



Vineland Veterans Home Upgrades Ventilation System to Maximize Energy Savings while Maintaining the Health and Safety of its Occupants

CASE STUDY



The Vineland Veterans Home, located in Vineland, New Jersey, is the state's oldest veteran's home, continually operating since 1899. The Vineland Home has provided services to New Jersey Veterans from every war or armed conflict since the Civil War. Their new state-of-the-art, Medicare certified nursing home was built in 2005 and accommodates up to 300 residents.

Dilution ventilation decreases harmful exposures to all indoor contaminants and reduces infection rates by replacing stale, recirculated air with fresh filtered outdoor air.

Cost Effective Energy Recovery Solution

In order to maintain a healthy indoor environment, ventilation systems must run twenty-four hours a day, seven days a week throughout the year. Given this constant exchange of air, energy codes mandate the use of energy recovery ventilation technology to reduce the cost of conditioning the outdoor air by up to 80%.

When the new Vineland Veterans Home was constructed in 2005, the ventilation systems included Airxchange energy recovery wheels in the original air handler design. For the past 15 years the wheels operated continuously to ensure fresh air was delivered comfortably and economically, saving the facility over \$1.5 million in total energy savings.

Dilution Ventilation for a Healthy and Safe Indoor Environment

Given the critical nature of health care facilities, proper ventilation, humidity control, and building pressurization is paramount to ensuring the health and safety of its occupants. Dilution ventilation is a trusted method for controlling indoor air quality and has been recently recognized by the CDC and ASHRAE for its role in reducing the infection rate from indoor pathogens.

In 2020, after a site wide energy audit, and in consideration of the wear and tear 24/7 operation had on the HVAC system, the recommendation was made to include the energy recovery wheels in the energy retrofit project.

The Vineland Veterans Home partnered with Centrica, an energy solutions company – who chose Falasca Mechanical to perform the on-site mechanical work related to the energy recovery restoration project.

“In regards to the energy measures considered, the energy recovery restoration portion represented one of the more prevailing measures and is responsible for a large portion of the energy savings” – Chris Reeves, Centrica

To ease the replacement of the wheels up to 10ft in diameter, Falasca Mechanical ordered field assembled wheel kits created by Airxchange which enabled the wheels to be delivered through standard doorways to the mechanical room without special equipment or alteration to the building space. To assist with the assembly, Airxchange provided step-by-step documentation and instructional videos. By utilizing their own internal service expertise and not relying on expensive third-party labor, Falasca Mechanical was able to minimize total cost, increasing the projects rate of return.



Once in the mechanical rooms, the wheels were assembled in the air handlers without interrupting the critical operations of the facility, and then powered on to return the ventilation system to an energy saving asset for the Veterans Home. To enable optimal performance over the lifetime of the new wheels, Airxchange provided hands-on instruction to the facility staff to develop a preventative maintenance strategy to help the facility maintain optimal operational efficiency.



Airxchange’s unique and practical hygienic wheel design makes it easy to remove and clean the energy transfer media outside the air-handler unit.

Value of New Energy Recovery Wheels at Vineland Veterans Home

Location: Vineland, NJ
Project Date: 2020

Total OA CFM: 92,643

Peak Cooling Reduction: 216 Tons

Peak Heating Reduction: 4,725 MBTU/hr

*Estimated Annual Operating Savings: \$110,000

Simple Payback: 2.44 Years

Hrs of Operation (since 2005): 130,000 (continuous)

Realized Savings: \$1,601,600

*Based on the following assumptions: 84% Heating Efficiency @ \$0.80 therm & \$0.08 kWh / 0.8 kW/Ton Cooling Efficiency @ \$0.08 perf kWh & \$8.00 per kW Demand Charge.

About Airxchange

Airxchange has 35 years of extensive experience in the energy recovery industry. Our mission is to design and manufacture high quality products that perform reliably and effectively for the life of the HVAC system, reduce energy consumption, and improve indoor air quality. The addition of high-tech materials and innovative designs to a technology based on fundamental scientific principles has earned us the trust of our valued OEM customers. We will continue to innovate and support our customers to meet evolving market demands for energy recovery ventilation technology. Visit airxchange.com for more info.