VENTILATION DESIGNED FOR CARE HOMES
Ventilation in care homes provides good indoor air quality for residents, staff and visitors. A ventilation system designed to suit different environments within the care home will provide fresh air, remove pollutants (humidity, odours, CO₂ emissions etc.) and prevent condensation risk and mould growth.

Care home owners constantly strive to provide premises that are clean, hygienic and free from offensive odours providing a dignity of care to their residents.

Passivent ventilation systems designed specifically for care homes offer tailored solutions to meet the needs of individual rooms or spaces. Our fully trained in-house design team offer a full technical design service to suit building regulations and budget.
VENTILATION DESIGNED FOR CARE HOMES

Key issues for Care Homes

● Care homes are occupied 24 hours a day, 7 days a week. A continuous demand controlled ventilation system is suited to this type of environment. Passivent care home ventilation systems are energy efficient coupled with low initial cost and lower life time running costs.

● Rooms within a care home have different principle pollutants. Humidity in some rooms and odours in others. Passivent ventilation systems are designed to suit the relevant pollutant in each room whether this is humidity or odour related.

● Rooms are occupied for different lengths and times across the 24 hours. Automatic demand control ventilation is suited to this type of environment as it removes the need for occupant interaction, automatically switching on when and where required detecting rises in pollutants and responding accordingly. Passivent ventilation systems are effective and energy efficient.

● In care homes, as little occupant input as possible is required. Intermittent extraction that relies on an occupier is not ideal as research has shown there is often a risk of insufficient ventilation or over ventilation increasing energy costs. Often the ventilation is not sufficient to reduce humidity and maintain levels below the 70% target for prolonged periods. Passivent ‘intelligent’ ventilation systems remove the need for occupier interaction.

● Ventilation systems are required to be quiet to reduce disturbance. At night with low demand, the fan speed reduces meaning less noise and therefore less disturbance. Passivent constantly running low power fans are discrete and energy efficient.

Important factors for a Care Home ventilation solution include

● Good indoor air quality providing fresh air all year round

● Maintaining relative humidity below 70% to control condensation

● Effectively removing pollutants

Regulations and Requirements include

Building Regulations Approved Document F1: Means of Ventilation Building Regulations covering ventilation of domestic and non-domestic dwellings

‘Communal residential properties are buildings containing separate residential units with some degree of communal facilities.’

CIBSE Guide B0: Application and Activities: HVAC strategies for building types

CIBSE Guide B2: Ventilation and Ductwork

Good Practice Guide 192: Designing energy efficient multi-residential buildings
Passivent iMEV is the intelligent ventilation system that caters for multi-occupancy care homes where individual rooms and areas require different extraction rates. Passivent iMEV is intelligent in that it removes the need for occupant interaction, automatically increasing extraction when and where required.

Passivent iMEV care home system works by drawing polluted air (moisture laden, odours etc.) via air extracts located in ‘wet’ rooms (en-suite bathrooms, kitchens etc.) using a central fan and exhausting this air through ducting to roof-mounted terminals.

To ensure the polluted air is replaced, through-wall or window vents allow fresh air from outside to enter. These vents are typically placed within habitable rooms such bedrooms and living areas.

This cycle of stale air out and fresh air in ensures good indoor air quality and a fresh clean environment. Importantly, it also removes moisture which can otherwise lead to damp and mould.

Passivent iMEV automatically detects rises in humidity and responds accordingly. The system only increases extraction when required, so it uses much less energy as the central fan is not running at a higher speed unnecessarily. Heat loss is also reduced as iMEV relies on demand control (extraction when and where required), extraction is only increased in the areas where humidity has risen.

**Constant pressure system**

With a constant pressure fan, automatic control of the humidity sensitive extracts situated in wet rooms (eg en-suite bathrooms) and a fan pressure sensor maintains the overall system pressure. This increases extraction in the areas where required, whilst keeping a sufficient level of ventilation in other rooms. At night time when there is low humidity and low demand the fan speed reduces to the quietest minimum setting.

A Constant Pressure system is ideally suited to provide effective ventilation for care homes.
FANS

It is important to choose the right fan for a project. The descriptions shown indicate the main uses for each fan type, but Passivent can advise on the most suitable for any given project.

A151DC E Fan
Capacity: 350m³/hr @ 120Pa

The A151DC E fan incorporates one of the lowest energy motors on the market, despite it being one of the most powerful. It can be operated at a constant fixed speed and be commissioned during installation.

Key features
- To further enhance occupier comfort, the fan is fitted with an internal silencer, reducing mechanical noise and allowing the fan to be placed within a cupboard space near habitable rooms.
- The A151DC E is eligible for energy use calculations under Appendix Q of SAP (Standard Assessment Procedure for Energy Rating of Dwellings) and has a Specific Fan Power as low as 0.17W/l/s.

A151DC W CP Fan
Capacity: 350m³/hr @ 120Pa

The A151DC W CP fan is perfect for large multi-residential properties which require individual areas to be monitored and ventilated separately, without the need for occupant involvement. The constant pressure version is designed to be used with humidity-sensitive extracts as part of a Passivent iMEV care home system.

Its compact size and range of fixing positions means it can be concealed within a roof or cupboard space, with one fan serving multiple dwellings. This fan is especially useful for care homes and other multi-occupancy residential properties where extraction may need to increase in different areas at different times, without affecting other areas where additional ventilation is not required.

Key features
- Energy efficient.
- Can be mounted in various different profiles eg on the floor, wall or ceiling.
- Spigot orientation can be changed for versatile installation possibilities.
- Fan blade orientation improves acoustic performance and reduces air resistance which increases longevity.
- Constant pressure version features a malfunction warning light to easily identify issues with individual units when multiple fans are used. Good for care homes where multiple fan units may be clustered together.
AIR EXTRACTS

Passivent have a wide range of extract options available for use in the different applications. They are located in wet rooms such as bathrooms, WC’s and kitchens.

Each extract provides a level of control that is suitable for the room and activity at any time. Each room has different requirements from the ventilation system; Passivent provides a truly adaptive solution for each.

<table>
<thead>
<tr>
<th>Extract type</th>
<th>Model</th>
<th>Airflow performance (m³/hr) @ 80Pa</th>
<th>Typical applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automatic humidity-sensitive, some with switched boost</strong></td>
<td>A12I</td>
<td>15 - 75</td>
<td>not applicable</td>
</tr>
<tr>
<td></td>
<td>A133</td>
<td>20 - 75</td>
<td>150 for 30 mins</td>
</tr>
<tr>
<td></td>
<td>A133C</td>
<td>20 - 75</td>
<td>150 constant</td>
</tr>
<tr>
<td></td>
<td>A133SH</td>
<td>10 - 45</td>
<td>90 for 30 mins</td>
</tr>
<tr>
<td><strong>Constant volume with switched boost</strong></td>
<td>A141E</td>
<td>25</td>
<td>90 for 30 mins</td>
</tr>
<tr>
<td></td>
<td>A141EWC</td>
<td>15</td>
<td>30 for 30 mins</td>
</tr>
<tr>
<td></td>
<td>A142E</td>
<td>25</td>
<td>120 for 30 mins</td>
</tr>
<tr>
<td></td>
<td>A142C</td>
<td>20</td>
<td>120 constant</td>
</tr>
<tr>
<td><strong>Constant volume with passive infra-red boost</strong></td>
<td>A141PIR</td>
<td>15</td>
<td>65 for 30 mins</td>
</tr>
<tr>
<td></td>
<td>A141PIRWC</td>
<td>15</td>
<td>30 for 30 mins</td>
</tr>
<tr>
<td><strong>Constant volume</strong></td>
<td>A141/15</td>
<td>15</td>
<td>not applicable</td>
</tr>
<tr>
<td></td>
<td>A141/30</td>
<td>30</td>
<td>not applicable</td>
</tr>
<tr>
<td></td>
<td>A141/45</td>
<td>45</td>
<td>not applicable</td>
</tr>
<tr>
<td></td>
<td>A141/60</td>
<td>60</td>
<td>not applicable</td>
</tr>
<tr>
<td><strong>Boost switch (timed for 30 minutes)</strong></td>
<td>A132</td>
<td>Use with A133, A133SH, A141E, A142E</td>
<td></td>
</tr>
<tr>
<td><strong>Constant boost switch</strong></td>
<td>A134</td>
<td>Use with A133C, A142C</td>
<td></td>
</tr>
</tbody>
</table>
**DUCTING, TERMINALS AND AIR SUPPLY**

**DUCTING**

**Plastic rigid circular ducting**
Plastic rigid circular ducting can be used to connect all parts of a Passivent care home system including air extract to fan and fan to roof terminals. Available with a number of different connection pieces to navigate different project layouts. Insulation is available to prevent heat loss, condensation and provide resistance to fire.

**Plastic rigid flat channel ducting**
Plastic rigid flat channel ducting is suitable for extraction from wet rooms such as bathrooms and kitchens. Its low profile enables ducting to be concealed. The various types of ducting available mean that it can easily be incorporated into different types of project.

**TERMINALS**

**Exhaust air terminal**
A tile terminal is designed to blend with most available manufacturers' roof tiles, and will weather to match the surrounding tiles over time. It is AA fire rated to BS 476: Part 3.

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Duct/spigot dia</th>
<th>Air flow performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Versa-Tile TT13</td>
<td>150mm</td>
<td>50m³/hr at 0.3Pa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100m³/hr at 1.0Pa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200m³/hr at 4.2Pa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300m³/hr at 9.5Pa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500m³/hr at 27.4Pa</td>
</tr>
</tbody>
</table>

**Note:**
TT13K is also available for builders kerb situations.

Wall terminals are also available.

**AIR SUPPLY**

When using Passivent /MEV care home systems, fresh air vents must be provided to replace the extracted air. Inlet vents are usually located within habitable rooms such as bedrooms and living rooms.

Passivent have various inlet vent options available to provide sufficient levels of background air but at the same time ensure that residents’ comfort is maintained.

**Window Vents**
Window Vents are incorporated within the window or the frame. There are various types available with different controls, from manual operated units to fully automatic humidity sensitive versions.

The units are usually installed by the window manufacturer at the time of making the windows. Each is designed to ensure that airflow is not directed into the centre of the room which residents mainly occupy, but is directed upwards, reducing the effect of draughts.

There are acoustic options including either manual or automatic control. These can give sound reduction of up to 42dB Dₙ,e,w providing a quieter, peaceful living environment.

**Wall Vents**
A range of through-wall vents can be used where it is not possible or desirable to fit a window vent or where a greater control of fresh air supply is required.

Wall vents are infinitely adjustable between open and closed, so allow close control of how much air is allowed in.

Humidity-sensitive options are available where manual control is not required. The acoustic range can provide substantial sound reduction of up to 50dB.
FURTHER INFORMATION

Services
Passivent has its own in-house research team dedicated to developing techniques and products for natural ventilation, and is a leading partner in some of the most important research projects in this field including NatVent™, a consortium of European organisations headed by BRE.

We offer a comprehensive design and advisory service tailored to your specific project, covering both natural ventilation design and product selection. Advanced software based on CIBSE AM10 is used to calculate sizes of air inlets and outlets to achieve optimum performance.

Installation
Installation and commissioning service through an independent network of Passivent MasterCare® installers.

Names of approved installers can be provided on request.

Quality Assurance
Passivent products are designed, developed and manufactured under a BS EN ISO 9001 quality management system, giving an independently audited assurance that the products will fulfil their intended purpose.

Environment
Passivent conducts all business processes under a BS EN ISO 14001 quality management system, giving an assurance that all activities are carried out having minimal impact upon the environment.

Other products
Passivent market a range of other ventilation and daylighting products for commercial and domestic buildings including:

Natural (passive) ventilation systems
Aircool® ventilators for windows, curtain walling and walls
Airstract® roof terminals for passive stack and other natural ventilation systems
Airscoop® wind-driven ventilation terminals
SoundScoop®