# North Shore District 112 Geothermal Install

Trane helped suburban Chicago School District leverage Inflation Reduction Act tax credits and referendum dollars for a leading-edge geothermal install.



#### **Quick Facts**

Location: Highland Park, Highwood, IL Industry: K-12 Schools Products: New Geothermal Technology Topics: K-12 | Geothermal | Innovative Technology | Tax Credits Services: Consulting | Engineering | Solution Installation



#### Results

Up to 40-50% Saved In Tax Credits And Incentives \$3M

Total Project Savings **1<sup>ST</sup>** Of Its Kind To Be Installed In The U.S.

#### **Highlights**

- Community referendum dollars combined with substantial federal and local incentives saved 40-50% on a \$6.67M project.
- Implementation of a new closed loop geothermal system, never before seen in the U.S.
- The vertically oriented Dynamic Closed Loop (DCL) technology takes up considerably less real estate than conventional geothermal.

## Challenge

North Shore School District 112, serving nearly 4,000 Pre-K through 8th grade students from Chicago's northern suburbs — Highland Park, Highwood, and Fort Sheridan — faced the challenge of aging infrastructure. Committed to their mission 'to inspire every student to discover and pursue their dreams', district leaders sought solutions that would not only address immediate needs but would benefit future generations of students to come.

A successful public referendum helped secure initial funding, but the district still needed to navigate the complex landscape of federal, state, and local sustainability incentives to maximize their investment while remaining fiscally responsible and environmentally conscious.

"The inspiration for green energy and saving taxpayer dollars was at the heart of our project," said Dr. Michael Lubelfeld, School District 112 Superintendent. "It aligned with our strategic agenda and core values of sustaining both education and the environment."

## Solution

With strong community backing, North Shore District 112 turned to Trane, who had worked with the district since 1997, to explore innovative solutions for their infrastructure challenges. Beneath their feet lay an untapped resource: the earth's natural thermal energy, known as geothermal energy. This resource, along with financial incentives designed to accelerate sustainability projects, presented a unique opportunity to the district.

A geological survey confirmed that the area was ideal for a Dynamic Closed Loop (DCL) geothermal system, setting the project in motion. North Shore SD 112 is the first in the United States to employ DCL technology, harnessing the absorption and rejection of heat through underground flowing water. Unlike traditional geothermal systems that use the earth itself as a heat sink, DCL utilizes the more efficient heat transfer properties of flowing water, requiring significantly less physical space—making it ideal for K-12 schools in suburban areas. "The district chose DCL technology because it includes a spacesaving energy capture field that won't alter the nearby environment," said Patrick Heneberry, Trane Services Account Executive. The inspiration for green energy and saving taxpayer dollars is at the heart of our geothermal project. It aligns perfectly with our strategic agenda, innovative design and construction practices, and community engagement. These efforts reflect our core values, and we are proud to sustain both education and the environment.

Dr. Michael Lubelfeld Superintendent, North Shore District 112 Schools

While geothermal systems traditionally require significant upfront investment, Trane helped the district identify Inflation Reduction Act tax credits and incentives that dramatically improved the financial equation. This approach not only made the installation more affordable initially but positioned the district for substantial long-term energy savings and carbon footprint reduction.

The district, in collaboration with Gilbane Building Company (construction manager at-risk), Wight & Company (architect), and Trane worked to develop a phased implementation plan starting with Ravinia school, the first of three schools to receive the DCL technology. Sherwood School will be the next installation, followed by one additional school to complete the geothermal installation.

### Results

Through these strategic funding approaches, North Shore SD 112 realized over \$3 million in savings on a \$6.67 million HVAC investment — a return of up to 40-50%. While referendum funds contributed significantly, the federal, state, local, and utility credits and incentives uncovered were crucial to maximizing the district's return on investment.

Beyond immediate financial benefits, the district anticipates substantial long-term operational savings through reduced energy consumption and lower maintenance costs. The closed loop geothermal system is expected to reduce the district's carbon footprint by approximately 30% while providing more consistent and comfortable learning environments. "This project is potentially transformative for educational markets nationwide," says Heneberry. "We were honored to collaborate with North Shore District 112 on this innovative project and bring our experience in sustainable systems and consultative approach to the project."

The district also benefited from the OMNIA® Partners procurement vehicle, in which Trane serves as an official contract holder, allowing the district to take advantage of fast procurement and competitive, pre-approved bids on all required equipment— streamlining the implementation process considerably. "Trane has offered energy solutions beyond what we ever imagined," said Dr. Monica Schroeder, Deputy Superintendent. "Being among the first school districts in Illinois to have a closed loop geothermal system and the first in the United States to install the DCL technology is exactly what we want for our schools, students, and community."

This pioneering project serves as both a practical solution for North Shore District 112 and a model for other K-12 schools nationwide. By embracing innovative technology while maintaining a commitment to fiscal responsibility, the district has created infrastructure that supports their educational mission for students today and well into the future.



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