City of New Hope

FACTS

LOCATION
New Hope, MN

PROJECT DATES
01/2011 – Ongoing

PROJECT SIZE
Buildings: 7
Square Feet: 131,000

CONTRACT
Amount: $4.5M

FUNDING SOURCES
$3,500,000 QECB
$350,000 Hennepin County Grant
$650,000 Municipal Bonds

TEAM

PROJECT DIRECTOR
Pat Barribeau

CONSTRUCTION MANAGER
Chris Sawyer

ENGINEER
John Earhart

CONTACTS

OWNER
City of New Hope
Susan Rader
Director of Parks and Recreation
4401 Xylon Ave N, New Hope, MN
763.531.5152

PROJECT DETAILS

The City had an aging ice arena facility with both ice sheets' refrigeration systems as well as the north sheet's roof reaching the end of their useful lives. McKinstry did a City-wide energy audit and was able to come up with energy efficiency measures across the city to help pay for the capital-intense repairs in the ice rink. McKinstry developed an energy-efficient design concept and calculated the savings resulting from the new system, which included heat recovery, new innovative efficient equipment configurations, and new efficient control strategies. McKinstry then partnered with a design firm to oversee and aid in the new design and partnered with a construction contractor to oversee and coordinate the construction throughout the design-build process.

The Facility
Originally built in 1975, the north sheet of ice was built on a sand floor with a Freon-based refrigeration system. The rink has some national notoriety as in 1991, several major scenes from the Disney movie *The Mighty Ducks* were filmed at the rink. A second sheet of ice was added on a sand floor with its own Freon-based refrigeration in 1996.

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ANNUAL UTILITY SAVINGS
$57,000+

OPERATING COST REDUCTION
30%

CARBON DIOXIDE EMISSIONS REDUCTION
1.4 million pounds

Project Scope
The project included replacing the sand with concrete floors on both rinks and connecting both to a shared ammonia-based energy-efficient ice system. The project also included a new metal roof chosen by the City based on its best total cost of ownership as analyzed by McKinstry. Other improvements included: City-wide interior and exterior lighting upgrades, City-wide building envelope sealing, and City-wide water conservation upgrades. Services provided during the project consisted of design oversight of the new ice rink systems to ensure the efficient design, construction management and coordination with the City for all projects in the contract, securing financing for the project including a QECB grant, securing utility rebates for efficiency upgrades, commissioning of new equipment installed, and measurement and verification of energy projects to ensure guaranteed savings are met with reports delivered to client.

Equipment Upgrades
Equipment replaced in the upgrades included a full refrigeration system including chillers, pumps, fluid cooled condensers, heat exchangers, and new digital control system; the HVAC was also redone with a new packaged air handling unit including a desiccant dehumidification component and a new ductwork distribution system.

McKinstry's project is expected to reduce the facility's operating costs by 30%, save more than 1.4 million pounds of carbon dioxide, and allow the facility to house two local high school teams and numerous community groups for decades to come.