MVHR and Cooling: Why Forcing a Square Peg into a Round Hole Costs You Energy, Comfort, and Cash

The Delusion of Multi-Tasking Machines

Let's start with a simple analogy. Imagine using a toaster to brew coffee. Sure, both appliances involve heat, but one crisps bread; the other extracts flavour from beans. Similarly, MVHR systems are brilliant at heat recovery—essentially "recycling" warmth from stale air—but they're hopeless at cooling. Why? Because physics, economics, and common sense all shout: *"Stop trying to make this work!"*

The UK's growing obsession with airtight, energy-efficient homes has turned MVHR into a buzzword. But here's the rub: airtightness traps heat in summer, and suddenly everyone's asking, *"Can't my MVHR just… cool the house?"* The answer, bluntly, is no. Let's dissect why.

The Thermodynamic Trap: Why MVHR Can't Beat the Laws of Physics

MVHR operates on a simple principle: it transfers heat from outgoing air to incoming air. In winter, this saves energy. In summer, however, the system either:

- **Wastes energy** by cooling incoming hot air (if you add a chiller), or
- **Does nothing** beyond basic ventilation.

To cool a house, you need to *remove heat*, not shuffle it around. AC units excel here by compressing refrigerants and expelling heat outdoors. MVHR lacks this mechanism—it's a heat recycler, not a heat remover.

Key Insight: MVHR's design is like a frugal chef who reuses every scrap of broth. But in summer, you don't want yesterday's stew—you need a fresh, chilled gazpacho.

The Numbers Don't Lie: Air Changes Per Hour Explained

Let's crunch data. MVHR systems typically provide **0.5 air changes per hour (ac/h)**. That means every two hours, your home's air is fully replaced. Air conditioning? It delivers **4 ac/h**, swapping air every 15 minutes.

Why does this matter?

- Cooling requires rapid air turnover to counteract heat gain from sunlight, appliances, and occupants.
- MVHR's glacial pace means any cooled air it introduces is quickly diluted by warm air entering through windows, doors, or leaks.

The Math: To match AC's cooling power, MVHR would need to blow air at -20°C—a temperature more suited to a industrial freezer than a living room. Even if achievable, this would create Arctic

draughts and sky-high energy bills.

The Hidden Costs of Over-Engineering

Some manufacturers tout “cooling-enabled” MVHR systems. But retrofitting chillers or bypasses often backfires:

- **Energy Waste:** Cooling incoming outdoor air (e.g., from 30°C to 20°C) demands colossal energy—defeating MVHR’s efficiency purpose.
- **Condensation Risks:** Uninsulated ducts become moisture magnets, fostering mould and structural damage.
- **Comfort Trade-offs:** Even successful cooling would create uneven temperatures, with some rooms overcooled and others stifling.

Innovation isn’t about cramming every feature into one gadget. It’s about doing one thing brilliantly. MVHR’s brilliance lies in ventilation and heat recovery—not cooling.

Smarter Solutions: Let MVHR and AC Play to Their Strengths

Rather than frankensteining MVHR into a cooling system, pair it with a dedicated AC unit. Here’s why this duo thrives:

- **MVHR** maintains air quality by filtering pollutants and managing humidity.
- **AC** focuses on cooling, recirculating chilled air efficiently.

Bonus Synergy: During cooler nights, MVHR can draw in fresh air to pre-chill the house, reducing the AC’s daytime workload. This tag-team approach slashes energy use and enhances comfort.

The Summer Bypass Myth: A Limited Lifesaver

“But wait,” you say, “what about the summer bypass?” This feature lets MVHR skip heat recovery and pull in cooler outdoor air. Sounds great, right?

Reality Check:

- It works *only* if outdoor air is cooler than indoors (e.g., at night).
- During daytime heatwaves, bypass mode simply floods your home with hot air.

Bottom Line: The summer bypass is a niche tool—not a cooling solution.

The VENTI Philosophy: Honesty Over Hype

At VENTI, we could sell you a “cooling MVHR” system. But we won’t. Why? Because our purpose is to *empower you with truthful solutions*, not empty promises. Our ARIA and FLUXO systems prioritise clean, efficient ventilation—because that’s what MVHR does best.

Final Thought: In a world obsessed with multi-functional gadgets, sometimes the smartest choice is to let specialists specialise. Your comfort, wallet, and planet will thank you.

Explore VENTI’s MVHR solutions for year-round air quality—contact us today to design a

system that respects your home’s true needs.