

HVAC CASE STUDY

Portland restaurant cooks up comfort and energy savings

Seasonal discomfort prompts high-efficiency HVAC conversion.

Verde Cocina is a Portland, Ore., restaurant located within a historic building. Due to an older HVAC system and a large roll-up door taking up most of the street-facing wall, restaurant patrons experienced discomfort in both the winter and summer seasons.

The property management company reached out to Energy Trust of Oregon for a cost-effective solution. When they learned of an innovative approach to significantly reduce energy use and improve comfort, the property management company felt their choice was easy. Then a \$2,772.88 custom incentive from Energy Trust helped to make that choice even easier.



Project Overview



Building Type
Restaurant



Project Floor Area
1,147 sq. ft.



Energy Utility/Program
Energy Trust of Oregon



Total Project Cost
\$30.99 per sq. ft.



Reduction in HVAC
Energy Use
73%

Dining-room comfort and energy-load reduction.

Although the largest energy loads in restaurants come from cooking and hot water, efficient HVAC systems are an important way to reduce overall energy costs. Verde Cocina was able to take a sizable chunk out of their energy load and increase comfort for diners by converting to an innovative HVAC approach known as a very high efficiency dedicated outside air system (very high efficiency DOAS).

DOAS separates heating and cooling from the ventilation system to allow for optimal control of each of these critical building functions. Building on the DOAS concept, a very high efficiency DOAS includes heat recovery ventilation and focuses on increased equipment efficiency and optimized system design. This approach has been proven to yield significant energy savings in new and existing commercial buildings while also providing:

- **Increased occupant comfort**
- **Improved indoor air quality** due to filtered 100% outside air being brought into the space
- **Lower energy bills** because the very high efficiency HRV allows for a smaller heating and cooling system that runs less often
- **Saved roof space** through system downsizing and reduced ductwork
- **Precise temperature and humidity control**

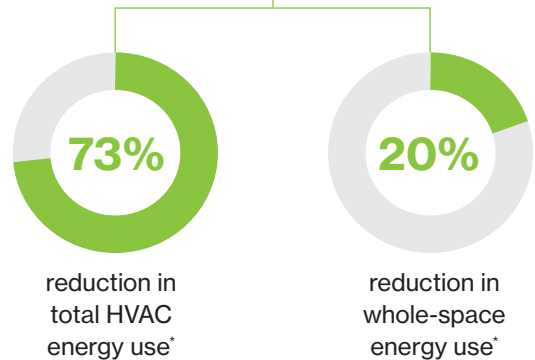


“This new system has made a huge difference. The air quality is much better, and it feels great to make decisions that contribute to sustainability. We would highly recommend that other restaurants make this upgrade.”

Anna Garnica, Owner, Verde Cocina

Conversion Summary

Pre-existing HVAC system:	1x 3-ton RTU
New HVAC system:	1x 3-ton Daikin multi-zone ductless heat pump 1x Ventacity VS1000RT HRV



*Compared to a modeled code-minimum HVAC system.

Results

In addition to the substantial reduction to their HVAC energy use and increased thermal comfort, the restaurant manager was happy to note the improved indoor air quality and the silent, unobtrusive nature of the new system's airflows. Not only are diners able to enjoy 100-percent fresh air and consistent temperatures all year long, they can also enjoy their meals in relative quiet.

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