

RenewAire Case Study: Little Village Learning Center



Once Upon a Time

Once upon a time, in the riverside city of Salem, Oregon, there was a kind lady named Mercy Johnston. Mercy loved to take care of little children. So 20 years ago, she opened the Little Village Learning Center so mothers and fathers would have a place to leave their little children while they were at work.

Mercy and her staff were very happy at their day care center. The children had lots of room to play and rest and eat. Large windows let in lots of sunlight. The walls were painted with bright colors and decorated with pictures. And the parents who worked at the State capitol right down the street were glad to have such a nice place near by to bring their children.

Like all fairy tales, of course, the story of Mercy's Little Village took a turn for the worse. And the cause of Mercy's problems, like many of the bad things that happen in fairy tales, was something no one could name or explain. Nevertheless, tragedy was prevented, in this case by something never before seen in a fairy tale — a RenewAire energy recovery ventilator (ERV).

Under a Wicked Spell

About three years ago, Mercy began to notice some changes at her center. For one thing, spots of black mold began to appear on the ceiling. Then it spread to the upper part of the walls. The large, single pane plate glass windows were streaked with condensation. On rainy or humid days, water literally ran down the windows to form puddles on the sills. The odor of mold was noticeable to anyone who came into the center.

"We couldn't figure out why, all of a sudden, the air in the center was so humid," said Margie Moorman, who manages Pringle Park Plaza where Mercy's center was located. She hadn't made any renovations to the building nor to the space Mercy's center occupied. And Mercy was clear that she wasn't doing anything different in the center.

Since they couldn't find what was causing the humidity, Margie focused on treating the symptom of the problem. She hired a company to do mold remediation in the center, washing the ceiling and walls with a bleach solution. However, the mold reappeared within months. The cleaners came twice more. Each time, the mold came back. So Margie started bringing in contractors to see what they had to offer. "They told us what we already knew: that we needed to improve the air

exchange,” said Margie. But Margie wasn’t convinced that any of the proposed solutions made complete sense.

Meanwhile, visitors and prospective clients at the center mentioned the moldy odor. Mercy noticed that her employees were getting sick more often with respiratory problems. And some parents had similar concerns about their children’s health.

It was as if the building was under a wicked spell, and it was threatening Mercy’s business.

Prince Charming is a HVAC Contractor

This is where a handsome prince comes along to break the evil spell. The Little Village Learning Center’s prince charming was HVAC contractor, Carl Robins of Lyons Heating and Cooling.

Robins saw at once that conditions at the day care center were ideal for growing mold. The 7,000-square-foot space was kept warm enough, both by the heating and the warmth generated by lots of active children and their caretakers. The mold had plenty of food, too, especially with the dozens of cherished blankies and stuffed animals the children brought in every day. So as the humidity steadily increased — it came to measure almost 100% near the ceiling — the mold thrived.

Robins knew that he couldn’t lower the temperature in the center enough to retard the mold. But he could do something to control the humidity and to remove much of the food from the air. To accomplish that, Robins started with energy-recovery ventilation (ERV), then added other components to form a multi-faceted approach to mold control. The ERV he chose was a RenewAire EV300, with both dehumidistat and run-time controls to keep the indoor relative humidity at or below 35%. This was tied into a new ductwork layout designed to improve the circulation of inside air. Robins also incorporated a Trane Perfect-Fit Electronic Air Cleaner and a Honeywell ultraviolet Smart Lamp into the heating system to remove fibers from the air and kill any airborne mold spores.

The RenewAire ERV proved more than up to the task of exhausting the excess moisture. According to Margie, the most immediate result was a noticeable improvement in comfort. The air inside the center felt fresh and clean instead of stale and damp like it had been. Meanwhile, the EV300 – set to run during off-hours as well as through the business day – was allowing the space itself to dry out for the first time in several years. And with all of the exhaust air passing through RenewAire’s exchange core, most of its heat was being transferred to the incoming air stream. That kept the cost of heating all that fresh air to a minimum.

The elimination of odors was a bonus. RenewAire’s static-plate technology keeps the outgoing and incoming air streams completely separated. (In fact, RenewAire is ARI certified ERV with 0% exhaust air transfer under normal, balanced operating conditions). That way the odors being exhausted – along with any mold spores or pathogens – cannot make their way back into the center.

Happily Ever After

The happily-ever-after phase of the Little Village Learning Center began when Robins and his crew installed the new equipment. They did all their work at night and over a holiday weekend when the center was normally closed, so that Mercy didn’t lose a day of business.

Four months later, business at the Little Village Learning Center is bustling and the air quality is better than ever. On a recent rainy day visit, Robins found that windows, walls and ceiling were dry and free of mold, and that “Mercy was very happy. ”

- In addition to keeping humidity under control, RenewAire ERV has also reduced the number of airborne germs that the children and staff share with each other. So for the first time in years, Mercy's staff and the children in their care are experiencing only the usual amount and type of illnesses.
- The RenewAire ERV transfers moisture strictly as a gas. So it doesn't use drains, condensate pans or other accessories that add to the moisture inside.
- RenewAire's core has no rotating wheels or dampers. That makes scheduled maintenance so easy and safe that the day care center's janitorial crew can do it.

Mercy is once again looking forward to taking care of children at her day care center for many more years. And the RenewAire EV300 has improved her chances of doing that. As Margie points out, "This system wasn't inexpensive. But the price that Mercy might have had to pay in lost business, or even for lawsuits, would have been much higher. "