

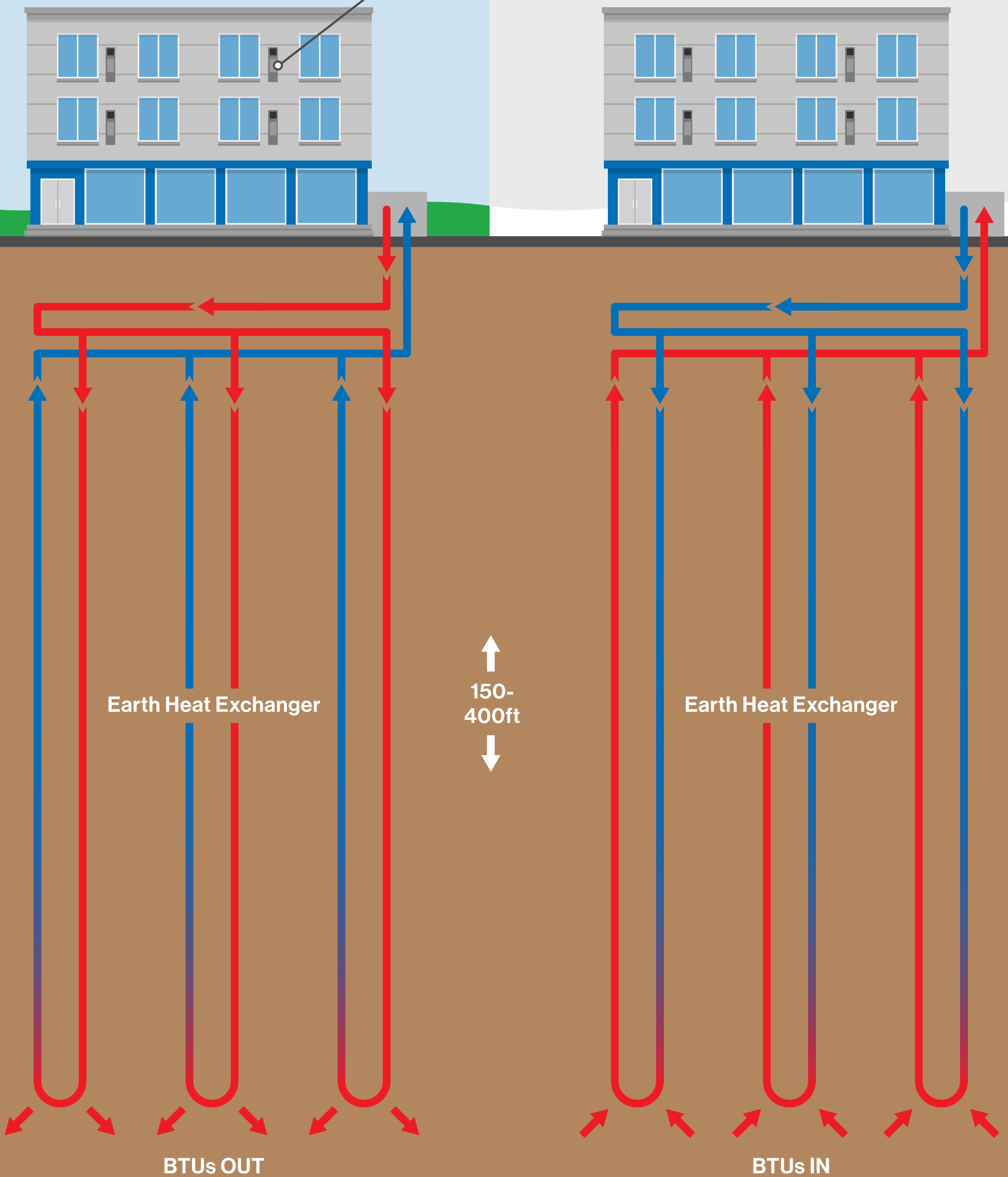
A traditional Ground Source Heat Pump (or Geothermal) system transfers heat to and from a geothermal borehole field to provide space heating and cooling. It uses electric heat pumps to move heat to and from the ground and must be sized large enough to meet peak winter heating needs.



Most systems use Water-to-Air heat pumps in each unit to distribute heating and cooling energy from the single water loop. The heat pumps operate in both heating and cooling modes.

Summer (Hot)

Winter (Cold)



Pros & Cons

The capital cost of geothermal systems is relatively high because of the expense associated with drilling boreholes up to 400 ft below ground level.

Geothermal systems are highly efficient, and can reach a Coefficient of Performance (COP) of between 3-6, producing up to 6 units of heat per unit of energy consumed. Geothermal systems are only viable options when there is a promising location for a boreholes and deep drilling.

System	Capital Cost	Energy Cost	Suite Noise	Floor Space Impacted	Submetering	Fuel Flexibility	Temperature Control
Ground Source Heat Pump	High	Low	Moderate	Central System	Inexpensive	Low – cannot convert	Slow