

TOROMONT

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FACT SHEET



LOCKPORT ICE ARENA AND SPORTS CENTER

34 Chestnut Street, Lockport NY 14094

PROJECT OVERVIEW

About the Facility: An important economic driver and community hub in downtown Lockport:

- Projected annual skater and spectator traffic of 150,000 by 2015
- Potential for hotel room demand of 4,000 nights per year
- The entire facility has a goal to be ADA compliant and special-needs users will be warmly welcomed
- The vision is to enhance quality-of-life in the greater Lockport community through operation of a public skating rink and sports center.
- Mission of the Facility: To combat juvenile delinquency and community deterioration, promote social welfare and physical fitness, lessen the burdens of government and promote the development of good sportsmanship through the conduct of supervised athletic games.

Energy efficiency commitment plan: Possible energy savings from 50% to 100% of total heat rejection from the refrigeration system.

Details of how the system works efficiently: CIMCO's propriety ECO CHILL® refrigeration system uses the waste heat, generated by the refrigeration process, by collecting, recycling and reusing this heat for building, sidewalk, floor and water heating. No other heating system is needed. The ammonia heat pump, using a compressor's discharge heat as the energy source, provides a higher level and quality of heat, which saves money in the long run.

After a year of understanding and fine-tuning their ECO CHILL® system, the operator and manager of the Lockport Ice Arena facility reduced the overall power consumption of the facility from 255,000 kwh to 160,000 kwh (upwards of 63%). In turn, the energy bill has been reduced to \$12,500 per month (without the need for any other heating system.)



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GENERAL INFORMATION

Owner:	Lockport Ice Arena and Sports Center, Inc.
Project Type	Ice Arena
Construction Year	2013-2014
Rink Surface	Two pads: 85 feet x 200 feet, 17,000 sq. ft. each
Building Area	93,500 ft. sq.
Number of Seats	630
Months of Operation (per yr)	One seasonal pad open 8 months, One pad open year-round.
Playing area temp	50°F and 40% humidity four (4) ft. above the ice

REFRIGERATION SYSTEM INFORMATION

Compressors	Three (3) Bitzer OSKA 8561 Screw Compressors c/w 100 HP high efficiency motors
Plant Style	ECO CHILL low charge with full integrated building
Total system Tonnage	180TR
Refrigerant	Ammonia
Evaporator Style	One (1) Vahterus PFHE Chiller rated at 180 TR utilizing a 21% Ethylene Glycol at 1800 GPM; 2.5ΔT.
Condenser	One (1) Alfa Laval M10-BWH Condenser rated at 200 tons
Cooling Tower	One (1) Evapco AT-19-811 Cooling Tower
Secondary Fluid	Heat reclaim loop utilizing 35% Ethylene Glycol

HEAT RECLAIM SYSTEM INFORMATION

Space Heating	Approximately 10,000 sq. ft.
Makeup Air Preheating	3 x Various capacity, BTUs on demand
Radiant Heating Floor	500 sq. ft. vestibule and outdoor walking path to entrance
Service Water Heating	Approx 225,000 BTUs
Under-pad Frost Protection	Approx 50,000 BTUs
Snow Melt Pit Heating System	Approx 400,000 BTUs

INTEGRATED CONTROLS SYSTEM DESIGN

- BMS system with Cimco Ecosense controls

HEAT RECOVERY INTEGRATION

- There is no other source of heat in the entire building, strictly the ECO CHILL plant

THERMAL STORAGE

- Ice Battery - 300 Ton Hours
- Connected Air conditioning Load - 55 TR

OPERATING MEASURES

- Floating Head Pressure: Yes
- Load Shedding: Yes
- Floating Ice Temperature Control: Yes
- Setback Temperature Control: Yes
- Occupied/Unoccupied Settings: Yes
- Infrared Camera Control: Yes

SERVICE PROVIDERS

Refrigeration Contractor	CIMCO Refrigeration
Refrigeration Design	CIMCO Refrigeration
Mechanical Designer	M/E Engineering P.C Buffalo
Controls Designer	CIMCO Automation Group/ CIMCO Refrigeration
Building Management Systems Provider	CIMCO Automation Group/ CIMCO Refrigeration



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