725 tons of carbon dioxide (CO_2) green house gas. This savings is an annual savings that should be realized for many years to come.

"Free Cooling" projects also contributed to achieving the energy efficiency goal. During FY 08 and FY 09, three significant projects were added that utilize "free cooling" to reduce the amount of electric energy consumed to ensure proper creature comfort. In Buildings 10 and 11, the building's construction (e.g., no insulation) and activities (e.g., equipment use) allow heat to accumulate. As a result, cooling is required even when the outside temperature is very cold. To serve the customers' cooling needs, but reduce the amount of cooling required, two sections within Bldg 11 were renovated (Sections 10 & 11). These renovations provided the ability to draw in large volumes of cool "outside air" when the conditions are favorable. As a result, the customers enjoy a comfortable environment while the energy load required is greatly reduced. The same concept was applied on a larger scale in two related projects in Buildings 10 & 11. In those projects, the required cooling load was met by utilizing a cooling loop that draws "outside air" over a specially installed cooling coil, which then circulates the cool water back into the buildings to match the load. Engineering estimates of the savings resulting from these projects show an expected $50,000 annual savings.

Additional energy savings were achieved by replacing old energy inefficient chillers at Buildings 10 and 11, and implementing a more managed approach to shut down the lights and HVAC system in Bldg 20 during holidays, weekends, and after 6 PM during the week. Associates needing to work beyond normal work hours simply request lights and cooling for the section of the building where they will be working.

Judging Criteria

Program Management. The Environment, Safety and Occupational Health organization maintains the DSCC Environmental Management System, in which all organizations participate. Individual DLA organizations manage their own programs. DLA Enterprise Support-Columbus meets customer's needs and energy efficiency goals specified by EO 13423 by centralizing all projects within the Installation Management function.

Technical Merit. Each DLA organization utilizes the latest technologies, products and services to achieve their green procurement or energy efficiency goals. Alternatives for cadmium-plated electrical connectors have been identified; 50 percent post-consumer fiber content paper is used for printing and copying; replacement electronics equipment meets EPEAT standards where such standards exist; energy efficient boilers, lighting, and cooling equipment have resulted in a 24 percent reduction vs. an 18 percent reduction target; and used/reconditioned test equipment have saved money while providing state of the art product testing services.

Orientation to Mission. All projects are mission focused. Each DLA organization at the Defense Supply Center Columbus provides its customers with the best products and services in support of the warfighter and managed weapons systems. The DSCC elements of the Product

Test Center work with the Maritime and Land supplier and customer operations to verify the quality and identify the cause of failure of weapon system components. DAPS provides paper and printing services that exceed E.O 13423 requirements. DLA J6 replaces outdated electronics with new energy efficient equipment and handles customer's needs via a help desk function. DLA Enterprise Support Columbus provides security, fire protection, environmental and safety services, building management and custodial service, cafeterias, recreational equipment, exercise facilities and a golf course to meet on-site personnel needs and mission needs. Grounds maintenance and snow removal are provided on a seasonal basis.

Transferability. The successes of the various DLA organizations at DSCC have been shared within DLA and the military branches. Any facility with a central heating plant and cooling requirements can achieve energy savings by studying DSCC's successful energy projects.

Stakeholder Interaction. DSCC associates and federal employees in Central Ohio read stories in the Columbus Federal Times and the DLA and DSCC intranet websites that highlight the achievements mentioned above. Regular project presentations are made at the DSCC Commander's meeting, DES Site Director's senior partners and staff meetings. Meeting minutes are published to the DSCC website for maximum availability to all associates.