

# FISHERIES & WILDLIFE FIELD HEADQUARTERS WESTBOROUGH, MA

## KEY PARAMETERS

- Type of Installation – New Construction (NC)
- Function - State Government
- Area – 45,000 sq. ft.
- Project Completion – May, 2014

The project involved design and construction of a new \$25 million dollar Field Headquarters Building which included offices for 120 staff members, several classroom areas, field research labs, a GIS laboratory, conference rooms, and a 150 person flexible multi-purpose room. The building is situated on a bluff that overlooks a 1,000 acre wildlife management area.



**Challenge:** Sustainability. This project was chosen to be one of the first public sector zero net energy buildings in the state of Massachusetts.

**Solution:** Designers sought to achieve zero net energy through solar photovoltaics and innovative mechanical and air filtration systems as well as building envelope quality and the reduction of all energy loads through building management.



**MassWildlife**



Dynamic V8 Air Cleaning Systems were selected in the DOAS for their MERV 15 performance plus VOC reduction and superior capture of ultra-fine particles, and their ability to hold up to ten times the dust of standard cartridge and bag filters. Their low static pressure resistance reduces the amount of energy required to push air through the filtration system. Typical maintenance cycles run over three years which cuts operating costs to 1/3 that of other filtration systems.

Energy modeling guided the selection of the building site and as a result, the building was oriented to optimize production from the rooftop photovoltaic panels and to minimize heating and cooling energy use.

**Results:** The building achieved LEED® Gold certification. Energy use is approximately 60% below typical usage for this type of building. Modeling results also suggested that the designed building would reduce actual energy cost by 50.1% compared to the LEED baseline building.



The majority of energy savings were in HVAC energy. These savings resulted from improved heating performance (heat pumps use ~25% of the energy that electric resistance requires for the same load), exhaust air energy recovery (reduces ventilation loads by ~70%), demand controlled ventilation (reduces ventilation loads by ~50%), improved envelope performance, and the decoupling of the outside air system from space loads which reduces reheat.

## TEAM

- Owner – Commonwealth of Massachusetts
- Architect - Architerra, Inc.
- MEP Engineer - Van Zelm Heywood & Shadford
- Contractor – Columbia Construction Co.
- Energy Modeling – Demand Mgmt Institute
- HVAC – Geothermal & Heat Recovery
- DOAS Unit – DAC Sales

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