

# Balanced Ventilation with Heat Recovery

## Hoa Mai Garden SEATTLE

**BUILDING TYPE**  
**multifamily**  
 affordable family housing

**SIZE**  
**111 units**  
 1-4 bedroom apartments

**COST PER UNIT**  
 \$5,602    \$695  
 in-unit system    centralized system

**BUILT**  
 2017

**OWNER**  
 Seattle Housing Authority (SHA)

**ENGINEER**  
 Glumac

**PERFORMANCE**

The Seattle Housing Authority (SHA) started the Breathe Easy program in Seattle's High Point neighborhood. After scientific study results demonstrated how great the highly filtered air has been for residents with asthma, SHA wanted to provide this improved air quality to a greater portion of the population by using mechanical filtration with Energy Recovery Ventilators (ERVs).

In Hoa Mai Gardens, ERVs are used to pre-heat incoming ventilation air by using energy from the outgoing exhaust air. This decreases residential unit heating loads, subsequently reducing both energy use and costs. The building uses two systems; the in-unit systems' filters improve indoor air quality for residents, while another part of the building has a centralized system with enhanced level filtration to serve families with asthma. Selection considerations include maintenance staff access for in-unit system filter changes, and the higher initial cost of the centralized system.

**65+%**  
**heat recovery efficiency**

**8+**  
**MERV filtration efficiency**

"We believe the health impacts outweigh the cost. It is important to have healthy environments for the residents."

SEATTLE HOUSING AUTHORITY

[exemplarybuilding.housingconsortium.org](http://exemplarybuilding.housingconsortium.org)



**TECHNOLOGIES**

- 1 Venmar AVS S10 in-unit ERV
- 2 RenewAire EV450RT central ERV



**LESSONS LEARNED**

- ✓ The ERV systems are low maintenance and have worked well. The in-unit systems have the added benefit of diminishing the possibility of any cross-contamination of air between units. Hoa Mai Gardens is also looking into washable filters for cost reduction – however, HEPA filters don't always fit in-unit ERVs. Overall, SHA has been pleased with the technology and plans to implement it in other buildings to create healthy environments for residents who are exposed to air pollution and episodes of wildfire smoke.

Photo by William Wright Photography