



CONCRETE THINKING FOR A SUSTAINABLE FUTURE

PROJECT PROFILE

PROJECT DESCRIPTION

The Earth Rangers Centre is a 5800 m² wild animal treatment and rehabilitation, education centre

OWNER

Earth Rangers

LOCATION

Kortright Centre for Conservation, Woodbridge, Ontario

CONSTRUCTION VALUE

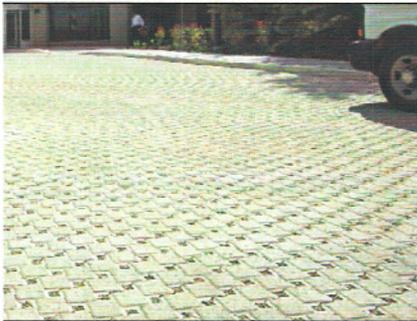
\$23 million

CONSTRUCTION TIME

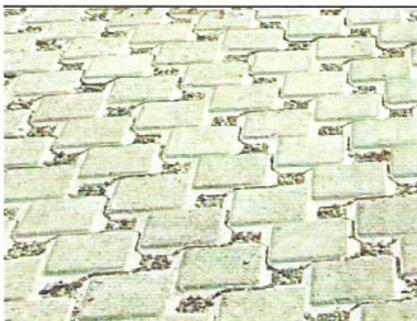
2 years

COMPLETED

October 2004



10,000 square feet of Unilock Ecolock paver



EARTH RANGERS CENTRE

WHAT CONCRETE PRODUCTS WERE USED FOR THIS PROJECT?

The building structure is reinforced concrete, with load bearing masonry walls in the animal enclosure areas to provide a durable, moisture resistant interior environment. All insulation is located on the building exterior, enclosing the 4000 m³ concrete frame. This enables the large mass of the concrete and masonry to act as thermal storage, improving the comfort and energy performance of the building.

PROJECT DESCRIPTION / CHALLENGE

The project has a number of challenging design requirements. The rehabilitation rooms and treatment areas had to be durable enough to: a) accommodate the tough patients—deer, raccoons, etc., b) offer no escape or hiding places for the small or flying patients, c) withstand the humid, wet environment of the waterfowl and beavers, and d) provide a healthy environment conducive to the speedy recovery of all.

Ventilation rates are high, which is typical of human health care facilities, yet energy use is as low as the best available technology allows—the target was to eliminate mechanical cooling and achieve a 50% energy reduction compared to Model National Energy Code for Buildings (MNECB), despite the fact that heating and cooling of large amounts of ventilation air is the major energy load in human hospitals. Another mandate was to demonstrate innovative technologies to achieve these objectives and to qualify for certification under the Leadership in Energy and Environmental Design (LEED) Standard of the US Green Building Council. The final annual energy use is calculated to be 63% less than required by the MNECB.

