

## Sustainable Design Features of

# Fire Hall No. 7



## How do buildings impact the environment?

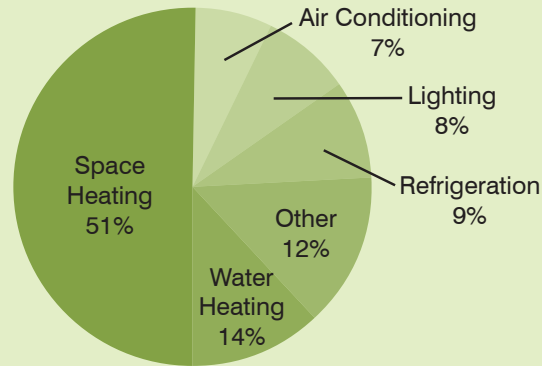
### Natural Resource Use

Buildings require large quantities of raw materials during construction. Bricks, steel, concrete, and wood all require energy and natural resources to produce. In addition, these materials are often shipped long distances from factories to the construction site, requiring fuel to transport. These activities create pollution and CO<sub>2</sub> emissions.

### Energy Use and Greenhouse Gasses

In Canada, buildings are responsible for 33% of all energy used and 35% of all greenhouse gas emissions.<sup>1</sup> Most of these emissions come from energy used to heat buildings.

Typical Commercial Building Energy Use<sup>1</sup>



### Water Use

The average Canadian uses 343 litres of water daily. Showers, baths, and toilet use account for 65% of daily home water use.<sup>2</sup>

## What is LEED?

LEED stands for Leadership in Energy and Environmental Design. It is a voluntary program, administered by the Canada Green Building Council (CaGBC), to promote the design and construction of buildings that have low environmental impact and are healthy for building occupants.

Levels of LEED certification include Certified, Silver, Gold, and Platinum. Windsor Fire Hall No. 7 was designed to achieve a LEED Silver rating. The LEED scoring system focuses on sustainability in the following categories:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation and Design



Creating a LEED Certified building requires collaboration between the building owner, architect, engineers, and contractors to create a truly “green” finished product. Just as each building is unique, each LEED building uses its own unique set of strategies to minimize its impact on the environment.

The City of Windsor has been promoting LEED Certified buildings and sustainable construction as part of its Environmental Master Plan goal of creating healthy communities.

### Sources:

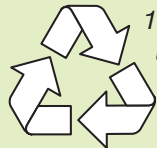
- 1: National Round Table on the Environment and the Economy and Sustainable Development Technology Canada. “Geared for Change: Energy Efficiency in Canada’s Commercial Building Sector.” (2009) <http://libguides.csuchico.edu/content.php?pid=214757&sid=1786635>
- 2: Environment-Canada. (2011, March 16.) Wise Water Use. *Environment Canada*. <http://www.ec.gc.ca/eai-water/>

For more information on sustainable buildings, visit:

- Canada Green Building Council
  - <http://www.cagbc.org>
- Environment Canada
  - <http://www.ec.gc.ca/>
- City of Windsor Sustainable Construction
  - <http://goo.gl/6Gtwc>



# Sustainable Features of Windsor Fire Hall No. 7



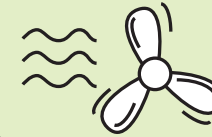
19% of building materials used in the construction of Fire Hall No. 7 were recycled materials.

30% of materials used in Fire Hall No. 7 were produced within 800 km of the construction site, minimizing transportation energy use.



Fixtures used in Fire Hall No. 7 use 49% less water than typical building of the same size.

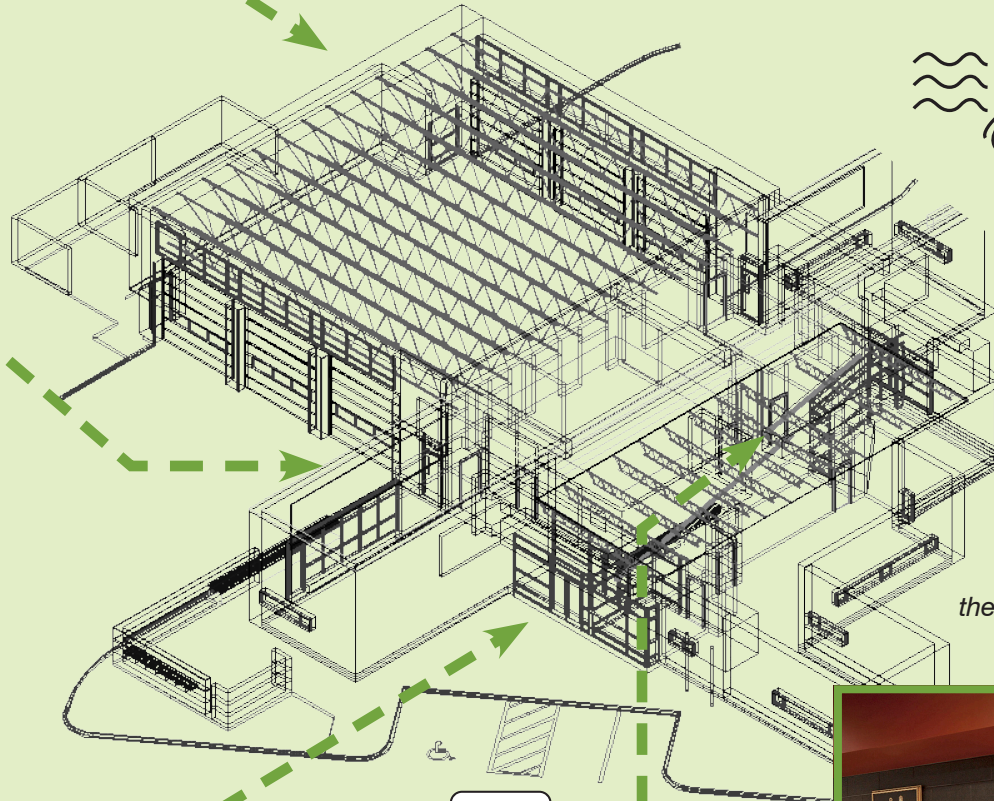
Fire Hall No. 7 is projected to use 21% less energy than a typical building of the same size, due to efficient heating systems and added building insulation.



Building systems in Fire Hall No. 7 were designed to provide enhanced ventilation rates, providing better air quality for building occupants.



Paints, sealants, and adhesives with low volatile organic compound (VOC) content were used throughout the building to enhance indoor air quality.



Bike racks and shower facilities promote the use of bikes as an alternate mode of transportation.



Adjacent to two Windsor bus routes, Fire Hall No. 7 is located to encourage use of public transit.

