

# Tommy Douglas Library is awarded LEED Gold!

By Deb Thomas.

Opened in 2009, the Tommy Douglas Library branch of Burnaby Public Library was designed and built with the aim of qualifying for LEED Silver certification. We were recently pleased to be informed that our application for certification was granted with LEED Gold.

LEED stands for the Leadership in Energy and Environmental Design Green Building Rating System® which encourages global adoption of sustainable green building and development practices through “the creation and implementation of universally understood and accepted tools and performance criteria” (Canada Green Building Council, “Introduction to LEED”). It goes on to say that “LEED is a third-party certification program and an internationally accepted benchmark for the design, construction and operation of high performance green buildings” and that it “promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water efficiency, energy efficiency, materials selection, indoor environmental quality.” Certification is based on the total point score achieved, following an independent review. The Canadian rating system is adapted from the US Green Building Council’s [LEED Green Building Rating System](#) and tailored to Canadian climates, construction practices and regulations.

LEED certification does not come easily – the paperwork is extensive, there is a considerable cost to applying, and certification will take years to receive – over 2 years in the case of the Tommy Douglas Library. In an article prepared for the American Chemistry Council (Northbridge Environmental Management Consultants, 2003, “Analyzing the Cost of Obtaining LEED Certification”), the authors state that: “At the current rate of LEED registrations, the incremental cost of obtaining certification for public buildings will add at least \$900 million per year to the cost of these projects; the annual figure may be as high as \$2.2 billion.” The article goes on to recommend improving building codes and industry standards as a preferred way to achieve sustainable building practices. This cost may certainly cause many municipalities to rethink the



Tommy Douglas Library at Kingsway & Walker.  
Photo: Burnaby Public Library

need for LEED certification in future when building to LEED standards without applying for certification can serve the same purpose without the additional expense.

Considerations for future buildings aside, Burnaby Public Library is proud of this significant recognition of the City’s achievement in building a beautiful and sustainable library facility that enhances the low income neighbourhood in which it resides and provides services tailored to its needs. Tommy Douglas Library was able to achieve its gold rating with the following features:

## Lighting

- Substantially day lit
- Artificial light - Daylight sensors and automatic dimming controls ensure appropriate light levels with minimum energy use
- Quality of light – Extensive shading on the south, east, and west facades, reducing direct light while allowing diffuse light.
- Office lighting - Light shelves fitted to drive light deeper into the rooms and bottom-up shades provided to address privacy and glare without excluding all daylight.

## Heating

- Radiant heating in the concrete floor slab

- A ground source exchange system of (21) 225 ft deep wells provides thermal energy for this system
- Thermal energy is drawn from the earth around the wells using heat exchangers and pumps
- No natural gas connection to the building

### Ventilation

- Displacement ventilation system is employed
- Ventilation functions are independent from heating
- Heat recovery is undertaken on return air before it is discharged, to draw out remaining heat to warm the fresh air that is drawn into the building
- Natural ventilation is accommodated with both manual and automated operable windows

### Air quality

- Interior finishes were selected that exhibit little or no off-gassing, effectively eliminating sources of Volatile Organic Compounds (VOC's).
- FSC-Certified wood is planned for millwork and interior finishes. Certified wood is responsibly harvested and processed, and its production is verified by a third party.



Tommy Douglas Library entrance. Photo: Burnaby Public Library

### Exterior construction materials

- The concrete for the building exhibits 30-40% cement replacement with supplemental cementing materials (flyash). Cement production is energy intensive and results in substantial carbon dioxide emissions. Replacing cement with flyash, a waste product, has the dual benefit of lowering CO2 emissions while making use of a waste material.



Tommy Douglas Library's green roof. Photo: Burnaby Public Library

- The massive walls and floor are generally exposed to allow the concrete to act as a thermal regulator, absorbing and releasing heat energy to moderate the daily variation in temperature.

### Water-saving

- Roof water is captured and collected in an underground cistern, where it is stored for later use as the sole source of the site landscape irrigation system.
- The water feature on the south face of the building uses only recycled water.
- Inside, potable water is conserved by use of low-flow fixtures.

### Green Roof

- Low portion of the roof is 'green' - planted with a mix of sedums, a plant variety that is hearty in our climate that requires little maintenance.
- Aids in reducing storm water discharge, and helps cool the building.

### Use of Green Cleaning Products

- Biodegradable and non-toxic chemical cleaners
- Biodegradable garbage bags

After some initial bumps with the heating and cooling, the 17,500 sq ft branch is functioning well and is much enjoyed by area residents with about 400,000 visits each year in its first two years. As energy prices rise, we look forward to the economies imagined by City planners and to continuing to serve

the rapidly changing community in which it is located.

**References**

Canada Green Building Council. Introduction to LEED. Retrieved from <http://www.cagbc.org/AM/Template.cfm?Section=LEED>

Northbridge Environmental Management Consultants, 2003, Analyzing the Cost of Obtaining LEED Certification. Retrieved from [http://www.cleanair-coolplanet.org/for\\_communities/LEED\\_links/Analyzing\\_theCostofLEED.pdf](http://www.cleanair-coolplanet.org/for_communities/LEED_links/Analyzing_theCostofLEED.pdf)

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