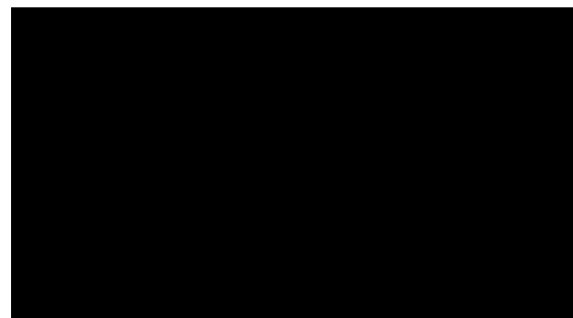




Attn: Alison Baird

Ref: Bairds Holiday Lets
Climping Street
Climping
Littlehampton
West Sussex BN17 5RQ

Advisors:

James Oakley
Terry Walters

Your personalised quote,
from your local heating and
renewable energy specialist



29/01/20

Dear Mrs Baird,

Please find below our quotation to install a ground source heat pump solution at Bairds Holiday Lets, Climping, Littlehampton BN17 5RQ

I have based the designs on the Stiebel Eltron ground source range. Stiebel Eltron are leading manufacturers of heat pumps and can boast high efficiency levels along with outstanding reliability. We get full support from the manufacturer on all projects and work closely with them to ensure a smooth design and installation process.

Please note that we have assumed that ground loops are the method to be installed, rather than boreholes.

For your reference we have assumed the following insulation figures: ground floor 75mm Celotex (u-value equivalent of 0.17); external walls 100mm cavity filled (0.24); standard double-glazed windows (1.4); and roof insulation (rafters) of 175mm (0.2). Total floor area 316 m²

This quotation is subject to a technical survey of the property.

Quote summary Ground Source Heat Pump

The system has been designed taking into account first comfort and second efficiency. The indoor unit is the heart of the system. We have assumed this will be located in the Plant room. Careful consideration needs to be taken with regards to space as the equipment will take up a fair amount of internal space. The primary pipe work for the heating system can be connected at this position. All mechanical controls will be placed in as yet to be agreed locations.

In the plant room a 100ltr buffer store will also be installed. The buffer store will aid both flow and reaction times of the heat pump. All the heating circuits will be connected at this position, and we expect that your heating tails will be within 2 metres of this position.

Because of the potential high demand of domestic hot water (8 showers/bathrooms) then we recommend two high efficiency hot water cylinders specifically designed to work with heat pumps that will be installed alongside the heat pump. These cylinders are efficient enough to hold hot water for days on end and are directly operated via the heat pump controller. I have chosen two 300ltr high gain hot water cylinders. The hot water system will be installed as a pressurised system adding both performance and efficiency.

All pipe work is then filled, pressure tested and flushed to ensure any debris is removed from the system. A central heating filtration unit will be installed to prevent any future debris build up. The system will then be filled with an inhibitor solution to ensure complete protection. The system will then be fully commissioned to both MCS and manufacturers standards.

The heat pump will operate on a weather compensator. This means it will measure the outside temperature and deliver a temperature inside to your heating system. When it's warm outside it will deliver a lower temperature and when it's cold outside higher. This adds a huge amount of efficiency to the system and eliminates wasted heat.

Heat pumps are largely becoming the direct replacement for fossil fuelled appliances such as oil and gas boilers. High efficiency, low running costs and low maintenance are some of the key factors for this. Ground source heat pumps, if designed and used in the correct manner can be the most efficient type of heating and hot water production available to us in the UK.

This system has been designed to operate with ground loop collectors. The collectors are a 40mm MDPE pipe and approximately 600 metres will be installed. All the pipes will meet into a purpose made chamber and from this position be distributed via 62mm MDPE headers to the assumed location in the plant room.

Please note that we have assumed that the distance between the purpose made chamber and the heat pump location is no more than 10m.

Please note we have allowed to supply and connect up the pipes only and have assumed that the loops will be laid by others. We will assist with the ground loop design and layout.

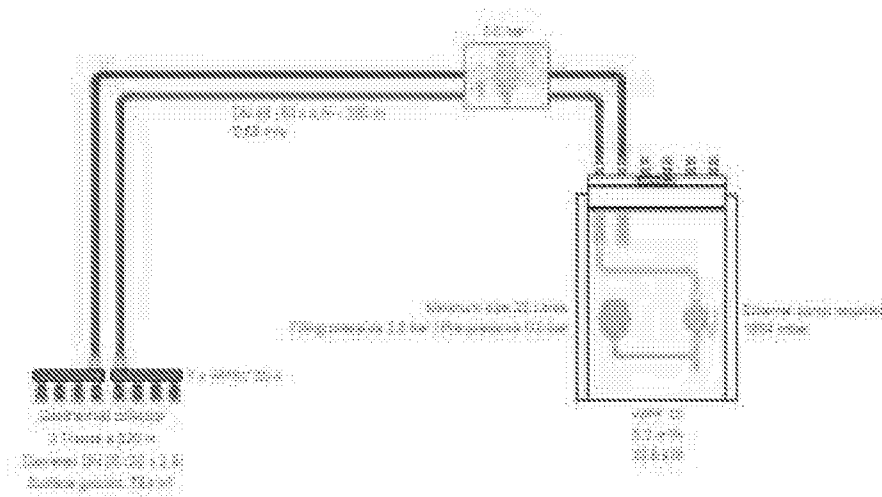
Electrical

Wire up heat pump on new dedicated circuit. Wire up all new controls as required.

Insulation

Any of our installed pipe work in unheated areas to be insulated to meet current building regulations or exceed wherever possible.

Example System Design



Components to be installed

- Stiebel Eltron WPF 13 S Heat Pump Unit
- WPSF Brine Filling Unit
- SPB 100ltr Buffer Store
- Brine Circulation Pump
- Expansion Vessels
- Remote FE 7 Control
- 1 x 500 litre Hot Water Storage cylinder
- Dirt Filters
- Brine Circulation Pump
- Grade A system circulation pumps
- Metering Package
- Approx. 800 meters of collector pipe
- Purpose made manifold chamber
- Approx. 10 meters of header pipe work
- Complete installation of full system
- Manufacturers commissioning assistance

To Include:

- Installation of all the above components
- Signing the system off to MCS standards to enable you to claim the proposed non domestic RHI.
- 2 Year Stiebel Eltron Guarantee and 5 year parts warranty
- 2 year warranty on all works carried out by Ohm Energy Ltd
- RHI application assistance