

Sustainability

Inspired by the Past, Motivated by the Future

The transformation of the historic Don Valley Brick Works into Canada's first large-scale community environmental centre represents a striking new model for the future—a heritage destination where nature meets innovation in the heart of an urban centre.

Sustainability is a goal that was fundamental to the design of the centre, and will be front and centre in site operations. Sustainability is also a central programming theme – visitors will be given many ideas that they can take home and apply in their own homes, businesses and schools to help create healthier cities.

Green Design

Creating more sustainable cities requires a widespread shift in building practices. As a showcase for green design, Evergreen Brick Works has embedded energy, water and waste savings across the 12-acre site. We are using innovative methods to reduce any negative environmental impact and, where we can, contribute positively to the ecosystem.

Energy

Our measures will reduce our fossil-fuel energy use by about 65% compared to our use had we used conventional methods.

- high-efficiency building envelopes
- operable windows and solar chimneys that minimize mechanical ventilation and air conditioning
- energy harvesting of waste heat
- night cooling of building environments
- solar thermal hot water heating
- solar photovoltaic electricity generation
- intelligent building automation and lighting control system
- ongoing measurement and verification of energy performance

Water

Water is central to the site. Evergreen Brick Works is situated in the heart of Toronto's ravine network, adjacent to the Lower Don River and within its floodplain. Mud Creek runs through the site and four ponds filter stormwater and provide habitat in the quarry gardens. Our primary water conservation goals include collecting enough water to meet our annual water needs, reducing stormwater runoff and improving the quality of stormwater effluent.

- fifteen 20,000-litre above-ground rainwater cisterns collecting water from the vast roofs, capturing more than 4 million litres of water annually
- low-water and no-water lavatory fixtures

- using collected rainwater to irrigate gardens, service washrooms and provide water for the cooling tower on the roof of the Centre for Green Cities
- wildlife-friendly stormwater management channels, swales and pond

Minimal municipal potable water will be used for toilets or irrigation between April and October (due to freezing temperatures, cisterns will be dormant in winter months). These measures and others will reduce overall municipal water consumption by at least 60% relative to conventional facilities.

Materials

We have carefully selected materials that suit the conditions of the site, create a healthy environment for work and play, and limit the negative ecological impacts associated with the manufacturing and transportation of construction materials.

- the adaptive reuse of more than 95% of existing buildings
- constructing a durable long-life building with adaptive interior spaces that will respond to changing uses over time
- using modular, lightweight, pre-assembled structural and floor systems that reduce waste and embodied energy in construction
- using a minimum of 20% locally extracted and manufactured materials
- using 100% sustainably harvested wood-based materials or wood from salvage sources
- using recycled and salvaged materials

Waste

Evergreen Brick Works will be a model facility targeting zero-waste to landfill for construction and operations. Materials will be recycled back into nature or the marketplace in a manner that protects human health and the environment.

- 95% of construction, demolition and land-clearing debris will be diverted from landfill for recycling or reuse
- only compostable and reusable food service items will be used at Evergreen Brick Works
- on-site composting and reuse of 100% of non-animal and oil-based organic waste
- 100% diversion of paper, plastic, glass, metal and other recyclable materials
- closed-loop supply chains in which suppliers take back waste created by the use of their product
- regular waste audits measuring the effectiveness of the waste-minimization strategy

Transportation

In order to reduce the carbon and pollution associated with automobile use, infrastructure improvements will offer convenient and safe opportunities for tenants and the public to take transit, walk and cycle to the site. This infrastructure will include:

- a dedicated shuttle from a nearby subway station
- a Toronto Transit Commission bus route to the site from Davisville Station

- improved trail connections and signage for pedestrians and cyclists (in collaboration with the City of Toronto and Toronto Region Conservation)
- on-site car sharing and carpooling
- plug-in stations for electric vehicles
- ample bicycle parking (with shower facilities for tenants)
- on-site bicycle repairs and clinics

It is expected that these measures will significantly shift the emphasis from low-occupancy car use to more collective and environmentally sustainable alternatives.