

Partners for Climate Protection

Greenhouse Gas Reduction Initiative of the Month

Town of Banff: LEED Candidate Bus Storage Facility



Municipal Profile

Population: 8,244

PCP Member since: 1999

Background

In 2007, the town council of Banff, Alberta, passed its Municipal Sustainable Building Policy, which requires new municipal buildings with a footprint of 500 metres square or greater to meet or exceed the Silver level of Leadership in Energy and Environmental Design (LEED) certification. New buildings smaller than 500 m², renovations and other projects where a LEED standard may not apply require design and construction to reflect triple-bottom line principles. The new transit storage facility was the first new municipal building constructed after the policy was passed. The facility was built to house Banff's new transit fleet of four hybrid diesel-electric buses.

Implementation and approach

Prior to construction of the storage facility, Banff's transit system was run by an outside operator. Transit was contracted by the town, which stored and maintained the buses. In June 2008, Banff launched Roam, its new municipal transit system, creating the need for a new storage facility. Facility construction began shortly after Roam was launched.

At the time, Alberta was experiencing a tremendous construction boom and finding contractors to complete municipal projects was challenging. "It was a sustained boom in our economy and we had trouble attracting construction firms," recalls Chad Townsend, Banff's Environmental Services coordinator.

That said, he credits Banff Town Council's decision to push ahead with the project.

"The building cost more upfront but will increase employee comfort and productivity and provide significant operational and environmental savings over a longer lifespan."



The 1,260-metre square facility (pictured above. Photo courtesy of the Town of Banff) was built within the town's operations compound. The facility provides storage and maintenance space for the Roam buses (pictured at left. Photo courtesy of the Town of Banff) as well as municipal fleet maintenance, and warehousing services.

Environmental features include:

- concrete wall construction, estimated to last 50 years longer than an equivalent steel or pre-engineered building;
- a natural gas-fired, high-efficiency heating system, as well as state-of-the art electrical and mechanical systems that use one-half the energy of a non-LEED building;
- a rooftop rainwater collection system that provides water for bus washing;
- high-efficiency windows and significantly higher roof insulation for heat retention; and
- low-flow water fixtures throughout the facility.

“As a national park community, we have a responsibility to limit our environmental impacts, and we are committed to being leaders in reducing greenhouse gas (GHG) emissions,” says former Banff Mayor John Stutz. While in office, Stutz oversaw the transit storage building’s development. “The opportunity is to show millions of visitors what we’re doing, with the thought that they’ll take what they learn home and put it to use. The combination of the bus fleet and the maintenance facility is an example of that.”

Results

Energy modelling of the facility shows energy use will be reduced by about 30 per cent annually. Capturing and using rainwater for bus washing reduces potable water use by more than one million litres of water per year. GHG emissions reductions from electricity total about one tonne per year. Natural gas reductions are about 17 tonnes annually.

The storage facility was Banff’s first LEED project and the first LEED project for the project’s builder. Townsend says trying to achieve LEED Silver (as per the municipality’s building policy) was difficult. “It’s basically a big box with large doors that are open a lot of the time,” he maintains. “It’s not impossible, but this type of building doesn’t lend itself well to this type of certification. That said, although the facility will not achieve LEED Silver, the building will be LEED-certified in about six months’ time.

Aside from the resource and cost savings, Townsend says the facility is a great place to work. “Staff are happy, and we have good employee retention,” he says. The transit storage facility is located at the entrance to Banff’s light industrial compound, which houses several local businesses. As a result, says Townsend, “The facility sets a good precedent for future development within the compound. Future redevelopment by the neighbouring private sector will now have an example to follow.”

Lessons learned

Given the construction boom at the time, the cost of constructing Banff’s transit storage building was higher than anticipated: \$5.2 million. “The construction market at the time was so busy that everyone was paying a premium,” says Townsend, “but we didn’t want to wait on the construction in case the situation worsened.”

Townsend advises other municipalities that may be undertaking a similar initiative to take the time at the beginning to fully consider the design and lifecycle of the building, its durability and the types of materials used. “We chose a concrete construction because it’s more durable and energy-efficient and will give us a longer lived building. Plus there’s a cement plant within 50 kilometres of Banff.”

The Town of Banff invested \$1.45 million, received a combined loan and grant of \$600,000 from FCM’s **Green Municipal Fund™**, while the remaining funds were provided through Alberta’s Municipal Sustainability Initiative program.

As well, Townsend maintains that having a LEED-accredited staff member would have been

useful. “In the LEED process there is so much to keep track of—landfill records, the types of finishes and materials you use, etc.—and those things are difficult to reconstruct after the fact. We missed a few things, but this helped with our second LEED project, the Fenlands Recreation Centre, which went a lot smoother as a result of our experience with the storage facility.”

Future direction

Since its inception, Banff’s Roam hybrid buses have increased overall ridership by close to 50 per cent. Most recently, the town has partnered with nearby Canmore and ID#9 (the lands inside Banff National Park) to form Alberta’s first Regional Transit Services Commission. A commuter route between Canmore and Banff is expected to begin in September 2012, followed by transit service to major destinations within Banff National Park, such as Lake Minnewanka, Johnson Canyon, Moraine Lake and Lake Louise.

Further information

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Download a copy of [Banff’s Municipal Sustainable Building Policy](#).

The Partners for Climate Protection (PCP) program is a network of Canadian municipal governments that have committed to reducing greenhouse gases and acting on climate change. PCP is the Canadian component of ICLEI’s Cities for Climate Protection (CCP) network, which involves more than 900 communities worldwide. PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability. PCP receives financial support from FCM’s Green Municipal Fund.