

GREEN Building

featuring Super Spacer®

Mountain Equipment Co-op one of only eight buildings in Canada to be awarded a Gold Certificate by the United States Green Building Council

Mountain Equipment Co-op is a member-owned outdoor and adventure equipment retailer with outlets across Canada. In accordance with its core values of environmental protection, the Co-op has emerged as one of Canada's leading developers of sustainable buildings. The Winnipeg Mountain Equipment Co-op store is its crowning achievement, being recognized by government and a host of other organizations as one Canada's most sustainable buildings. The 30,270 sq. ft. retail facility was designed by award-winning Prairie Architects Inc. to be one of the greenest commercial buildings in the world. To date it is one of only eight buildings in Canada to be awarded a gold certificate by the Green Building Council. It has also been awarded a number of Canada's most prestigious sustainable building awards including the Natural Resource Canada Energy Innovator Award, The Manitoba Round Table for



MEC's Winnipeg store uses approximately 47% less energy than the baseline specified in the federal government's model energy code for buildings. It reduces greenhouse gas emissions by more than 30 tons per year compared to conventional buildings and was built using 97% recycled materials.

Sustainable Developments Award of Excellence, and the Canadian Council of Ministers of the Environment's Pollution Prevention Award.

The Winnipeg MEC project has pushed the envelope of sustainable building in a number of areas that include material and resource reuse, water management and energy performance. From the perspective of material reuse, the Winnipeg MEC utilized a technique often referred to as deconstruction or eco-renovation. This involved the careful dismantling of two of the three existing buildings on the site, conducting an inventory of reclaimed materials then designing and constructing entire new sections of the building from these materials. In total, almost 4,000 tons of material had been diverted from the landfill fulfilling the project's environmental objectives while reducing the projects total design and construction budget to less than \$100 CAD per square foot.

A second innovative feature of the building is its green roof. The green roof functions as an evaporative cooler by utilizing a photovoltaic powered irrigation pump that delivers captured rain water to the surface of the roof. In utilizing this technique, the roof evaporates significantly more captured rain water than would be possible with conventional irrigation reducing the potential for the displacement of raw sewage into the local watershed through combined sewer overflows while providing a cooling benefit of up to 43,000,000 BTU's per month.

Windows formed a key element in the project in terms of aesthetics as well as energy efficiency. The selection of fiberglass windows from **DUXTON Windows & Doors** was based on

several factors including the performance level of the product, the high environmental rating of the window material as well as working with local suppliers. The selected window systems featured the awning / fixed windows complete with AFG Ti-R e/Argon c/w **Super Spacer** high performance glass. Simulation analysis determined that these insulating glass units would provide the best possible performance from a heat loss as well as heat gain perspective. Other elements of the building's design also enhance the building energy performance. High levels of insulation coupled with a radiant heating and cooling system in combination with heat recovery and high-efficiency lighting have enabled the building to be certified under the Canadian Federal Government's C-2000 program for the country's most energy efficient buildings.

Extreme dreams for cold climates, no challenge to Duxton

Al Dueck, CEO/owner of Duxton Windows, Winnipeg, has built a creative career — and his manufacturing firm — around superinsulated window construction. His products are high-performance architectural components in the "dream" and "green" projects of Canadian builders, developers and architects.

"The perfect window, says Dueck, "would permit zero heat loss, while maximizing solar gain and daylight." It would also withstand the challenge of condensation in extreme climates. We keep striving for perfection in fenestration, by using Super Spacer and other top thermal performers."

For more information, go to www.duxtonwindows.com.



Canmore Civic Centre Goes Green with CWD Windows and Doors and Earns Alberta their First LEED Silver Certification

The Canmore Civic Centre is a multi-purpose focal point for the town of Canmore, located in the spectacular Canadian Rocky Mountains. The two story, 25,000 sq. ft. building was awarded a Silver LEED Certification from the United States Green Building Council in January 2005, becoming the first project in Alberta and fourth in Canada to receive a Silver LEED certification. The Civic Centre was also awarded 'Project of the Year 2004' by *Alberta Construction Magazine* (December 2004) and an Award of Merit from the Consulting Engineers of Alberta (February 2005). Lead by the project team at Marshall Tittermore Architects and Keen Engineering in Calgary, Alberta, the facility operates at 40% lower energy consumption than specified by the Model National Energy Code for Buildings and boasts a 55% reduction in water use.

The project's goal was to design an advanced facility that promoted environmental stewardship by maximizing energy efficiency, reducing water consumption and providing a healthy interior. After the project commenced, a unanimous decision was reached to strive for LEED Silver Certification. Remarkably, this did not increase the pre-set budget or affect the completion date.

In addition to considering orientation, massing, construction and sustainable transportation measures, a variety of green strategies were employed. Daylighting and natural ventilation both contributed to maximizing energy efficiency, while enhancing top indoor air quality. **CWD**

Windows and Doors' Regency clad windows were chosen with four different glazing options including Low-E and Super Spacer® to make the best use of natural light and thermal performance. The Super Spacer sealed units were typically 5mm bronze outer lite with 3 to 5mm Low-E interiors in both soft and hard coats depending on the exposure. Many of the rake shaped units were supplied with heat-strengthened glazing due to shading and sun orientations. CWD's sourcing of wood from Certified Well Managed Forests helped secure the environmental LEED initiative.

The Town of Canmore and the Project Team at MTA set out to create a central hub - a cultural, administrative and communications' heart for this mountain town rich in railway, mining and mountaineering history. Housing the government offices, Council Chamber and the new location for



CWD's Regency clad window with hem-fir interiors - sourced from Certified Well Managed Forests - was chosen for its excellent performance ratings and natural beauty.

the Canmore Museum and Geo-Science Center, the Civic Centre is used during off-hours as a multipurpose community facility, an exhibition space and a public meeting place. The resultant facility serves as an example for the rest of the province demonstrating the relative ease of going green and the associated benefits, both short and long term.

Environmental stewardship has become a hallmark for Canmore - their Civic Centre serves to represent one of the first principle steps towards this town's legacy and commitment to sustainable development.

For more information please visit: www.cwdwindows.com.

Boreal Centre achieves a high standard for sustainability in government buildings



Planned to leave only a tiny "footprint" during construction and operation, the building will be cooled and warmed by heat pumps from a geothermal field.

Manasc Isaac Architects was retained to design the new **Boreal Centre for Bird Conservation** in Slave Lake, Alberta. This new multi-functional facility will support research, education, tourism, and conservation. The building must be a simple economical building, but evocative at the same time, reflecting on

the important research being done, and providing an attractive destination for the growing "eco-tourism" movement around the world. The building has no access to potable water nor is it connected to a sewer system or gas supply. Reduced water consumption has been achieved by composting toilets and waterless urinals. Captured water

from the roof is purified on site. Heating and cooling is via heat pumps and a geothermal field. This project is required to achieve LEED-Silver Certification. The sharply angled roof to collect snow and rain, the straw panel walls and the fiberglass windows with Tripane Super Spacer, supplied by **Duxton Windows**, are all specified in order to meet the demanding sustainable criteria of the LEED green building rating system. The main building and related buildings on site must be designed and modeled utilizing the Natural Resources Canada Model National Energy Building Code (MNEBC) and should meet or exceed the requirements of the CBIP.

For more information about LEED and Green Building visit: www.usgbc.org - United States Green Building Council www.cagbc.ca - Canada Green Building Council www.buildinggreen.com