U.S. DEPARTMENT of ENERGY | Office of Energy Efficiency and Renewable Energy
Geothermal Technologies Office

GEOTHERMAL HEAT PUMP CASE STUDY:

Epic Systems Corporation

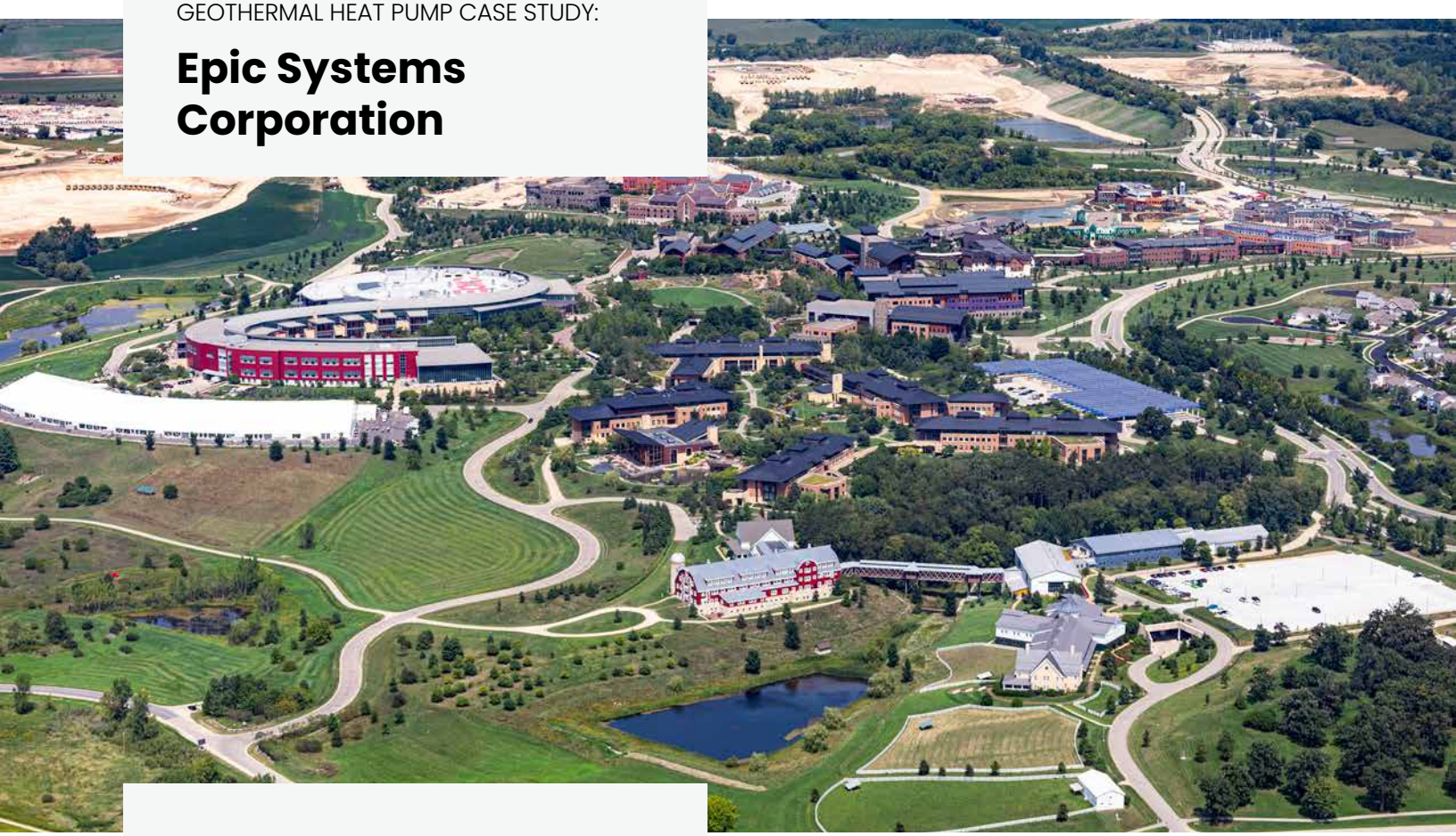


Photo from Epic Systems Corporation

Name: Epic Systems Corporation

Location: Verona, Wisconsin

Campus Size:

- About 40 connected buildings
- Approximately 9 million square feet of building space

Geothermal System Size:

- 6,100 wells
- 4 borefields
- 2 lake exchange systems

Unique Features:

- Stormwater lake and quarry lake serve as heat sinks
- Spare capacity to accommodate growth
- Cooling support for a 3.5-MW data center

Research Collaborations:

- Subsurface soil conditions monitored by University of Wisconsin-Madison

Funding Incentives:

- Supported through various federal tax programs over the years.

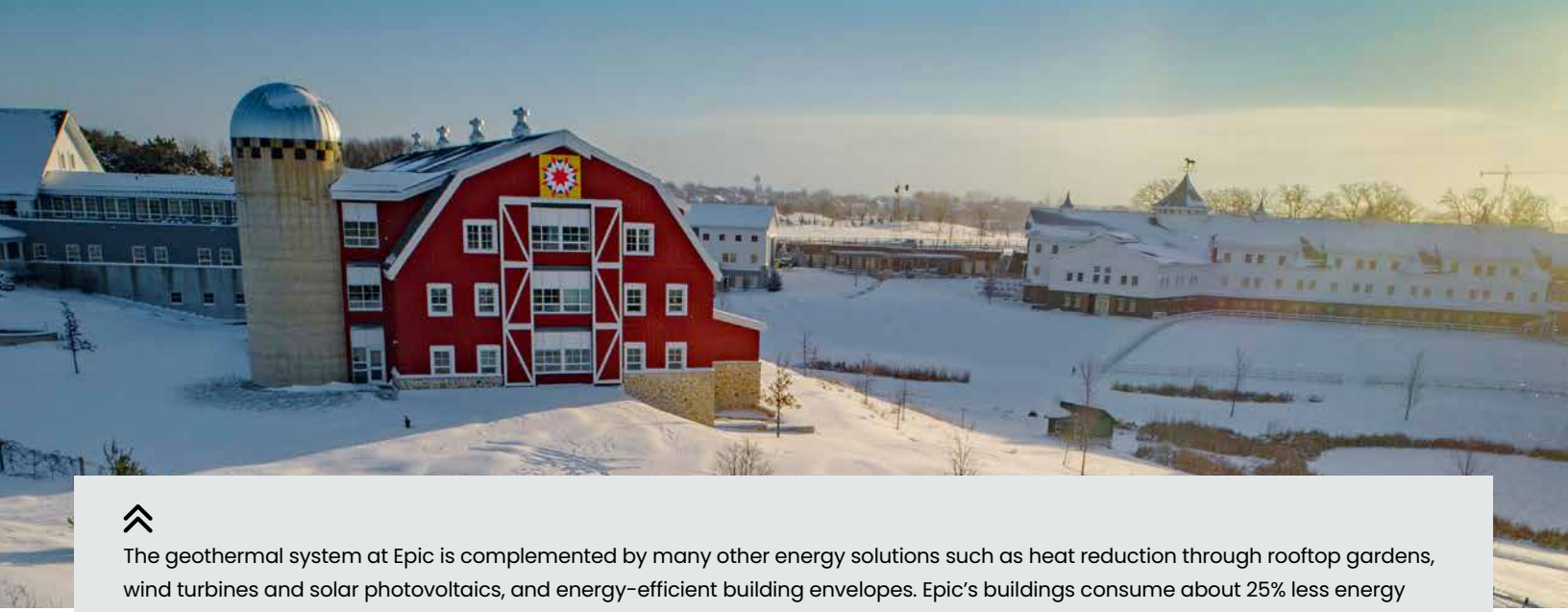
Not Your Typical Workplace

Epic Systems Corporation's (Epic's) campus architecture is not your typical office park—as a software factory, it's designed to inspire creativity. There are buildings styled like the Emerald City of Oz, Willy Wonka's Chocolate Factory, and a gingerbread cottage from Grimm's fairytales. Staff can hold their meetings in the treehouse conference room, skip across a medieval drawbridge, and eat lunch at the old school soda fountain.

But Epic's creativity runs deeper than interior design—much deeper. A geothermal network reaches 500 feet underground and runs thousands of miles of piping. Epic's campus space is almost exclusively conditioned by geothermal heat pumps (GHPs)—most pipes transport water, with gas infrastructure reserved for just a few specialty heating applications.

Efficient Data Center Cooling

Epic claims their 1,400-acre campus hosts one of the largest geothermal systems in the world.



The geothermal system at Epic is complemented by many other energy solutions such as heat reduction through rooftop gardens, wind turbines and solar photovoltaics, and energy-efficient building envelopes. Epic's buildings consume about 25% less energy than comparable buildings in the same climate. *Photo from Epic*

Large tech companies use substantial energy, and the data center needs to be cooled around the clock, even through the Wisconsin winter. Excess heat from the data center is transferred into the relatively cooler ground beneath the building, maintaining optimal temperature in the data center with much less electricity than traditional air conditioning.

Epic develops the software for electronic medical records used at most health care facilities in the United States. More than 305 million patients have a medical record in Epic's software. Serving healthcare patients requires 24/7 operations, and the geothermal system helps Epic meet this standard of reliability.

University Collaboration Supports Knowledge Sharing

The University of Wisconsin-Madison has been monitoring Epic's geothermal system since its installation. Researchers track data such as the air and soil temperature, subsurface water flow, and the water level in the quarry pond to help understand system performance. Epic hopes the collaboration will advance knowledge sharing and improve geothermal technology. The engineers managing Epic facilities are also highly trained in these large-scale systems.

Connected Design Makes For an Energy-Efficient Campus

An integrated campus design further contributes to Epic's energy savings. On most days, some buildings need heating while others need cooling, meaning that piped water can redistribute heat around campus while the borefield pumps are switched off. The boreholes are the primary loop of the geothermal system, but the campus buildings can form a closed secondary loop.

The combined effect of these designs reduces costs and energy use.

> Beyond the energy savings, the geothermal system has resulted in goodwill from the local community and the worldwide healthcare network. It also resonates with the talent Epic seeks to recruit.
>
> Derek Schnabel, Epic Facilities Director

Contact: info@epic.com

Visit the Case Studies page to see more examples of geothermal heat pumps in action.

U.S. DEPARTMENT of ENERGY | Office of Energy Efficiency and Renewable Energy
Geothermal Technologies Office

For more information, visit:
www.energy.gov/eere/geothermal/geothermal-heat-pump-case-studies

DOE/GO-102025-6433 • July 2025