

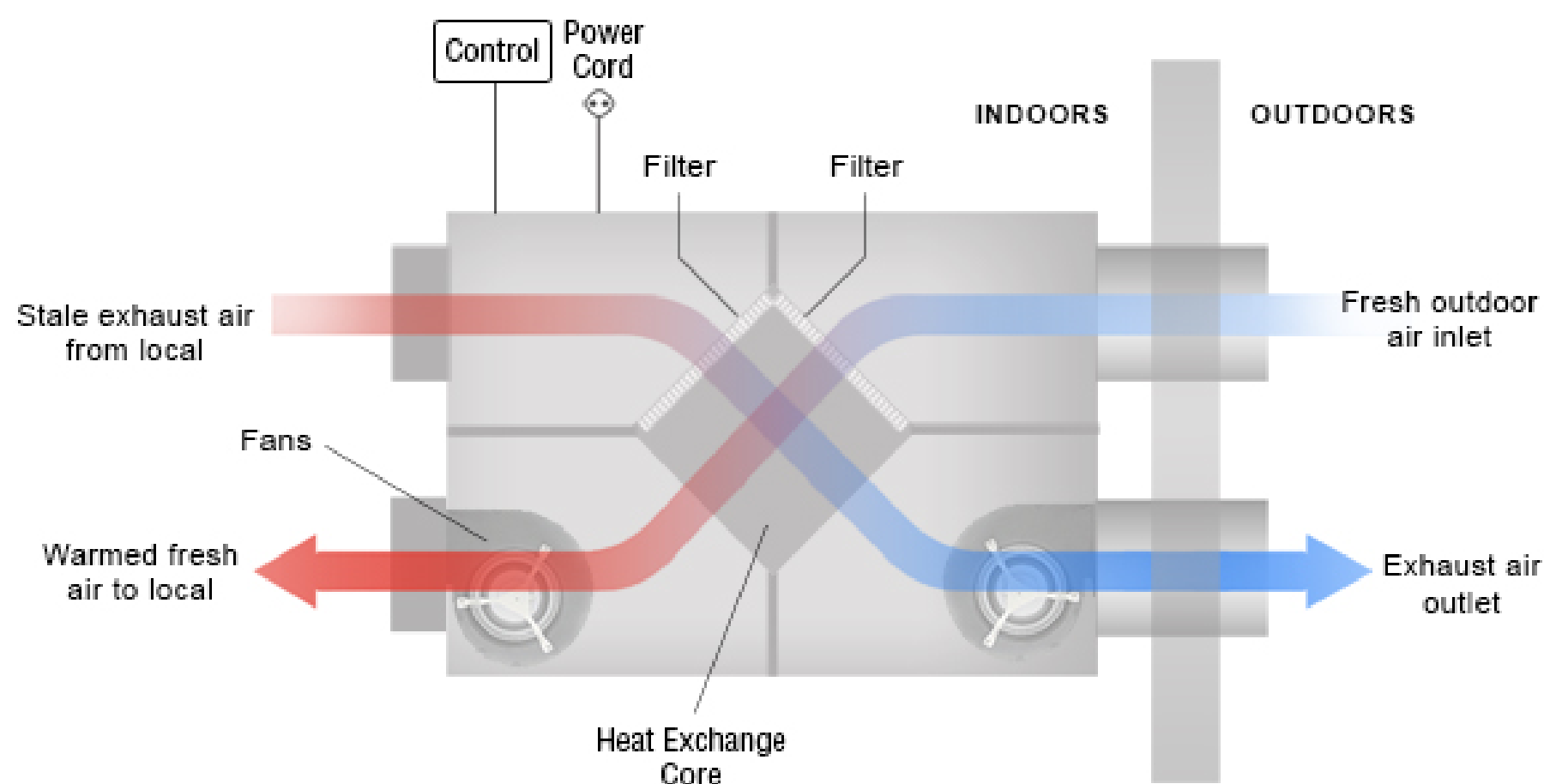
Energy efficiency in Public buildings

Ventilation system with heat recovery

Upgrade to a mechanical ventilation system with heat recovery to ensure a constant supply of fresh air, optimize indoor comfort, and significantly reduce heating and cooling costs.

What is heat recovery?

Heat recovery in ventilation (HRV) is a process that captures and reuses the energy from a building's exhaust air to preheat or precool the fresh, incoming air. Instead of expelling heated or cooled air directly outside, an HRV unit transfers a large percentage of its thermal energy to the fresh air, significantly reducing the energy needed to heat or cool the building. This process ensures proper air exchange without the typical energy loss associated with traditional ventilation.



How does it work?

Two air streams:

A unit pulls stale air out of the building and brings fresh air in through two separate channels.

Heat exchanger:

The core of the system is a heat exchanger, which allows heat to transfer between the two air streams without them mixing.

Energy transfer:

In winter, the stale, warm air transfers its heat to the cold, incoming fresh air, pre-warming it before it enters the living space. The process reverses in the summer, where the heat from incoming warm air is used to pre-cool the outgoing stale air.

Filtered air:

Both the incoming and outgoing air are filtered, which removes dust and particles, improving indoor air quality.

Balanced airflow:

The system is designed to move equal amounts of air in and out, maintaining a steady indoor pressure and avoiding drafts.

Why is it a good idea?



Significant Energy Savings:

In many buildings, a substantial amount of energy is lost through the existing ventilation. A heat recovery system can recover around 75-85% of this energy, leading to lower heating and/or cooling costs with reductions of 15-20%.

Improved Indoor Air Quality:

While the system reclaims heat, it does not mix the stale exhaust air with the fresh supply air. The heat is transferred through a heat exchanger, which ensures a continuous supply of fresh, filtered air, removing pollutants and moisture and improving the overall indoor air quality.

Reduced CO₂ Emissions:

By decreasing the energy needed for heating or cooling, HRV systems also lower the building's carbon footprint.

Enhanced Comfort:

A balanced ventilation system with heat recovery helps maintain a more stable and comfortable indoor temperature, preventing drafts that can occur with open windows or simple exhaust fans.

Notes

It's important to note that in buildings without an existing ventilation system, the implementation of a new mechanical ventilation system will result in an additional electrical consumption per year for its fans and other components.

Heat recovery is particularly beneficial in modern, energy-efficient and airtight buildings that lack natural ventilation, which can lead to poor air quality if not addressed.