Today’s HVAC Pilot Projects Empower Tomorrow’s Commercial Buildings

Heating, ventilation and air conditioning systems, collectively known as HVAC, account for more than 39 percent of the energy used in U.S. commercial buildings. Northwest utilities and energy efficiency organizations have long worked together to identify the most advanced, energy-efficient HVAC technologies and techniques on the market. To find the most effective options for the Northwest’s future, the alliance considers both emerging technologies and well-established products that have performed for years outside the Northwest, but have not yet taken hold in the region.

Dedicated outside air systems, or DOAS, which separate a building’s heating and cooling system from its ventilation, are not a new concept. However, very high efficiency DOAS (VHE DOAS) is new to the Northwest and North America. VHE DOAS is an innovative HVAC system approach that pairs high efficiency heating and cooling with very high efficiency ventilation, along with design approaches to optimize critical building functions.

NEEA, in partnership with local utilities and energy efficiency organizations, is currently testing VHE DOAS to verify its energy-saving potential and regional market viability. In 2018 the alliance completed the first four of eight pilot demonstration projects in the Northwest. Results of these pilots found, on average, that VHE DOAS reduced whole-building energy use by 40 percent and HVAC energy use by 60 percent. In addition, the tenants of these buildings have praised the non-energy benefits of the system, including improved indoor air quality and enhanced temperature control.

“The benefits we’re seeing are widespread and substantial. We’re hopeful this system could shift the paradigm.”

- Maria Murphy, Senior Program Manager, NEEA
Bringing World-Best HVAC Technology to the Northwest

The VHE DOAS HVAC systems approach has delivered substantial energy savings in Europe and Asia for more than a decade. Nevertheless, there is little-to-no market awareness of the concept in the Northwest.

Pilot demonstration projects are crucial not only to test the savings and non-energy-benefits potential, but also to acclimate pilot participants to a largely unfamiliar approach by testing, learning and identifying installation best practices and optimal design approaches.

To help bring VHE DOAS to the region, the alliance works closely with the supply chain including an innovative new company called Ventacity Systems—the first manufacturer to produce a very high efficiency heat recovery ventilator (HRV) on par with high-performing overseas models.

“Working with NEEA has given us invaluable resources. In addition to the third-party research that proves the business case for VHE DOAS in the Northwest, NEEA provides us with substantiated market insights and a shared vision of HVAC transformation.”

- Sal D’Auria, President, Ventacity Systems

Collaborations like these, combined with product-testing and awareness-building efforts, are paving the way for innovative technological approaches like VHE DOAS to transition from very little market awareness into more mainstream use. And as the market becomes more aware of and comfortable with this HVAC system approach, it becomes more likely to be adopted by state codes to lock in the savings for the future.

For more information about VHE DOAS, visit betterbricks.com/solutions/hvac.

TOGETHER We Are Transforming the Northwest