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### Advocate Sherman Hospital, Geothermal Lake, 2023

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# Advocate Sherman Hospital

## Geothermal lake

### It's more than just a lake

It's an energy-producing, stress-reducing geothermal lake that heats and cools the hospital, saving an estimated \$1 million in energy costs per year. Since this 15-acre wonder is a big deal - it's the largest geothermal system in Illinois, and one of only two currently heating and cooling medical centers in the U.S. - we've answered some questions about how it works below.

### What is geothermal energy?

Geothermal energy is energy that is derived from the temperature of the earth. The earth absorbs 50 percent of all solar energy and traps it as heat just below the frost line. Using a heat pump, this natural and renewable resource trapped below the earth's surface is transformed into a harnessable form of energy. This energy - geothermal energy - provides buildings with a dependable, eco-friendly and economic heating and cooling system.

### Geothermal energy facts

- Geothermal heating and cooling technology has been given the best rating by the Environmental Protection Agency (EPA).
- Geothermal energy is a renewable resource, and doesn't deplete non-renewable resources.
- Geothermal energy does not produce any form of pollution, and it doesn't contribute to the greenhouse effect.

- Buildings that use geothermal energy use up to 40-percent less energy than other high-efficiency buildings.
- Geothermal energy requires no outside sources of fuel to keep the power houses running.

## **Geothermal lake facts**

Advocate Sherman Hospital's geothermal lake provides energy-efficient heating, cooling and ventilation, resulting in increased patient comfort and safety. The lake makes Advocate Sherman Hospital one of the most energy-efficient health care facilities in the country. It also helps Advocate Sherman Hospital to significantly reduce operating costs.

- The temperature at the bottom of the lake - a constant 55°F -is the heating and cooling source for the hospital.
- The energy for the hospital is harnessed by a lake loop-heat pump system under the water.
- The manifold houses pressure gauges connected to over 185 miles of pipes.
- Advocate Sherman Hospital's geothermal lake is one of the largest - if not the largest - lake loop-heat pump systems in the world.
- Advocate Sherman Hospital was the first hospital in Illinois to build a geothermal lake, and has the largest geothermal system in Illinois.
- The geothermal lake is projected to decrease Advocate Sherman Hospital's gas and electric costs by nearly \$1 million annually, compared to the energy costs of the old campus.

- This system costs 13-percent more to install than traditional energy sources, but the investment more than pays for itself in just a few short years.
- The geothermal lake allows Advocate Sherman Hospital's flexibility to grow. It is easy to expand the geothermal system when the hospital grows.
- The lake is safe. Advocate Sherman Hospital does not expect safety issues with its lake, but as an added safety feature, Advocate Sherman Hospital's lake has a shallow shelf around the edge of the lake.
- The lake is surrounded by a .5-mile walking path for visitors to get exercise while enjoying the views of the lake and prairie restoration areas around the lake.
- The geothermal system was switched on in May 2009 and is working to heat and cool various areas of the hospital.

## Geothermal energy awards

- Advocate Sherman Hospital was awarded a \$400,000 grant from the Illinois Clean Energy Community Foundation for its geothermal lake for setting a "green" benchmark for how hospitals and large institutional energy users can heat and cool facilities in an environmentally friendly way.
- Advocate Sherman Hospital was awarded \$956,000 from the U.S. Department of Energy for the lake for promoting America's energy security through reliable, clean, and affordable energy.

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