

# ERVs Eliminate Mold and Improve IAQ at Daycare Facility



## AT A GLANCE

### OVERVIEW:

- ◆ Project: Little Village Learning Center in Salem, Oregon
- ◆ Building Type: 7,000 sq. ft. preschool facility
- ◆ RenewAire ERV: [EV300](#)

### RESULTS:

- ◆ Eliminated recurring mold growth on ceilings and walls
- ◆ Enhanced indoor air quality (IAQ)
- ◆ Reduced indoor relative humidity to 35% or below
- ◆ Improved occupant health and reduced respiratory issues
- ◆ Lowered heating costs via high-efficiency energy recovery

## CHALLENGES

- ◆ Humidity trapped indoors causing mold growth
- ◆ Lack of ventilation causing poor indoor air quality (IAQ) leading to health concerns and spread of germs
- ◆ High moisture outdoor environment
- ◆ An installation that allowed the center to remain operational during peak hours

## OVERVIEW

### A Hidden Priority In Childcare

When selecting a daycare provider, parents weigh [dozens of factors](#)—curriculum, staff credentials, cleanliness, and nutrition plans. Air quality, however, is rarely at the top of the list. Yet, as the team at Little Village Learning Center in Salem, Oregon, discovered, the air children breathe plays a critical role in their health, wellness, and development.

### Why IAQ Matters For Children

(IAQ) refers to the air quality within buildings, and how it can affect occupant health and comfort. For a preschool program, the stakes are significantly higher. Children are [particularly vulnerable](#) to poor IAQ because:

- ◆ **Developing Systems:** Their lungs and immune defenses are still growing and less developed than those of adults.
- ◆ **Higher Intake:** Children [breathe more rapidly](#), inhaling a larger volume of air relative to their size.
- ◆ **Increased Risk:** Poor air quality can increase the risk of adverse respiratory effects in children by [30–50%](#).



Image courtesy of Little Village Learning Center

### The Turning Point At Little Village Learning Center

After serving Salem families for decades, the Little Village Learning Center faced a serious problem—their facility lacked proper ventilation. This problem caused indoor humidity to skyrocket, trapping bacteria and germs within the center.

The result was more than just a “stuffy” room; the environment became a breeding ground for black [mold](#). This led to immediate [health concerns](#) for both children and staff, including chronic coughing, wheezing, and skin irritation. To protect its community, the center needed a solution that would stabilize the environment without disrupting its daily operations.

RenewAire ERVs  
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EV Premium X ERV



HE05 ERV



HE10 ERV

## CHALLENGES

### The Environmental Challenge: A “Perfect Storm” For Mold

Little Village Learning Center’s location played a major role in its IAQ struggles. With [average annual precipitation of around 40”](#) Salem, Oregon, is geographically primed for mold and mildew growth. Mold flourishes in environments where moisture is allowed to accumulate.

Specific to Little Village Learning Center, the lack of ventilation along with their climate conditions allowed these conditions to develop in the facility:

- ♦ **High Humidity:** The high outdoor humidity helped to create an environment where indoor relative humidity reached nearly 100% at the ceiling—far exceeding the [EPA-recommended 30% to 50% range](#) required for a healthy building.
- ♦ **Mold Growth:** Substantial condensation at the ceiling created an environment that allowed mold to thrive, making it difficult to [clean the surfaces](#).
- ♦ **Health Concerns Due to the Spread of Germs:** [Without adequate ventilation](#) to dilute and refresh the indoor air, employees and children experienced increased respiratory problems and frequent illnesses.

### Compounding Factors: The Preschool Environment

The daily operations of a preschool created internal “moisture load” that a standard HVAC system was not designed to handle. For example, significant body heat and respiratory moisture from children and staff generated was quickly absorbed by daycare essentials like blankets, stuffed animals, and carpets. These items acted as “sponges,” trapping excess humidity alongside the bacteria, germs, [dust mites](#), and other [indoor allergens](#). Because children [breathe more rapidly and inhale more](#) relative to their size than adults, the presence of these trapped allergens transitioned from a simple maintenance task to a critical health priority.

To protect its community, the center needed a way to flush out these indoor contaminants and replace them with fresh, filtered air.

## SOLUTION

### Sustainable High-Volume Ventilation

To protect the health of its students and staff, Little Village Learning Center partnered with Lyons Heating and Cooling to implement a robust ventilation strategy using RenewAire [energy recovery ventilators \(ERVs\)](#). The primary goal was to drastically increase the exchange of indoor air to eliminate the stagnant conditions where mold and germs thrive.

Increasing ventilation indoors is the key to diluting [harmful contaminants](#) like mold, humidity, [volatile organic compounds \(VOCs\)](#), and [bacteria](#). However, this usually means increasing energy use. While traditional ventilation systems often lead to higher utility bills—as heating systems struggle to warm cold, incoming winter air—the RenewAire ERV uses a static-plate, cross-flow core to make high-volume ventilation cost-effective. This core [separates](#) the polluted outgoing indoor air from the incoming fresh airstreams while transferring energy and humidity between them. This “pre-conditions” the fresh outdoor air, allowing the facility to meet strict IAQ standards and building codes without a significant spike in energy costs.



Image courtesy of Little Village Learning Center

To further ensure total climate control and enhance indoor air quality, Little Village Learning Center’s ventilation system added:

- ♦ **Automated Humidity Management:** A dehumidistat was installed to measure indoor relative humidity constantly, automatically activating the system to ensure levels stay at or below 30%.
- ♦ **Targeted Air Purification:** The installation included a [Trane](#) Perfect-Fit Electronic Air Cleaner and [Honeywell](#) ultraviolet smart lamps to neutralize airborne mold spores and remove fine particulates from the airstream.
- ♦ **Seamless Implementation:** The quick installation of the RenewAire units allowed Lyons Heating and Cooling to complete the project overnight during a holiday weekend, ensuring zero downtime for the families the center serves.

## RESULTS

### A Healthy Foundation For Learning

The RenewAire ERV transformed the facility by addressing the black mold growth. With the system in place, the center successfully managed indoor moisture levels, keeping windows, walls, and ceilings dry even during periods of heavy external humidity. Most importantly, the energy recovery ventilation eliminated the lingering odors and dampness and created a healthier environment for children to grow and learn.

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For over 40 years, RenewAire® has been manufacturing energy recovery ventilators (ERVs) and [dedicated outdoor air systems \(DOAS\)](#). Providing the built environment with healthy ventilation has always been important, as indoor air quality (IAQ) can affect occupant health, cognitive function, and productivity. RenewAire ERVs work in every single environment from [Alaska](#) to Florida. Based in Madison, Wisconsin, we’re committed to sustainability and environmentalism (our facility holds [Green Globes](#) and [LEED Gold](#) certifications). For more information, visit [www.renewaire.com](http://www.renewaire.com), email: [ramarketing@renewaire.com](mailto:ramarketing@renewaire.com) or call (800) 627-4499.