DESIGN AND INSTALLATION SPECIFICATION - MECHANICAL VENTILATION WITH HEAT RECOVERY

The installation has been designed and must be installed in accordance with the following:

* Domestic Ventilation Compliance Guide 2010 Edition
* CIBSE B: Heating, ventilation, air conditioning and refrigeration, 2005.
* Building regulations, Approved Document F: Ventilation - Volume 1 (2021), Approved Document L1: Conservation of fuel and power in dwellings, Approved Part B: Fire Safety.
* The relevant British Codes of Practice including: BS 5925: Code of Practice for ventilation principles and designing for natural ventilation
* Manufacturer's installation instructions.
* HVCA DW/154 specification of plastics ductwork, 2000
* BRE Digest No 398
* Technical Handbook ch 3 (for Scotland)

Mechanical Ventilation with Heat Recovery (MVHR)
The system is designed to operate continuously to provide ventilation rates in line with the requirements of Part F- Vol1 (2021) Continuous Supply and Extract Ventilation with Heat Recovery.

The unit specific Installation Instructions and Homeowner Guide are supplied with each unit and this product must be installed inline with the manufacturers guidance and Domestic Ventilation Compliance Guide (2010).The Homeowner Guide must be left with the unit.

Ducting:
The specified unit must be ducted in accordance with your ventilation design.

If joist layouts/sections are not supplied we assume the ceiling void is suitable to accommodate the specified duct. Clear paths through the ceiling/floor void for the duct to be installed are also assumed.

The design may show rigid plastic ducting:
Ø125mm, Ø150mm circular or 204 x 60mm, 220 x 90mm rectangular ducting.

The design may show semi-rigid plastic ducting:
Ø75mm, Ø90mm circular or Flat 51 Comfotube.

with associated rigid (steel) Atmo ducting of Ø160-Ø200mm.

Insulation:
Ducting should be insulated where it passes through unheated areas and voids (e.g. loft spaces) with the equivalent of at least 25mm of a material having a thermal conductivity of <0.04 W/(m².K) to reduce the possibility of condensation forming.

Where a duct extends above roof level, the section above the roof should be insulated or a condensate trap should be fitted just below roof level.

Condensation:
The MVHR unit should incorporate a condensate drain, which should be connected to the nearest waste water network. Where units are sited in a position that makes the connection of piping to allow a fall, impractical, a condensate pump may be incorporated as part of the installation.

Vertical ducting will require a condensate trap in order to prevent back flow of any moisture into the product.

If terminating to a tile vent consideration should be paid to the effective equivalent area of the terminal to ensure that this does not adversely affect the fan performance. Please refer to the product installation instructions for further details.

Cooker Hoods:
For continuously running ventilation systems we recommend that a re-circulating cooker hood complete with carbon filter is installed to degrease the air at the source of pollution, preventing a build up of grease from forming within the ducting.

Extract valves should not be installed directly above a heat source, but be positioned a minimum distance of 600mm from the nearest edge.

Fire stopping:
For advice on appropriate fire stopping products a fire officer should be consulted as well as the Building Regulations 2010: Approved Document B (Fire Safety) - Volume 1: Dwelling houses (2019).

Background ventilation:
No background ventilators are required

Wiring:
WARNING: Class II appliances must be earthed. All wiring must conform with BS7671: IEE Wiring Regulations.The installation must be carried out by a qualified electrician in accordance with prevailing regulations.

Minimum Clearances:

Room Valves:	Ceiling Void	
Standard Ø125mm	135 mm	
Flat 51 system	140 mm	
Ø125mm Wall Mounted	400mm from corner	
Semi-Rigid Ducting:	**Ceiling Void**	**Inc Insulation**
Flat 51	65 mm	115 mm
Ø75mm Comfotube	85 mm	135 mm
Ø90mm Comfotube	100 mm	150 mm
Ø110mm Comfotube	120 mm	170 mm
Rigid PVC Ducting:	**Ceiling Void**	**Inc Insulation**
Ø100mm Round	125 mm	175 mm
204x60mm Rectangular	85 mm	135 mm
Ø125mm Round	150 mm	200 mm
220x90mm Rectangular	115 mm	165 mm
Ø150mm Round	175 mm	225 mm
Rigid Steel Ducting:	**Ceiling Void**	**Inc Insulation**
Ø160mm Round	185 mm	235 mm
Ø180mm Round	205 mm	255 mm
Ø200mm Round	225 mm	275 mm
PassivHaus Armaflex >		add 50mm

Gwel Teg House (<) 5 m³/(h.m²) at 50 Pa

Dwelling Details

Floor Area	206.40 m²		**Whole House Ventilation rate:**	
Room Height	2.40 m		Default	37.0 l/s
Volume	495.36 m³		0.3l/s per m²	61.9 l/s
Bedrooms	4		**Min ventilation rate**	62 l/s
Minimum Design Flow Rate for ComfoClime 36				100 l/s

Normal Speed Flow Rates:

Extract Normal Speed		Supply Normal Speed	
EnSuite	16 l/s	Bedroom 1	13 l/s
Shower	16 l/s	Dressing Room	6 l/s
WC	11 l/s	Bedroom 2	15 l/s
Plant Room	16 l/s	Bedroom 3	9 l/s
Kitchen	25 l/s	Office	8 l/s
Shower	16 l/s	Living/Dining	36 l/s
		Bedroom 4	13 l/s
Total Extract Airflow	**100 l/s**	**Total Supply Airflow**	**100 l/s**

Boost Speed Flow Rates:

Extract Boost Speed		Supply Boost Speed	
EnSuite	18 l/s	Bedroom 1	14 l/s
Shower	18 l/s	Dressing Room	7 l/s
WC	12 l/s	Bedroom 2	16 l/s
Plant Room	17 l/s	Bedroom 3	10 l/s
Kitchen	27 l/s	Office	9 l/s
Shower	18 l/s	Living/Dining	40 l/s
		Bedroom 4	14 l/s
Total Extract Airflow	**110 l/s**	**Total Supply Airflow**	**110 l/s**

Commissioning Ventilation Flow rates

Please read additional notes on MVHR Design for specific design details.
The product manual and user manual are supplied with the unit, please leave the product manual with the unit.

NOTES:

REV	DESCRIPTION	BY	DATE
01	Unit relocated, ducting amended to suit.	NJC	12/03/26

C&G design consultancy

C&G Designs Direct

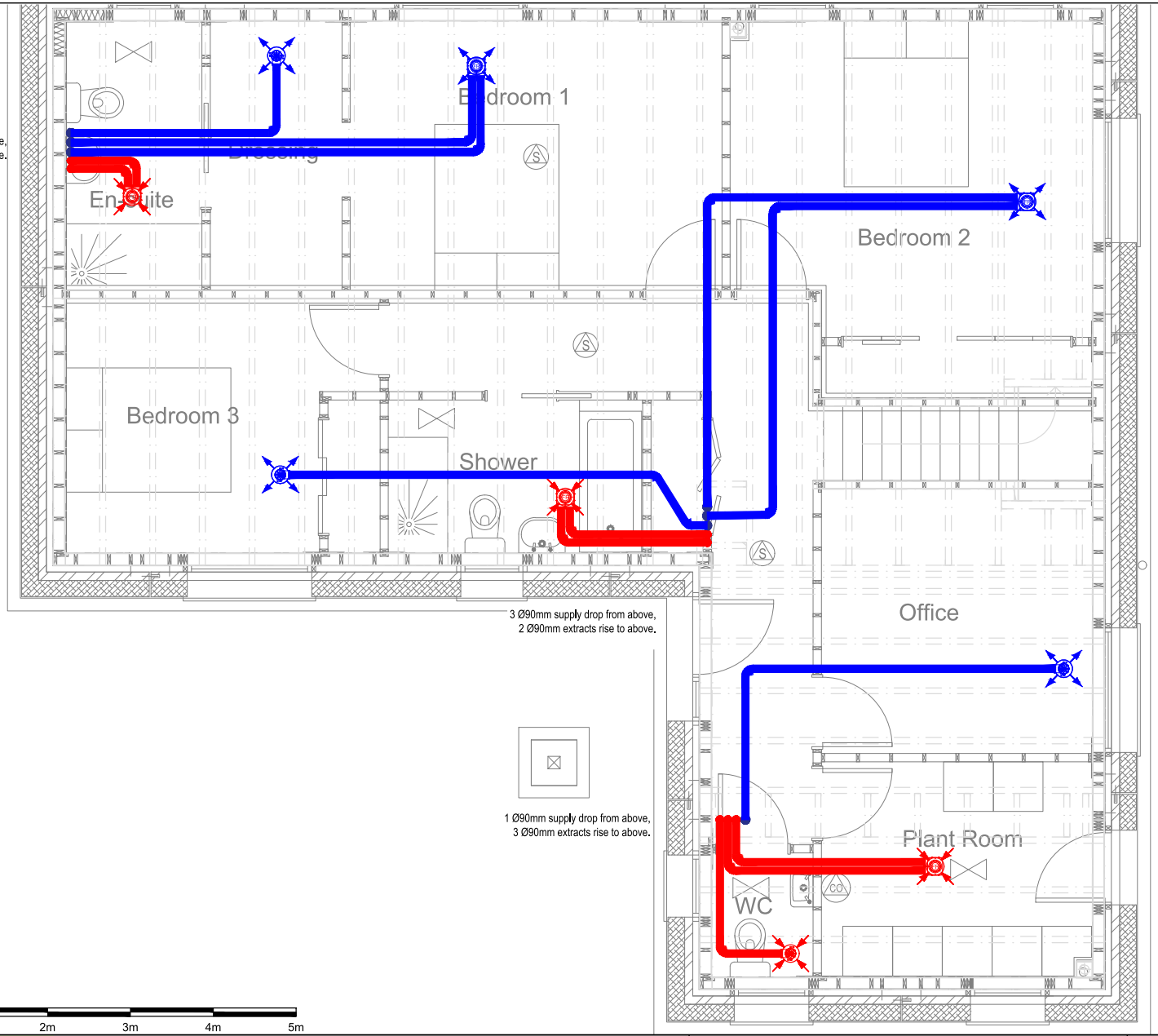
Your company details here

Dwelling name here

Dwelling address here

Specification

REF		SCALE	1:50
DRAWN		SIZE	A3 (L)
DATE		DWG No 01.0	REV 01



1:50

1m 0 1m 2m 3m 4m 5m

NOTES:

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MVHR GF

REF	
DRAWN	
DATE	
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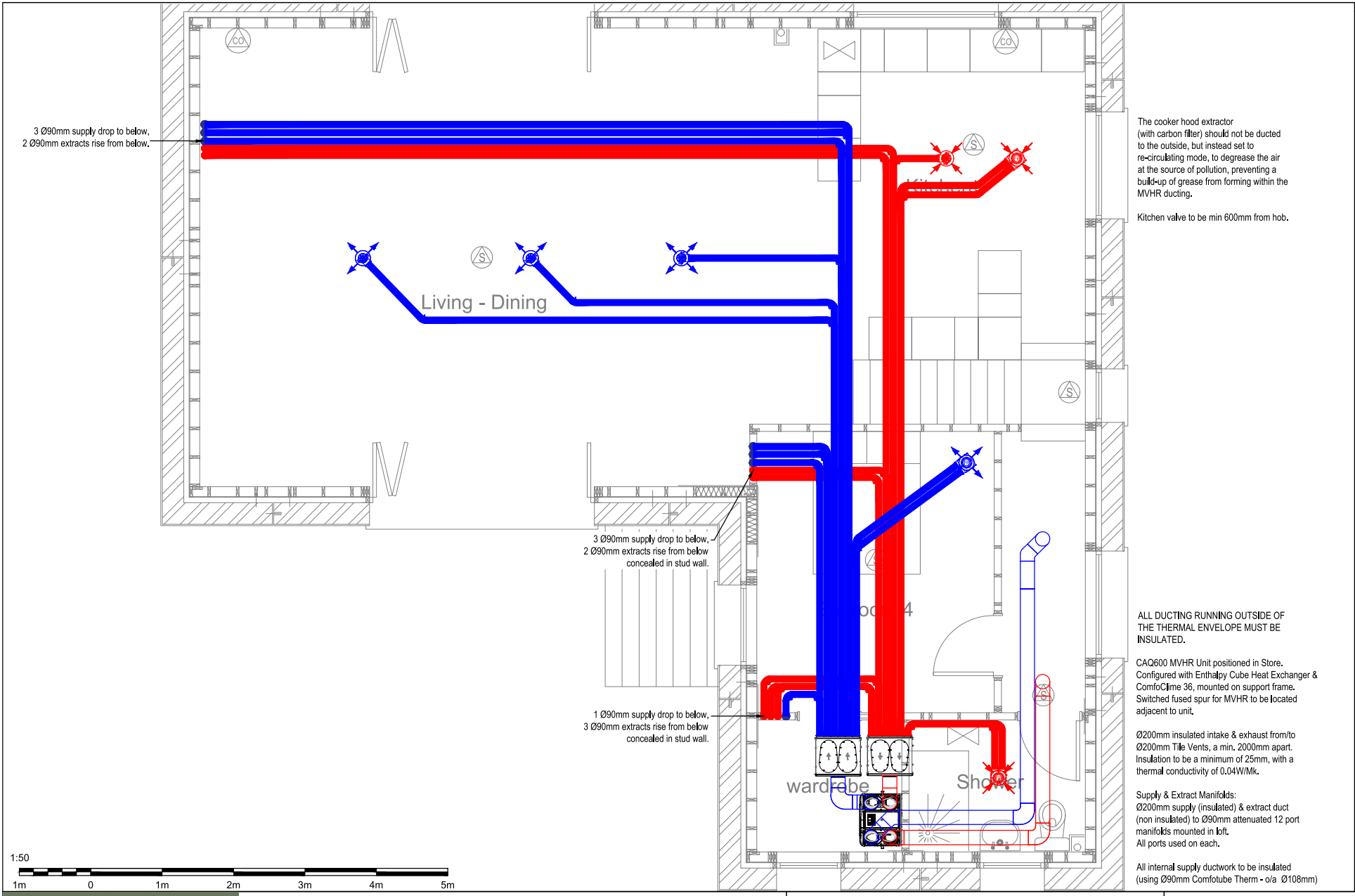
SIZE	A3 (L)
DWG No	01.1
REV	01



The cooker hood extractor (with carbon filter) should not be ducted to the outside, but instead set to re-circulating mode, to degrease the air at the source of pollution, preventing a build-up of grease from forming within the MVHR ducting.

Kitchen valve to be min 600mm from hob.

ALL DUCTING RUNNING OUTSIDE OF THE THERMAL ENVELOPE MUST BE INSULATED.

CAQ600 MVHR Unit positioned in Store. Configured with Enthalpy Cube Heat Exchanger & ComfoClime 36, mounted on support frame. Switched fused spur for MVHR to be located adjacent to unit.

Ø200mm insulated intake & exhaust from/to Ø200mm Tile Vents, a min. 2000mm apart. Insulation to be a minimum of 25mm, with a thermal conductivity of 0.04W/Mk.

Supply & Extract Manifolds:
Ø200mm supply (insulated) & extract duct (non insulated) to Ø90mm attenuated 12 port manifolds mounted in loft.
All ports used on each.

All internal supply ductwork to be insulated (using Ø90mm Comfotube Therm - o/a Ø108mm)

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C&G Designs Direct

Your company name here

Dwg name here

Dwelling address here

MVHR FF

REF		SCALE	1:50
DRAWN		SIZE	A3 (L)
DATE		DWG No	01.2 REV 01