

# Why Geothermal?

## Geothermal Benefits

*With a geothermal heat pump you'll enjoy these benefits:*



- **Efficiency & Lower Operating Costs** - Geothermal heat pump systems save money. They use the earth's thermal properties to provide unmatched efficiency and operate more efficiently than conventional heating and air conditioning systems. Annual energy savings for homeowners can be **reduced from 30 to 70% in heating mode and 20 to 50% in the cooling mode** compared to conventional systems.<sup>1</sup> For every unit of electricity the system uses, it provides three to four units of heating energy - an efficiency of 300% to 400%.

Geothermal systems can also provide increased energy security protection from inflation in the cost of volatile fossil fuel (natural gas) commodity prices.

- **Longest Equipment Life** - the government of Canada says systems last 20% longer and have lowest life cycle cost.<sup>2</sup>
- **Environmentally Responsible, Green Technology** - geothermal systems eliminate the combustion of fossil fuels on site and dramatically lower the need to generate power - significantly reducing the emission of greenhouse gasses and the environmental damage associated with nonrenewable resource extraction.
- **Comfort** - geothermal systems use the relatively stable temperature of the earth as an energy source, you are assured of constant, even heating in winter, and better humidity control in the summer - through a single system both your heating and air conditioning comfort is taken care of. They eliminate the need for exhaust venting, reducing the number of penetrations in the building envelope and thereby improve weather tightness.
- **Flexibility** - geothermal systems can provide any combination of forced-air heating, radiant in-floor heating, domestic hot water, and air conditioning all from the same unit. From houses to office buildings to community swimming pools, and everything in between, geothermal systems can be designed to provide efficient heating and cooling solutions. Additionally, geothermal systems require only one-third the space of traditional HVAC systems.
- **Quieter Operation & Better Aesthetics** - neither outside air conditioning equipment nor chimney. The compact self-contained, interior equipment does not need a noisy, unsightly outside condensing unit that a traditional air conditioner requires. Geothermal heat pumps are quiet and discrete. You will barely know they are there, but you'll notice

the lower energy bills.

- ***Healthy Indoor Air Quality*** - Eliminates Carbon Monoxide (nothing burned) and costs for Carbon Monoxide detectors in new residential construction. Eliminates need for exterior wall venting, improving building envelope weather tightness
- ***Safety*** - No flame, no flue, no odors, no risk from carbon monoxide. Simply safe and reliable operation.

<sup>1</sup> Geothermal Heat Pump Consortium, GeoExchange Heating and Cooling Systems: Fascinating Facts

<sup>2</sup> Ministry of Natural Resources, Brochure Heat Pump Technology, 1997; Trends in Renewable Energy Issue #143