

Resilient Building Toolkit Adaptation Measures Factsheet

Name and description of measure: Ground source heat pumps

Ground Source Heat Pumps remove heat from the earth through a borehole and release it at higher temperatures, the heat can be used for space heating and hot water.

Cost of measure (high, medium or low):

Medium (Dependant on cost/type of boreholes)

Pros and Cons:

Pros:

Typically low maintenance costs, high reliability, few moving parts, proven technology, great functionality, can be used in both heating and cooling modes, long life expectancy (Typically 20-25 years), no flue or ventilation gases.

This technology is RHI compliant but must have a COP of 2.9 and must be MCS certified for installations less than 45 kWth. 8.7 ppkWh for 20 years.

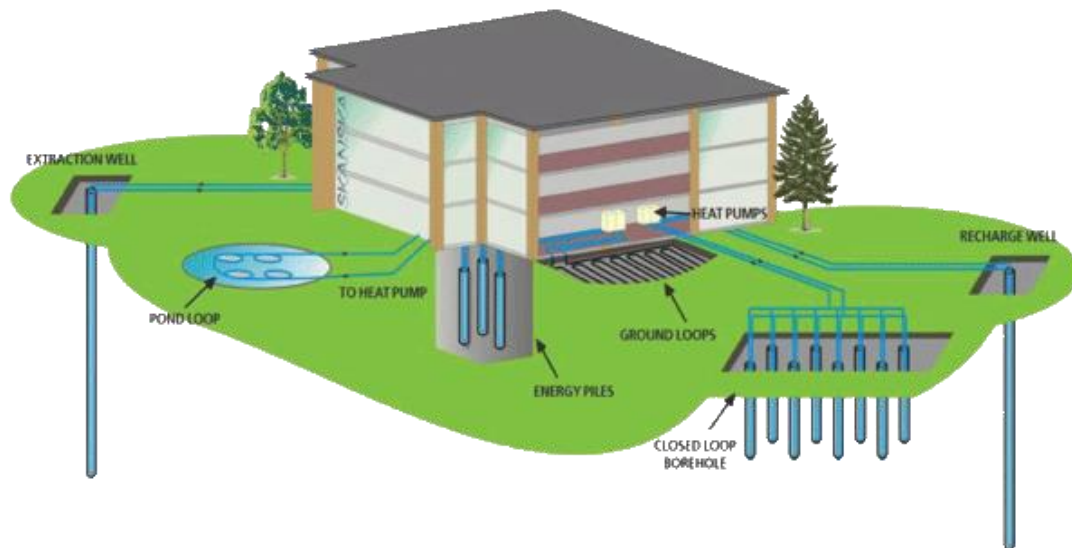
Cons:

Cost of coils can lead to comparatively higher installation costs - can often be prohibitive, ground conditions may not be suitable, often require relatively low supply temperatures in heating mode to achieve high COPs, use of refrigerant gases, may be space issues for collector loops or boreholes.

Effectiveness of measure (high, medium or low):

Medium CO2 savings, COPs are dependant on relatively low supply temperatures in heating mode.

Photo:



Product review site:

Ground Source Heat Pump Association - <http://www.gshp.org.uk/>

Energy Saving Trust - <http://www.energysavingtrust.org.uk/domestic/content/ground-source-heat-pumps>

Link to case study and contact:

http://www.gshp.org.uk/pdf/DECC_Nicole_Smyth.pdf