

What is the working principle of MVHR Systems?

Mechanical Ventilation with Heat Recovery (MVHR) is an energy-efficient system that enhances indoor air quality while minimising heat loss. It operates by extracting stale air from rooms, recovering heat from it, and using that heat to warm incoming fresh air, ensuring a continuous supply of clean air throughout the home.

Understanding MVHR: How It Works

1. Air Extraction

MVHR systems are designed to remove stale air from areas prone to moisture and pollutants, such as kitchens, bathrooms, and utility rooms. This air often contains excess humidity, odours, and indoor air pollutants, which can negatively impact indoor air quality.

2. Heat Recovery

Once the stale air is extracted, it passes through a heat exchanger within the MVHR unit. This component is crucial as it allows for the transfer of heat from the outgoing stale air to the incoming fresh air. Remarkably, up to **92% of the heat** can be recovered, significantly reducing the energy required to heat the fresh air.

3. Fresh Air Intake

The system then draws in fresh air from outside. Before this air enters the living spaces, it is filtered to remove dust, allergens, and other pollutants. The heat recovered from the stale air warms the incoming fresh air, ensuring that the indoor temperature remains comfortable without excessive energy use.

4. Air Distribution

The warmed and filtered air is distributed back into the building through a network of ducts. This continuous cycle ensures that all rooms receive a consistent supply of fresh air, which is essential for maintaining good indoor air quality.

5. Moisture Control

By continuously removing moist air and replacing it with fresh air, MVHR systems help to control humidity levels. This is particularly important in preventing mould and condensation, which can lead to structural damage and health issues.

Benefits of MVHR Systems

Energy Efficiency

In the UK, where energy costs can be significant, MVHR systems play a vital role in reducing heating bills. By recovering heat from extracted air, these systems can lead to substantial savings on

energy expenses, making them a financially sound choice for homeowners.

Improved Air Quality

As homes become increasingly airtight due to modern building practices, indoor air quality can suffer. MVHR systems provide a constant influx of fresh air, which is crucial for health and well-being. They effectively dilute indoor pollutants, creating a healthier living environment.

Sustainability

With the UK's commitment to reducing carbon emissions and promoting sustainable living, MVHR systems align perfectly with these goals. They are often integrated into energy-efficient building designs, such as Passivhaus projects, which aim for low energy consumption and high comfort levels.

Compliance with Regulations

MVHR systems help homeowners comply with building regulations, particularly those related to ventilation and indoor air quality. By ensuring adequate ventilation, these systems can prevent issues associated with poor air quality, such as damp and mould.

Key Features of MVHR Systems

- **Continuous Operation:** MVHR systems work continuously, providing a steady supply of fresh air without interruption.
- **Heat Recovery Efficiency:** High-efficiency heat exchangers ensure that most of the heat from the extracted air is transferred to the incoming air.
- **Filtration:** Advanced filtration systems remove contaminants from incoming air, improving overall air quality.
- **Humidity Control:** By managing moisture levels, MVHR systems reduce the risk of mould growth and associated health risks.

Summary

MVHR systems are an essential component of modern ventilation solutions in the UK, offering energy-efficient, sustainable, and health-promoting benefits. They ensure that homes remain well-ventilated, comfortable, and compliant with regulations.

Explore MVHR systems to enhance your home's air quality and energy efficiency today!