RenewAire case study: Beaver Valley Nursing Center

A retrofit of an existing ventilation system at a Beaver Falls, Penn. nursing home in 1982 included the installation of 18 RenewAire energy recovery elements, which continue to run efficiently after nearly 13 years.

When the government ordered the nursing center in 1982 to provide an exchange of air in each resident's bedroom, Beaver Valley's parent company, Unicare Health Facilities Inc., turned to an experienced contractor it had used before.

Dual Temp of Allentown, Penn., had modified a heat recovery system in Unicare's facility in Langhorne, Penn., resulting in both installation and operating cost savings with the use of RenewAire technology. For Beaver Valley, they



again redesigned the original specifications that had called for a centrally located heat recovery wheel, instead offering an energy recovery system using RenewAire elements.

The system was installed in two components, at either end of an attic dormer that was added to the roof of the nursing facility. One end of the dormer contains five units, each with two RenewAire elements, and the other end has four units, making for a total of 18 elements. They provide ventilation for all of the 48,000-square-foot facility except its kitchen and laundry. The retrofit involved keeping the stale air ventilation units in the bathrooms of each

RenewAire energy-recovery elements were successfully used instead of conventional heat-wheels in this ventilation system. bedrom but adding fresh air vents in each bedroom.

The heart of the system is the Mitsubishi RenewAire cores. RenewAire is a fixed-plate, cross-flow heat exchanger made of a proprietary resin-paper composite. The exhaust and fresh air streams are kept physically separated by the composite plates. The many plates are spaced very close together, providing a very large heat transfer surface area within an individual core.



Beaver Valley Nursing Center.doc

800.627.4499 toll free 608.221.4499 telephone 608.221.2824 facsimile support@renewaire.com © 2001 RenewAire LLC Page 1 The RenewAire units require little maintenance beyond a change of the filters every 3 months, said Tom Berovich, maintenance supervisor for Beaver Valley. He also offered an example of how simple the cores are to clean: a year after installation, an unusual situation resulted in the elements themselves becoming plugged with dirt. A filter had been left off the return-air side of the cores at the time of installation. Berovich's crew at the nursing center simply hooked up a hose to an air compressor and blew out the dirt in the elements. The men installed the missing filters and the system worked fine from then on.

In 1992, an air conditioning system was installed at the nursing center. The add-on resulted in an increased air flow through the energy recovery system to meet the cooling comfort needs, but the RenewAire technology readily accommodated the change.

| Project Summary | |
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| Nursing Home Ventilation | Beaver Falls, PA |
| est. 15,000 CFM | Installed 1982 |
| Heating | Cooling |



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