University of Minnesota Offsite Collections Facility (OCF)

Preserving the Environment, Collections, and Campus Square Footage with Darcy Solutions Technology

A NEW HOME FOR KNOWLEDGE

In early 2025, the University of Minnesota reached a milestone in its ongoing effort to preserve and manage its vast library collections. The University's new Offsite Collections Facility (OCF) opened on the St. Paul campus — a purpose-built structure designed to house millions of library volumes and archives in a secure, stable, and efficient environment.

Since February 2025, five full-time library staff and 20–25 student employees have operated the facility, moving more than 3.5 million volumes into carefully organized storage. Each item is housed in a size-sorted tray and scanned into a shared Big Ten library system, ensuring every inch of space is optimized and every item is easily retrievable.

While the OCF is not yet open to the public, a reading room will soon allow visitors to access collections by appointment — expanding public engagement with university archives and special collections while freeing up valuable space in other campus libraries.

SUSTAINABILITY AS STANDARD

Sustainability at the University of Minnesota is not a new initiative — it's embedded in every project from the start. All new buildings follow the Minnesota B3 Guidelines (an adaptation of LEED), ensuring projects meet the highest standards of environmental performance.

According to Shane Stennes, the University's Chief Sustainability Officer, sustainability is a 'foregone conclusion.' The OCF reflects this philosophy: efficiency is not an afterthought but a design foundation.

The University's 2023 Climate Action Plan (CAP) outlines a clear path toward decarbonization. The plan focuses on reducing heating and cooling-related carbon emissions by 20% by 2033 on the way to full decarbonization by 2045 and significant improvements in energy use intensity (EUI).

These ambitious goals are central to how the University approaches new infrastructure like the OCF. Beyond architecture, UMN continues to bridge research and application through partnerships with organizations such as Darcy Solutions — whose geothermal technology was born from research at the University in the early 2010s. The OCF project demonstrates how these innovations can move from lab to large-scale impact, supporting the University's broader mission of sustainable progress.

University of Minnesota 2023 Climate Action Plan (CAP)

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WHY GEOTHERMAL?

As with every new facility, the design and construction team — led by Trevor Dickie, Scott McCord, and Nicholai Fugate — evaluated a range of systems for heating and cooling. Early considerations included air-cooled chillers, boilers, and source heat pumps. However, OCF's unique storage environment demanded exceptional temperature stability to protect sensitive collections, while the University's sustainability mandate required maximum efficiency with a minimal footprint.

That's where Darcy Solutions' groundwater enabled technology came in. Initial space limitations made geothermal seem infeasible. Traditional systems often require hundreds of borings, but Darcy's delivered commensurate capacity with just three 12" diameter wells. The simplified design unlocked a geothermal solution met capacity requirements and improved energy efficiency, even as the building's total energy use was set to double.

Trevor Dickie described the process as an 'integrated design journey' — one that balanced innovation, practicality, and long-term value. The fact that Darcy Solutions was founded by University of Minnesota alumni helped strengthen confidence and collaboration. 'It was a great opportunity to showcase a former student,' Dickie noted.

DESIGN & CONSTRUCTION

Construction began in April 2023 and wrapped up by February 2025, with geothermal drilling completed in Fall 2023. The geothermal system uses a four-part water circuit with variable speed control, ensuring optimal temperature regulation. By integrating geothermal energy with efficient envelopes and low-temperature hot water loops, the team achieved both reliability and performance in a smaller plant footprint.

For the University, OCF represented more than a building — it was an opportunity to test, measure, and refine sustainable design practices. One clear takeaway was the importance of integrated planning. From mechanical engineering to library operations, collaboration was key to success.

“You have to figure out how you can use less, then find efficient systems that can do the job,” summarized Trevor Dickie. Balancing cost, size, and efficiency was an ongoing challenge, but long-term lifecycle savings made geothermal a compelling choice. ‘The dollar always wins,’ Dickie added, ‘but when you start to see and quantify the savings, it changes how you think.’

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WELL SYSTEM

1,332
MBH HEATING DEMAND

111
TONS COOLING DEMAND

LOOKING AHEAD

The University of Minnesota views the OCF geothermal project as a pilot for future opportunities. While there are no immediate plans for additional geothermal installations, it's now firmly part of the University's 'toolbox' for sustainable infrastructure.

Each new project will be evaluated on its own merits, but the success of OCF shows how geothermal energy can play a role even where space is limited. "We're learning as we go," said Dickie. "So far, so good."

The school continues to advance its sustainability leadership through campus-wide initiatives in energy efficiency, waste reduction, and climate action planning. Projects like OCF embody that commitment — combining research, innovation, and practical application to create lasting environmental impact.

CONCLUSION

The Offsite Collections Facility stands as a testament to innovation and collaboration — between university departments, local partners, and alumni-founded enterprises. Through forward-thinking design and a willingness to try new technology, the University of Minnesota has set a new standard for how institutional buildings can merge functionality, efficiency, and sustainability.

As the facility fills with the history of the University's collections, its geothermal system quietly ensures that knowledge is preserved — efficiently and responsibly — for generations to come.

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