



OUTDOOR RINK IN
NORTH VANCOUVER
LEVERAGES NEW
TECHNOLOGY TO
MOVE TOWARDS
NET ZERO EMISSIONS



After a century of industrial shipping activity, dealing with the resulting pollution and debating the transformation of the run-down space, the rejuvenated Shipyards has finally opened to the public. Set against the beautiful backdrop of downtown Vancouver, the Shipyards Commons skate plaza is the region's largest outdoor skating rink.

City officials are thrilled with the outcome. "It's going to be the premier gathering space in the Lower Mainland," said former Mayor of North Vancouver, Darrel Mussatto. "It'll have an outdoor ice rink in the winter that people can go on and ice skate, and it'll be the envy of every city." In addition to creating a new space for the community, the project aligns with North Vancouver's **Community-Wide Climate Action Plan** and marks a huge step towards achieving their Climate Action Targets.



Commitment to Sustainability

North Vancouver has committed to achieving net zero emissions by 2050. The city is a leader in developing sustainable transportation alternatives, building energy efficiency initiatives and encouraging waste diversion. To meet their ambitious climate action targets, staff are incorporating the new targets into the city’s plans, policies and business actions, and will be reporting regularly on their progress.

The Ice Rink

The warmer temperatures in Vancouver provide unique challenges for outdoor ice rinks. Taylor Mathiesen, director of operations for QPM, said the quay and city are working closely and bringing in third-party experts to ensure the rink works for the local climate. “The last thing we want is to build this beautiful ice rink that’s slush,” he said. As a result, they considered three proposals for this project.

Options	GWP	Efficiency (Operating HP)	Heat Recovery
CO ₂ primary circuit with glycol	0	200 HP	Yes
Direct CO ₂ system	0	200 HP	Yes
RB07 systems	3,985	400 HP	No



Based on these proposals, Vancouver contracted CIMCO Refrigeration to supply and install the refrigeration system. The CO₂ system has no negative impact on the environment, costs roughly half as much to operate as other options, and offers heat recovery through their unique ECO CHILL technology. This allows the city to use waste heat from the refrigeration system to heat nearby buildings via the district energy system. In keeping with the overall sustainability vision, even the Zamboni is 100% electric. This forward-thinking environmental mindset will help North Vancouver achieve its net zero targets.

How does CO₂, a 100% natural refrigerant, compare against R507, a synthetic refrigerant?

As CIMCO engineer Rob Martin states, "There really is no comparison. CO₂ has no negative effects on the environment, it operates far more efficiently, and it provides the opportunity to recover usable heat at 80 degrees F. Plus it's significantly cheaper, costing about \$1/pound while R507 costs about \$50/pound."

Overall Results

The project was an overwhelming success, according to the current Mayor of North Vancouver. Mayor Linda Buchanan says, "This is, in my opinion, the jewel in the crown for the city. This just allows for the public to get outside, use the community as their backyard and it provides lots and lots of social opportunities to connect with one another, in events that are programmed for free."