RenewAire® Energy Recovery Ventilation

BOSARGE FAMILY EDUCATION CENTER

at Coastal Maine Botanical Gardens Boothbay, Maine

HIGHLIGHTS

PROJECT:

- Education buildings

PRODUCT APPLICATION:

- (1) HE1X RenewAire ERV
- (3) EV450 RenewAire ERV

SQUARE FEET:

- 8,200

AWARDS AND CERTIFICATIONS:

- LEED NV v2009 Platinum, 2012
- Green Building Award, 2012
- Designed for and achieving NET Zero energy performance

ENGINEERING FIRM
Allied Engineering Inc., Portland, ME

GENERAL CONTRACTOR
HP Cummings, Winthrop, ME

RENEWAIRE REPRESENTATIVE
RST Thermal

BACKGROUND

The spring 2014 edition of the ASHRAE Magazine, High Performance Buildings, features an article on the Bosage Family Education Center at the Coastal Maine Botanical Gardens in Boothbay, Maine. The 8,200 square foot facility serves 11 full time staff and up to 200 visitors with an inspirational learning environment as green as the botanical gardens that surround it. The building has been awarded a LEED Platinum Certification, the US Wood Design Awards – Green Building Award and since its July 2011 occupancy has achieved zero energy utilization thanks to its energy efficiency and solar electric power system.

ERV Case Study

CHALLENGE

With thousands of visitors each year, the gardens saw a significant opportunity to influence the future of sustainability in Maine and beyond by designing a building as an active teaching tool. This included designing and installing an energy efficient HVAC system that conserved as much energy as possible. That is where RenewAire came into the picture.

RENEWAIRE SOLUTION

RenewAire ERVs are an important contributor to the Education Center's superior indoor environmental air quality by providing generous ventilation while exceeding energy efficiency standards. From November 2012 through October 2013, of the approximately 45,700 kWh of total electricity consumed – including the geothermal heat pump heating system – approximately 52% of the energy was used for heating and cooling, 16% for lighting, just 4% for the RenewAire energy recovery ventilation units and 28% for other loads. This ultra-low power consumption meant that when the facility's solar electric system produced over 55,900 kWh over the same period the Center not only was "Net Zero" but actually received a check back from the local utility company for the electricity that was produced and returned to the grid.

HOW IT WORKS

There are four RenewAire ERVs providing ventilation for the Center, one HE1X unit and three EV450 models. These units provide over 2000 CFM of exhaust and fresh air supply and saves over 112,000 BTUs of heating load at winter design conditions. This savings is like eliminating a good sized residential furnace or boiler from the project.

608.221.4499
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