Heating Hot water Renewables

Princedom Street
John Southworth Builders Ltd

Your personalised carbon saving heat pump recommendation



Vaillant
myVAILLANT DESIGN

Vaillant supporting you all the way



A heating system that cares for your world

Having a new Vaillant heat pump installed in your property is intended to have a positive impact for you and the world around you.

Within this document, based on the information provided you will find estimated calculations on how much energy savings you could make from upgrading to a heat pump, your new estimated average heating costs, plus the potential savings in carbon emissions.

Your full Vaillant system solution

Buying a heat pump is an important decision and that's why we have provided you with a detailed overview within this guide.

If you have any questions, please feel free to get in touch with your installer.

Document Prepared on:
13/05/2024

Prepared by Vaillant
System Sales & Design

Project Reference:
Princedom Street
John Southworth Builders Ltd

Project Address

Princedom Street
Manchester, M9 4JL

The project report is based on the estimated information for your heating and hot water needs for the property. Vaillant Group UK Limited accepts no liability in regards to the calculations nor performance of the system as a result of the recommendations or calculations prepared.

Product recommendation

Based on the information supplied we can estimate

- The peak heat loss from the property is 3.4 kW
- Design outside temperature of -2.2 °C
- The heating requirement is 5,825 kWh/year
- The domestic hot water requirement (DHW) is 3,821 kWh/year

Total estimated energy demand 9,646 kWh/year



Heat Pump

Recommended heat pump: aroTHERM plus 3.5kW
Design outside temperature: -2.2 °C
Design flow temperature: 45 °C
Heat pump capacity at design conditions: 4.4 kW
Spare capacity: 23 %

Open volume requirement: 15 L



Cylinder

Recommended DHW cylinder: 200 Litre Heat Pump Cylinder

Assumed occupancy: 4
Assumed usage per person: 45 L
Total assumed DHW usage: 180 L
DHW store temperature: 50 °C

Average heat up time from cold (10°C): 149mins



Controls

Recommended control : **sensoCOMFORT**

Weather compensating programmable room thermostat

Intuitive touchscreen interface provides simple navigation of the control

Provides a better understanding of energy consumption (kWh) and renewable savings

Estimated system performance

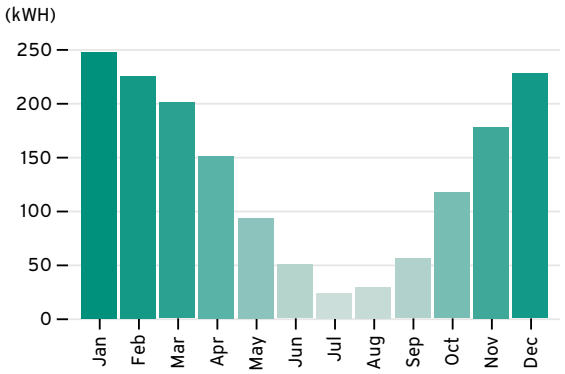
Estimated annual energy consumption

3,415 kWh

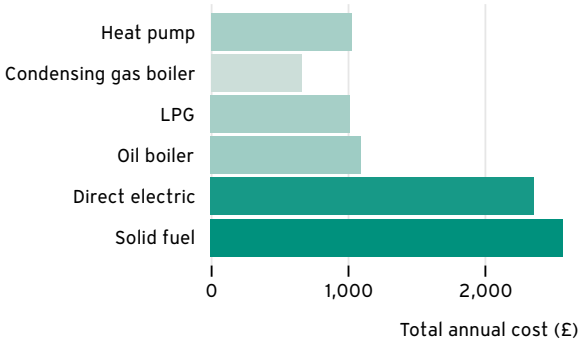
Estimated annual heating and hot water costs

£837

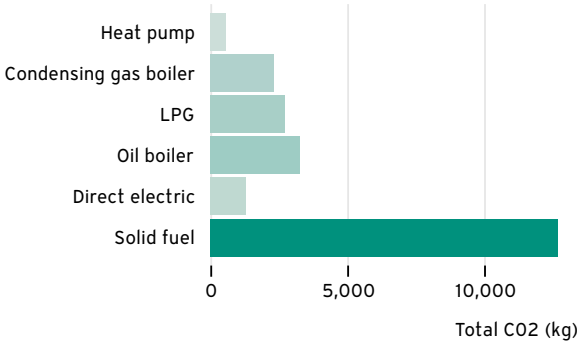
Estimated energy consumption per month



Cost comparison chart



Carbon comparison chart



Reference tariffs

Condensing gas boiler:	6.04p
LPG:	9p
Oil boiler:	10p
Direct electric:	24.5p
Solid fuel:	8p

Reference efficiencies

Condensing gas boiler:	90%
LPG:	85.5%
Oil boiler:	90%
Direct electric:	100%
Solid fuel:	30%

It is difficult to predict the heat demand of a building, and therefore the performance and running costs of heating systems with certainty. There are variables that apply to all types of heating systems and the efficiency of heat pumps is linked to good system design and installation. For these reasons this project report is given as guidance only and should not be considered as a guarantee.

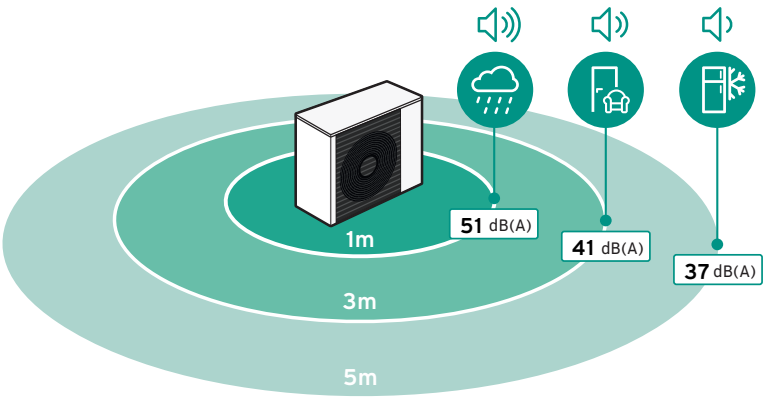
Overview:
Your system solution

We recommend a system for you featuring the following main components

Image	Description	Article number	Quantity
	aroTHERM plus 3.5kW	0010037211	1
	200 Litre Heat Pump Cylinder	0020235272	1
	sensoCOMFORT VRC 720	0010036819	1
	Flexible hose 750mm long for aroTHERM (x 2)	0020165288	1
	anti-vibration feet (large)	0020250226	1
	Glycol discharge vessel	0020145563	1
	Volumiser 18 Litres (mounting bracket not supplied)	0020048753	1
	Ball filter valve 28mm	0010038133	1

Additional information

Sound pressure level for the installation



Sound emission from the aroTHERM plus

3.5kW heat pump, free standing

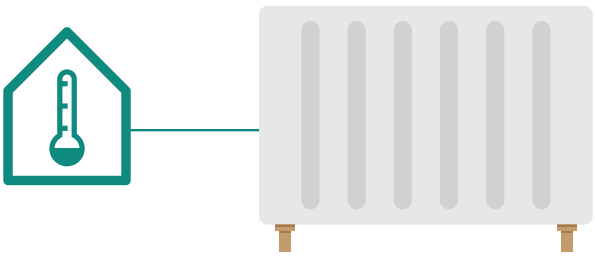
Sound power
This is the rate at which sound energy is emitted from a unit. The sound power of all heating products like heat pumps and boilers are displayed on the ErP product label.

Sound pressure
This is the volume of sound you hear as the sound travels through the air. So the further away you move from the sound source, the lower the volume of sound you hear. Sound pressure values are always lower than sound power values. An example of the sound pressure value would be 46dB(A) the (A) shows that is a sound pressure value.

Planning Information
Development is permitted only if the air source heat pump installation complies with the Microgeneration Certification Scheme planning standards or equivalent standards.

A heat pump will be passed under permitted developments if the installation area passes a noise assessment **(MCS 020)** and the requirements of the local planning portal are met. 10kW and 12kW aroTHERM plus/split heat pumps and cascade systems require planning permission.

District Network Operator
Installers have the responsibility to inform network operators when installing a heat pump system to ensure the electrical supply is adequate.
www.energynetworks.org



Heat Emitters
Radiator sizing and underfloor heating spacing should be sized to achieve the lowest possible flow temperature. Systems designed with lower flow temperatures are generally more efficient.

Mixed temperature zone systems will only be as efficient as the highest design temperature.

Vaillant heat pumps operate on a 5kΔT.

Installation Information
Please refer to installation manual for full information on installation requirements.

Before purchase of the heat pump, a full heat loss calculation should be carried out (in compliance with MCS MIS3005/EN12831) to ensure that the equipment is fit for the property. The plant area and entrance into the plant area must be measured to ensure all components required can be installed.

Government grants and funding



Boiler Upgrade Scheme (BUS)

The Boiler Upgrade Scheme is a Government grant designed to encourage installation of low carbon heating systems. Available until 2028 for participating MCS installers, the initiative replaces the previous RHI scheme which ended on the 31st March 2022.

The scheme is open to domestic and small non-domestic properties in England and Wales with grants of £7,500 for both air source heat pumps and ground source heat pumps.

To find out more, visit:
www.gov.uk/apply-boiler-upgrade-scheme

The Home Energy Scotland Grant and Loan Schemes

The Home Energy Scotland Grant and Loan Schemes offer funding to homeowners upgrading to a heat pump.

The Home Energy Scotland Grant and Loan aims to help with the upfront costs, giving you a grant up to £7,500 (or up to £9,000 if the household qualifies for the rural uplift) and the opportunity to borrow up to £7,500 as an optional loan.

To find out more, visit: www.homeenergyscotland.org

Legal disclaimer

This project report was prepared based on the data provided to us ("Data") and is computer generated. The results are rounded and rely on certain assumptions. Vaillant Group UK Limited does not check this Data for correctness and completeness. This project report is not intended to replace a full and detailed investigation of the site and a full room by room heat loss and hot water calculation carried out to the MIS 3005 standards.

The Installer who provided the Data is responsible at all times for the clarity, accuracy, fitness, suitability and completeness of the information provided and to seek any guidance from Vaillant Group UK Limited in respect of any issues on which it is unclear. The Installer also agrees and acknowledges that, regardless of the issuing of this report all risk remains with the Installer and all risk in any development and installation of any appliances shall remain with the Installer.

Vaillant Group UK Limited does not warrant the accuracy of the details provided within the Statement or the technical details and calculations provided within the Statement or provide any guarantee in respect of the same.

Any warranties or representations as to, and all liabilities whether in contract, tort (including negligence) or otherwise in relation to, the quality, fitness for purpose, accuracy, completeness or timeliness of this project report or any recommended products (whether or not based on the Data (to the extent permitted by law) are excluded or (to the extent that any such exclusion is not permitted by law) limited to the minimum sum likely in all the circumstances to be legally enforceable.

Vaillant Group UK Limited accepts no liability for any losses arising from reliance on this project report or for the completeness or accuracy of the project report in its entirety.

Please ensure compliance with laws and regulations and the observance of all applicable manuals upon installation. Please be aware that you will be the Controller of any personal data (such as the installation address that you provide to us).

Vaillant Group UK Limited does not contract with the homeowner directly and does not carry out the installation works in respect of the products and shall have no liability in relation to such installation or the performance of the heat pump.

Assumptions:

This whole house calculation provides an estimation of the space heating and hot water requirements.

For reference, the data below has been inputted:

Assumed values

U-value external walls:	0.2 W/m²K
U-value floor:	0.2 W/m²K
U-value roof:	0.13 W/m²K
U-value windows:	2.7 W/m²K
Ventilation air changes:	0.6
Number of floors:	2
Ground floor area:	43.7 m²
First floor area:	52.3 m²
Glazing area:	10 %
Number of bedrooms:	3
Water usage:	45 L
Property type:	House
Built form:	Semi-Detached
Age of property:	New build

Calculated values

Calculated heated floor area:	96 m²
Calculated watts per square metre:	35 W/m²
Total estimated energy demand:	9,646 kWh/year



Customer service support contact details

Homeowner

Homeowner line
Telephone: 0330 123 9070
Email: homeownerlead@vaillant-group.com

Renewable service
For renewable products aftersales, service, and commissioning:
Telephone: 0330 100 3540
Email: aftersales@vaillant.co.uk

General enquiries
If you have a general enquiry our friendly reception staff will happily point you in the right direction:
Telephone: 0345 602 2922

Installer

Technical enquiries
For technical assistance: 0330 100 3540

Training enquiries
Vaillant provide many different training courses. For more information:
Telephone: 0345 601 8885
Email: training@vaillant.co.uk

For technical assistance, system design queries and schematics
For technical assistance: 0330 1231767
Email: systemdesignuk@vaillant.com

Sales support
Vaillant products are available to purchase from reputable heating merchants in the UK. To find contact details for your nearest Vaillant sales representative:
Telephone: 0345 602 0262

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