



Campus Selects Next-Gen
Ice Rink System to Meet
Future Needs

Tabor Academy, a coeducational, college preparatory boarding and day school located in Marion, Massachusetts, prides itself on instilling leadership and the highest standards in its students—inspiring them to enrich everything they do. These values can also be found in all of Tabor Academy’s operations, including the recent upgrade of the school’s ice rink facilities and refrigeration plant.

Project Background

The Tabor Academy project was coordinated under the direction of one of North America’s leading rink engineering firms, I.B. Storey, Inc.

“We chose to work with leaders in the ice rink industry who are known for their innovation,” said Anthony Jaccaci, head of school at Tabor Academy. “This assured our ice rink project started on the strong foundations that carried through to the finish.”

According to Stephen Sanford, CFO at Tabor Academy, at the heart of the project was the need to replace the aging, ammonia-based ice making plant—which is located in the center of the school’s campus—with a safer, more energy-efficient, and reliable chiller system.

Ian Storey, president of I.B. Storey, Inc., explained the engineering approach used to determine the best innovative solution for end-user clients. “It’s I.B. Storey’s mandate to collaborate with our clients and identify options that exceed their objectives and goals, prior to engineering the optimized solution,” said Storey. “First, we did a full analysis on Tabor’s current system and operating conditions considering five critical facets of innovation: safety, optimization, service, regulations, and operating costs.”



ANTHONY JACCACI

Head of School, Tabor Academy

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Rink Refrigeration Engineering

For Tabor Academy's needs, I.B. Storey brought together two industry leaders known for innovation: Chemours Thermal & Specialized Solutions and Thermal Care, Inc., an industrial process cooling equipment and system manufacturer offering a broad range of chillers.

"Ultimately the Chemours Opteon™ and Thermal Care solution was selected by Tabor, who, as our client, always has the final say," noted Storey.

Because the rink is a place of public assembly and located in the heart of Tabor Academy's residential campus—where students and staff live—upgrading the safety aspects of the refrigeration system was paramount.

Chemours assessed options from its Opteon™ portfolio of refrigerants at the early planning stages of the project and selected Opteon™ XP10 (R-513A) as the right solution for the Tabor Academy upgrade.

"When it comes to the refrigerant itself, Opteon™ XP10 (R-513A) was perfect for this project because it is a nonflammable fluid offering low toxicity and zero ozone depletion potential," said Chuck Allgood, PhD, Technology Fellow with Chemours. "In addition, it delivers outstanding thermodynamic performance when paired with Thermal Care's innovative equipment technology."



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Chuck Allgood, PhD

Technology Fellow, The Chemours Company



Thermal Care looked to its TCFW375 (Gen 2.0) ice rink chiller to best suit the needs of Tabor's ice rink.

"Having installed more than 50,000 systems serving over 50 different industries, we were confident we had the experience and solutions to fit this project," said Tom Stone, Thermal Care National Sales Manager, Industrial Markets. "The TCFW375 (Gen 2.0) ice rink chiller we manufactured for this project delivers a number of innovative features that help reduce the energy usage and resulting environmental impact while lowering operating costs."

Storey agreed with the choice. "I'd been monitoring the oilless compression technology in the refrigeration industry for years," he said. "And with recent success in ice rink applications, it was clear that the value proposition of the new (Gen 2.0) systems developed by Thermal Care delivered on all the best practices for our industry."



The System - Thermal Care TCFW375 (Gen 2.0)

Compressor

The Danfoss Turbocor oil-free compressor uses magnetically levitated bearings and variable speed controls to precisely match rink conditions. Results in a highly efficient, reliable, low vibration and quiet system.



Heat Exchanger

Evaporator vessel uses compact and highly efficient hybrid falling film technology. Results in enhanced heat transfer, compact width, and reduced refrigerant charge.



Refrigerant

Opteon™ XP10 (R-513A) provides the optimal balance of performance and safety (nonflammable, low toxicity), enabling a safe, reliable system that delivers excellent energy efficiency.



"This project clearly met our project goals of introducing safety, efficiency, and reliability through innovation."

Stephen Sanford
CFO at Tabor Academy

The Tabor Academy rink is the first facility in the U.S. to install this cutting-edge technology—following the lead of several Canadian rinks that have been operating successfully with it for some time. When asked what advice he would give to other rink operators dealing with replacing aging infrastructure, Storey was clear.

"Be a part of the discussion and focus on the big picture," he said. "Hyper focusing on only one aspect is a danger that could lead to you missing the best overall solution."

"This project clearly met our project goals of introducing safety, efficiency, and reliability through innovation," said Stephen Sanford, CFO at Tabor Academy. "Our athletes and coaches have been thrilled with the facility."



Opteon™ XP10 Refrigerant

ASHRAE Number	R-513A
Composition	HFO-1234yf/ HFC-134a (56/44 wt. %)
Boiling Point	-20.6F (-29.2C)
Ozone Depetion Potential	0
Global Warming Potential (AR4)	644
Safety Classification	A1 (nonflammable, low toxicity)

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assess the facility, its purpose, and the people it serves. We provide education about everything from current requirements and upcoming regulatory changes to the immediate and long-term benefits of retrofits or new equipment.

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