

Manufacturing Retrofit Designed with the Future in Mind

Air-source heat pumps, EV fleet, and charging stations



PROJECT OVERVIEW

- 7 Variable Refrigerant Flow air-source heat pumps
- 4 Energy Recovery Ventilators
- 10 Level 2 EV charging stations
- 6 electric vehicles for company use

FINANCIAL INCENTIVES

- \$60,000 incentive from the Clean Heat Program
- \$7,500 federal rebate per electric vehicle

PROJECT TEAM

Rochester Optical Manufacturing
Owner/Operator

EMCOR Services Betlem
Design and Install

Rochester Gas & Electric
Utility Provider and Clean Heat Program Administrator

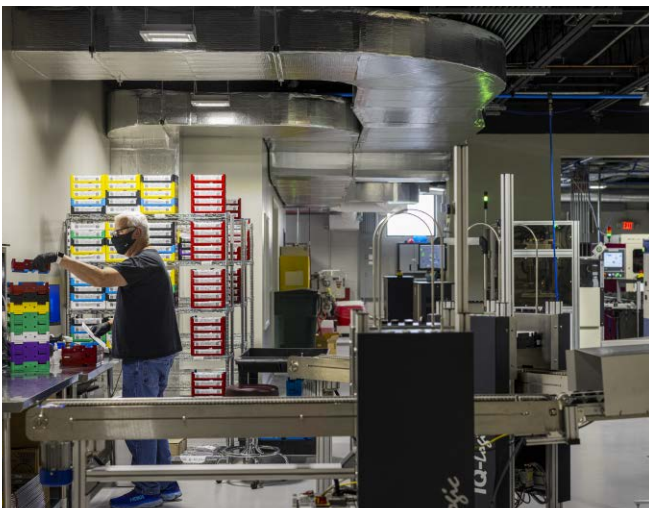
Big Ambitions for a Small Carbon Footprint

Rochester Optical Manufacturing relocated their plant to an existing building in Rochester, NY, and gave it an extreme make-over. They saw the move as a rare opportunity to customize the site to their manufacturing needs, and minimize the organization's carbon footprint. It was an easy – though not inexpensive – decision to install state of the art equipment in their build-out, including air source heat pumps, energy recovery ventilators, high efficiency production equipment, and electric charging stations.



State of the Art Heating & Cooling

The renovation involved replacing older gas-fired boilers with an all-electric heating and cooling solution, serving a mix of light manufacturing, clean room, warehouse, and office spaces. In addition to state-of-the-art Variable Refrigerant Flow heat pumps, this project has Energy Recovery Ventilators which recycle energy from the indoor air and bring outdoor air into the building, reducing heat pump costs, energy bills and providing fresh air.



Lab manager Ron Jackson says that the ability to precisely control the temperature in different parts of the building – whether it's 100 degrees outside or 5 degrees below zero – is crucial for their manufacturing process and high quality standards.

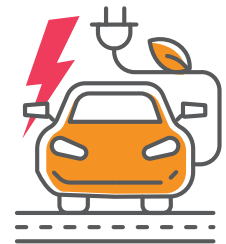
Project Highlights:



Differentiating the business in a crowded market



Investing in the technology of the future, not the past



Enabling employees, consumers, and partners to choose an EV

High-Efficiency Building Benefits

- Significant rebates for high efficiency heat pumps
- Precision temperature control for sensitive manufacturing equipment
- Positive brand image with customers and partners

Building a Business to Be Proud Of

Rochester Optical Manufacturing's President and CEO, Patrick Ho, is a pragmatic businessman, focused on creating top-quality, locally-made prescription eyeglasses for a national market. It's clear that an ultra efficient manufacturing workflow, with complete control of his operating environment, is a business imperative. The goal of being a completely carbon neutral optical manufacturing operation is a vision that aligns with his business model, company values, and his personal beliefs.

During the scoping process, the team closely evaluated the costs and paybacks of installing a heat pump system, over a gas fired system that would use the existing infrastructure. "I want to invest in technology that is not going to be obsolete in the near term. I also feel grateful for the success of my business, and think, what can I do to give back?" Rochester Optical was able to work with Rochester Gas & Electric to leverage funds from the NYS Clean Heat program to help offset the additional expense.

An EV Fleet & Workplace Charging

You can find any one of the six electric vehicles in Rochester Optical Manufacturing's fleet on the road delivering eyewear, or plugged in at one of the ten charging stations on site. The \$7500 federal rebate brought the cost of the Chevy Bolt



“We focus on sustainable, renewable, and clean manufacturing. It doesn't mean we compromise on the profitability of the business.”

PATRICK HO
President and CEO

down to a compelling \$20,000, and fuel costs per vehicle went from \$250/week for gas, to \$50/week for electricity. The main maintenance items for the EVs are swapping tires and adding windshield wiper fluid, where previously the delivery vehicles had needed oil changes every few months.



EV Benefits:

- Low fuel costs
- Low maintenance
- No oil changes
- Fun to drive

Green Business Decisions Enable Employees

A sustainability mindset has grown within the organization over time. Several employees have purchased an EV since joining the company - and the free charging during the workday is seen as a nice perk.

Ron Jackson is an EV driver, and says the charging stations at work have had a huge influence on staff perceptions and satisfaction. "I can charge at work and not have to worry about it. It's so convenient."

The Bottom Line

Taking a high-tech manufacturing facility down the path to net zero is no easy feat. But for this Rochester-based business, the rewards of a net zero facility and workplace charging far outweigh the costs.



Get the tools, resources, and information you need to electrify your building at [AMPEDProject.org](https://www.ampedproject.org).

