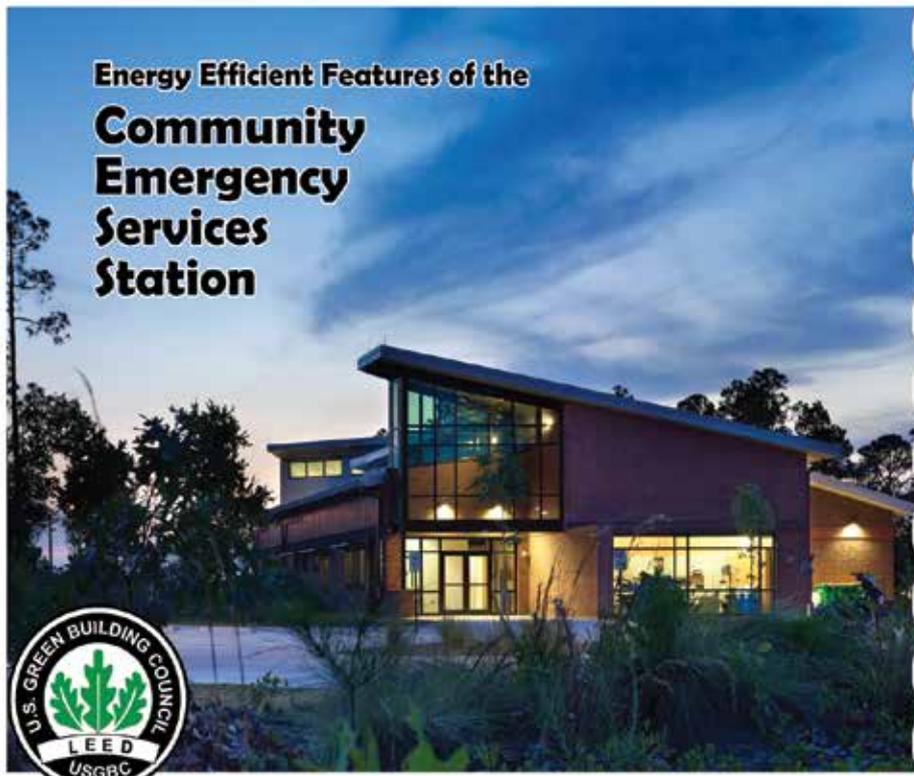


Achieving Environmental Sustainability Through Military Construction

As the design and construction agent for the Army, the U.S. Army Corps of Engineers builds efficient and sustainable facilities to meet future missions and support soldiers and families. The construction of Corps projects at Fort Bragg, N.C. and other military installations involves the use of eco-friendly practices which meet minimum criteria of Leadership in Energy and Environmental Design (LEED) Silver, as mandated by the Army in 2008. Established and managed by the U.S. Green Building Council, the LEED rating system incorporates

a point-based “checklist” used to evaluate a building’s design. The more environmentally friendly features a building has the higher it will score in the LEED system. Buildings that qualify as LEED certified can be rated as Certified, Silver, Gold, and Platinum. The Savannah district projects highlighted here are examples of how military construction is achieved in an environmentally sustainable way, by meeting LEED standards. 

By Rashida Banks, Corporate Communications Office



Energy Efficient Features of the Community Emergency Services Station

- 1 Geothermal Heat Pumps**
- 2 Solar Thermal Water Heating**
- 3 Recycled Building Materials**
- 4 Drought Tolerant Landscaping**
- 5 Rainwater Capture**
- 6 Daylight Sensors**
- 7 Construction Waste Recycled**
- 8 Local Suppliers**
- 9 Energy Efficient Plumbing**
- 10 Air Sensors**
- 11 Building Occupant Controls**

The \$2.6 million Community Emergency Services Center (Shown left) at Fort Bragg is the first LEED Platinum certified facility in the Army. Completed by the Savannah district in March 2011, the 8,300 square-foot facility includes mechanisms that save 35 percent more energy than a typical building of its kind. Additionally, the project received national recognition through the 2012 Chief of Engineers Awards of Excellence in two sustainability categories: “Lean, Clean and Green” and “Building the Future.” *Illustration by George Jumara.*

1. Geothermal heat pumps cool and heat the facility. They use the earth’s moderate and consistent temperature to heat and cool water in pipes drilled 400 feet into the ground. The water temperature from the ground helps heat air in the winter and cool air in the summer.
2. Solar thermal water heating system offsets at least 7.5 percent of total building energy costs.
3. Twenty percent of the products used to construct the building consist of recycled building materials.
4. Outside the building, native and locally-adapted, drought-resistant plants eliminate the need for any irrigation beyond the first year of establishment.
5. Rainwater, captured from the roof, feeds a 10,000-gallon cistern below the ground, which collects an estimated 45,000 gallons of water each year to flush toilets and wash vehicles.
6. Daylight sensors adjust the artificial light based on the amount and brightness of natural light. This energy saving strategy provides consistent light levels throughout the day while reducing lighting costs.
7. Ninety percent of construction waste and debris was recycled.
8. Local suppliers provided most of the materials for construction, reducing the amount of energy to transport them.
9. Low-flow toilet fixtures use less collected rainwater, making it available to wash vehicles.
10. Air sensors help ensure that indoor environmental air quality is adequate for ventilation.
11. Building occupants control their lighting and thermal comfort through the use of day lighting, artificial overhead lighting, thermostats, and operable windows.



The photovoltaic solar collectors mounted on the roof of the new \$28 million Battle Command Training Center can produce 25 kilowatts of electrical power using renewable energy, which helps the Army meet its renewable energy goals. Once completed, the 148,000 square-foot facility will be used to train soldiers, leadership teams, and units the skills necessary for successful battle command. *USACE Photo by Tracy Robillard.*

LEED Certified Facilities at Fort Bragg

Project	Level
4th Brigade Combat Team TEMF*	Silver
FORSCOM/USARC Headquarters (Marshall Hall)	Gold
Training Support Center	Gold
Community Emergency Services Center	Platinum
Blood Donor Center	Silver
Warrior in Transition Dining Facility	Silver

**Tactical Equipment Maintenance Facility*

U.S. Army Forces Command and Reserve Command

The new \$304 million combined headquarters for the U.S. Army Forces Command and U.S. Army Reserve Command (FORSCOM/USARC) at Fort Bragg was designed and constructed with sustainability in mind. The building's air distribution system lies under raised floors to improve ventilation efficiency, reduce energy use and increase comfort by allowing occupants to control air flow. The raised floor also allows for flexibility for reconfiguring walls. Other LEED features include reduced energy and water consumption, use of sustainable materials and environmentally friendly construction practices. The 631,000 square-foot facility was completed by the Savannah district in June 2011. As part of the Base Realignment and Closure Plan of 2005, the two headquarters were moved from Fort McPherson, Ga., to Fort Bragg. The facility is LEED Gold Certified. *Photo by Lawrence Stevens.*

