Why is an MVHR Preferred to a PIV with Heat Recovery?

Mechanical Ventilation with Heat Recovery (MVHR) is often preferred over Positive Input Ventilation (PIV) with heat recovery due to its superior energy efficiency, balanced air exchange, and enhanced air quality control. MVHR systems recover up to 90% of heat from outgoing air, significantly reducing heating costs, while providing consistent ventilation and advanced filtration for healthier indoor environments.

1. Understanding MVHR and PIV Systems

Before diving into the comparison, it's essential to understand what these systems do:

- **MVHR**: This system extracts stale air from inside the building and replaces it with fresh, filtered air from outside. It recovers heat from the outgoing air and uses it to warm the incoming air, making it highly energy-efficient.
- **PIV with Heat Recovery**: PIV systems draw in fresh air from outside and distribute it throughout the building. While they can recover some heat, they are less efficient than MVHR systems and often lack advanced filtration.

2. Energy Efficiency: MVHR Outperforms PIV

- **MVHR**: MVHR systems can recover up to 90% of the heat from outgoing air, significantly reducing the energy needed to heat incoming air. This makes them ideal for UK homes, where heating costs are a major concern.
- **PIV with Heat Recovery**: While PIV systems can recover some heat, they are generally less efficient, often recovering only 50-60% of the heat. This can lead to higher energy bills, especially in colder months.

3. Air Quality: MVHR Provides Superior Filtration

- **MVHR**: These systems include advanced filters that remove pollutants, allergens, and particulate matter from incoming air. This is particularly beneficial in urban areas or for households with allergy sufferers.
- **PIV with Heat Recovery**: PIV systems typically lack advanced filtration, meaning pollutants and allergens can enter the building more easily. This can compromise indoor air quality, especially in polluted areas.

4. Balanced Ventilation: MVHR Ensures Consistency

- **MVHR**: MVHR systems provide balanced ventilation, meaning they supply and extract air at the same rate. This prevents pressure imbalances, which can lead to issues like condensation and mould growth.
- **PIV with Heat Recovery**: PIV systems can create pressure imbalances, as they primarily focus on introducing fresh air without always extracting stale air at the same rate. This can lead to condensation in colder areas of the building.

5. Control and Flexibility: MVHR Offers Customisation

- **MVHR**: These systems allow for precise control over ventilation rates and can be tailored to

the needs of different rooms or zones within a building. This flexibility ensures optimal air quality and comfort.
- **PIV with Heat Recovery**: PIV systems are simpler and less flexible, often operating at a fixed rate. This can result in over-ventilation in some areas and under-ventilation in others.

6. Noise Levels: MVHR is Quieter

- **MVHR**: Modern MVHR systems are designed to operate quietly, making them suitable for residential and office environments where noise can be a concern.
- **PIV with Heat Recovery**: PIV systems can be noisier, especially if the unit is located in a central area of the building. This can be a drawback in quiet environments.

7. Installation and Maintenance

- **MVHR**: While MVHR systems can be more complex to install due to the need for ductwork, they are generally low-maintenance once installed. Regular filter changes and occasional checks are usually sufficient.
- **PIV with Heat Recovery**: PIV systems are simpler to install but may require more frequent maintenance to ensure optimal performance, especially in terms of filter changes and system checks.

8. Cost Considerations

- **MVHR**: The initial cost of an MVHR system can be higher due to the complexity of installation and the need for ductwork. However, the long-term energy savings and improved air quality can offset these initial costs.
- **PIV with Heat Recovery**: PIV systems are generally cheaper to install initially, but they may not provide the same level of energy savings or air quality improvements as MVHR systems, potentially leading to higher long-term costs.

When choosing between MVHR and PIV with heat recovery, MVHR is the superior option for most UK homes due to its energy efficiency, balanced ventilation, and advanced air quality control. For healthier, more comfortable living, consider investing in an MVHR system today.