

RenewAire Case Study: Holy Family Memorial Cancer Care Center



Some (Holy) Family History

Manitowoc is a small city on the Lake Michigan shore of Wisconsin's "thumb." It has been a major industrial and shipping center since the early nineteenth century. Today, maybe the best known Manitowoc shipping is the ferry that gives travelers between Wisconsin and Michigan the option of a 4-hour trip across Lake Michigan instead of an 8- to 12-hour drive around it.

Holy Family Memorial (HFM) in Manitowoc is the largest health care provider in the county. Originally Holy Family Hospital, HFM was founded more than 100 years ago. It now has a countywide network of health care facilities and services. Central to this growing network is the HFM medical center in Manitowoc.

A growth spurt of sorts began when the HFM Oncology Department had to replace its radiation equipment with a much larger machine. They had to decide whether to reconfigure their current space for the new machine or review the needs of their entire program. The resulting review led to the creation of an outpatient medical oncology program — and a new wing at the medical center. Along with the new wing, HFM gained a little-known distinction: it became one of the first hospitals in the U.S. to use a RenewAire energy recovery ventilator (ERV).

What Seems to Be the Problem?

Ventilating the new wing was complicated by the fact that the three-floor unit would be put to two very different uses. The two-level Cancer Care Center includes administrative offices, radiation therapy suites, a chemotherapy bay, a pharmacy and laboratory. The third floor is a surgical area with two operating suites and a catheterization lab. Clearly, both areas require air with a very low concentration of pathogens. However, each area was subject to markedly different ASHRAE standards and the Center for Disease Control (CDC) criteria for pathogen isolation. For example, the required rate of air exchange in the surgical area is double that of the cancer center.

One answer was to install two ventilation systems. But neither the budget nor the building's size would allow for more than one system. And that one system had to offer an effective and efficient way to minimize the contamination of the incoming air by the exhaust air.

Call in the Specialist

It was up to Bob Lex of Harwood Engineering to devise a solution that would meet all air quality requirements and stay within budget. “I wanted an energy recovery system, and my first choice would have been a rotary-type device,” Bob explained. “But the CDC was against using wheel systems in health care facilities. The wheels were too likely to transfer contaminated particulates from exhaust air to incoming air.” So, for a while, Bob was stymied.

Then he remembered a visit he’d had from a RenewAire representative. At the time, he’d been skeptical about the claims for the ERV’s performance. Now he went to the RenewAire factory in Madison, WI to learn more. He came away persuaded.

In RenewAire’s ERV, outgoing and incoming air streams flow through an exchange core made of highly engineered resin plates. The plates allow heat and moisture to transfer from one air stream to another, which reduces heating and cooling costs. At the same time, the plates keep the two air streams separate. In fact, RenewAire is the only ERV in the ARI certification program that has zero exhaust air transfer at normal, balanced operating conditions. At HFM, this eliminated the risk of returning pathogens to the ORs and treatment rooms with the incoming air.

Moreover, in Manitowoc, the average winter temperatures range from 29° above to well below zero. Cold like that gives a heating system an expensive workout, especially in a hospital where patients may be more vulnerable to cold. The RenewAire ERV recaptures heat from the exhaust air stream to take the edge off the bitter incoming air. In addition to lowering heating costs, it protects heating coils from freeze damage. At the same time, it transfers moisture strictly as a gas, which eliminates the need for drains, condensate pans or defrost accessories.

A Clean Bill of Health

Bob Lex designed a custom module for HFM’s new wing that housed RenewAire’s ERV with a constant volume terminal reheat system. The finished module was lifted into place on the new wing’s roof early in 1999. Since then, RenewAire has proven its value by reliably delivering required ventilation rates, while assuring cost-efficient heating and cooling. And perhaps most importantly, every part of the new wing meets the most stringent criteria for air quality.

Additionally, RenewAire is providing benefits of which patients and their doctors will probably never be aware.

- RenewAire has significant sound attenuation attributes. The dense heat transfer matrix acts as a muffler to keep surgical suites and treatment rooms peacefully quiet.
- The static plate exchange core also simplifies maintenance. The hospital’s own janitorial staff can perform all scheduled requirements quickly, easily and safely. Less maintenance expense means less cost shifting to patients’ medical bills.
- The total separation of air streams in the core makes RenewAire ERV the perfect tool for other controlled exhaust applications such as bathroom and food service areas.
- **Savings in energy costs allowed HFM to recover the installation cost of the RenewAire equipment within the first 3 years of operation.**

In health care facilities, cleanliness is a universal imperative, from the instruments surgeons use to the air everyone breathes. At Holy Family Memorial, fresh air ventilation is an effective treatment for

contaminated inside air. RenewAire ERV ensures that treatment succeeds by preventing exhaust transfer between the air streams and providing the required ventilation rates. And by helping HFM keep down its utility costs, it helps to keep quality health care affordable.

RX: Don't wait until you're building from the ground up to try RenewAire ERV. It works as well in upgraded or retrofitted systems as it does in new construction.