

Services Provided:

- Sustainability/LEED Consulting
- Energy Consulting



Project Characteristics:

Project Type: Municipal Service
Size: 672 m² (7,230 ft²)
Certification: LEED® Gold Certified
Project Cost: \$4.3 million
Project Span: 2010 - 2012

Vaughan Fire & Rescue Station #7-10

The Vaughan Fire & Rescue Station #7-10 is a 672 m², one-storey facility that incorporates a variety of spaces to service fire and rescue staff, including sleeping quarters, dayroom, an exercise area, a kitchen and eating area, support spaces as well as an apparatus room with storage areas. Station #7-10 provides firefighters with a modern emergency response facility while demonstrating the commitment of both the City of Vaughan and the Vaughan Fire and Rescue Service to constructing environmentally conscious buildings.

Sustainable Achievements:

Energy Savings: 34%
Water Savings: 45%
Recycled Content: 26%
Regional Content: 27%
Waste Diversion: 83%



The Vaughan Fire & Rescue Station #7-10 has achieved LEED® Gold Certification under the Canada Green Building Council's (CaGBC's) Leadership in Energy and Environmental Design Canada for New Construction (LEED® Canada-NC) v1.0 green building rating system. Zon Engineering Inc. worked closely with the design team and client throughout the entire project to establish a clear set of goals with respect to energy efficiency and overall project sustainability, and guided the project through the LEED certification process.

Owner Contact:

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Architect:

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 Owner/Principal
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The building site was designed to utilize a landscape design that consisted of native, drought-resistant plants, thereby eliminating the need for an irrigation system. A 6 m³ cistern collects rainwater runoff from the metal roof (which is comprised of a high percentage of recycled content) and diverts it for use by the building's toilets and urinals; the cistern displaces approximately 33,000 litres of water annually. The building also provides a high level of daylight to the regularly occupied building spaces, which promotes occupant comfort while simultaneously creating a bridge between the indoor and outdoor environment.



The project included several additional energy efficiency technologies, including:

- HVAC units with variable-speed supply fans, high-efficiency (condensing) furnaces, and high-efficiency DX cooling.
- Heat recovery ventilators that provide fresh-air supply for the living quarters.
- Enhanced insulation levels in the wall and roof assemblies, combined with high-performing glazing throughout the entire building.
- An energy efficient lighting design utilizing fluorescent lighting combined with occupancy sensors for control.