



**Vent-Axia**<sup>®</sup>

The UK's Leading Ventilation Company

Sentinel Kinetic  
Cooker Hood  
MVHR for New  
Build Residential

Edition 1

[www.vent-axia.com/kineticcookerhood](http://www.vent-axia.com/kineticcookerhood)



## No Room for MVHR?

While mechanical ventilation with heat recovery (MVHR) provides the highest levels of indoor air quality (IAQ) and energy efficiency of any ventilation type, it can pose some difficulties for smaller dwellings and apartments where space for internal services is especially tight.

This often results in inferior ventilation systems being specified that could negatively impact Dwelling Emission Rates and leave homeowners at greater risk of receiving poor IAQ in their home whilst having to foot the cost of higher energy bills. The Lo-Carbon Sentinel Kinetic Cooker Hood from Vent-Axia provides wholehouse ventilation with heat recovery and cooker hood extract – all in one unit.

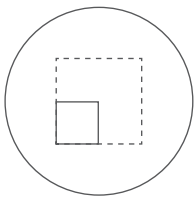
The Lo-Carbon Sentinel Kinetic Cooker Hood range fits within a standard 600mm wide cupboard where it would be sited above a gas or electric hob to provide localised extract, the unit would then also be ducted to the rest of the wet and habitable rooms within the dwelling to provide full wholehouse ventilation with heat recovery.

**Vent-Axia**



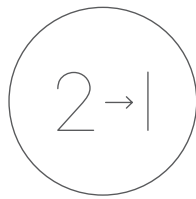
# Wholehouse heat recovery and hob extract from within a kitchen cupboard

## Sentinel Kinetic Cooker Hood



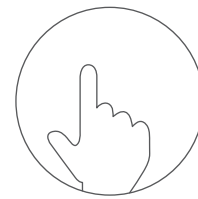
### Compact

The unit fits in a standard 600mm wide kitchen cupboard.



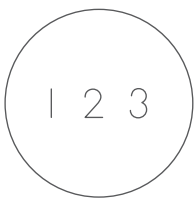
### 2-in-1

As well as all of the benefits of wholehouse heat recovery, the Sentinel Kinetic Cooker Hood also provides localised extract from above the kitchen hob.



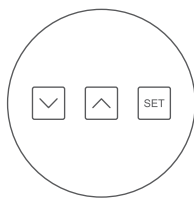
### Easy Access

No need for access in the loft or in the ceiling void. The unit fits discreetly within a kitchen unit with full accessibility for product operation and maintenance.



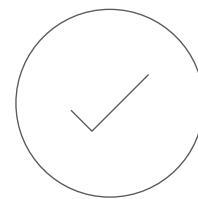
## Flexibility

The MVHR Cooker Hood trim comes in 2 different finishes to fit with most kitchen styles, SELV models allow for the product to be installed as close as 550mm from an electric hob.



## Full Control

Full Sentinel digital controls allow speedy installation and commissioning, 3 speed setting and a variety of switching options.



## Performance

The best SAP PCDB efficiency in its class and ultra low operating noise.

# Lo-Carbon Sentinel Kinetic Cooker Hood

- Acoustic Top Box option for reduced in-duct noise
- Recognised in SAP PCDB
- Includes Cooker Hood Canopy
- Horizontal duct option for space-saving installations
- Fits within a 600mm wide aperture (300mm deep)
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls; Humidistat, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Volt-free inputs
- Self-diagnosis for simplified fault finding
- Adjustable delay On/delay Off timer



## Cooker Hood Unit

The Sentinel Kinetic Cooker Hood is designed to fit in a 600mm wide aperture above a hob. The telescopic hood incorporates two flat removable metal grease filters, low energy light bulbs and is available with a White or Brushed Aluminium front trim.

The hood contains an integral fire damper in accordance with BRE Digest 398 and is connected to the heat recovery unit by a galvanised steel duct with access for cleaning. When the hood is opened, the heat recovery unit goes to boost speed and the summer bypass automatically opens to prevent cooking by-products entering the heat recovery cell. As an additional safety feature, the duct also contains a thermal cut-out fuse which turns off the MVHR unit in the event of excessive temperature in the airway. Cooker Hood units cannot be handed on-site and must be purchased as left hand (L) or right hand (R) models.

## Easy Installation

Ducting can be attached to the unit horizontally, vertically or both. Minimum internal depth of kitchen cupboard: 300mm.

**Horizontal and Vertical Spigots:** The combination of spigot options allows installation in confined locations. If vertical and horizontal connection are required on the same outlet/inlet, additional spigots can be supplied.

The condensate connection can be taken through the rear of the unit or through the side of the unit into an adjacent cupboard prior to connection into pre-installed domestic waste water system.

## SELV Models

SELV cooker hoods allow the distance between the hood and an electric hob to be reduced from 650mm to 550mm.

## Integral Humidity Sensor

The integral humidity (models with H suffix) sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor 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. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Models

Lo-Carbon Sentinel Kinetic with summer bypass and humidity sensor.

Model	Stock Ref
Kinetic CWH L (White Left)	446756
Kinetic CSH L (Brushed Aluminium Left)	446757
Kinetic CWH R (White Right)	446758
Kinetic CSH R (Brushed Aluminium Right)	446759
Kinetic CWH L SELV (White Left)	477003
Kinetic CSH L SELV (Brushed Aluminium Left)	477004
Kinetic CWH R SELV (White Right)	477005
Kinetic CSH R SELV (Brushed Aluminium Right)	477006

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter Controller	437827
LED Alarm with 15m cable	448356
Opto-coupler for volt-free bms connection	447340
ISO 45% Coarse (G3) Filter 2pk	441774
ISO ePM10 50% (M5) Filter 2pk	444200
Acoustic Purge Fan	477988
Acoustic Purge Fan XL	479829

## SAP PCDB Test Results

	SAP 2009		SAP 2012	
	Thermal Efficiency %	SFP (W/l/s)	Thermal Efficiency %	SFP (W/l/s)
K+1	85	0.72	85	0.78
K+2	85	0.74	85	0.89
K+3	84	0.83	82	1.03
K+4	83	0.92		

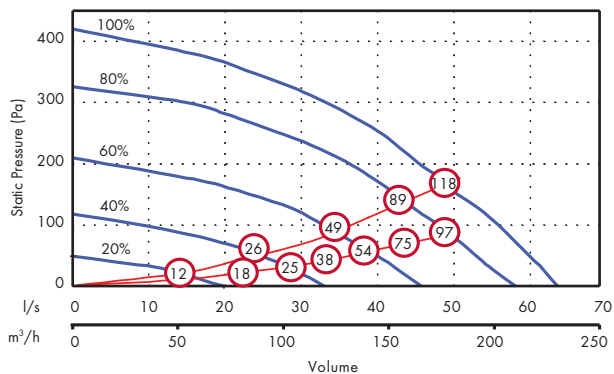
# SEC Class

Model	SEC Class
Kinetic CWH/CSH	A

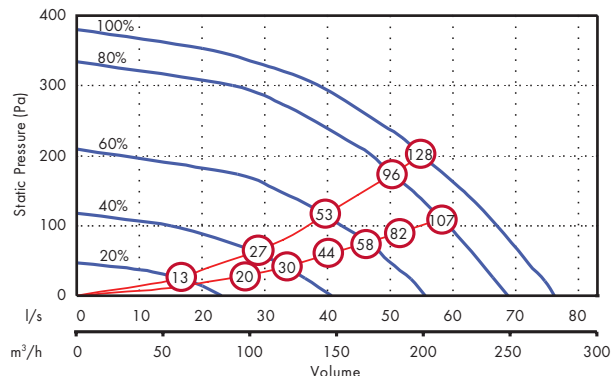
## Performance

Fan speeds are fully adjustable within the performance range.

Horizontal Spigots



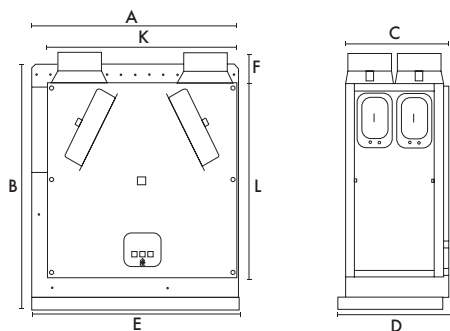
Vertical Spigots



(x) figure relates to Wattage (both motors)

## Dimensions (mm)

Unit

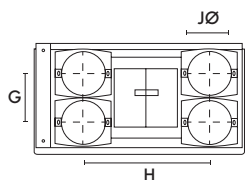


Minimum clearance from the bottom of this unit to the top of the hob must be:

Gas: 750mm

Electric: 650mm/ 550mm

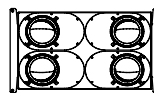
(SELV)



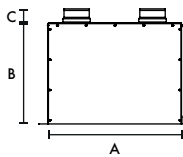
A	B	C	D	E	F	G	H	JØ	K	L	kg
590	710	295	316	598	90	140	360	125	550	550	27

## Acoustic Top Box

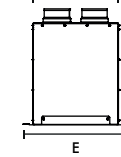
Top



Front



Side



A	B	C	D	E	kg	Spigot
549	501	75	335	367	11	125

## Sound Data

Flow l/s	Test mode	Octave band, Hz, dB SWL								SPL dB(A) @ 3m
		63	125	250	500	1K	2k	4K	8K	
10	Supply	47.8	40.2	38	31.1	28.2	22.1	23.6	30.9	21.4
	Extract	47	38.7	36	29.9	25	22.4	23.3	30.8	20.6
	Breakout	43.6	36.2	37.4	30.9	27.4	23.3	24.2	31.4	18.6
20	Supply	54	46.6	50.2	44.5	44.4	38.3	28.8	31.9	31.2
	Extract	46.8	40.5	34.6	34.2	34.6	25.9	23.7	30.3	22.9
	Breakout	45.9	39.9	40.6	35.7	33.5	28.4	25.3	31.2	21.3
30	Supply	58.1	54.5	57.6	52.2	51.7	47.6	38.6	35.8	38.5
	Extract	47.6	46.2	38.7	41.3	42.8	33.9	26.4	30.5	28.4
	Breakout	45.2	42.4	48.2	40.8	37.7	35.2	30	31.1	25.2
40	Supply	65.2	58.4	62.3	58	56.5	52.5	44.1	41.4	43.6
	Extract	53.5	53	44	47.7	48.1	39.7	31.5	31.5	33.5
	Breakout	50.9	47.6	47.4	48.1	42.5	40.8	36.3	34.4	29.3
50	Supply	66.4	63.2	66.3	62.5	61.7	57.4	50	47.8	48.3
	Extract	64.2	55.2	48	50.9	52.1	44.5	35.9	35	37.2
	Breakout	55	51	51.3	51.6	46.9	46.0	42	38.3	33.2

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical. For in-duct data, end reflections are added based on the spigot size of the unit.

## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be a Sentinel Kinetic as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Sentinel Kinetic shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a metal duct to the cooker hood, intumescent fire damper and thermal switch, in accordance with BRE Digest 398.

The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, automatic summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency forward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 92% when tested to EN 308. This shall be protected by ISO 45% Coarse (G3) Filter 2pk grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

To reduce in-duct noise, the top of the MVHR shall be fitted with an Acoustic Top Box to provide attenuation to the 4 ducts of the unit. This Acoustic Top Box shall be of steel construction lined with acoustic class 'O' foam with the MVHR spigots linked to the Top Box via 4 separate attenuated ducts. The acoustic enclosure and top box shall each be independently tested for noise to BS EN 13141-7.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit LCD user interface therein shall be removable for remote mounting if required.

Units shall be as manufactured by Vent-Axia Ltd.

Sound tested to BS EN 13141-7:2010

### Standard Controls

All Sentinel Kinetic units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ Integral min/max ventilation control/set point
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts

- ✓ 24V sensor supply
- ✓ Integral on/off or trickle boost function from remote switch e.g. PIR occupancy detector
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings
- ✓ Fully automatic summer bypass
- ✓ Switched Live input with adjustable 'Delay-On' feature
- ✓ Fan failure or component failure indicated via individual fault code display
- ✓ Running time counter
- ✓ Control panel PIN number lock
- ✓ Automatic frost protection effective to -20°C
- ✓ Tool free filter access
- ✓ The unit shall incorporate ('H' models) an integral humidity sensor with the following features:
  - Ambient Response; Raises the humidity trigger point as dwelling temperature reduces
  - Rapid Response; Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
  - Proportional Response; Incrementally increases the fan speed to reduce noise and reduce energy consumption

### Integral Cooker Hood Specification

The Sentinel Kinetic Cooker Hood shall consist of a telescopic Hood and galvanised steel duct connection to the MVHR Unit.

The Hood construction shall be of grey powder coated steel with Brushed Aluminium or White painted fascia.

The Hood shall trigger the MVHR unit to a pre-defined boost speed and open the summer bypass when opened, and shall have two low-energy lamps illuminating the hob top.

Filter shall be a flat metal grease filter, removable for cleaning.

The galvanised steel ductwork shall provide a continuous fire barrier between the Hood and the MVHR unit. It shall contain an intumescent fire damper, thermal cut-out and volume balancing damper. The thermal cut-out shall switch off the MVHR unit at a pre-defined safety temperature.

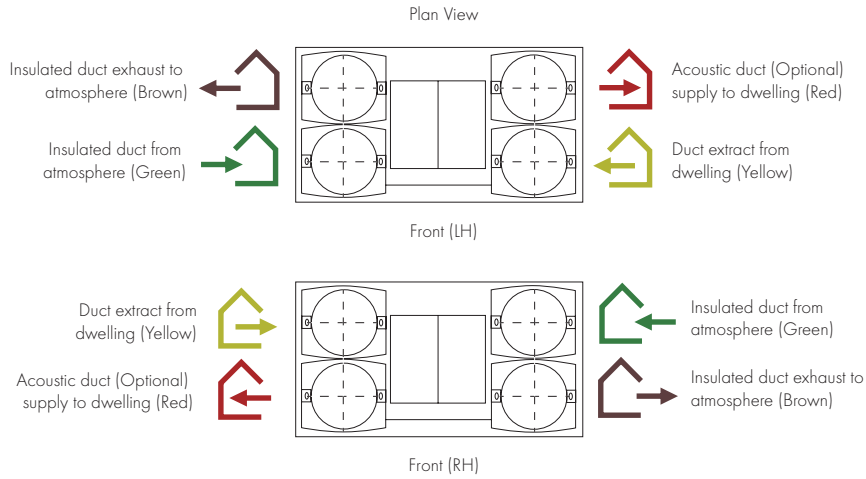
The duct shall have an access panel for cleaning by the end-user.

### Mounting Option



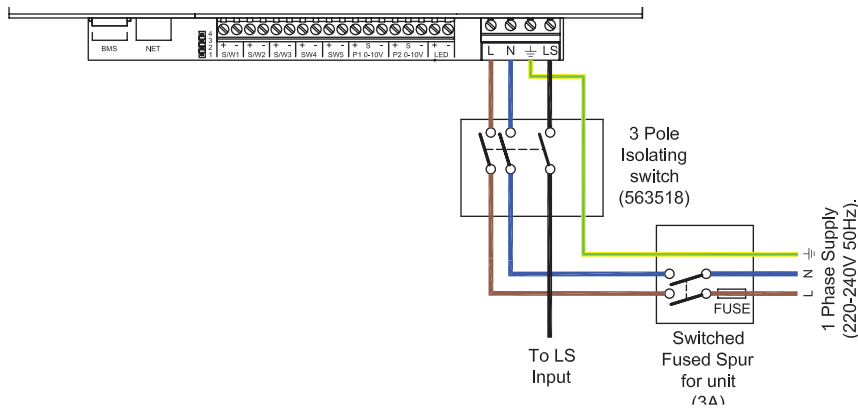


## Airflow Direction

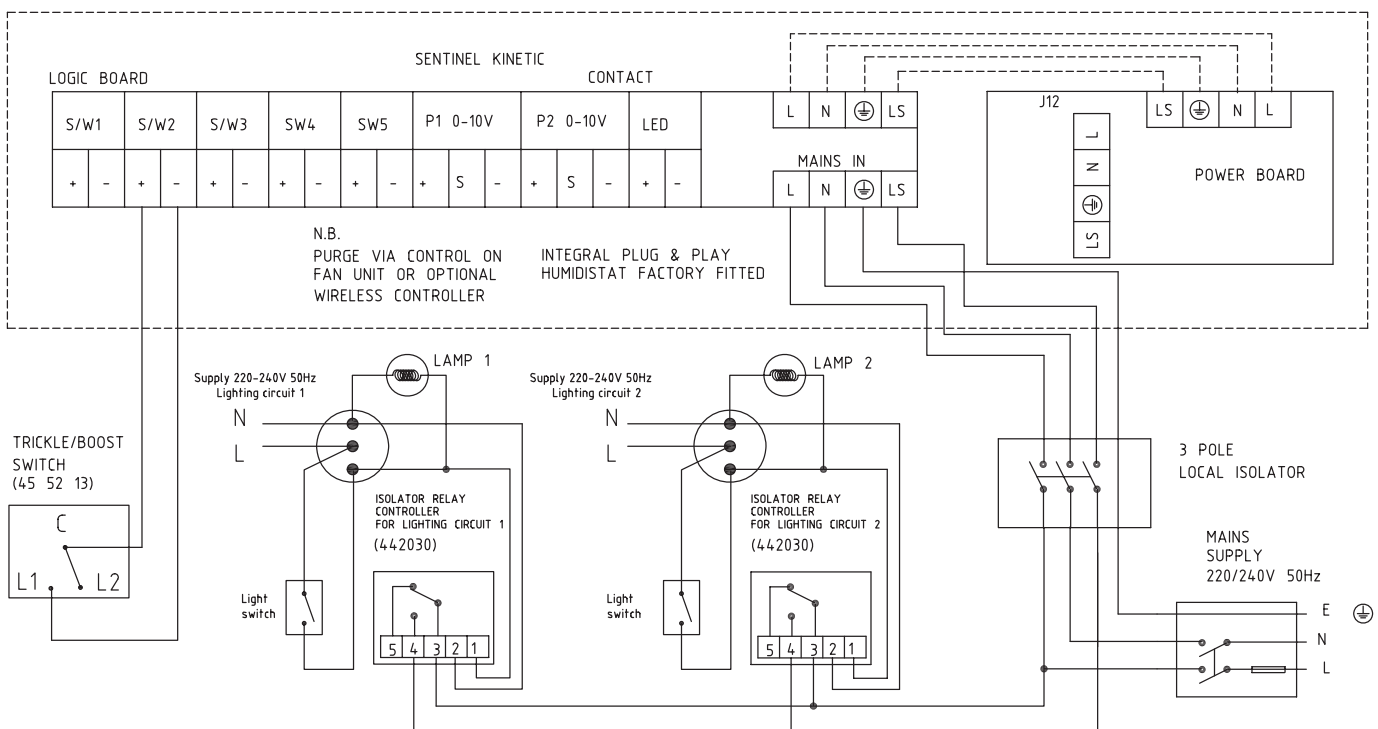


## Electrical Connection

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



## Trickle to Boost by a Light Circuit





# Case Study

## Vent-Axia's Cooker Hood MVHR Provides Fresh Air for Residents at Clippers Quay



Sentinel Kinetic Cooker Hood

Vent-Axia has supplied ventilation to the impressive Clippers Quay in Salford. Vent-Axia ventilation systems were specified to provide good indoor air quality for all 614 apartments. The largest build to rent development outside London, the scheme comprises 614 apartments and is set to be home to more than 1,200 residents and seven new retail businesses. One of the UK's largest providers of MEP services, HE Simm, specified and installed the ventilation for Grainger plc, the UK's largest listed professional landlord, who owns and manages the property.

At the project, 550 Lo-Carbon Sentinel Kinetic Cooker Hoods were specified to provide ventilation. The five-building development also offers a 24-hour gym, communal living rooms, co-working space, a cinema room and more.

The Lo-Carbon Sentinel Kinetic Cooker Hood from Vent-Axia combines a cooker hood with MVHR unit in one. It was selected for the majority of the apartments at Clippers Quay since there was no extra cupboard space for an MVHR unit. Successfully meeting the specified overheating requirements and strict noise requirements for the development, the Sentinel Kinetic Cooker Hood works seamlessly as an MVHR unit supplying energy efficient ventilation to the home and, when the cooker hood is needed, it is simply pulled out to provide a 100% purge of cooker fumes.

The unique Sentinel Kinetic Cooker Hood provides all the advantages of MVHR with all the advantages of a cooker hood. Designed to fit in a 600mm wide aperture/cupboard above a hob, the unit fits inside a kitchen unit for a seamless and discreet finish. The telescopic hood is pulled out when required to trigger the MVHR unit to switch to a pre-defined boost speed and the summer bypass automatically opens to prevent cooking by-products entering the heat recovery cell. The hood incorporates removable metal grease filters; low energy lamps to illuminate the hob surface; and is available with a white or brushed aluminium front trim. Additional SELV models are available for scenarios where it is required for the cooker hood to be as close as 550mm to an electric hob.

With the highest rating on SAP PCDB in its class, the Sentinel Kinetic Cooker Hood is highly energy efficient and also incorporates SELV models, reducing the distance needed between the hood and the electric hob from 650mm to 550mm - making it even more economical with space. The unit also features an integral fire damper within the hood, this safety feature completely seals the hood as soon as flames or high temperature fumes enter the MVHR unit and thus prevents fire or products of combustion being spread around the property. The hood is connected to the heat recovery unit by a galvanised steel duct with access for cleaning and, as an additional safety feature, the duct also contains a thermal cut-out fuse which turns off the MVHR unit in the event of excessive temperature in the airway.

The Sentinel Kinetic Cooker Hood also offers an integral humidity sensor option that increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached, ensuring adequate ventilation and minimal disturbance. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature. Both units also feature a revolutionary programmable 100% summer bypass to ensure year-round thermal comfort avoiding overheating, particularly where windows cannot be opened.

"We were keen to specify MVHR ventilation for the project but there was no extra cupboard space in the apartments to install it. The Vent-Axia Cooker Hood was therefore ideal as it combines a cooker hood and MVHR in one unit and it met the specified overheating and strict noise requirements."

Glyn Fryer, HE Simm Project Manager

# A Wide Range of Solutions

More than just an innovative  
ventilation manufacturer



## Support

Our expert ventilation consultants are always on-hand to assist with queries, offer their expert opinions, or even assist installers on trials of new ventilation products. Backed up by a knowledgeable and friendly technical support department, you can rest assured that Vent-Axia will always offer first class support.

**Vent-Axia**



## Training

The ventilation industry is constantly changing and evolving. So are our customer's challenges and that is why we are on hand to offer practical, engaging and informative training. From CPD courses on mould and condensation to hands-on toolbox talks on installation, we can help you to stay ahead of the knowledge curve.



## Downloads

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## VENT-AXIA CONTACT NUMBERS

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