



**THE TOWN OF OKOTOKS**

**LEED® GREEN BUILDING INCENTIVE PROGRAM**

**Approved by Council:**

**December 12, 2009**

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## 1. SETTING THE ENVIRONMENTAL CONTEXT

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The Town of Okotoks views the imminent development and expansion of the Okotoks Business Park as a fantastic opportunity to set a 'green' building and 'green' business park precedent in our community through the creation of an incentive / rebate program for the construction of environmentally sustainable buildings. From our research of other green building incentive/ rebate programs, the most economically efficient way for a municipality to proceed is through a third party certification / audit program. The most widely accepted third party certification program for commercial and light industrial buildings in North America is the LEED-NC® Green Building Certification Program.

The Canadian Green Building Council (CaGBC) was established in Canada in 2003. Prior to 2003, green buildings wanting to acquire LEED® Certification had to register through the U.S Green Built Council. In the past five years, since its inception in Canada, the LEED® Program has become the standard choice of Canadian Municipalities for third party verification of environmentally constructed buildings.

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## 2. WHO IS THE CAGBC® AND WHAT IS LEED®?

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The Leadership in Energy and Environmental Design (LEED®) Green Building Rating System has continuously grown in popularity over the past ten years with continual revisions made to the program to streamline the administration process and set standards for a greater variety of building systems. In 2003, when the Canada Green Building Council (CaGBC) was formed, they adopted and launched Canadian specific LEED® Guidelines, LEED– Canada for New Construction (NC) version 1.0. This program is currently being revised with the new version scheduled to launch in 2010.

Types of CaGBC LEED® Certification applicable to development within the Okotoks Business Park:

### A. New Construction (NC)

- The LEED® Canada-NC 1.0 rating system applies to new construction and major renovations of commercial and institutional buildings, i.e., buildings regulated by Part 3 of the National Building Code. It also applies to retail, mid- and high-rise multi-unit residential buildings (MURBs), public assembly buildings, manufacturing plants, and other types of buildings.
- Within LEED® Canada-NC, it is possible to certify projects with some leased tenant space not yet fit-up. Provision is also made for up to 10% of the building floor area (20% in the case of mixed-use buildings) to be completely exempted. Applicants with space that is not fitted out at the time of certification (e.g., intended for future lease) may wish to consider LEED® Canada for Core & Shell.

- The thresholds for LEED® Canada-NC 1.0 are:
  - Certified: 26 points
  - Silver: 33 points
  - Gold: 39 points
  - Platinum: 52 points
  - Total available: 70 points

### B. Core and Shell (CS)

- LEED® Canada for Core and Shell (CS) is a derivative of LEED® Canada NC and applies to buildings where less than 50% of the building area will be fit-up to LEED® Canada NC requirements prior to certification.
- LEED® Canada CS certification makes allowance for some leased tenant space that is not fit-up to NC requirements at the time of certification. Provision is also made for up to 10% of the building floor area (20% in the case of mixed-use buildings) to be completely exempted.
- The application guide, published in July 2008, applies retroactively to allow everyone to benefit from its flexibility. The thresholds for LEED® Canada CS are identical to those for LEED® Canada NC.

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## 1. THE INCREMENTAL COST ESTIMATE FOR LEED® CERTIFICATION

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The average incremental cost to a project's total construction cost of obtaining varies levels/ thresholds of LEED® certification are:

<b>LEED® Certified</b>	<b>1 - 3%</b>
<b>LEED® Silver</b>	<b>2 - 5%</b>
<b>LEED® Gold</b>	<b>4 - 6%</b>
<b>LEED® Platinum</b>	<b>5 - 8%</b>

The incremental green building costs for commercial and light industrial buildings tend to be on the lower scale however; smaller buildings (under 50,000ft<sup>2</sup>) tend to be higher in costs due to economies of scale.

*LEED® cost estimates provided by Enermodal Engineering Calgary. The CaGBC Project Manager estimates the additional cost of achieving LEED® Silver to be approximately 2-3% of the overall construction cost.*

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## **2. THE SOFT COSTS**

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According to the U.S. Green Building Council (USGBC) the total Soft Costs can range between 1 – 5% of Construction Costs, with smaller and more complex projects falling at the higher end of the range. Enermodal Engineering estimates that approximately 50% of the total incremental LEED® costs to be soft costs with the other 50% incremental cost being attributed to hard costs.

The Soft Costs include:

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### **1. Design Costs**

DP – Integrated design process / multi-disciplinary team from pre-design phase through post-occupancy to optimize building for environmental sustainability, performance, efficiency and cost savings.

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### **2. Commissioning**

A prerequisite of the LEED® process, involves an outside team (3<sup>rd</sup> party) that is not part of the design or construction team (if building is greater than 50,000sq.ft). Ensures compliance to LEED® certification and functioning and efficiency of implemented green infrastructure.

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### **3. Documentation & Fees**

Establishment of a tracking and reporting system (often performed by LEED® consultant, rather than the design and construction team) of points for LEED® certification. LEED® consultant can also be the design team or project

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### **4. Energy Modelling**

Prerequisite for LEED®, to establish energy efficiency estimates.

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## **5. THE GREENING / HARD COSTS**

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The hard costs for a LEED® project does require a premium over traditional construction costs, however the 'greening' construction and mechanical elements within the LEED® Rating System that a project can achieve vary widely. Each project is designed to LEED® standards, based on the existing location / site conditions, building use and municipal bylaws. Because of the individual nature of every LEED® building, it is very difficult to average what each building's hard costs may be and their individual payback period.

In most LEED® buildings, the additional infrastructure required is related to heating and cooling ventilation systems, roofing, lighting, water use, recycling services at the site and the sourcing of specific construction materials. It however, has been proven through LEED® building research

that a minimum of 50% to 100% of the hard costs are recapped over a period of time through operating efficiency returns.

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## 6. THE HIDDEN BENEFITS OF LEED®

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While green buildings typically cost more these increases are greatly overshadowed by economic gains associated with the following:

- Decreased Life Cycle Operating Costs
- Decreased Insurance Rates
- Decreased Occupancy Turnover Rates
- Increased Productivity Gains (with staff – estimated between a 2-10% increase)
- Increased Property Values and Absorption Rates (including Lease Rates)
- Increased Retail Sales

LEED® certification;

- acts as a quality control system
- protects green investment
- provides high building value
- provides great PR value
- creates markets for green products and services
- creates a long term reduction of health care costs

**Higher Return on Investment (ROI)** – estimated increases of about 6.6% are expected in Green Buildings. 68% of leading US executives whose companies are involved in green buildings experience superior ROI compared to conventional buildings.

The CaGBC's LEED® Program Manager has seen ROIs in Canada LEED® buildings of 15-20% on the energy efficiency measures – not even counting additional operational benefits from other green features.

- *Information from: The Marketing Green Buildings to Owners of Leased Properties Report 2007*

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## 7. THE INCENTIVE PROGRAM - DETAILS

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Town of Okotoks incentive/ rebate program is based on a percentage return to project's building permit fee when specific levels of LEED® Certification are achieved.

The Town is proposing the following rebate structure:

Level of LEED® NC or CS Certification	Rebate Percentage to Building Permit
CERTIFIED	20%
SILVER	40%
GOLD	50%
PLATINUM	60%

### Example:

Building Construction Cost (CC)	Building Permit Fee (0.8% of CC)	LEED® Platinum 60% rebate to BP	LEED® Gold 50% rebate to BP	LEED® Silver 40% rebate to BP	LEED® Certified 20% rebate to BP
\$1,000,000	\$8,000	\$4,800	\$4,000	\$3,200	\$1,600

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## 8. ADDITIONAL INFORMATION RESOURCES

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The Canadian Green Build Council's (CaGBC)

In-depth information regarding all types of the LEED® Rating Systems and their related accreditation levels. Current System Guideline and Addendums:

- **LEED® Green Building Rating System for New Construction & Major Renovations** (LEED® Canada – NC Version 1.0 (December 2004))
- **The CAGBC Fact Sheet:**  
Application guide for Core and Shell Buildings and leased tenant spaces in LEED®

- **Canada – NC Rating System Addendum for New Construction & Major Renovations**  
(LEED® Canada – NV Version 1.0 (March 2007))
- **Reference Guide Addendum for New Construction & Major Renovations**  
(LEED® Canada – NC Version 1.0 (September 2007))

**The CaGBC's Contact Information:**

<http://www.cagbc.org/>

**Head Office**

Canada Green Building Council  
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Ottawa, ON K1N 9K1

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**APPENDIX A:****DEFINITIONS OF HARD COST DESIGN SOLUTIONS AND MEASURES**


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Easy: Off the shelf, readily available product or technology

Low – no Risk

Many precedents of application

Low – no user and maintenance training issues

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Moderate: Low – moderate risk

Some training or user modification required

Changed or increased maintenance requirements

Some precedents of application

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Difficult: Medium-high perception of risk

Use and maintenance training required

Few or no precedents of application

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**Definitions of Capital Costs**


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Capital Cost: Net project impact rather than individual strategy or product cost.

Cost Neutral: +/- 2% of conventional project

Moderate cost increase 2% - 20%

High cost increase: 20%+

Cost savings: Overall cost savings

**Definitions of Life-cycle Cost**


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Immediate Payback: 0 – 5 years payback

Moderate Payback: 5 – 10 year payback

Long Payback: 10 years +

➤ Information from: Metro Vancouver Design Guide for Municipal LEED Buildings 2006

<b>SUMMARY TABLE OF HARD COST DESIGN SOLUTIONS</b>				
<b>Strategy Type</b>	<b>Capital Cost Increase</b>	<b>Ease of Implementation</b>	<b>Payback</b>	<b>Applicable LEED® Credits</b>
<b>Water conservation strategies</b>				
<b>Rainwater reuse</b>	Moderate	Moderate	Immediate	WE c_
<b>Greywater reuse</b>	Moderate	Moderate to Difficult	Moderate	WE c2, c3
<b>On-site sewage treatment</b>	High	Difficult	Long	WE c2
<b>Ultra-low flush / dual flush toilets</b>	None	Easy	Immediate	WE c3
<b>Low flow faucets and showerheads</b>	None	Easy	Immediate	WE c3
<b>Waterless urinals</b>	None	Easy	Immediate	WE c3
<b>Automatic sensor controls on facets</b>	None	Easy	Immediate	WE c3
<b>Water use metering</b>	Moderate	Moderate	Long	WE c3
<b>Energy conservation strategies</b>				
<b>Building envelope</b>	None to Moderate	Moderate	Immediate to Moderate	EA p2, c_
<b>Heating</b>	None to Moderate	Easy to Moderate	Immediate	EA p2, c_
<b>Cooling</b>	None to Moderate	Moderate	Moderate	EA p2, c_
<b>Lighting</b>	None to Moderate	Easy	Immediate	EA p2, c_
<b>Domestic hot water</b>	None	Easy	Immediate	EA p2, c_

<b>Ventilation</b>	None to Moderate	Moderate	Immediate	EA p2, c_
<b>District systems</b>	Moderate	Difficult	Immediate to Moderate	EA p2, c_
<b>On-site generation</b>	Moderate	Difficult	Immediate to Long	EA p2, c_
<b>Material Strategies</b>				
<b>Storage and collection of recyclables</b>	None	Easy	N/A	MR p_
<b>Building reuse</b>	Savings	Difficult	N/A	MR c_
<b>Construction waste management</b>	None	Moderate	Immediate	MR c2
<b>Resource reuse</b>	None to Moderate	Moderate	N/A	MR c3
<b>Recycled content</b>	None	Easy	N/A	MR c4
<b>Local / Regional materials</b>	None	Easy	N/A	MR c5
<b>Rapidly renewable materials</b>	None	Moderate	N/A	MR c6
<b>Certified wood</b>	None - Moderate	Moderate	N/A	MR c7
<b>Durable building</b>	None	Difficult	N/A	MR c8
<b>Indoor Environmental Strategies</b>				
<b>Construction IAQ</b>	None	Easy	Immediate	EQ c3
<b>Thermal comfort</b>	None	Moderate	Immediate	EQ c7
<b>Adhesives and sealants</b>	None	Easy	N/A	EQ c4
<b>Paints and coatings</b>	None	Easy	N/A	EQ c4.2
<b>Carpet</b>	None	Easy	N/A	EQ c4.3
<b>Composite wood products</b>	Moderate	Moderate	N/A	EQ c4.4

<b>Light quality and views</b>	None to Moderate	Moderate	Immediate	EQ c8
<b>Transportation Choices</b>				
<b>Transportation choices</b>	Savings to Moderate	Easy to Difficult	Immediate	SS c4
<b>Innovative Strategies</b>				
<b>Green operations (Housekeeping plan)</b>	Moderate	Moderate	Immediate	ID c2
<b>Green education plan</b>	Moderate	Moderate	Immediate	ID c2

**APPENDIX B:****CAGBC LEED® ACCREDITED PROFESSIONALS: CALGARY AREA CONSULTANTS**

<b>CaGBC LEED® Accredited Professionals in the Calgary Region</b>	
<b>Inter-Disciplinary Consultants</b>	
BKDI Architects	Architecture, Landscape Architecture, Interior Design
Cohos Evamy	Architecture, Landscape Architecture, Interior Design, Project Management, Electrical Engineering, Mechanical Engineering
Stantec Consulting	Interior Design, Architecture, Mechanical Engineering, Electrical Engineering, Structural Engineering, Civil Engineering, Commissioning, Landscape Architecture
<b>Architects and Interior Design Consultants</b>	
Abugov Kaspar Architecture Engineering Interior Design	Architecture
Amanda Hamilton Design	Interior Design
Archeform Technologies Ltd	Interior Design
BCMP Architects Inc.	Interior Design, Architecture
Benjamin Barrington Architect Ltd	Architecture
BRZ Architecture Ltd.	Architecture
Casola Koppe Architects Ltd.	Architecture
Coupland Kraemer Architecture + Interior Design	Architecture
Decca Design Inc.	Interior Design
Designworks Architecture	Architecture
Douglas Campbell Architect	Architecture
GEC Architecture	Architecture
Gibbs Gage	Architecture
Gowling and Gibb Architects	Architecture
Great West Life Realty Advisors Inc.	Architecture
Group2 Architecture Engineering Ltd.	Architecture
Harris and Harris	Landscape Architecture
Haworth	Architecture
HFKS Architects Inc.	Architecture
HOK CANADA	Architecture
Homes By Avi Canada	Architecture

IBI Group Architects Engineers	Architecture
ION Irrigation Management Inc.	Landscape Architecture
Jenkins & Associates	Architecture
Kasian Architecture Interior Design & Planning Ltd	Architecture, Interior Design
Marc Boutin Architect	Architecture
Martens Group Licenced Interior Design Studio	Interior Design
Max Tayefi Architect	Architecture
Maxam Design International Inc.	Architecture
McCrum's Office Furnishings	Interior Design
NORR Architects Planners	Architecture
O2 Planning + Design	Landscape Architecture
Paul Thomas Becher Architecture Inc.	Architecture
Poon McKenzie Architects	Architecture
Project 4	Architecture
Quinn Young Architects Ltd.	Architecture, Interior Design
Riddell Kurczaba Architecture Engineering Interior Design Ltd.	Architecture, Interior Design
Robert Pashuk Architecture	Architecture
S2 Architecture	Architecture
Sahuri + Partners Architecture	Architecture
Sahuri Hutchinson Brzezinski Architects Inc.	Architecture, Interior Design
SHB Architects	Architecture
Shearer Licensed Interior Design Inc.	Interior Design
Simpson Roberts Architecture & Interior Design Inc	Architecture
Sizeland Evans Interior Design Inc	Interior Design
Sturgess Architecture	Architecture
The LeBlond Partnership Architects and Planners	Architecture
Toker + Associates Architecture Industrial Design Ltd.	Architecture
Williams Miller Design	Interior Design
Within Design Inc.	Interior Design
Zeidler Partnership Architects	Architecture
<b>Engineering Consultants</b>	
A.D.Williams Engineering Inc.	Mechanical Engineering
AECOM	Mechanical Engineering, Electrical Engineering
AMEC Earth and Environmental	Mechanical Engineering
Bains Engineering Corp.	Mechanical Engineering
BGME	Electrical Engineering
CANA Construction	Civil Engineering
Care Factor Computer Services	Mechanical Engineering

CH2M HILL Canada Ltd.	Mechanical Engineering, Architecture
Crossey Engineering Ltd.	Electrical Engineering
DBK Engineering Ltd	Mechanical Engineering, Electrical Engineering
DMH Designs Ltd.	Mechanical Engineering
Earth Tech	Mechanical Engineering
Ellis Don Construction Services Ltd.	Project Management, Civil Engineering, General Contracting
Enermodal Engineering	Mechanical Engineering
H. H. Angus & Associates Ltd.	Mechanical Engineering
Halcrow Yolles	Structural Engineering, Building Envelope Consulting
Halsall Associates Limited	Building Envelope Consulting, Civil Engineering, Structural Engineering
Hemisphere Engineering Inc	Electrical Engineering, Project Management
Honeywell	Mechanical Engineering
Inland Concrete Limited	Civil Engineering
Johnson Controls	Project Management, Mechanical Engineering
MechWave Engineering Ltd.	Mechanical Engineering
Mulvey + Banini International (Alberta) Inc.	Electrical Engineering
MWC Consulting Structural Engineers Inc.	Structural Engineering
Read Jones Christoffersen	Structural Engineering, Building Envelope Consulting
Reinbold Engineering Group	Mechanical Engineering
Robertson And Associates Engineering	Electrical Engineering
Siemens Building Technologies	Electrical Engineering
SNC-Lavalin. Inc.	Mechanical Engineering
Stebnicki Robertson & Assoc. Ltd.	Electrical Engineering
Stuart Olson Construction	General Contracting, Project Management, Civil Engineering
Thompson-Nicola Engineering Company	Mechanical Engineering
Trane Company	Mechanical Engineering
Trotter and Morton Facilities Services Inc.	Civil Engineering
TYZ Engineering Ltd.	Mechanical Engineering
Wiebe Forest Engineering - Division of SNC-Lavalin Inc.	Electrical Engineering
Williams Engineering Canada Inc.	Building Envelope Consulting, Structural Engineering
WorleyParsons Komex	Civil Engineering

<b>Project Management, General Contracting and Commissioning Consultants</b>	
Altus Group Cost Consulting	Consultant
Associated Engineering Ltd	Consultant
Autodraft, Inc.	Consultant
Bayview Constructors Inc	General Contracting
Bernelle Construction Management Ltd	Project Management, Commissioning
Better Yet	Consultant
Bird Construction Company	General Contracting
BLJC	Project Management
Borealis Building Company	General Contracting
Browning Projects	Project Management
CFMS Alberta Limited	Commissioning
Chandos Construction Ltd	General Contracting, Project Management
Colin Lawson Projects Ltd	Project Management
Concept Electric Ltd.	Project Management
Devitt & Forand Contractors Inc.	General Contracting
Dominion construction	Project Management, General Contracting
EHS Partnerships Ltd.	Consultant
EnerVision/SAIT Polytechnic	Consultant
FAME Asset Management Solutions	Consultant
Foraytek Inc.	Consultant
Graham Construction & Engineering	General Contracting, Project Management
Labbe-Leech Interiors Ltd.	General Contracting
Ledcor Construction Limited	General Contracting
MHPM Project Managers Inc.	Project Management
Michal Consulting	Consultant
Morrison Hershfield Limited	Project Management, Building Envelope Consulting
Oxford Properties	Project Management
PCL Construction Management	General Contracting
Remington Development Corp	Project Management
Rocio Rangel & Associates	Consultant
Siemens Canada	Project Management
Suncor Energy inc.	Project Management
UMA Engineering Ltd.	Project Management
XPS Contracting Ltd.	General Contracting