



**COMMUNITY EMERGENCY SERVICES STATION (CESS)
FORT BRAGG, NORTH CAROLINA**

34.1% reduction in energy costs (LEED)

82.8% reduction in water use

90.4% of construction waste diverted from the landfill

LEED Facts

Community Emergency Services Station (CESS)
Fort Bragg, North Carolina

LEED for New Construction Version 2.2
Certification awarded March 6, 2012

Platinum 56

Sustainable Sites 11/14

Water Efficiency 5/5

Energy & Atmosphere 12/17

Materials & Resources 8/13

Indoor Environmental Quality 15/15

Innovation & Design 5/5

*Out of a possible 69 points

Photography Courtesy of: Robb Williamson



COMMUNITY EMERGENCY SERVICES STATION (CESS)

Fort Bragg Receives LEED Platinum Certification

PROJECT BACKGROUND

The Community Emergency Services Station (CESS) in Fort Bragg, North Carolina is the first Army MILCON project awarded Leadership in Energy and Environmental Design (LEED) Platinum certification. The Community Emergency Services Station (CESS) is an 8,295 square foot emergency services station for the new Residential Communities Initiative (RCI) neighborhood (Linden Oaks) in the Northern Training Area (NTA) on Fort Bragg, NC. The facility provides fire, EMS and police services to approximately 5,500 Soldiers and Family Members residing in 1500-plus housing units. The primary facility includes one company fire station, an emergency services station, office space for police operations and customer service, a combination dayroom/training area, emergency medical services (EMS)/decontamination area, dorm rooms, a fitness center and a training room. This project benefited from an Environmental Security Technology Certification Program (ESTCP) grant of \$1.2 million to support design, monitoring and validation of a high performance sustainable building. The project demonstrates that off-the-shelf building materials and components and integrated design can result in a high performance facility.

STRATEGIES AND RESULTS

A key objective of the CESS project was to test and implement the Whole Building Design concept to create a building that performs better than one designed using traditional design practices. The project achieved LEED platinum certification for efficient water, energy, lighting and material uses in addition to numerous other sustainable strategies.

Although the CESS project was developed on a greenfield site, it limited construction site disturbance and the design maximized open space on the site by providing six times the amount of square footage required by LEED standards. The project utilizes bioretention cells in its stormwater management design that use plants and soils for the removal of 85% of pollutants from stormwater runoff. All of the hardscape on the site is high-albedo concrete with a Solar Reflectance Index (SRI) of 35, which qualified the project for an Exemplary Performance bonus point. The roofing materials chosen for the design also has a high SRI that helps to reject solar heat and minimize the heat island effect.

The CESS project chose to landscape with native plants that do not require irrigation beyond natural rain events. This strategy negated the need for a permanent irrigation system and has reduced the potable water needed on site by 100%. The project also installed high efficiency fixtures to reduce water usage. Captured rainwater supplies the total water demand for sewage conveyance. The combination of these two strategies has reduced potable water use for sewage conveyance by 100% from a calculated baseline design. The project gained an exemplary performance bonus for reducing potable water use by 52.1% from a calculated baseline.

In order to optimize the building's energy performance and reduce costs, the project used technologies such as an integrated concrete form envelope, daylight sensors, lighting controls, a ground source heat pump, and solar hot water.

During the construction of the CESS project, 55.29 tons of on-site generated construction waste was diverted from landfills. 28.5% of the building materials are made of recycled content and 24.83% were extracted, harvested, and manufactured within 500 miles of the project site. Rapidly renewable materials account for 2.97% of the total materials used and 81.99% of wood-based materials are FSC certified products.

The building is designed with a Dedicated Outside Air System to provide outside air that exceeds the ASHRAE 62.1-2004 minimum standards by more than 30%. All adhesives, sealants, paints, coatings, and carpeting were selected based upon their low VOC content. All permanently installed composite wood products had no added urea formaldehyde. Permanent installed recessed walk-off mats prevent dirt and debris from entering the building at the main entryways. This building also has a variety of lighting controls including manual on switching with dimmers, occupancy sensors, photocell sensors, time clock switching, and emergency on inputs. Through passive solar design strategies such as North-South orientation of the building, external light shelves on the southern exposure, clerestory windows, and high efficiency glazing to minimize heat gain, the project provides daylighting to 94% of all regularly occupied spaces as well as views for 92% of spaces.

The CESS project gained additional Innovation & Design credits for implementing an education program that included developing a signage program and conducting a guided tour to building visitors. The project also instituted a green housekeeping program that includes product standards that comply with the GreenSeal and Environmental Choice certification programs.

"The Fort Bragg Community Emergency Services Station is a great building with plenty of natural light in the apparatus bay, dayroom, fitness area, offices and dorm rooms. Being able to wash fire trucks and rescue vehicles with water collected from the roof is a huge benefit to the installation. Green housekeeping has been implemented not only at this station but at all stations across Fort Bragg--a great spinoff from the project. The facility is not only sustainable but great looking as well."

Mark Melvin- Fire Chief, Station 6, Linden Oaks



U.S. Army Engineer District, Savannah

- Owner:** US Army
- Architects:** HSMM AECOM
- HVAC Engineer:** HSMM AECOM
- Civil Engineer:** HSMM AECOM
- Contractors:** R.A. Connelly, Inc
- Commissioning Agent:** CH2M Hill
- Electrical Engineer:** HSMM AECOM
- Plumbing Engineer:** HSMM AECOM

Project Size: 8295 square feet
Total Project Cost: \$2,100,000
Cost Per Square Foot: \$255

Photographs Courtesy of: Robb Williamson - HSMM AECOM

ABOUT LEED

The LEED green building certification program is the national benchmark for the design, construction, and operations of green buildings. Visit the U.S. Green Building Council's Web site at www.usgbc.org to learn more about LEED and green buildings.

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