

LEED® Gold Certified

Owner:

Mountain Equipment Co-op

Architect:

Stone McQuire Vogt Architects

**LEED® Consultant,
Energy Engineer,
Commissioning Agent:**
Enermodal Engineering Ltd.

Structural Engineer:
Equilibrium Consulting Inc.

**Mechanical/Electrical
Engineer:**
Enermodal Engineering Ltd.

Civil Engineer:
Trafalgar Engineering Ltd.

Landscape Architect:
ENVision

Contractor:
PCL Construction Canada Inc.

Mountain Equipment Co-op Burlington Burlington, Ontario



PHOTO CREDIT ENERMODAL ENGINEERING

Mountain Equipment Co-op (MEC) Burlington is the first MEC store to receive LEED Canada certification. The 2,500 m² building, which houses retail, warehouse, and administrative space, is a model for sustainable retail. From environmentally-appropriate materials to an unusual, combined solar thermal and PV system, MEC Burlington sets the bar high.

MEC, founded by six Canadian mountain climbers in 1971, has grown to over 3 million members and become the largest outdoors store in Canada. Its branch stores span 12 cities and sell outdoor and adventure gear and equipment. MEC exists to serve its members, and this includes promoting a healthy environment and retail experience.

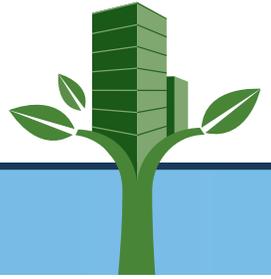
An net energy producer, not user

The core of MEC Burlington is its one-of-a-kind mechanical system. The cooling system uses six ice thermal storage units, the first-of-their-kind in Canada. The system makes ice at night (to shift the peak cooling electrical load to night time when there is less demand for energy), then cools the building during the day by circulating liquid refrigerant between the ice tank outside and the fan coils at the store ceiling. When outdoor conditions permit, the occupants can naturally cool the building with operable windows and a ventilating clerestory.

A rooftop Energy Recovery Ventilator (ERV) and a true under floor displacement ventilation system supply 100% outside air to floor grilles in the runway around the main floor and mezzanine retail area. In winter, ventilation air is pre-conditioned by the ERV, then further warmed by hot water pipes wrapped around the underfloor ducts set in the radiant heated floor. All spaces are heated by hot water radiant floors and two modulating condensing gas boilers.

While the building itself is modeled to consume 68% less energy than a conventional building, due to its solar energy generation, it achieved predicted energy cost savings of 70%.

A tracking PV rooftop solar system provides the building with some of its electricity needs.



Water – a valued resource

Many green buildings have one rain cistern; MEC Burlington has two. One collects stormwater runoff from the parking lot for irrigation, another collects rainwater from the roof for toilet flushing. As a result, MEC Burlington achieved a remarkable predicted indoor water savings of 82%, and no potable water is used for irrigation.

Let there be (less) light

Lighting is typically a major energy load for retail stores as products must be displayed effectively, and some lights are on for security purposes during off-hours. To minimize unnecessary lighting, MEC Burlington features bi-level lighting which allows for lights to be at half their maximum luminescence when an area is unoccupied and automatically increase to full levels when occupied. In the warehouse and washrooms, lights are off as a default and only turn on when the occupancy sensors detect movement.

These measures meant the interior lighting design achieves 63% energy cost savings over a conventional building.

Materially important

Understanding that a building is only as green as the sum of its parts (and how easily these parts can be reused), MEC's decommissioning was considered during its design. MEC Burlington is designed for simple disassembly and material recycling or reuse. MEC Burlington's structure is comprised of wood – a renewable resource. Additionally, 97% of this wood is FSC-certified, ensuring it was sustainably grown and harvested.

Healthy construction and indoor environment

The health of its employees and customers is important to MEC. To decrease the amount of dangerous Volatile Organic Compounds (VOCs) in the indoor environment, low-emitting materials were used throughout the building.

All spaces are ventilated with 100% outside air and controlled by CO₂ sensors. The health of the environment was also a priority, which resulted in recycled sources providing 9% of construction materials. To minimize CO₂ emissions as the result of resource transportation, local materials were used whenever possible and represented 11% of construction materials. Additionally, the floor was left as unfinished concrete to reduce material use.

Sustainable practices

While MEC Burlington is a sustainable building, its corporate practices are also amongst the most environmentally and socially progressive in the country. For example, MEC is the first retailer in Canada to provide the locations of all the factories that supply its clothes. Other ways that it exceeds the industry standard are the provision of 32 extra bike rack spaces (relative to LEED credit requirements) and the implementation of a green housekeeping program.

For more information, contact
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