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# Rising to the TOP

**New Department  
of Defense  
complex seeks  
LEED Gold status**





# Rising to the Top

*Army Corps of Engineers' largest construction project to date aims for LEED Gold certification*

By JoAnne Castagna, Ed.D.

It's been called the new centerpiece of Alexandria, Virginia—the multi-story Department of Defense (DoD) administrative office complex. The new facility is now the tallest structure in the region and tallest building ever erected by the US Army Corps of Engineers. But what isn't as obvious as the building's beautiful appearance may be even more impressive.

The towering building is the Army Corps' first project of this size that is working toward Leadership in Energy and Environmental Design (LEED) Gold building certification. The facility will use 30 percent less energy than a traditional complex and save taxpayers millions of dollars; no other building in metropolitan Washington, DC, can make that claim. Here's a look at how this high-profile and eco-friendly project progressed.

## Expansive and impressive

In March 2009, the Army Corps' New York District began constructing the design-build complex located at the Mark Center in Alexandria, in partnership with Duke Realty Corporation and Clark Construction.

The complex will be home to multiple DoD agencies that are currently occupying leased space throughout the national capital region and will also include the Washington Headquarters Services, the BRAC executive agent for these DoD customers. The project implements the 2005 Base Closure and Realignment Commission Recommendation No. 133 and, when completed in September 2011, will become a part of Fort Belvoir.

The new 1.7 million-square-foot facility sits on a 16-acre campus. When construction is complete, it will be comprised of two multi-story towers (15 stories and 17 stories), two parking garages, a visitor center, a remote inspection facility, and a public transportation center that will service the Mark Center and surrounding community.

The city of Alexandria and other team members stressed the importance of making this complex LEED Gold-certified and the Army Corps made this its mission. "Originally our goal was to make part of the complex LEED Silver-certified and another part LEED Gold-certified," says Joanne Hensley, Chief, Project Development, BRAC 133 Project, New York District, US Army Corps of Engineers. "We reviewed our original design plans and realized we were only shy one point from having the entire complex being certified LEED Gold, so we are shooting for LEED Gold for the whole complex."

LEED is an internationally recognized green building certification system that was developed by the US Green Building Council. There are different levels of certification based on the number of points earned, and LEED Gold certification is among the top certifications that can be obtained.

## Road to LEED Gold

To achieve LEED Gold certification, the Army Corps is designing and constructing the complex using cutting-edge strategies to earn LEED credits. The following features are estimated to reduce energy usage by 30 percent:





*In April 2010, the Army Corps team installed pre-cast exterior wall panels to the DoD project's 17-story and 15-story office towers.*

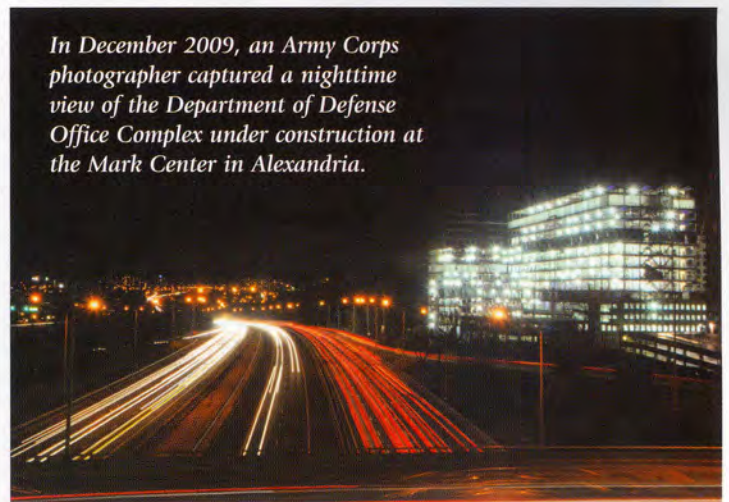
**Indoor lighting.** The Army Corps team is taking measures that will ensure all of DoD personnel will have adequate lighting that is also saving energy. The entire complex will have light-emitting diode (LED) and fluorescent lighting that will cost a bit more to purchase upfront, but will reap tremendous savings down the road. This type of lighting requires less electricity to run, and LED and fluorescent light bulbs last longer than typical bulbs—up to eight years longer.

Energy will be further conserved by using room occupancy sensors that will automatically turn lights on and off. The building's design also maximizes natural light. The complex will feature large shatter-proof windows that will allow copious outside light into the building. To help spread this light throughout the building, work stations inside the complex will feature low cubicle partitions.

**Indoor air quality.** Low cubicle partitions also will help facilitate air circulation and improve air quality. The complex will have an energy-efficient central air system that will keep the indoor air comfortable year-round for the personnel. To conserve this air, the complex's large windows will be highly insulated to prevent air from leaking outside the building.

Fresh outside air is also necessary to have healthy indoor air quality. A system will be put in place that will enable personnel to allow fresh outdoor air into the building, without wasting considerable energy.

The team is also constructing green roofs on top of the



*In December 2009, an Army Corps photographer captured a nighttime view of the Department of Defense Office Complex under construction at the Mark Center in Alexandria.*

complex's Visitors' Center and Remote Inspection Facility. Green roofs are rooftops with vegetation on them. Green roofs are aesthetically pleasing, but also hold in warm indoor air during the wintertime and keep building interiors cool during the warmer months.

Another way the team is keeping indoor air comfortable is by installing special rooftops on some of the structures that will reflect the sunlight away from the buildings, keeping indoor air cool during the warmer months.

Indoor air toxins are also a threat to air quality, and the team is taking measures to minimize this issue. One of the



## FEATURE

ways they are doing this is by using paints, carpets, and wooden furniture that emit lower levels of toxic fumes.

After the structures are painted, carpeted, and furnished, the team will air out the structures before the DoD personnel occupy the space. In addition, the DoD has agreed to use low-toxic cleaning products inside the building after they move in.

**Water efficiency.** The complex will use almost 50 percent less water than a traditional building of the same size—a savings of 4.5 million gallons of drinking water annually. To accomplish this, low-flow faucets, toilets, and shower heads will be used inside the complex. Outside the complex, there will be no landscape irrigation and landscaping will feature only drought-tolerant native plants. The team also is constructing a bioswale outside most of the main structures. Bioswales are basically ditches that catch rain water, slow the water runoff from the site, and capture sediment

and contaminants before they go into the storm drains.

**Recycling system.** When the project is completed in September 2011, it is estimated that 6 million pounds, or 75 percent, of construction waste will be recycled and not placed in disposal sites. The team also is recycling some of the trees it had to remove to construct the complex. The wood from these trees is being used to create wall paneling for some of the complex's interior.

Recycling will continue once personnel occupy the building. Personnel will have access to a 500-square-foot recycling area at the building's loading dock. There will be various recycling bins available in the recycling area as well as on each floor of the towers.

**Transportation support.** The DoD agencies occupying the complex will encourage employees to take alternate ways to commute to work that will save energy and reduce pollution. They are doing this by providing special

parking for van pools, carpools, and fuel-efficient hybrid vehicles in the complex's two parking garages and providing 300 bicycle racks and showers for bicyclists. The complex also will have its own mass transit center with access to the Metro Bus, Dash Bus, and DoD shuttle services.

Sean Wachutka, Program Manager, BRAC 133 Project, New York District, US Army Corps of Engineers, has worked for the Army Corps for 35 years. He has worked on some of the largest dam projects and overseas missions, but says this project is the most incredible mission he has ever experienced. "Green building standards are slowly being worked out. They are going to get better as we go along and the Army Corps is helping to lead the way in moving them forward," Wachutka says. ■

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Steel deck bed shown with underbed storage, nightstand and pedestal desk. Accented with wood laminate Living Accents<sup>®</sup>.



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Bunked lift beds shown with nightstand and wall unit w/ desk surface. Accented with wood laminate Living Accents<sup>®</sup>.