

Case Study



Ancona Eco Mansion

Vent-Axia has been specified as part of a luxurious, £5.5m contemporary off-plan eco mansion in Kent, presently listed with Savills.



Sentinel Kinetic High Flow

The Ancona mansion in Hythe is designed to be sustainable and low impact, with three of Vent-Axia's Sentinel Kinetic High Flow Mechanical Ventilation with Heat Recovery (MVHR) units chosen to provide quiet, energy efficient and effective ventilation and heating throughout the proposed 8,323 square foot home.

Envisaged by developer, Kelly Penson, and designed in conjunction with OnArchitecture working with energy advisors and Passivhaus consultants, Conker Conservation, Ancona is a rare opportunity in the UK to buy a luxury home off-plan. Resembling a Beverly Hills mansion but designed for the British weather, the plans show how a modern build can combine very contemporary aesthetics with sustainable living. The proposed home features cantilevered terraces with wild flower sedum grass roof coverings, three above ground floors, an indoor pool complex and gym, a master bedroom suite with panoramic sea views and a modern, stylishly-lit wine cellar.

The comprehensive Vent-Axia MVHR system, specified and designed by Built Environment Technology Ltd, harnesses geothermal temperatures for heating in the winter and cooling in the summer, all controlled via a tablet or phone. There are three ventilation zones - the garage; the ground floor including the gym and communal area between the gym and spa; and the 1st and 2nd floors, each with a designated Sentinel Kinetic High Flow MVHR unit.

The Sentinel Kinetic MVHR units have 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 unique 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.

Ancona uses geothermal ducting that feeds into the three Sentinel Kinetic MVHR units with manual shut-off dampers included for each MVHR Unit, to provide the option of geothermal or atmospheric intake air. Geothermal ducting will provide

some free cooling in the summer and some free heating in the winter, which will create a wonderful clean and healthy air quality and year-round temperature in the home. In addition, pollen filters on the MVHR will help hay fever sufferers and inhabitants suffering from other allergies such as dust. Where the MVHR air outlets and inlets penetrate the thermal envelope, appropriate insulating material has been specified to ensure minimum heat loss.

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. Warm, moist air is extracted from 'wet' rooms through ducting and passed through the heat exchanger before being exhausted outside and fresh incoming air is preheated via the integral heat exchanger. The unit can extract from up to fourteen wet rooms and a communal kitchen while still achieving almost 90% heat recovery. It has two fully adjustable speeds and a purge setting and its energy saving Vent-Axia DC motors further improves efficiency and carbon reductions.

"MVHR is an integral part of any Ecohome; Ancona is designed to be almost airtight making air changes via MVHR essential. Vent-Axia's Sentinel Kinetic MVHR offers pre-conditioned air changes taking heat from outgoing air and applying it to fresh air. Ancona will be a calm, comfortable airy space which will be pollen free and help ensure good indoor air quality."

Kelly Penson, EcoMansions

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