

# Renewaire Case Study: Woodfield Suites Hotel

The Woodfield Suites is a luxurious resting-place for the weary traveler. The building's environment friendly design gives the residents a chance to relax in a cosy and comfortable environment. Necessary to maintaining comfort was a steady supply of fresh outdoor air.



The engineers in this project decided that by using RenewAire's Energy Recovery Ventilators (ERV's) they could introduce the required amounts of fresh air to the inside without incurring significant energy penalties common with standard outdoor air systems.

The ventilation requirements for this large hotel complex were designed based on recommendations provided in ASHRAE 62-1989 calling for 30 cfm of air per bedroom and between 15 and 20 cfm per person for the other areas of the hotel. This equated to a total fresh outdoor air requirement of 7,800 cfm.

The design engineers were well aware that to treat the 7,800 cfm of outdoor air they would need 24 tons of cooling load and 777,000 Btu/h of heating load. The obvious solution was to use some form of Energy Recovery Ventilator (ERV) which could take energy from the exhaust air and recover it back into the fresh air from outside.

In the past the design engineer had experience in using a desiccant wheel device but feared that the many complex moving parts in this type of unit would leave it vulnerable to maintenance problems. Instead the engineer opted for the completely non-moving RenewAire total heat exchanger. Its fixed plate design ensured a high degree of durability and reliability. These features have led RenewAire to the position of being the largest selling Energy Recovery Ventilator in the world.

The units chosen for the project were six RenewAire roof-top ERV's (HE-2x900RTV) each supplying a dedicated ventilation zone. Fresh air is supplied to the bedrooms through insulated ducts and exhaust air is extracted through each of the bathrooms via a vertical duct shaft.

Air-conditioning for the bedrooms was provided by packaged terminal air conditioner units positioned under each bedroom window. These units were able to easily cope with the internal heating and cooling loads while the RenewAire units took care of the ventilation requirements.



The mechanical contractor was surprised at how simple the RenewAire units were to install, commenting that:

”...Once we got them (the RenewAire units) on the roof, installation was so straightforward that we had all six units in position by the end of the day.”

After a year of experience with the units, Brian, the maintenance engineer, had this to say:

“...It’s great to not have to worry about the RenewAire equipment. Having a total heat exchanger with no moving parts cuts down not only on our running costs with reduced energy usage, but also cuts way back our maintenance downtime. I’m very happy with these units.”

The installation of RenewAire Energy Recovery Ventilators was successful in providing fresh air requirements as recommended by ASHRAE 62-1989. It was also able to provide major reductions in cooling and heating loads which, combined with running cost savings and the utility rebates, provided an almost immediate payback.

Summary	
<i>Project:</i>	Woodfield Suites
<i>Ventilation Rate:</i>	7,800 CFM
<i>Heat Savings:</i>	560,000 BTU/h
<i>Cooling Savings:</i>	16.7 Tons