

More geo-exchange system buildings coming to Ontario

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If you've never heard of a geo-exchange heating system, you're not alone. If you're looking for another option to lower your heating and cooling costs, this type of system can help.

Geo-exchange systems, otherwise known as a geothermal heat pump, uses renewable energy just below the earth's surface to heat and cool a house, along with provide hot water. While the temperature fluctuates above ground during the seasons, the Earth's temperature a few metres below the surface stays fairly constant all year round at about seven degrees or 21 degrees Celsius, depending on where you live.

A geo-exchange system works by digging holes hundreds of feet below the surface and installing piping that is filled with liquid. A little electricity is used to power heat pumps, ground loop pumps and distribution fans or pumps. To heat the home, the liquid in the pipes will absorb heat from the Earth's surface and carry it inside the home, where a heat pump will help distribute the warmth inside the home. While to cool the home, the process is reversed and heat is extracted from the air and transferred to the piping which carries the heat back into the Earth.

This technology has been around for more than 50 years, but recent technological improvements have made it more accessible to install and more efficient.

Homeowners who install the system will benefit greatly through lower utility bills of about 25 to 75 per cent, lower maintenance fees and knowing that they're generating much less greenhouse gas when keeping their house warm or cool.

Del Ridge Homes, an Ontario builder with buildings in Markham, Burlington and Vaughan, has been an early adopter with this technology, which looks to be gaining attention from other homebuilders, [according to the Toronto Star](#).

While installing the system itself may be expensive, homebuilders are attracted to heating/cooling option since the province is implementing new codes and rules to determine "green" buildings.

"As of 2017, any new buildings in the province of Ontario are going to have to increase the threshold for energy efficiency," a GTA engineer told the *Star*.

"Existing technologies are getting stretched to the limit. You can insulate a building as much as you can, put in as few windows as you can, but once you finish with the envelope, the usual mechanical systems don't allow much more movement (in terms of increasing efficiency)."

This may have a huge impact for condo owners since the builder will take on the cost of installing the geo-exchange system while condo owners will reap the benefit of potentially cheaper condo fees. But for single family homeowners, this type of green renovation will require a hefty investment of about \$20,000, which may take a long time to pay back.

Green renovations can help you save money right away and here are a few others that will [lower your housing costs](#).

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