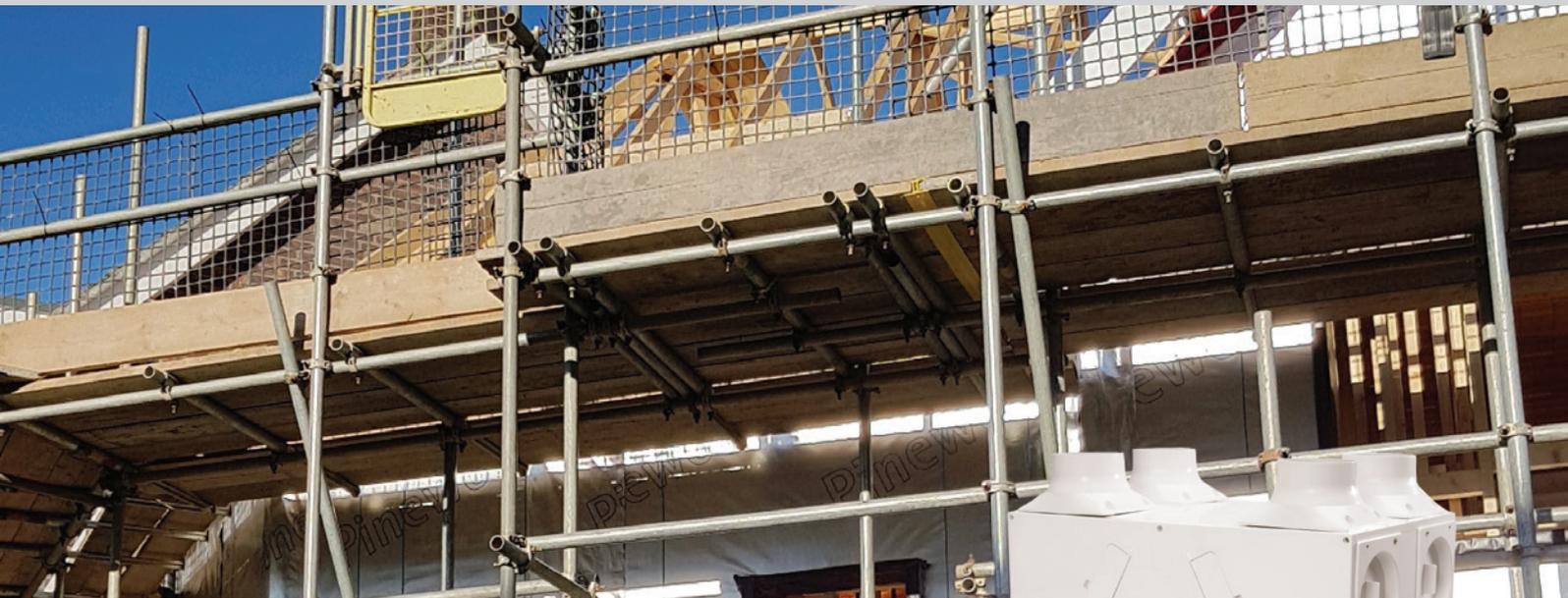


# Case Study



## A Healthy Smart Home

Vent-Axia has supplied a Lo-Carbon Sentinel Kinetic High Flow Mechanical Ventilation with Heat Recovery (MVHR) unit to a 3,000sq ft. self-build smart home in County Down, Northern Ireland.

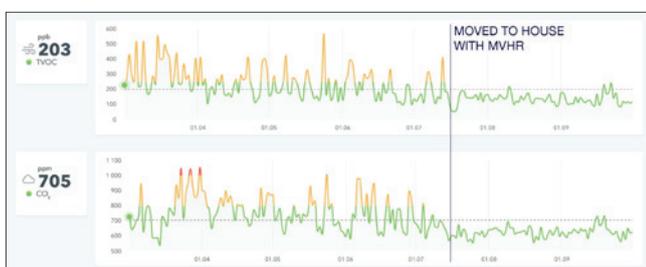


Sentinel Kinetic High Flow

Whilst the fully-automated smart home was being built, the owners lived in a rented standard block construction 70s bungalow with no MVHR. They began monitoring the levels of volatile organic compounds (VOC) and CO<sub>2</sub> whilst living there and then continued to do so in their new home, which features the Vent-Axia MVHR system. Since moving into the new house with the Sentinel Kinetic High Flow, there has been a huge improvement in Indoor Air Quality (IAQ) compared to the temporary accommodation.

In the rented bungalow, total VOC levels regularly exceeded 400parts-per-billion (ppb) and over 500ppb on some occasions. This is over the generally acknowledged 'acceptable' levels of between 50 and 325ppb. However, in stark contrast, in the new self-build home with MVHR installed the occupants now have markedly improved total volatile organic compounds (TVOC) levels which rarely exceed 200ppb and are, on average around 100ppb. Similarly, in the bungalow CO<sub>2</sub> was also a problem with levels often reaching or exceeding 900ppm and rarely under 700ppm in the bungalow compared to an average of between 600-700ppm in the smart home. Typically, CO<sub>2</sub> concentrations indoors range between 400-1,000ppm, the lower the level the better.

Not only does the Sentinel Kinetic High Flow provide effective ventilation which improves indoor air quality, it is also highly efficient. With the new smart home energy efficiency is key, which is why the Sentinel Kinetic MVHR unit was specified



by Daly Renewables, an engineer-led company committed to designing low energy efficient renewable energy systems.

Sentinel Kinetic MVHR units feature integral humidity sensors for intelligent air quality control. The sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. It also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This feature ensures adequate ventilation, even for the smallest wet room.

A summer bypass provides passive cooling when conditions allow whilst a frost protection mode ensures maximum ventilation during the coldest periods. A digital controller is mounted on the front of the units and a remotely-wired version has also been included for each. Low carbon, energy saving and clean, Sentinel Kinetic High Flow MVHR is ideal for larger homes and offers a whole building heat recovery system combining supply and extract ventilation in one unit.

"We've been tracking TVOC and CO<sub>2</sub> levels over six months and when I looked at the comparison between our temporary accommodation and the new house I was blown away. The difference that the Vent-Axia MVHR system is making to our air quality is amazing. Installing an MVHR system as part of our smart home was a great move and we are delighted with the improvements it is making to the health of our home."

Mark McCall, Homeowner

Latest high efficiency

Low energy consumption

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SAP PCDB recognised