

Hook and Ladder Apartments

Location: Minneapolis, Minnesota

Installing Contractor: Associated Mechanical

Equipment Supplier: SVL, Inc.



Highlights:

- Tempeff Energy Recovery Make-Up Air Unit
- Average of 90% Energy Efficiency
- PHIUS Certification



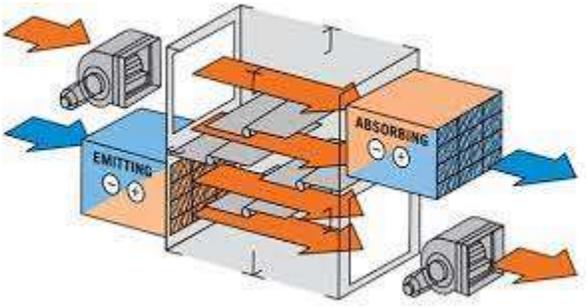
Background: The Hook and Ladder Apartments are two identical buildings that stand on the ground where the firehouse for the neighborhood once stood. One of the buildings was renovated to PHIUS (Passive House Institute, US) specifications to show the feasibility of an apartment built to use virtually zero energy. In contrast, the other building was renovated to meet typical ASHRAE standards. SVL worked with Associated Mechanical to install a Tempeff Energy Recovery Make-Up Air unit into the building selected for PHIUS certification to use virtually zero energy.

Challenge: The challenge to achieve PHIUS certification was to remodel one Hook and Ladder Apartment building to a new set of requirements. Hence, there was a significant renovation that was necessary. Additionally, each apartment shares a single heating and cooling system, which eliminates excess air gaps.

Solution: SVL's Engineering Team worked with Steen Engineering and Tempeff to identify the best energy recovery unit to meet PHIUS specifications in conjunction with the other equipment on site. The Tempeff Energy Recovery Unit was selected for several reasons.

First, the Tempeff Energy Recovery Unit has a proven ability to efficiently recover energy within a regenerative cyclic dual-core heat exchanger system. It can also achieve superior high-temperature efficiency (90% +/- 5%) by providing air that is just below the room temperature, removing the necessity for additional heating coils.





Second, the Tempeff Energy Recovery Unit maintains as much as 57% latent recovery to the cooling load.

Third, the Tempeff Energy Recovery Unit operates around 450 FPM resulting in less than an inch of pressure drop.

This system's fourth feature is the dual-energy core, which delivers high, frost-resistant energy recovery. Moreover, it meets and exceeds ASHRAE 62-2010 standards pertaining to cross leakage rates.

Finally, the system contributes to LEED (Leadership in Energy and Environmental Design) points and has been used on several gold and silver LEED-certified facilities.

The superior energy recovery provided by the Tempeff Dual-Core Unit was a cornerstone for this project's ability to gain PHUIS Certification requiring virtually zero energy.

End Result: The Tempeff Dual-Core energy recovery unit and condensing unit are now in the PHUIS Certified Hook and Ladder Building, saving an average of 90% of energy and significantly cutting down on energy expenses. Third-party studies are being conducted on these buildings to prove the effectiveness of PHUIS standards.

For more information about this project or other case studies, visit svl.com.



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