

AWARD
Winning
INSTALLATION



4-bedroom home heating from Radiant Heating Solutions

"Radiant went above and beyond to help us find the exact solution we needed for a sustainable heat source for our new home" -
Mr & Mrs Clark

Struggling to get a Ground Source Heat Pump for your home, due to an awkward plot, that is limiting your ability to lay enough collector pipe?

This solution may work for you too.

Get in touch now for pricing & information

hello@underfloor.biz

The Story

The clients wanted to incorporate renewable technologies to heat their home and hot water, A Ground Source Heat Pump (GSHP) was chosen to provide full space heating and hot water for their new ScandiaHus 4 bedroom house with large annex situated near to the market town of Bourne, Lincolnshire.

The problem was that the property sits in a densely wooded area and it was not possible to excavate horizontal collector trenches.

The solution was bore holes BUT again because of the trees (roots etc) not traditional bore holes.

We specified and commissioned Geothermal Radial Drilling (GRD) to enable the entire bore field to be accessed from a centrally placed chamber. This is a relatively new system which allows for sustainable heat extraction from a wider ground source.



Boreholes being drilled



Worcester Bosch heat pump

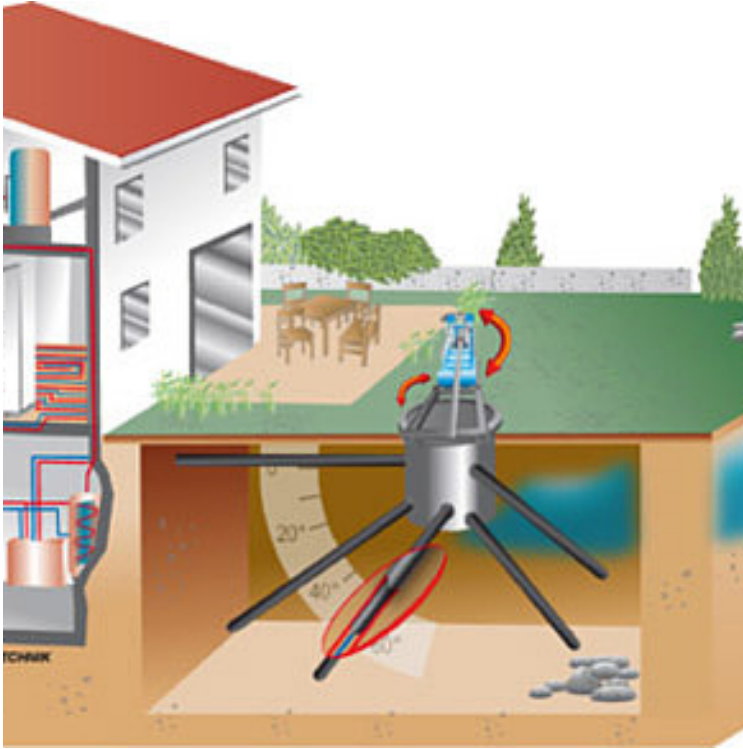


Drilling the first of 6 bore holes



Pipes entering the home

Facts and figures



With the GRD system all plot dimensions can be utilized searching out the most rewarding geology

House 255m²
EPC (Energy Efficiency Rating) A+ (96)

What we installed
9KW Heat Pump + 100L Buffer + 280L Hot water tank
+ Bore Holes Fully installed
Installed Cost - £27,190
RHI Return - £19,017
Time on job - 6 weeks
Annual Heating costs - £584.00
Annual Hot Water Costs-£75.00
NB: If standard ground collectors were able to be used total install cost would have been £19K

Alternative Heating (Oil)
Installed Cost - £9,960
RHI Return - £0
Annual Heating costs - £612.00
Annual Hot Water Costs-£78.00
(based on Oil at 36p/Litre)

Should you require a more detailed technical report on the project please feel free to contact us.

The Drilling Process

The Radial drilling draws its heat by spacing bores at varying angles ensuring that the highest possible ratio of watts per metre is achieved.

Initially a single main drill chamber is installed which acts as an access point from which the bores can be drilled. These can be placed anywhere within a 360 degree circumference around the chamber.

By drilling out at angles from a single main chamber, the long horizontal trenches required by ground loop systems are avoided.

In most situations a clean air powered system is then used to remove bore hole waste from the site, a huge advantage where preservation of existing areas such as gardens, patios or driveways is a priority.



The 6 bore holes were drilled and totalled 300 metres of collector using 600 metres of pipe.

The site sits over varying layers of clay and sandstone making drilling very difficult. It took over four weeks to complete the bore hole installation and connect it to the heat pump.

The system is fully operational supplying underfloor heating throughout the house and fan coil radiators in the annex. Throughout this last winter the house had a constant (designed) internal temperature of 21C throughout. Our clients, Jill and Rob Clark are delighted with the installation and the efficiency of their Worcester Bosch heat pump.

To heat the home a peak heat load of 8.6kW would be required. We specified a Worcester Bosch 9kW LECP heat pump with a 100L buffer and 280L hot water tank.



Worcester Bosch heat pump and
buffer tank



Boreholes waiting manifold
connection



How the borehole looks
when finished

Radiant Heating Solutions recently won, for the second time the Worcester Bosch Environment 2020 award for the unique design of this installation.



01400 250572

radiantheatingsolutionsltd.com