



## NEW HAMPSHIRE NATIONAL GUARD JOINT FORCES HQ READINESS CENTER CONCORD, NEW HAMPSHIRE

**25.0%** reduction in energy costs  
(LEED)

**44.0%** reduction in water use

**93.6%** of construction waste  
diverted from the landfill

### LEED Facts

New Hampshire National Guard Joint  
Forces HQ Readiness Center  
Concord, New Hampshire

LEED for New Construction Version 2.1  
Certification awarded September 21, 2009

**Certified 30**

Sustainable Sites 8/14

Water Efficiency 4/5

Energy & Atmosphere 2/17

Materials & Resources 3/13

Indoor Environmental Quality 9/15

Innovation & Design 4/5

\*Out of a possible 69 points

## READINESS CENTER

## Readiness Center Receives LEED Certification

## PROJECT BACKGROUND

The purpose of the 65,629 square foot New Hampshire National Guard Joint Forces HQ Readiness Center is to provide the Guard with a headquarters building that not only helps both military and civilian personnel with their peacetime missions, but also serves as a command center for New Hampshire state military forces under times of natural, weather-related incidents, or in the event of terrorist acts. The three-phased project included the addition of the 16,500 square foot, state of the art, Civil Support Team (CST) Facility which houses the twenty-two person, highly trained, response team for the aforementioned natural and manmade events. This specialized team also functions as the liaison between the military and the public during such events.

Located in a suburban area on the outskirts of Concord, New Hampshire's state capitol, the command center brings forth a strong military presence to the public as well as creates an iconic structure that now grounds the entire military base. The National Guard chose the project site, in part, due to the fact that both its overall geographic and physical locations, place the facility at a particularly centralized point in the State. It is across the street from the municipal airport and within close proximity to the major roadway networks for the State of New Hampshire and the New England region. It is located on the existing State Military Reservation and is part of the ongoing efforts to consolidate and realign both State and Federal military forces. A newer command structure has replaced multiple antiquated systems in order to reduce manpower and alleviate overlapping functions that previously existed. Both the Army and Air National Guard forces, as well as a civilian support staff occupy the building.

## STRATEGIES AND RESULTS

Prior to construction, a waste management plan was initiated in order to recycle as much construction debris as possible and reduce the amount of waste trucked to landfills. The result was a 95% recycling rate, which amounts to approximately 2,400 tons of waste diverted from landfills.

A large number of building products, especially major construction materials, were sourced from within 500 miles of the job site in order to reduce the consumption of fossil fuels during transportation. Many materials and furniture products with high recycled content were specified and used throughout the building, and, along with finishes, contain either low or no volatile organic compounds (VOCs). In the interest of indoor air quality, urea formaldehyde was chosen for exclusion in the building. As part of the LEED certification process, the building underwent a two week flush-out period to help ensure that any fumes left over from construction or off-gassing were eliminated prior to occupancy.

A large effort was made to reduce overall site disturbance and contain the new building footprint within the existing footprint or previously paved roads, taxiway and runway areas. Paved areas not taken up by building footprint were excavated and restored with topsoil. Specific parking spaces dedicated to car and van pools and the addition of bicycle racks also encourage the reduction of fossil fuel use.

Fifteen acres of endangered species habitat were restored on the State Military Reservation for the federally endangered Karner Blue Butterfly and the state endangered Frosted Elfin Butterfly. Plantings and vegetative species used in the restoration process were carefully selected to provide not only livable habitat areas, but also to provide nectar-producing plants as the butterfly species' food source. Landscaping was minimized and designed to require minimal maintenance and little to no irrigation.

Parking lots and strategically placed drainage swales divert run-off to bio-retention basins located around the building. A combination of the sandy soils and the selection of flood resistant plantings help to mitigate run-off and limit contaminants percolating back into the soils and ultimately the groundwater aquifer. The bio-retention areas were also sited and sized to accommodate the facility's storm water system. The 49,000 square feet of Energy Star roofing, chosen to reduce the urban heat island effect, drains to the bio-retention areas for mitigation. These strategies allow for the majority of run-off and storm water to be handled on site.

Energy efficiency is achieved through a geothermal heating and cooling system, daylighting techniques that bring light deep into interior spaces, occupancy sensors that minimize energy wastage, direct digital controls for maximum HVAC system efficiencies, as well as efficient lighting systems. Water is conserved through low-flow fixtures and waterless urinals used throughout the facility.



## New Hampshire Army National Guard

**Architect:** Oak Point Associates  
**Civil Engineer:** Oak Point Associates  
**Commissioning Agent:** Oak Point Associates  
**Contractor:** Harvey Construction Corporation of NH  
**Electrical Engineer:** Oak Point Associates  
**Interior Designer:** Oak Point Associates  
**Landscape Architect:** Oak Point Associates  
**LEED Consultant:** Oak Point Associates  
**Lighting Designer:** Oak Point Associates  
**Mechanical Engineer:** Oak Point Associates  
**Owner:** New Hampshire National Guard  
**Plumbing Engineer:** Oak Point Associates  
**Structural Engineer:** Oak Point Associates

**Project Size:** 82,014 square feet  
**Total Project Cost:** \$16,495,360  
**Cost per square foot:** \$180.81

**Photography Courtesy of:** Oak Point Associates

## 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](http://www.usgbc.org) to learn more about LEED and green buildings.

New Hampshire Army National Guard

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Construction and Facilities Management Office

