Ventilation and Energy Efficiency: Why the two must go hand in hand

We are all aware of the importance of Energy Efficiency in the pursuit of Net Zero Carbon. But how does Ventilation relate to Energy efficiency, and why must the two go hand in hand? And how does Ventilation improve energy efficiency?

The Role of Ventilation

Proper ventilation is important for maintaining good indoor air quality and removing pollutants and moisture, while energy efficiency is important for **reducing the amount of energy needed to maintain a comfortable indoor environment**

Where Energy Efficiency comes in

Energy recovery ventilation systems provide controlled ventilation while minimizing energy loss. They reduce the costs of heating ventilated air in the winter by **transferring heat from the warm inside air being exhausted to the fresh (but cold) supply air**. Our Systems at VENTI recover at least 82% of the temperature, using that to heat the incoming air.
This in turn, reduces the energy needed to heat the home by maintaining the temperature. It also works through reducing humidity which allows indoor air to be heated more easily.

The Pursuit of Net Zero

Low carbon homes are the buzzword now – with the pursuit of Net Zero carbon on the agenda by around 2050. Low carbon homes produce and often store their own energy, resulting in low carbon emissions being produced in the running of the home, including heating the home. In order to achieve this high level of energy efficiency, our homes have become increasingly more airtight. The negative outcome of this sealing up of our homes is that air flow is often impeded and causes pollutants and humidity to build up indoors. The build up of pollutants and moist air indoors then cause several problems for occupants related to poor IAQ;

1. **Infections, lung cancer and chronic lung diseases such as asthma**. People who already have lung disease are at greater risk.
2. **Cognitive issues – concentration, memory, mental clarity & mental health.** Poor indoor air causes impairment in these areas.
3. **Mould –** If humidity is high and pollutants can’t escape, it provides the ideal environment for mould to develop which causes it’s own health implications. Condensation causes around 80% of mould cases.

How do we combat Poor Indoor Air Quality whilst maintaining Energy Efficiency?

Through Energy Efficient Ventilation. This is known as MVHR – Mechanical Ventilation with Heat Recovery. This can be done through whole house systems such as our **RESPIRO®** (https://www.venti-group.com/product/mvhr/) or **UMIDEX®** (https://www.venti-group.com/product/umidex/) or our decentralised systems ; **FLUXO®** (https://www.venti-group.com/product/fluxo-mvhr/) and **ARIA®** – Wet rooms (https://www.venti-group.com/product/aria/).

Our systems effortlessly incorporate Energy Efficiency with Ventilation through an effective heat retaining technology. This enables our homes to be energy efficient and compatible with net zero carbon goals, whilst ensuring correct levels of ventilation. Energy Efficiency ***must*** go hand in hand with Ventilation for our homes to be healthy homes. When separated, our homes either become;

- Energy efficient airtight boxes which cannot breathe. Or;
- Non energy efficient homes which have fresh air but waste valuable energy resource.

Finally;

How Does Ventilation Improve Energy Efficiency

When we install proper Ventilation measures with heat recovery in a building, this works in several ways to improve efficiency;

1. It **reduces heat loss** which would otherwise be lost through natural ventilation, i.e. windows and doors being opened for air flow.
2. It **recovers heat** through technology which then heats up incoming air. See our links above for our energy efficient options.
3. It **keeps humidity at optimum levels** which makes the indoor environment easier to heat
4. It can be set to extract which will **reduce overheating**. This avoids the need for cooling appliances which use additional energy.

So, Ventilation and Energy Efficiency must go hand in hand for the perfect partnership. Combined together, these two will ensure homes are both energy efficient and well ventilated which will both benefit the Carbon rating of the home and the health of the homes and their inhabitants.