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## **Appledore Engineering's new \$2.24 million headquarters earns EPA's Energy Star**

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Appledore Engineering, Inc. headquarters at 177 Corporate Dr. has earned the U.S. Environmental Protection Agency's (EPA's) Energy Star, the national symbol for superior energy efficiency and environmental protection. This signifies that the building's energy performance rates in the top 25% of facilities nationwide.

Appledore's new 12,500 s/f headquarters earned a rating of 92 out of 100, placing the building's energy performance rating in the top 8% of facilities in the nation. Appledore's building is the only office building to date in New Hampshire to earn the Energy Star for 2009.

TRB Development Group, Inc.

built the \$2.24 million facility.

Here are some details regarding the new headquarters:

- \* The expected cost savings is \$4,200 annually.
- \* 97 Eagle performance class and grade C45 double hung windows with a thermal transmittance U-factor and maximum air infiltration rate of 0.3 cfg/s/f with low E argon filled insulating glass.
- \* (NLE)/T5 lighting.
- \* SIP panels are 10-1/4" engineered laminated composite panels consisting of structural grade oriented strand board (OSB), structural grade adhesive with expanded polystyrene cores with an ASHRAE thermal resistance factor of 37.9.
- \* Subcontractors included Royal Window and Door, Stellos Electric, Winterpanel, and Compass, LLC.
- \* The building is currently registered under LEED for existing buildings, Operation and Maintenance 2009 edition.
- \* The HVAC system (Daikin) is a VRV (Variable Refrigerant Volume) system. This enables the output of the outdoor units to be "varied" or modulated by the cooling or heating demands of the zone that it controls. This allows a user to heat in one office while cooling in the adjacent office. Since office buildings are subject to the fluctuating heat levels generated from electronic office equipment, lighting and varying occupant levels, the heat recovery system offers the perfect solution for stabilizing the air temperature by providing all the features of a heat pump system - and the added flexibility of simultaneous cooling and heating from one refrigerant pipe network. The heat recovery function is achieved by diverting exhaust heat from indoor units in cooling mode to areas requiring heating, and uses a electronic control unit to switch the indoor units from cooling to heating mode. The VRV system keeps running costs at an absolute minimum by controlling each zone individually and being able to shut down unoccupied areas.

It is currently registered under LEED for existing buildings, Operation and Maintenance 2009 edition. The energy efficiency of the Appledore Engineering building can be attributed to the design that

incorporates structurally insulated roof panels, energy efficient windows and lighting as well as a variable frequency drive heat pump mechanical system. Commercial buildings that earn the Energy Star use an average of 35% less energy than typical buildings and also release 35% less carbon dioxide into the atmosphere.

"Improving the energy efficiency of our nation's buildings is critical to preserving our environment and our natural resources, " said Kathleen Hogan, director of EPA's climate protection partnerships division. "From office buildings to hotels, supermarkets to schools, the Energy Star distinguishes those organizations who are taking environmental responsibility into their own hands."

Energy Star was introduced by EPA in 1992 as a voluntary, market-based partnership to reduce greenhouse gas emissions through energy efficiency. Today, the Energy Star label can be found on more than 60 different kinds of products, new homes, and commercial and industrial buildings. Products and buildings that have earned the Energy Star designation prevent greenhouse gas emissions by meeting strict energy-efficiency specifications set by the government. Last year alone, Americans, with the help of Energy Star, saved about \$19 billion on their energy bills while reducing the greenhouse gas emissions equivalent to those of 29 million vehicles.

Appledore Engineering, Inc, is a civil engineering consulting firm working on the planning, site design and permitting for a variety of sustainable, low impact projects throughout New England. Appledore's project experience includes retail, hospitality, educational, office, recreational, industrial, federal and municipal projects. Appledore's staff of professional civil engineers includes LEED accredited professionals and certified erosion control specialists.

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