

Topping Off a Record Win:

The Olympic Oval gets a new roof

By Melanie Franner



Skyline Roofing crew applying torch on cap sheet to the Olympic Oval roof on a crisp fall day.



By completion of the project, Skyline Roofing will have removed and refurbished 12,000 triangular panels and re-installed them in their original location.

Even though 1988 wasn't the best year for Canadian medal wins, with just three at the Calgary Olympic Winter Games, the Olympic Oval has lived on as an important legacy of those games. As such, the 23-year-old facility has played a vital role in the lives of many aspiring Canadian athletes.

"Eleven of the medals won by Canadian athletes at the 2010 Olympic Winter Games in Vancouver can be associated directly with athletes who trained here at this facility," says Kameron Kiland, Director of the Olympic Oval. "In fact, 40 per cent of all the medals won by Canada during those games can be attributed to the athletes who trained here."

Not bad for the little oval that would become one of Canada's premier training facilities for speed skating, short track and hockey. But the legacy was not to be without its shortfalls. A leaking roof was to put a damper on the ice – and on the trust arrangement that had been put in place to maintain the facility as a first-rate training ground for athletes and future Canadian Olympians.

Funding Finesse

WinSport Canada and the University of

Calgary took over the operation of the Olympic Oval after the 1988 Calgary Olympic Winter Games. The facility is a premier venue for athletes, but it is also open to the public in the evenings and on weekends, while offering special camps during the day. Boasting a 400-metre ice surface for long-track skating and two rinks for hockey and short track, as well as a weight room and track and field equipment, the facility also hosts to several high-profile national and international sporting events.

"The Olympic Oval is the crown jewel of all the Olympic facilities when it comes to community involvement and high-performance sport," says Kiland, who adds that some 600,000 to 750,000 people use the facility each year. During the summer, some 60 to 70 per cent of these people are athletes. During the winter months, it's more evenly split between athletes and the public.

Two-thirds of the cost of operating the facility had been covered by the interest generated by the Olympic Endowment Fund, an endowment fund put in place by the Government of Canada prior to the 1988 Winter Olympic Games. The other third has

been covered – and will continue to be covered – by the University of Calgary.

"The Olympic Oval is owned and operated by the University of Calgary," explains Bob Reekie, Chief Financial Officer of WinSport Canada. "Our relationship with them has been in place since 1988. We are the trustees of the endowment fund set up by the Government of Canada to assist with the operating costs of the Olympic Oval and Canada Olympic Park."

Until recently, interest generated from the endowment fund had covered these operating costs. But a changing world economy and an aging facility heralded the winds of change.

"Everything was fine until 2008," says Reekie. "When the stock markets crashed and the world went into a recession, it greatly impacted the interest being earned by the endowment fund and brought to a head the problems with the funding formula that had been put in place."

Continuing the Legacy

Before proceeding with any of the much-needed infrastructure work, the University



Stephen Broadley, construction manager of CANA construction (left), leads a site tour with roof renovation partners (left to right) Philip Parker, associate, building science and restoration of Read Jones Christoffersen; Ash Gupta, project manager, facilities development at the U of C; Shane Fischer, manager of metal operations with Skyline Roofing; and Elie Filion, RJC lead for construction reviews.

of Calgary took a step back and re-evaluated the life of the Olympic Oval. It hired Calgary-based Read Jones Christoffersen (RJC) Consulting Engineers to conduct an investigation of the Olympic Oval roof, including waterproofing, thermal performance, drainage and snow-control issues.

“We were initially engaged by the University of Calgary in 2008,” says John Harder, a Managing Principal with RJC. “The university was concerned about roof leaks, which

were affecting the ice surface and activities within the world-class facility. Based on our investigation, we recommended replacing the roofing system, upgrading the roof assembly and re-using the roofing panels, which were still in good shape.”

According to Harder, the Olympic Oval roofing system is “unique” as it involves thousands of connectors that attach the panels to the roof. Every single connector had to be waterproofed.

“We really wanted to make sure that we had improved thermal performance, drainage and rigorous waterproofing,” adds Elie Filion, the RJC lead for construction reviews. “It represented some logistical challenges in the sheer number of panels and in the tight time frame. The ice came out in March and was put back in August, a month ahead of schedule.”

In addition to the new roof, RJC suggested that the university install a horizontal lifeline system at the perimeter of the roof in order to offer workers better – and safer – access to the drains and to performing regular maintenance work.

“It’s been a privilege working to maintain and improve an Olympic legacy facility,” says Harder. “We’re quite proud to have been part of the team on this.”

Let the Rains Begin

After getting the feedback from RJC, the University of Calgary decided to go ahead with the project. But to do so, it needed some money to complete the improvements. So WinSport Canada and the university got together and approached the Government of Canada with the need for a new funding formula. The result: a new financial funding model that allowed for a \$10 million initial draw from the endowment fund to service the Oval’s critical infrastructure needs. Following this, the facility will receive approximately \$2.4 million annually to enable it to remain an important training hub for Canada’s future sporting pursuits.

The new funding formula came into effect in April of 2010, and construction on the roof began shortly thereafter. CANA Construction Limited was chosen as the general contractor for the new roofing project, which has special significance for the company.

“CANA President and CEO John Simpson is a former member of the Canadian Equestrian Team and represented Canada in the 1976 Olympic Games, the 1978 World Championships and the 1979 Pan American Games,” explains Mark Hames, Executive Vice President at CANA. “John’s past as an Olympic athlete has created an even greater significance for CANA in the construction of Olympic and sports facilities, as buildings like the Olympic Oval help to facilitate the performance and success of future Canadian Olympic athletes.”

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Skyline Roofing's crew atop the Olympic Oval roof, where 99 per cent of material from the roof is being recycled.

Hames goes on to describe the Olympic Oval re-roofing project as a little unusual.

"The Olympic Oval re-roof is different from other renovation projects that CANA has completed because the goal was to find a 100 per cent solution to the roofing system to ensure that it would not have to be replaced again," he says. "This will mean that the Olympic Oval will continue to be a functional sports facility for Calgarians and other Canadian athletes for many years to come."

The Olympic Oval is just one of many projects that CANA has worked on for the University of Calgary. According to Hames, the company has been involved with the construction of almost 50 per cent of the University of Calgary campus. Since 1989,

CANA has completed more than 10 university projects that have a combined value of over \$200 million.

"CANA was working at the university on other projects," explains Stephen Broadley, Construction Manager at CANA. "The university was considering a couple of options over the last few years when it came to the oval. We were chosen as the general contractor in the fall of 2010 and putting in a successful proposal with Skyline Roofing Ltd."

According to Broadley, the Olympic Oval is unique in that it has a 180,000 square foot freespan roof, one that includes over 12,000 separate triangular porcelain enamel panels.

"To do the actual repair on a small scale is relatively simple," says Broadley. "What

makes this project so complex is the magnitude of the roof. It became a huge scheduling challenge to ensure the building could operate successfully with athlete training, while finishing the roof above."

To that end, CANA Construction took care of the scheduling, while Skyline Roofing Ltd. did the actual manual labour on the roof.

"The existing roofing system had to be removed right down to the membrane," says Jason Taylor, Director of Business Development at Skyline Roofing Ltd. "The existing panels on the roof are steel panels with a porcelain coating. These panels were removed and refurbished so that they could be put back on after the rest of the work was completed."

This other work entailed installing a new two-ply SBS membrane and replacing the existing sub-framing and insulation. The expanded polystyrene insulation was removed, recycled and replaced with a new drainage mat and three-inch mineral fiber insulation. Some 70,000 support clips were fastened through to the underlying structure and waterproofed, to support the new sub-framing. A filter fabric was then installed over the insulation and support clips, followed by the new continuous sub-grit framing and then the refurbished panels. The panels themselves were scraped, ground where necessary, cleaned and repainted over the repaired areas, and then hung on racks to dry before being re-installed on the roof.

"The original panels had to be removed, labeled and catalogued before being brought to our facility for refurbishing," explains Taylor. "It's like a giant jigsaw puzzle."

Since they began work in March of this year, Skyline Roofing has had almost 40 men working on the roof at any one time at a facility itself that was closed for the first time in its 23-year history.

"The original roofing system had exceeded its life expectancy and was becoming an ongoing maintenance problem for the facility," says Taylor. "The oval is still the premier speed skating facility for Canada. It is in their best interest to get another 25 years out of it."

Topping Off a Stellar History

According to WinSport Canada's Reekie, the recently instated new funding formula provides maintenance money for the Olympic Oval up until 2030. In 2027, Win-



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Sport Canada and the University of Calgary will begin discussions to determine if and how the funding will continue.

"Having the world's premier speed skating oval on the University of Calgary campus is another element that makes this institution world class," says Dr. Elizabeth Cannon, President of the University of Calgary. "For our students, faculty and the City of Calgary, the Olympic Oval provides unique opportunities for recreation and research. The skaters and other athletes who train here add to the richness of our school, and most importantly, the oval serves as a reminder that the pursuit of excellence is a goal that we all share as a campus community."

A Circle of Dreams

Although many athletes – and public – can attest to the unique opportunities afforded by having the Olympic Oval back in tip-top shape, one athlete in particular can speak of the advantages firsthand. Lucas Makowsky was an Olympic 2010 Gold Medal winner in the men's Team Pursuit event. And he attributes a lot of his success to having access to the Olympic Oval.

"I've been training at the Olympic Oval in Calgary since the fall of 2005 when I moved here to train and go to the university," he says. "Once I'm back on the ice full-time to get ready for the racing season, I'm at the oval six days a week for no less than three hours a day. For some of the longer days, I'll be at the oval for up to six hours in a given day."

According to Makowsky, some of the key features that set the Olympic Oval apart from other training facilities are the other amenities that surround it.

"We have a high-performance weight room right here at the oval," he says. "The Human Performance Lab is just down the hall where we do all of our sport testing. The Sport Medicine Centre is right beside that, and the Canadian Sport Centre Calgary is close by as well. On the academic side, the oval is right at the University of Calgary campus, which makes pursuing an education possible. I can't think of another training facility that offers as much as this one in one location."

It's this combination of services and location that has contributed to Makowsky's

Olympic success.

"The Olympic Oval has been a huge part of my success, primarily because it's where our National Long-Track Team is based," he says. "[The Vancouver Winter Olympics] would have been a much different situation if the oval wasn't around after the 1988 Games. I'm really fortunate that it's right at the University of Calgary so that I can work towards my academic goals as well. For me personally, it's the perfect set-up."

Now that the Calgary Olympic Oval is well on its way to getting a renewed lease on life as the premier Canadian training facility for short-track and long-track speed skating, athletes like Makowsky can breathe a sigh of relief and re-focus on what's important to them.

"I am planning on competing in the next Winter Olympics in Sochi, Russia in 2014," says Makowsky. "The Olympic Oval will definitely be part of my training regimen. The National Long-Track Program isn't moving anytime in the near future so this will be the place where I'll be able to get the best coaching, training, testing and recovery as I prepare for those games." ■

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