

## Rainwater Cisterns Conserve Water

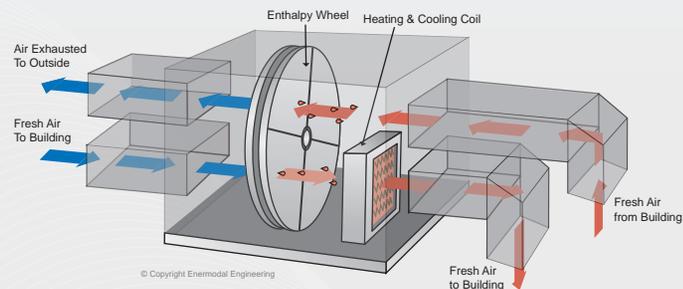
Water use at the Kingston Police Headquarters is greatly reduced due to the use of a rainwater cistern. Rainwater is collected in an underground, 30 m<sup>3</sup> cistern. Water pumped from the cistern is used to flush toilets, saving over 64% of the potable water normally used for toilet flushing.



1. Rainwater collected from roof
2. Rainwater stored in underground cistern
3. Cistern water is used to flush toilets

## Energy Recovery: Year-round Temperature and Humidity Exchange

During winter, heat and humidity are transferred from exhaust air to incoming outdoor air. During summer, heat and humidity are transferred from incoming outdoor air to the building exhaust air.



© Copyright Enermodal Engineering

## The Kingston Police Headquarters



This project was carried out with assistance from the Green Municipal Fund, a fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.



# The Kingston Police Headquarters

Our new Headquarters represents a unique step forward in the design of policing facilities. The Headquarters incorporates modern security considerations with a commitment to the environment shared by both the Kingston Police and the Kingston Police Services Board.

We are pleased to demonstrate that when building design is based on environmental stewardship, the result is a facility that is a healthy workplace as well as being inviting and functional for visitors. This brochure is an introduction to some of the creative building technologies and strategies that help us express our environmental principles in very practical ways.

## The LEED® Canada Building Rating System

LEED is an internationally recognized system for evaluating the “green-ness” of building design and construction practices. Buildings that are awarded a LEED certification incorporate leading-edge design, construction, and operational practices that protect the environment and promote healthy working and living conditions. LEED Certification indicates that experienced professionals, working collaboratively, have arrived at a holistic building design.

The LEED Rating System awards points for meeting design and performance standards that are much higher than those used in conventional buildings. Points can be awarded in six categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovation and design.

### LEED Rating: GOLD

Certified by the  
Canadian Green Building Council  
[www.cagbc.ca](http://www.cagbc.ca)



#### LEED® Project Facts

Gross Floor Area: 416 (m2)  
Energy Density: 208 (kWh/m2)

Category	% Performance
<b>Water Savings</b>	
Irrigation	86 %
Indoor Use	35 %
<b>Energy Savings</b>	
Recycled Content	61 %
Regional Content	11 %
Daylighting	100 %
Views	100 %
<b>LEED® Gold</b>	



## Environmental Challenges & Opportunities

Construction impact	Erosion and sedimentation control measures Construction waste management plan
Fossil fuels, global warming, air pollution	Well insulated building envelope High performance windows Energy recovery system re-uses heat from exhaust air Air handling units cool building using outdoor air Efficient condensing boilers for heating and hot water Occupancy and daylighting sensors Extensive building commissioning Long-term energy monitoring program Bike racks and showers for cyclists, proximity to public transit, reserved parking for car pool vehicles
Water depletion and pollution	Rainwater stored for outdoor use and toilet flushing Drought-resistant vegetation Water-conserving showerheads, urinals, and faucets Stormwater treatment units remove pollutants from stormwater
Resource depletion	Materials with recycled content: steel, siding, wood, drywall, asphalt, concrete, insulation, ceiling tiles, rubber tiles, sports flooring, concrete block, wood doors, rebar, carpet, steel studs Locally made and extracted materials: asphalt, concrete, insulation, concrete block, gypsum board, gravel Forest Stewardship Council certified millwork
Indoor air pollution	CO2 monitors Green housekeeping program with low-impact cleaning products Indoor air quality protected during construction Low-VOC materials: sealants, paints, carpets, adhesives, coatings, composite wood products Recessed building entrance grills, high performance air filters, segregation of hazardous chemicals, dedicated photocopier rooms Greenguard-certified systems furniture
Light pollution	No light spillage from exterior lighting, no uplighting

### Design & Construction Team

Architect: Rebanks Pepper Littlewood + Shoalts and Zaback  
LEED Consultant: Enermodal Engineering Ltd.  
Electrical/Mechanical Engineers: MCW Consultants  
Site/Civil Engineers: Josselyn Engineering Inc.

Structural Engineers: Roney Engineering Ltd.  
Landscape Architect: Scott Wentworth Group Ltd.  
General Contractor: M. Sullivan & Son Ltd.

