



Earth Rangers Centre

Using thermal mass to save energy



Owner:
Earth Rangers Foundation

Architect:
M Architects/Bautech

Our Services:

- Sustainable Design Facilitation
- Energy Efficiency Consulting
- Mechanical Design
- LEED® Consulting & Certification

The Earth Rangers Wildlife Centre in Woodbridge, Ontario, is a 5,500 m² nature education centre located on a rolling 31 acre property. The building is a showcase of energy-efficient and water-conserving technologies, from a green roof to on-site wastewater treatment. Underground "earth tubes" temper ventilation air. Radiant heating and cooling are provided through tubing embedded in concrete structural slabs. Northfacing skylights and enhanced daylighting design maximize natural lighting. Sixteen DHW panels are mounted on the south-facing surfaces of the skylights. High-efficiency lighting reduces the lighting power density to 50% of MNECB targets.

Notable Features

- green vegetated roof
- on-site wastewater treatment using a bioreactor and ultra-filtration system
- highly insulated building shell
- ventilation heat recovery on all air handling systems
- concrete slab radiant heating and cooling
- buried earth tubes to temper outdoor air
- displacement and hybrid ventilation systems
- condensing boiler
- small chiller with water side economizer
- energy-efficient lighting design with power density 50% below MNECB
- solar DHW system mounted on skylights
- daylighting through north-facing skylights

LEED® Project Facts

Gross Floor Area: 5800 (m²)

Energy Density: 228 (kWh/m²)

Category	% Performance
Water Savings	
Irrigation	100 %
Indoor Use	63 %
Energy Savings	
Energy Savings	58 %
Recycled Content	10 %
Regional Content	25 %
Daylighting	75 %
Views	91 %

LEED® Gold



LEED NC Gold Certified
Completed 2006
Woodbridge, Ontario



58% Energy Savings



63% Indoor Water Savings



10% Raw Materials Savings

