CASE STUDY | Whitecourt - JDA Place

Municipal Climate Change Action Centre

Skating toward savings

How Whitecourt improved arena efficiency and comfort

THE CHALLENGE

Whitecourt's JDA Place houses two arenas, the Athabasca Arena built in 1969, and the McLeod Arena built in 1994. While effectively operating as one building, the two arenas share a lobby and an ice plant. In 2011, JDA Place underwent an upgrade. However, Athabasca Arena's original architecture was not replaced, leaving a gorgeous wood timber frame and an aging roof. In 2023, the arenas used 955,000 kWh of electricity and 9,150 GJ of natural gas, costing roughly $242,000 in utilities ($160,000 for electricity and $82,000 for natural gas) that year.

As Whitecourt looked for ways to improve energy efficiency, they noted that the ice plant was at the end of its life and that the McLeod Arena could use additional insulation above its existing R-5 original 1994 roof. The roof insulation was so thin that when it was -30°C outside, inside, the temperature could be as low as -10°C. Community groups began cancelling their ice time bookings, often last-minute, because it was simply too cold for skaters and spectators, which resulted in a loss of valuable operating revenue for the Town.

But the cold wasn't the only issue: the roof's poor sealing and degraded insulation led to leaks and condensation. As warm air rose and contacted the cold roof, water would condense and fall onto the ice surface, where staff had to manually chip away stalagmites of condensation build up. The maintenance costs continued to add up, with age, condensation, and weather all working together to damage the roof. Major leaks damaged ceiling tiles and forced last-minute closures of the restaurant, incurring more costs in repairs and clean-up.

THE SOLUTION

In 2024, Whitecourt accessed funding from MCCAC's Community Energy Conservation program to finally fix McLeod Arena's roof, upgrading from the R-5 insulation to R-20. The new roof significantly reduced heat loss, improving indoor comfort for visitors and users while reducing natural gas consumption and costs. Now the indoor temperature hovers between 3-5°C even when the outdoor temperature is -30°C, an increase of as much as 15°C compared to the old roof.

Keeping the momentum going, the Town also used MCCAC funds to install a REALice system that eliminates the need for hot water when building and maintaining ice. Using cold water cuts energy costs by saving on natural gas and electricity use while also reducing the load on the new ice plant.

(continued)

THE MUNICIPALITY

*The **Town of Whitecourt** is in northern Alberta, northwest of Edmonton. JDA Place, the community's twin arena, serves local hockey and figure skating programs and is home to the Alberta Junior Hockey League's Whitecourt Wolverines. Whitecourt, with a population of approximately 10,000, relies on JDA Place as a central gathering place for sports and community events, but its aging infrastructure led to complaints and lost revenue, with groups cancelling bookings due to the low interior temperatures.*

Whitecourt accessed funds from the Government of Alberta via MCCAC's energy efficiency programs, including the Community Energy Conservation program. The $881,100 in funding allowed them to make $1,321,200 of upgrades over three projects.

FUNDING	ACTION	SUCCESS		
$881K	**3**	**$76K** ↓	**6.9K** ↓	**Bonus!**
from two MCCAC programs	energy conservation retrofits	savings per year	lifetime tonnes of GHG savings	savings on maintenance and labour

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Another big win for Whitecourt was replacing their inefficient ice plant, which they did in 2021 with the help of MCCAC funding. The new ice plant is a 150-ton low-volume ammonia system that reduced electricity use by roughly 35%. The new ice plant features an adiabatic condenser that uses less water and more effectively rejects heat. This upgrade enabled the Town to extend its ice season into the warmer spring and summer months for more hockey academies and camps, something their old system couldn't handle. As a result, more operating revenue can now be generated from ice bookings.

UNEXPECTED BONUS

Like most towns in Alberta, the local rink is a community hub, and the retrofits for JDA Place have ensured it continues to function well and provide great experiences for residents and visitors. Now, staff spend less time and money managing leaks and fixing ice damage, and kids have a dependable place to play. Coaches and hockey camps can now rely on a longer ice season, providing young athletes with more training opportunities without having to travel, and restaurant operators inside the arena have a more reliable space to run their business. These upgrades demonstrate that energy efficiency projects cut consumption and serve a greater purpose in community: they improve quality of life, keep the community engaged, and ensure community spaces remain welcoming and sustainable gathering places for years to come.

WHAT ARE LOCALS SAYING?

"The facility enhancements will greatly impact recreational users and visitors to our community, while at the same time making an impact on our environment."

—Whitecourt Mayor (2021-2025) Tom Pickard

THE COMMUNITY ENERGY CONSERVATION PROGRAM

The Community Energy Conservation (CEC) program provides financial rebates to municipalities to help identify energy-saving opportunities and implement retrofit projects in municipally-owned facilities. The CEC program helps facilities save energy, save money, and become more comfortable, thanks to a grant from the Government of Alberta. The program was designed and delivered by the Municipal Climate Change Action Centre, a partnership of:

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