

# FUTURE-PROOFING CURLING CLUBS:

## SIMPLE UPGRADES FOR LONG-TERM SAVINGS AND EFFICIENCY

H. WILKINSON 2024



---

### THE CHALLENGE OF AGING INFRASTRUCTURE

---

Across Canada, curling clubs are vital to winter sports culture, yet they face rising operational costs and maintenance issues threatening their long-term survival. Despite the dedication of members, volunteers, and fundraising efforts, these facilities are under significant financial strain, primarily due to outdated equipment that inflates repair and energy expenses. Inefficient, energy-hungry compressors often break down, and technicians struggle to troubleshoot issues without real-time data or system insights.

The reliance on analog controls creates precision gaps, making it difficult to maintain the consistent temperatures essential for high-quality ice, a critical aspect of curling.

Manotick and Bancroft Curling Clubs have illustrated these challenges. Evaluating their aging systems, they confronted crucial questions: What should the new equipment deliver? How long will it last? Will it enhance efficiency and be financially viable? Addressing these questions is essential to avoid repeating the problems they aim to solve.



---

### GAINING CONTROL WITH MINIMAL DISRUPTION

---

For many clubs, a complete system replacement is financially unfeasible, leaving retrofits as the most practical solution. These retrofits must focus on energy efficiency and precision control while adhering to budget and infrastructure constraints. Finding the right balance between lifecycle cost and performance is key to sustaining club operations and ensuring future viability.

The Manotick and Bancroft clubs sought modernization, resilience, and optimal performance by adopting Oxford Energy Solutions' advanced platform, which features sophisticated temperature control and energy management. This upgrade stands out for its flexibility, requiring no extensive retrofits or modifications. It integrates seamlessly into the clubs'

---

## TRANSFORMATIVE UPGRADES

---

At the heart of the upgrades was the replacement of outdated fixed-speed compressors and analog controls with fully integrated, packaged indoor compressor racks featuring digital controls. This marked a transformative shift in the clubs' operations. The legacy compressors operated at maximum capacity regardless of demand, resulting in inefficiencies, increased energy use, reduced lifespan, and inadequate temperature and humidity control due to short cycling.

Now, multiple variable-speed compressors operate in parallel, precisely matching fluctuating demand and eliminating energy wastage. This load distribution enhances reliability through redundancy; in the event of a compressor failure, the remaining units continue to operate, ensuring uninterrupted performance. Integrating Variable Frequency Drives (VFD) facilitates efficient staging and operation under varying loads, significantly reducing

existing infrastructure with minimal disruption. The system arrives pre-built, pre-programmed, and pre-charged, significantly simplifying the installation and commissioning process. Its scalability allows future needs to be met without major alterations, reducing downtime and saving on renovation costs.

energy consumption and costs.

Additionally, the new compressors use Proportional-Integral-Derivative (PID) control to regulate temperature, pressure, flow, and speed, effectively managing the on/off cycling of multiple units. This real-time adjustment minimizes energy costs and reduces wear and tear, ultimately extending the equipment's lifespan.



---

## INTELLIGENT MANAGEMENT WITH SENSORS

---

Monitoring and controlling these processes optimize the performance of the compressors and ensure they operate

within their intended ranges – gaining better efficiency and longevity. The Sensori™ BAS provides a sophisticated control layer that manages the entire system, including the condenser, brine pump, and new compressors. It offers comprehensive monitoring and control, which is crucial for maintaining optimal ice conditions.

The intuitive interface makes it easy for technicians to oversee system performance, reducing the time spent on troubleshooting and maintenance. With real-time insights into temperature, flow rates, and compressor activity, clubs can ensure their system runs efficiently, minimizing energy waste and extending equipment life.

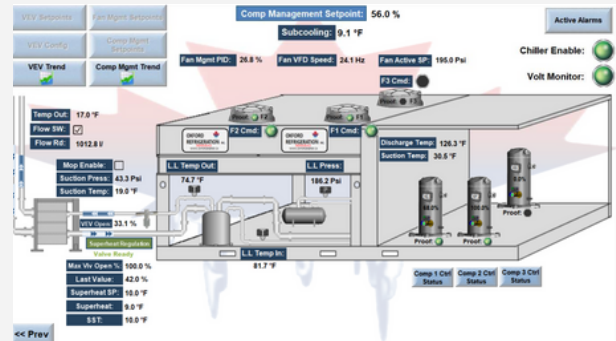
---

## A SOLID FOUNDATION FOR FUTURE ADVANCEMENTS

---

Oxford's platform introduces the first-ever unified system for curling clubs, aligning facility needs with refrigeration performance. It offers a consistent interface across various locations, making it easier for ice makers and staff to collaborate and share expertise. By eliminating differences in equipment, this platform has significantly enhanced the skills and capabilities of the ice-making community.

The entire ice plant is now easily managed by the technician, who can monitor heat flow from the ice surface, through the cement or sand deck, into the



*HMI screens depict all data for straightforward monitoring and adjustments*

brine or glycol, and to the refrigeration system. The platform also tracks, controls, and alerts for heating zones and humidity levels in the dehumidifiers—both crucial for ice quality. This system takes the guesswork out of the complex process of creating perfect curling ice.

Investing in Oxford Energy Solutions' platform improves the current capabilities of the curling clubs and lays a solid foundation for future advancements. The system's adaptability allows for easy integration of innovative technologies without requiring costly overhauls. This scalable approach ensures that clubs can upgrade their facilities incrementally, optimizing performance and costs over time.

By prioritizing ease of upgrades, extended equipment longevity, and lower operational costs, Manotick and Bancroft Curling Clubs have positioned themselves for sustained success. This thoughtful approach ensures these vital community hubs remain operational for years to come – all while maintaining financial viability and energy efficiency. 🇨🇦