Planning for the future with new energy storage technology

Detroit Lakes is best known as one of Minnesota’s great resort destinations. Among the amenities offered by the city is its Historic Holmes Theatre, known to sell out shows when seasonal residents and tourists pack the town. The Detroit Lakes Community and Cultural Center (DLCCC), which houses the theatre, also has a popular fitness center with an eight-lane pool, indoor walking track, and one of the state’s largest indoor children’s play areas, “The Backyard.”

The project created several benefits, including better comfort with the building automation system, better lighting with the upgraded LED lights, and significant energy cost reductions.
- Stu Omberg, DLCCC

A HISTORIC DETROIT LAKES LANDMARK REDUCES ENERGY COSTS & INCREASES COMFORT FOR RESIDENTS’ COMMUNITY ACTIVITIES

Highlights

TECHNOLOGY
- Lighting, HVAC, Storage, Envelope

ANNUAL SAVINGS ON ENERGY
$87,000

ANNUAL SAVINGS ON MAINTENANCE
$35,000

PROJECT TEAM
- DLCCC
- Detroit Lakes
- Trane
The building was originally constructed as a school in 1895 with the fitness center added in 2001. Between the old construction and more recent addition, the building presented some energy and operational challenges—including having to turn off the HVAC system during theater performances because it was too noisy to run.

Trane's project team worked with the DLCCC to find multiple ways to improve the building's performance to reduce energy consumption, maintenance and utility costs. The upgrade, which was completed in July 2019, included an updated HVAC system, new automated controls, weather-stripping, and a total update of all the lighting to LED technology. “The project created several benefits including better comfort control through the upgraded building automation system, better lighting with the upgraded LED lights, and most significantly reduced our energy costs dramatically. In addition, with the upgraded and enhanced HVAC infrastructure we will realize significant savings through reduced maintenance costs,” said Stu Omberg, CEO of the DLCCC.

A special feature of the project was the inclusion of a new chiller plant, which creates ice overnight at off-peak hours and uses it to cool the building during the day. This technology shifts the building’s time of highest electrical energy demand—a feature beneficial to Detroit Lakes municipal utility that serves the DLCCC. “This was a very collaborative project and we were happy to work with the DLCCC staff and City of Detroit Lakes to find the best possible solutions and uncover savings to benefit all parties involved,” said Jeff Seewald, Trane Energy Engineer and Project Developer.

Importantly, the increased cooling capacity and placement of ice tanks will also accommodate the future construction of the Becker County Museum, which is planned to be added on to the facility in 2020.

**Featured Savings & Benefits**
- Utility rebates on HVAC system, chiller and ice storage, pool boiler, LED lighting, and building automation and controls
- Updated building controls system allowing facility staff to better monitor and provide proactive maintenance
- Automated management through occupancy controls so light and heat aren’t wasted when rooms are not in use
- Elimination of HVAC noise in the theater, enabling use of HVAC during shows and improving ventilation and comfort for theatergoers
- Total $1.8 million cost for the project will be paid back in reduced energy and maintenance costs within 15 years