

METRO TRANSIT HEYWOOD OFFICE & POLICE FACILITY

RENOVATION AND ADDITION WITH BUILT-IN ENERGY SAVINGS

CASE STUDY
MINNESOTA



Photos courtesy of Corey Gaffer

The Metro Transit Heywood Office & Police Facility in the heart of Minneapolis' North Loop was the culmination of a 30-month effort. The four-level addition and a partial renovation of the existing facility includes evidence processing labs, vehicle bays, sally ports, administrative rooms, new elevators and an officer training room.

No stranger to energy efficiency, Metro Transit, the lead agency in the project, knew they would build energy efficiency in from the ground up. They worked with Xcel Energy's Energy Design Assistance Program to determine which measures to implement to save energy and money in the long run.

"I like the process from an energy management perspective," says Jeff Freeman, Senior Project Coordinator at Metro Transit. "The design consultant puts together a laundry list of options along with cost benefits to help us decide which measures to implement."

Saving Energy Throughout

Freeman and his team started with a heating and cooling plan that was both cost effective and energy efficient. They installed forty 500-foot deep geothermal wells under the property that are used to provide heat in the winter and cooling in the summer. The wells negate the need for gas to heat the facility, and cooling requires much less electricity. The measure accounts for nearly 60 percent of the total project energy savings. Freeman says it was a significant reduction over the gas alternative.

"We continue to focus on reducing our carbon footprint," Freeman says. "We've gone from 1,800 pounds of CO₂ per megawatt down to about 1,300."

Lighting is always a great way to save energy. The team opted for LED lighting as well as occupancy sensors throughout the building.

"We like having localized controls because some of the sections of the building are operational 24 hours a day all week long and some only operate from nine to five," he says. They also used daylighting in several areas to decrease the need for additional lighting.

It brings ideas to the forefront and opens up discussions about the best ways to save. We know exactly where we're saving now and we'll continue looking for other opportunities.

Jeff Freeman,
Senior Project Coordinator
Metro Transit



PROJECT SNAPSHOT

Xcel Energy EDA rebate	\$95,000
Peak savings	149 kW (demand) 51% savings over code
Estimated annual energy savings	890,000 kWh (energy) 59% savings over code
Estimated annual energy cost savings	\$75,000

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The team opted for triple pane windows in some places and double pane in others, depending on the energy savings projected by the modeling. They also addressed plug loads throughout the building to curb phantom energy use.

"About half of our outlets are used in personal offices," Freeman explains. "Things like fans, lamps and cell phone chargers are now shut off at night after everyone leaves."

A final element is the green roof, which keeps temperatures cooler in the summer sun and adds much needed green to this downtown area.

Final Energy-Saving Installations

The biggest energy saving measures in the Metro Transit Heywood Office & Police Facility include:

- Ground source heat pumps which account for nearly 60% of the total project savings
- Lighting system that was 50% lower than code and accounted for almost 20% of the total project savings
- Lighting controls throughout the building as well as occupancy sensor control of office outlets

"We now have a sense of how close the energy modeling is, so it helps with our commissioning process and it will also help us down the road when we're talking about recommissioning," Freeman says.

They're already planning to use the EDA program for an upcoming bus garage project.

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If you're planning a new construction, addition or major renovation project, visit xcelenergy.com/BusinessNewConstruction or call an Energy Advisor at **855.839.8862**.

