

# Canadian **Architect**

**Green Building Challenge**



# Green Building Mountain Equipment Co-op

Toronto, Ontario

Stone Kohn McQuire Vogt Architects

A store for outdoor enthusiasts seeks to set a new standard in the design of sustainable retail environments.

Buildings



**Top:** a view from the northwest of the Co-op building in its downtown context. **Above, middle:** a canopy constructed of recycled timber provides covered bicycle storage. **Above:** a large portion of the building's flat roof is planted as a mountain meadow. **Above right:** the large atrium provides daylighting and natural ventilation.

**Client:** Mountain Equipment Co-op  
**Architect team:** Heinz Vogt (partner-in-charge), Dan Cowling (project architect), Craig Bonham, Susan Webster, Robert Boyd, Lynne Huston, Gerald Kostuik, Amin Wallani  
**Structural:** Read Jones Christofferson  
**Mechanical:** Keen Engineering  
**Electrical:** M.D. Stanley/M.C.W. Consultants

**Landscape:** Ferris + Quinn  
**Geotechnical/Environmental:** Golder Associates  
**Environmental:** Ensar Group  
**Development managers:** Chard Retail Development Ltd./Don Logie Inc.  
**Completion:** March 1998  
**Budget:** \$5.3 million  
**Photography:** As noted

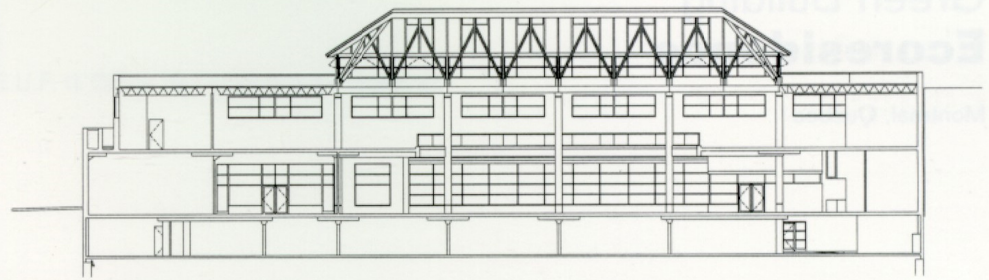
**To date, retail buildings** have not played a significant role in the evolution of environmentally sustainable design. Mountain Equipment Co-op, one of Canada's largest retailers of outdoor equipment, recently opened a new store in Toronto that hopes to demonstrate that environmentally responsible material and system choices can be made within the context of a consumer lifestyle. Ultimately, the company's success is closely linked to the preservation of natural resources on which the pursuit of outdoor activity depends.

In contrast to the recent explosion of suburban big box retail development, the Co-op is located on a downtown infill site on Toronto's King Street West, and as a result is easily accessible by foot, bicycle and public transit. Construction materials are left exposed, and unfinished interior surfaces incorporate recycled materials and products labeled under Environment Canada's *ecologo* program. The wood used for the structural members and the decking of the canopy along King Street West, as well as on the sloped skylit roof, was reclaimed and milled specifically for the project to avoid the cutting of virgin growth and the associated environmental impact on natural habitats.

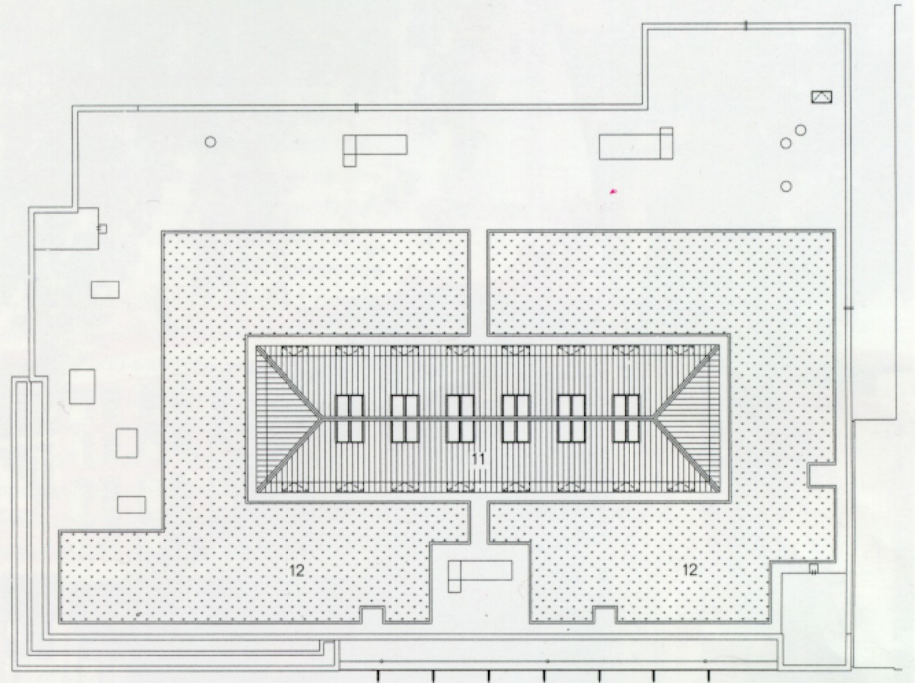
Skylights provide natural daylighting and bring it into the centre of the space, and energy-efficient light fixtures are controlled by a computerized building management system and, in areas of occasional use, by daylight and occupancy sensors. A direct digital control system allows monitoring and customizing of the scheduling of equipment and lights, so that the Co-op can monitor the building's energy consumption and redesign the style or rate of consumption according to the season, use context, and need. Photovoltaic panels further reduce energy requirements and demonstrate an emergent set of technologies.

The use of recycled content in the concrete mix utilizes the waste product of another energy process and allows for a reduction in the use of Portland cement. Clerestory windows provide free cooling and natural ventilation, and custom premium rooftop HVAC units with economizers increase the efficiency by up to 16% and utilize environmentally friendly refrigerants. The Co-op also makes use of a "green roof" planted as a mountain meadow. A series of perennial grasses, flowers and shrubs will cover approximately 50% of the exposed roof area.

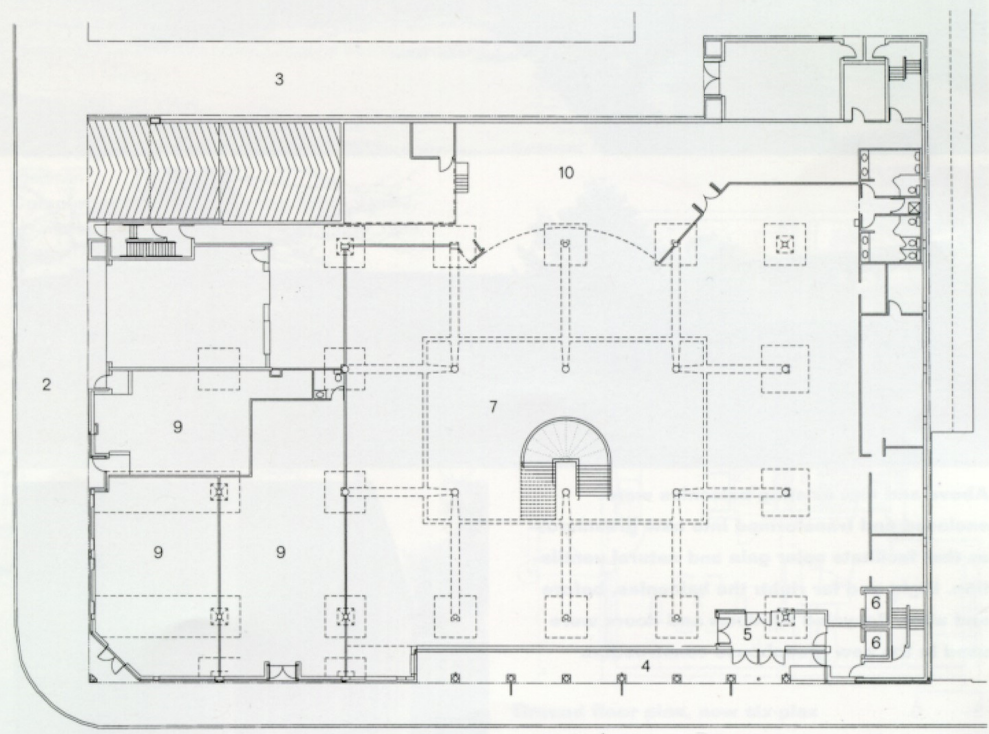
Life cycle costing and environmentally responsible choices in design and materials have been given priority over capital cost concerns. As a result, the store is expected to exceed the minimum ASHRAE 90.1 standard by over 37%, and long-term savings are expected to materialize in the form of reduced energy consumption and the durability of building materials. **NM**



**Cross section**



**Roof plan**



**Ground floor plan**

- |                     |                       |                          |
|---------------------|-----------------------|--------------------------|
| 1. King Street West | 5. entrance           | 9. separate retail units |
| 2. Charlotte Street | 6. elevators          | 10. stock room           |
| 3. public lane      | 7. main retail space  | 11. sloped metal roof    |
| 4. canopy           | 8. stair to mezzanine | 12. planted roof         |

