

Sustainable Living

The Kortright Centre for Conservation, along with its partners, has created **The GreenWorks** - a building that highlights state-of-the-art techniques in resource efficiency, wastewater treatment and renewable energy technologies.

Goals

The goals of **The GreenWorks** are to:

1. Demonstrate and promote sustainable technologies.
2. Inform and educate visitors about sustainable lifestyle practices.

Kortright is a natural oasis located on 320 hectares of pristine woodlands along the Humber River Valley, just 10 minutes north of Toronto, Canada's most populous city. Our mission is to promote the conservation of our natural resources including, land, forests and water. We accomplish this mission through high quality interpretive and educational programs whose popularity is reflected in our annual attendance of 130,000 visitors.

Kortright is a centre of excellence in the field of renewable energy technologies, housing Canada's largest renewable energy demonstrations. We have built a reputation with the public, educators, industry and the media as providers of quality educational programs delivered by expert staff. With hands-on, practical workshops and numerous program demonstrations, Kortright introduces thousands of visitors to a variety of sustainable technologies in a natural setting.



A publication of Toronto and Region Conservation
dedicated to making a Living City. www.trca.on.ca

KORTRIGHT
Centre for Conservation 

Partners

This project is a result of the generous donations of the following corporations and organizations:

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The GreenWorks is located at the Kortright Centre for Conservation, 9550 Pine Valley Drive in Woodbridge (south of Major Mackenzie Drive and west of Highway 400).

For more information call 905-832-2289 or visit our website at www.kortright.org.

The GreenWorks is a demonstration site supporting Toronto and Region Conservation's vision of helping to build a Living City Region. The Living City Campaign is a joint venture of Toronto and Region Conservation and the Conservation Foundation of Greater Toronto.

For more information on the Living City Campaign, please call 416- 661-6600 ext. 5207 or visit our website at www.trca.on.ca.



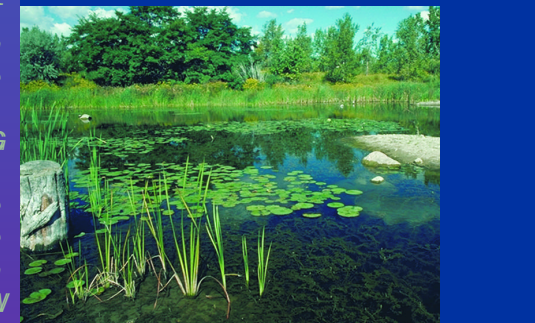
 **TORONTO AND REGION
Conservation**

The GreenWorks



Kortright Centre Education for Sustainable Living

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The GreenWorks highlights three main areas of sustainable technology:

- 1) Wastewater Treatment
- 2) Renewable Energy
- 3) Resource Efficiency

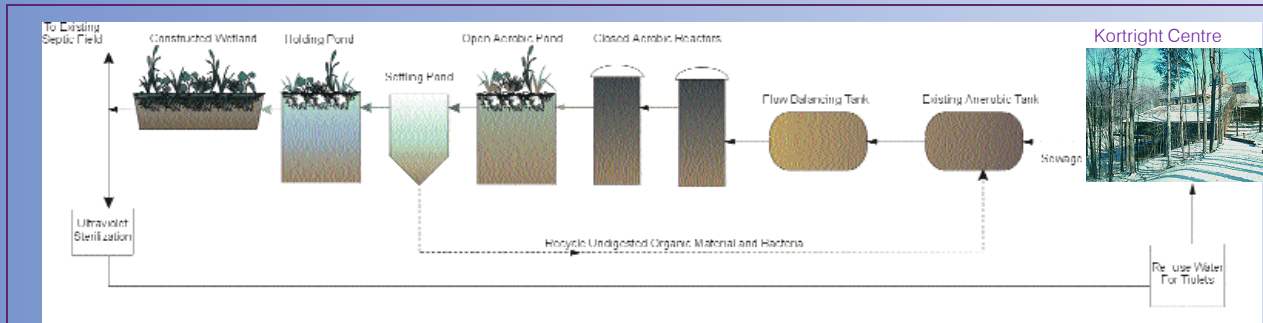
Wetland Wastewater Treatment System

In the past, the Kortright Centre experienced problems with the septic system that serviced its visitor centre. These problems provided Kortright with a unique opportunity to replace the old system with a new, state-of-the-art biological waste treatment system that not only effectively treats waste, but provides educational opportunities for visitors to the centre.

The system, based on a biological ecosystem that simulates a natural wetland, is designed to naturally decompose and filter sewage using plants and bacteria. The filtered water from the wetland (clean enough to support fish) is sterilized and reused to flush Kortright's toilets.

This simulated wetland is operated in a greenhouse to allow it to function through the winter. Normally, greenhouses are inefficient buildings and result in high heating costs during the colder months. For this reason, Kortright chose to construct a building that is very energy efficient and uses a variety of renewable energy technologies. These technologies minimize operating costs while creating the necessary temperature and light conditions for the wetland to flourish.

Wetland Treatment Process



system designed by Ecowerks Technologies

Resource Efficiency:

The GreenWorks is built on the major theme of conserving and recycling our natural resources:

1. The building is energy efficient, in terms of both heat and electrical energy.
2. The building reduces water consumption by 90 per cent through the replacement of washroom fixtures with low-flow fixtures, and by reusing water from the wetland treatment system to flush toilets.
3. The building is entirely constructed of recycled steel treated with zinc, a naturally occurring element that increases the life of the building.

Renewable Energy

The GreenWorks uses a unique combination of solar and geothermal energy to provide its own heat and electricity.

Heating:

This facility combines passive solar design (southern glass orientation, mass and insulation), in conjunction with a ground-source heat pump and solar water heating system to keep the building warm during the cold winter months.

The design of the building allows direct solar heat to be stored in the thermal mass of the concrete floor. This floor radiates the stored heat to the building during the evening.

Although passive solar design provides some of the heat energy, the majority of the heating is contributed by the ground source heat pump in conjunction with the solar water heating system.

Electricity:

The electricity for the lights, appliances and ground-source heat pump is provided by a four-kilowatt photovoltaic system that converts the sun's light energy into electricity. The building is connected to the visitors' centre, allowing the photovoltaic system to supply excess electricity to the centre on sunny days and to withdraw energy on cloudy days or at night. This reduces cost and eliminates the need for battery storage.

Renewable Energy System

