



## Cambridge City Hall - Gold LEED Certified

### Green and Energy Conservation:

- Cambridge City Hall building incorporates features of sustainable design and is the wave of the future in the field of architecture.
- The new building is the first city hall in Canada with Gold Leadership in Energy and Environmental Design (LEED) certification. LEED is a nationally recognized roadmap for green building rating system in North America established by the U.S. Green Building Council.
- The atrium's focal point is a 110 m<sup>2</sup> "living wall" of tropical plants. The plants cleanse the air of pollutants such as formaldehyde, volatile organic compounds, dust, and spores. This four-storey high "living wall" enhances the natural beauty of the atrium while providing air purification, cleaning and re-circulating air throughout the building. A soothing sound of running water and providing humidity during the winter months are also benefits of the "living wall".
- A portion of the roof is made up of native plants, grass and shrubs, rather than asphalt or other granular substances. This "green roof" will retain heat in the winter and cool things off in summer, cutting down on the need for heating and air conditioning. The green roof is an improvement over the traditional dark-coloured roofs and the plants cool the surroundings which don't contribute to the "urban heat island." There are more than 3,000 plants utilized for new City Hall.
- The landscaping around the building is comprised exclusively of native or naturalized species which do not require irrigation.
- Exceptional water conservation performance is achieved through a cistern, low-flow plumbing fixtures, and water efficient landscaping. All rainwater that falls on the new building will be collected in a 10,000 litre cistern tank and are used to flush toilets.
- Inviting pedestrian traffic and alternate forms of commuting, bicycle racks, storage and change rooms will be available for riders in order to encourage people to leave their cars at home. The City is also encouraging

carpooling and has designated car pool parking spaces for staff at the rear of the building.

- Many indoor materials such as work stations were selected because they do not emit harmful levels of pollutants such as volatile organic compounds. These materials include paints, carpeting, adhesives, and sealants.
- Its open concept allows for greater air flow and penetration of natural light, reducing the reliance on air conditioning and artificial lights. The ventilation system includes high efficiency MERV 13 air filters. Rooms that contain potential pollutants have separate exhaust systems and deck-to-deck partitions (interior walls that run the full height from floor to floor, and do not end at the ceiling tiles).
- Although more energy efficient than incandescent lighting, fluorescent lighting contains mercury. The lamps used throughout City Hall were selected for low mercury content. Furthermore, used lamps are sent to recycling, thus recapturing the mercury.

**Cambridge City hall is a soundly designed building expected to achieve annual energy cost savings of about 42% relative to a baseline building defined by the Model National Energy Code for Building. A recap of features that will help achieve energy savings includes:**

- energy-efficient windows let in daylight but reduce overheating
- a green roof to insulate the building roof
- radiant heating panels to save fan energy
- a high-efficiency modulating gas boiler
- a condensing water heater
- an energy-efficient chiller with free cooling mode
- atrium designed for "stack ventilation"
- heat recovery on building exhaust air
- occupancy sensors to dim lighting in unoccupied spaces
- day lighting sensors to reduce the use of artificial lighting
- indirect lighting using fluorescent fixtures
- durable building envelope

**Dollar Savings:** A conservative estimate comparing a standard 85,000 square foot building to the new City Hall LEED standard building results in a \$160,000 savings on energy per year or some \$1.6 Million over 10 years. Compared to the leased location at Cambridge Place for City of Cambridge administration, the result would be a 50 per cent savings or only half the costs for energy.

The City signed a contract with "Bullfrog Power" to supply green energy based on a net zero pollution basis. Green Power is produced from solar, wind, geothermal, biomass or low-impact hydro sources. Bullfrog sources its power from wind and low impact hydro.

Another energy saving feature is the day lighting control system, which automatically dims or shuts off artificial lighting when there is sufficient natural sunlight. 75 percent of the building has natural lighting.

City Hall was recently awarded first place for the 2009 Architectural Woodwork Awards (AWMAC) in the GIS Category, thanks to the beautiful work of Diamond and Schmitt Architects.

### Hi-Technology and Core Revitalization:

- Home to several hundred city employees with the ability to take advantage of a more efficient layout and better opportunities for customer service.
- Increased economic impact on the core area as the new building benefits and encourages residents to visit area restaurants and shops.
- The design incorporates a computer room cooling systems with a vast amount of cabling to wire the building and offer the latest technological amenities. The network uses approximately 35 to 40 miles of 10GX cable and 2 miles of fibre optic cable for data, voice, security cameras, and wireless access points. The City of Cambridge is the first municipality to use the 10GX cable in installation.
- New City Hall is a Wi-Fi hot spot and will also have a touch technology information kiosk for the general public. In addition to the computer kiosk, a green education program explaining the environmentally appropriate features of the building and public tours will be part of the mix.
- The new City Hall has an independent weather station on part of the roof that sends electronic signals about outside temperature, barometer, wind direction and wind speed. This ties into the monitoring systems to enable efficient operations of things like the operable windows.
- The other part of the roof is an extensive, semi-intensive green roof with grasses, bulbs, perennials and succulent plant mixes. The area is 30 metres long by 4.5 metres wide, providing a total space of 135 metres squared! There is also a small green roof outside the Mayor's office on the second floor.
- A building automation system (BAS) tracks indoor temperature and humidity and maintains the building at the most comfortable condition. CO2 sensors are connected to the BAS, which sends greater ventilation to occupied spaces and reduce ventilation to unoccupied spaces. This saves energy and

ensures good air quality.

- Smart screen technology and computer/technology services training room. The building becomes the Emergency Operations Centre (EOC) for the City in the fall of 2008.
- All staff areas have LED message boards to communicate to employees. Messages such as prompts to close the windows on extremely hot days are conveyed to conserve energy and reduce cooling costs. Lighting cost have been reduced by 70 percent.
- The City of Cambridge received a certificate of “destruction and recycling” from Greentec in June 2008 for recycling computer materials and diverting more than 4,400lbs from landfill.

#### **A Civic Square With Enhanced Amenities:**

- The Civic Square is the focal point for a new and revitalized downtown, strengthening the community collaboration. It includes a permanent public art display by a nationally acclaimed artist entitled “indigena domain”.
- Smoke-free Civic Square including Historic City Hall, New City Hall, Cambridge Fire Museum and the Farmers’ Market means a healthier environment for staff and the public. This policy is in keeping with the spirit of LEED construction and seeks to enhance the environment for families utilizing the public amenities.
- It offers a venue for concerts, meetings, and special events. There is also public meeting rooms in New City Hall available including the atrium during off-peak hours.
- Links historic City Hall with the Farmers’ Market, the Cambridge Fire Museum and Education Centre and the Cambridge Centre for the Arts.

#### **Construction Efficiency, Budget Considerations:**

- No new tax dollars were used to build the New City Hall Administration Building.
- On time and on budget, the \$30 million project was financed through the settlement of a loan with the city’s hydro utility.

- After the provincial government privatized local hydro utilities in the late 1990s, the City of Cambridge sold the Cambridge hydro utility for \$70 million, \$35 million of which they received in capital and a loan payable to the city of another \$35 million.
- Taxpayers will be saving money. The city will no longer have to pay leasing costs for offices at Cambridge Place. Those leasing costs are close to a half million dollars a year.
- As energy costs go up, Cambridge will not be hit as hard because utility costs will be lower thanks to the environmentally friendly features of the new building.

The City of Cambridge is a member of Canada Green Building Council, a coalition representing the building industry which promotes design, construction and operation of buildings that are environmentally responsible.

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The City of Cambridge is one of the fastest growing areas in the country. It is strategically located astride highway 401 in Southwestern Ontario, part of Canada's Technology Triangle. In 2008, the population reached over 125,000 people. With a multicultural mix and a strong foundation of support services, Cambridge has a diverse economic base with leading industries in manufacturing, automotive, high technology, pharmaceutical, business and financial services and hospitality/retail. The Corporation of the City of Cambridge is an employer with a work environment that offers the opportunity to provide service to the community through creativity and innovation, and with opportunities for career growth and advancement.

For more information on the area or the corporation visit [www.cambridge.ca](http://www.cambridge.ca)