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Our Ref: CAS 17030
12th June 2024

McCarthy & Stone Retirement Lifestyles Ltd

Dear Sir/Madam

Ref: NHBC Explanation Report – Mechanical Ventilation Validation and Evidence of Compliance with New Part F Building Regulations for Project: CAS 17030 – Durrington (2870)

Dear Sir / Madam,

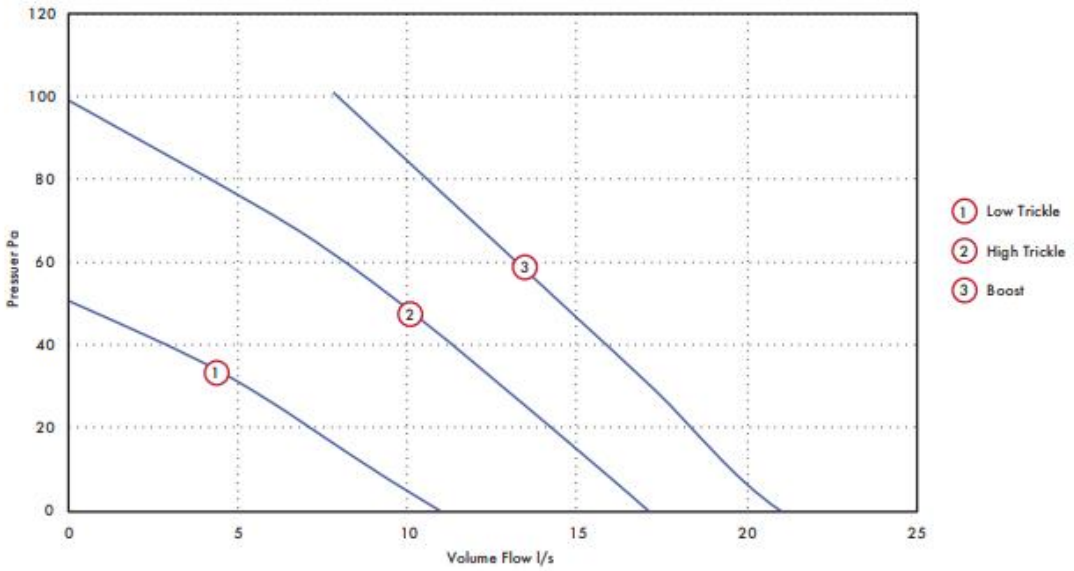
Herewith an explanation report pertaining the ventilation system to be used, it performance criteria, the strategy as per specifications and further evidence of compliance of the Vent Axia Ventilation System for the above referred dwellings and communal areas, as per the New Part F Building Regulations.

This explanation report related to **NHBC conditions, BC27 – BC-28 & BC 42, only.**

In relation to the **Communal area (shareable, non habitable areas) & Dwelling & Habitable Rooms,** as defined by McCarthy and Stone Retirement Lifestyles Ltd, the ventilation system is confirmed as follows, as per the Part F Building regulations Section 1 & Section 4, with interaction Part B, L, K and M (and Part O where applicable):

- **Cleaners Store, Bistro tea point, Kitchen WC, Guest Suite WC, Staff Suite WC & Kitchen, Office WC, Reception WC and Wellness suite,** have all been designed with Vent Axia Extract Fan Lo-Carbon Solo / Selv fan (427484B), ducted to the external through a non-insulated PVC 204 x 60mm ducting, to a fixed wall termination single airbrick.
    - Where ducting crosses through fire strategy related walls, BS1366 compliant fire collars are installed over the ducting through their passing the wall.
    - Where ducting terminates through fire strategy related external walls, Ryton A1 fire rates air bricks are used.
    - All fire sealing to completed by other trades, not related to Vent Axia.
    - The powerful centrifugal impeller allows installations using 100mm ducting in straight runs, whilst still achieving 15l/s as required by Building Regulations Approved Document F.
    - Continuous running products, such as the Lo-Carbon Solo Plus, installed in all wet areas of a dwelling are classed as a whole house ventilation system and therefore only need to move the amount of air as outlined in table 5.1a and 5.1b of Building Regulations Approved Document F.
    - The Lo-Carbon Solo Plus has an adjustable boost speed which is set at installation variable between a wall or duct setting for boost/override operation to meet Building Regulations thus ensuring minimum energy usage and low sound levels. All models have an optional speed for constant trickle ventilation (12l/s), selectable at installation. Depending on the model, the fan will switch from trickle (if selected) to boost via the pullcord/light switch/humidity sensor/PIR.
    - All models can be wall, panel or ceiling mounted and can be connected to either circular, rectangular or Vent-Axia's flat ducting. Enclosure of the electrical components is manufactured from flame retardant grade material.

Performance Guide (Duct Mode)



Model		Extract Performance l/s (m³/h) Boost	High trickle	Low Trickle	Power consumption - Watts Boost	High trickle	Low Trickle	dB(A) @ 3m Boost	High trickle	Low Trickle	SFP (W/l/s) @ 0Pa
Lo-Carbon Solo Plus/SELV P/T/HT/TM	Wall mode	18 (64.8)	12 (43.2)	8 (28.8)	6	2.9	2.3	33.5	27	23.5	0.28
	Duct mode	21 (75.6)	17 (61.2)	11 (39.6)	8.4	5.3	3.2	35.5	33	26	0.29

Tested at 240VAC @ 50Hz

- Please refer to **Annexure A & B** for technical documentation pertaining to product specification and performance details, as well as evidence of testing and commission criteria, tracker, and certification on completion, by qualified and accredited commissioner, and related equipment.

- **Bistro Lounge, Plant Pump Room, Kitchen Office, Staff Suite Laundry, h**ave all been designed with Vent Axia Mixed Flow Inline fan (17105010D), ducted to the external through a non-insulated PVC 204 x 60mm ducting, to a fixed wall termination single airbrick.

    - Where ducting crosses through fire strategy related walls, BS1366 compliant fire collars are installed over the ducting through their passing the wall.
    - Where ducting terminates through fire strategy related external walls, Ryton A1 fire rates air bricks are used.
    - All fire sealing to completed by other trades, not related to Vent Axia.

    - Vent-Axia has designed a complete range of energy efficient Mixed Flow In-Line fans that are now quieter, offer two and half times the pressure of conventional axial fans and are dimensionally more compact making them ideal for many ducted applications.

    - For optimum variable speed performance use a Vent-Axia 1.5 Amp electronic controller. Surface mounted providing variable speed control with an On/Off/sensor slider with indication light. There is an adjustable minimum speed setting. The controller has electrical connections for use with suitable external sensors.

- These units have a separate footplate for simple location mounting and detachable spigots for simple connection to ducting. The motor body chassis rotates to provide connection in acute spaces. Cleaning the product is simple as all parts can be removed without removing the ducting.

- The ACM Mixed Flow In-Line fan can operate in both horizontal and vertical positions

Sound Data

Dia.	Spectrum	63	125	250	500	1k	2k	4k	8k	dB(A) @ 3m
100	Breakout High	32	36	41	39	37	37	28	22	22
100	Breakout Low	30	31	34	36	28	29	23	22	16
100	Inlet High	38	42	57	56	54	46	38	30	37
100	Inlet Low	35	40	49	49	47	37	28	24	30
100	Outlet High	36	41	52	52	53	44	37	28	34
100	Outlet Low	38	41	45	46	45	36	28	24	27
125	Breakout High	32	33	38	41	41	40	33	23	24
125	Breakout Low	27	33	30	39	30	29	24	22	17
125	Inlet High	36	47	53	58	55	53	47	39	39
125	Inlet Low	38	42	45	48	45	41	35	26	29
125	Outlet High	36	47	51	54	55	50	46	37	37
125	Outlet Low	33	41	45	45	44	38	33	25	26
150	Breakout High	26	28	41	45	48	54	41	29	36
150	Breakout Low	21	29	45	49	43	44	32	22	29
150	Inlet High	40	49	59	63	59	63	55	47	46
150	Inlet Low	38	46	52	57	52	54	46	37	38
150	Outlet High	36	48	54	60	58	61	54	46	44
150	Outlet Low	33	45	49	54	54	52	45	36	37
200	Breakout High	38	53	47	47	56	60	44	33	41
200	Breakout Low	26	46	40	34	30	26	18	21	26
200	Inlet High	46	52	54	60	61	63	60	49	47
200	Inlet Low	38	37	40	41	39	35	24	23	22
200	Outlet High	63	68	69	73	70	69	62	54	54
200	Outlet Low	53	54	52	52	48	47	39	28	33

- **All Apartments (whole dwelling and habitable rooms),** on all floors have been designed with Vent Axia Lo-Carbon Sentinel Kinetic SELV Cooker Hood, Mechanical Ventilation & Heat Recovery Unit, ducted to the external intake & exhaust through a insulated PVC 220 x 90mm ducting, to a fixed wall termination double airbricks. The internal supply and exhaust are ducted respectively throughout the whole dwelling, and into each habitable room, with the Uniflex+ RV Adjustable Value (up to 21l/s for supply & extract)
    - Where ducting crosses through fire strategy related walls, BS1366 compliant fire collars are installed over the ducting through their passing the wall.
    - Where ducting terminates through fire strategy related external walls, Ryton A1 fire rates air bricks are used.
    - All fire sealing to completed by other trades, not related to Vent Axia.
- Optimisation has been targeted in every aspect of the design to ensure that it really does improve quality of life. Whatever the outside environment, we a have a method to help reduce air pollution from entering the living space. Our range of filter options, up to and including ePM2.5 (F7), ensures that even homes in heavily urbanised areas have the opportunity to filter out the impurities and help protect their family from respiratory issues.

- 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.

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

- The Vent-Axia Connect smartphone application, available on iOS and Android, allows the multitude of functions to be adjusted from the comfort of your sofa.

- We have spent or time considering every element of the ventilation control. Should you want to run the system at certain times and a various speed, all the options are available. With smartphone compatible controls, you are in full control of your ventilation all year round, for example increasing the ventilation rate during hot periods in the summer or reducing the speed while away to minimise running costs.

- Simultaneously, the smart logic built within our controls also ensures that you system operates optimally, with automated functions such as frost protection and summer bypass, ensuring your comfort is the number one priority.

- Low energy buildings typically have very low leakage rates (below 3m3/(h.m2) at 50Pa). This reduces the effectiveness of the standard frost protection strategy which imbalances the airflows. For airtight buildings in cold climates it is advisable to use the Sp models with built-in pre-heater.

Sound Data

Flow l/s	Test mode	Octave band, Hz, dB SWL								SPL dB(A)
		63	125	250	500	1K	2k	4K	8K	@ 3m
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.

- Please refer to **Annexure A & B** for technical documentation pertaining to product specification and performance details, as well as evidence of testing and commission criteria, tracker, and certification on completion, by qualified and accredited commissioner, and related equipment.

ANNEXURE A

(Refer to Attached Product Information Brochures)

ANNEXURE B

Vent-Axia

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West Sussex RH10 9YX

Airflow Rate Calculation Certificate

Plot No.	**Plot**		**Checklist**
Project Name			(Mark Y/N or N/A As Appropriate)
Customer			Filters fitted & clean?
Reference			Unit free from visible damage?
Date Tested			Humidistat Functional?
System Type			Boost switches functional?
System Commissioner			Condensate pipe connected to correct side?
NICEIC Certificate No.			Drain cap fitted to opposite condensate outlet?
Unit Handing			Fault codes displayed?
			System accessible?
Commissioning Equipment			Date & time set?

Anemometer Used: Testo 417

Serial No. 61239877 Certificate No. UK 51960

Date Calibrated / Expiry Date: 10.3.23 - 10.3.24

Unit Serial No.	

COMMISSIONING TABLE (l/s)

	Fan Speed Setting (%) 51		Fan Speed Setting (%) 33	
EXTRACT	Measured Boost	Required Boost	Measured Trickle	Required Trickle
Kitchen	13.0	#DIV/0!	8.4	#DIV/0!
Utility	8.0	#DIV/0!	5.2	#DIV/0!
Shower Room	8.0	#DIV/0!	5.2	#DIV/0!
En-Suite	8.0	#DIV/0!	5.2	#DIV/0!
	37.0	#DIV/0!	24.0	#DIV/0!

	Fan Speed Setting (%) 51		Fan Speed Setting (%) 31	
SUPPLY	Measured Boost	Required Boost *	Measured Trickle	Required Trickle
Living Area	16.0	#DIV/0!	10.4	#DIV/0!
Bedroom 1	12.7	#DIV/0!	8.3	#DIV/0!
Bedroom 2	8.4	#DIV/0!	5.4	#DIV/0!
	37.1	#DIV/0!	24.1	#DIV/0!

(Flow rates to Doc F Building Regs)

* Supply Boost shown based on optimum balanced rates. Only Trickle rates actually required by Doc F regulation.

PIN Locked?	yes

Commissioner's Comments: