

# Green Building Guideline



## Industrial, Commercial, Institutional, and Large Residential

### LEED: Key Areas of Performance

LEED credits and prerequisites are organized into five major categories. An additional category, Innovation & Design Process, addresses sustainable building expertise as well as design measures not covered under these five environmental categories. Certification is based on the total point score achieved, following an independent review and an audit of selected credits. With four possible levels of certification (certified, silver, gold and platinum), LEED is flexible enough to accommodate a wide range of green building strategies. The following is a list of the key performance categories and examples of strategies used to fulfill the credits.

Sustainable Sites	Close to public transit routes and essential services, reduced site disturbance, reduced light pollution
Water Efficiency	Low flush fixtures, grey water systems, drought resistant landscaping
Energy & Atmosphere	Renewable energy systems, ozone protection, energy efficient building operations
Materials & Resources	Recycled, regional, and renewable materials, waste management plans, certified wood
Indoor Environment Quality	CO <sub>2</sub> monitoring, low VOC materials, occupant controls, daylighting in occupied spaces
Innovation & Design Process	New or inventive designs, LEED Accredited Professional on design team

### Additional Information

A summarized list of the LEED Canada for New Construction (NC) requirements is attached to this document.

Please check out our Ten Green Tips pamphlet as well.  
 LEED Canada-NC and the Canadian Green Building Council  
[www.cagbc.org](http://www.cagbc.org)  
 Other Rating Systems available in Ontario  
 Green Globes rating system [www.greenglobes.com](http://www.greenglobes.com)  
 BOMA Best rating system [www.bomabest.com](http://www.bomabest.com)



Buildings must be designed to meet minimum Ontario Building Code (OBC) requirements for energy efficiency. This currently includes conforming to ASHRAE 90.1 or the Model National Energy Code for large buildings. However, there is growing concern about the need for more immediate action to deal with climate change, and there is room for improvement upon these minimum requirements.



Invista Centre - LEED Silver

The City of Kingston is encouraging builders and stakeholders to consider designing all new large buildings to highly energy efficient and sustainable standards. This guideline discusses the requirements and benefits of designing to an improved standard, such as LEED.

The City cannot force building permit applicants to meet energy efficiency requirements that are beyond the minimums required by the OBC. However, the purpose of this guideline is to help demonstrate the advantages of other design options.

Green building rating systems are transforming the industry by focusing on high-performance, energy efficient, economical and environment friendly buildings. Most rating systems and standards are voluntary in nature, and in many cases used as design checklists. Though energy efficiency is a major component of designing a green building, several other sustainability requirements need to be considered as well.

## What the City of Kingston is Doing

Since April 2004, it has been City of Kingston policy through Council resolution that all large municipal building and retrofit projects undertake an assessment of LEED as a design goal for Council's consideration before finalization of a project's design. This official adoption of the LEED approach puts Kingston on the leading-edge of sustainable development and ensures that new City buildings maximize energy efficiency, provide the highest quality of indoor working environment, and minimize any building's burden on the natural environment and long-term operating budgets.

These new City facilities are designed to achieve a LEED rating, and will expect to save at least a 40 per cent savings in energy costs:

- Kingston Police Headquarters  
705 Division Street – Gold
- Ravensview Administration Building  
947 Highway 2 – Silver
- INVISTA Centre  
1350 Gardiners Road - Silver
- KROCK Centre  
1 Barrack Street - Silver



## Building Design Rating s

Some design systems address whole building location, design, and performance. This often involves a higher level of coordination, as well as documentation, administration and registration or certification fees.

However, verification ensures a level playing field. Shortcuts are virtually eliminated especially with the involvement of a third party, and the final rating is meaningful and accurate. In addition, while some requirements are easier and less expensive to achieve in certain situations, most systems allow for a great deal of flexibility in achieving requirements and encourage innovation. Points are often awarded for making simple improvements over existing minimum standards. These improvements result in an earlier return on investment from energy savings, and add to the resale value of the building.

## Leadership in Energy and Environmental Design (LEED)

Several building design rating systems have been developed to objectively evaluate energy and environmental performance. These systems challenge designers to go beyond codes to not only improve overall building performance and sustainability, but also to minimize life-cycle environmental impact and cost. These systems utilize an all-inclusive approach, and such buildings are often the products of a team design. This design team should include not only the architects, engineers, occupants and owners, but also from the beginning of the project, specialists in indoor air quality, materials, energy, costs, etc.

This type of design process also takes into consideration the interaction of the whole building structure and systems. In the past, research did not take into account how individual systems affect other systems. For example, a building that uses extensive daylighting techniques will reduce the amount of heat given off by lighting fixtures, thus allowing a smaller air conditioning system to be used. This whole-building philosophy considers site, energy, materials, indoor air quality, acoustics, natural resources, and how they are all interrelated.

An ideal way to balance these many issues is to use LEED as a comprehensive building design system. The LEED program allows considerable flexibility in design, but has a number of prerequisites that establish certain minimum building performance. The system lists intents and requirements for credits which must be obtained. Certification is based on the total point score achieved, following an independent review and an audit of selected credits.

Recent experience has demonstrated that for certain buildings, the costs to meet LEED certification will achieve a payback in energy savings and efficiencies sufficient to provide operational savings that will pay back in saved capital costs over 10 to 15 years. For this reason, the City encourages all design teams involved in new large buildings to review the LEED categories and strive to achieve a LEED silver certification.

