

Trane Transformation of an Iconic Building in La Crosse, WI

See how Trane's La Crosse facility now stands as a cutting-edge Advanced Technology Training Center leveraging all-electric heat pump systems.



Quick Facts

Location: La Crosse, WI

Industry: C&I

Products: Thermal Battery Storage-Source Heat Pump System | ACX Air-To-Water Heat Pump | RTWD Water-To-Water Heat Pumps | Tracer SC+ Controls | Hydronic Branch Conductor

Topics: Thermal Energy Storage | Heat Pumps | Hydronic Branch Conductor | Controls

Services: HVAC | Building Automation System | Controls | Electrification | Funding

Results

>250%

Improvement In Heating Efficiency

COP of 3

Heating Coefficient Of Performance

28%

Reduction In Overall Building Energy Use Intensity (EUI)

30-40 Million

Gallons of water per year savings expected



Highlights

- World's first Thermal Battery™ Storage-Source Heat Pump System installed in La Crosse, WI.
- All-electric HVAC system proven to be effective in extreme winter conditions.
- Tracer® SC+ controls optimize performance with real-time data.
- Project funded through federal tax incentives and Trane's "Lead by Example" initiative.

The Challenge

Founded in La Crosse, Wisconsin, more than a century ago, Trane Technologies' legacy of innovation remains deeply rooted in the community. The facility has long served as a center for engineering, manufacturing, and education. When leaders set out to transform a portion of an 80,000 square-foot space inside a 75-year-old building into a Customer Experience Center, they envisioned a space where customers could explore advanced HVAC systems and where future technicians could engage in hands-on learning. The renovated building would include immersive training labs and a live mechanical room powered by fully electric systems. The building infrastructure, however, dated back to the 1950s and relied on outdated steam and cooling systems. Winters in La Crosse, WI added complexity, pushing the limits of electrification. As a global leader in sustainability, Trane seized the opportunity to lead by example and to prove that these systems could perform in the most challenging conditions.

The Solution

Blueprint for Success

Trane assembled a cross-functional team of engineers, facilities experts, sales leaders, and project managers to bring the vision to life. Their first task was to align on performance goals that prioritized carbon reduction, water conservation, and customer experience. The team mapped out a two-phase approval process that clearly communicated and justified the investment based on measurable environmental and educational outcomes. A strong testing philosophy shaped every decision. “We were able to install this and learn from it before releasing a project or product,” said Andrew Jenkins, Senior Product Manager at Trane. That mindset helped the team move quickly, refining the system in real time as needed, resulting in a solution that benefitted Trane as well as future customers.

First-of-Its-Kind System

The updated La Crosse, WI facility features the world's first Thermal Battery storage-source heat pump system. Ice-based thermal energy tanks work in tandem with air-to-water and water-to-water heat pumps to create an all-electric system that stores heat instead of wasting it, which is a game-changer in frigid Wisconsin winters. Hydronic branch conductors enable cost-effective, two-pipe branch distribution to the building's single dual-purpose coil. This simplifies piping and helps reduce installation time and costs compared to traditional four-pipe distribution. A 105°F (41°C) hot water loop feeds dual-purpose coils, allowing simultaneous heating and cooling in the building without traditional boilers and a much more efficient heat pump system. Elevating efficiency further, Tracer SC+ building automation controls use real-time data and predictive algorithms to balance heating and cooling demands and enhance system performance.

Smart Funding and a Model for the Future

Trane leveraged federal tax incentives for thermal energy storage to offset upfront costs. Internal funding from the company's “Lead by Example” initiative helped position decarbonization as a key driver of the project. The Customer Experience Center now effectively serves a variety of distinct and important purposes, including:

- Trane systems development engineers monitor system behavior firsthand.
- Customers can tour the mechanical room, view the ice tanks and heat pumps in action, and see how electrified systems perform in real-world conditions.
- Product teams gather live operational data to inform future innovation.

This project proves that bold ideas, backed by the right team and technology, can turn even help legacy buildings into powerful demonstrations of what is possible.

The Results

The updated system has delivered measurable improvements across water use, emissions, and year-round performance. By replacing outdated steam systems with a fully electric solution, Trane demonstrated what is possible when innovation is applied to existing infrastructure. Water use is expected to decline by 30 to 40 million gallons per year due to the elimination of water-cooled units, steam heating systems and improved process controls. The new Customer Experience Center has also demonstrated strong performance in extremely cold conditions. On winter mornings in La Crosse, WI, the system achieves a heating coefficient of performance (COP) of 3, even when outside temperatures fall below zero. Overall, the system has led to a 28% reduction of overall energy intensity of the training center building and is +250% more efficient than the steam system it replaced. During spring, the building operated for several weeks without running the outdoor heat pump to heat the building. “We were able to take the heat that people generated and use that heat that was now stored in the ice tank to meet heating loads,” said Trane Project Manager, Rick Heiden. By piloting these solutions at its La Crosse, WI facility, Trane gained valuable insight into how electrified systems can operate efficiently even in the most challenging retrofit scenarios.

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Andrew Jenkins
Senior Product Manager



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