



THE TOWN OF OKOTOKS

LEED® GREEN BUILDING INCENTIVE PROGRAM

Approved by Council:

December 12, 2009

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1. SETTING THE ENVIRONMENTAL CONTEXT

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.

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

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.

1. THE INCREMENTAL COST ESTIMATE FOR LEED® CERTIFICATION

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

| | |
|------------------------|---------------|
| LEED® Certified | 1 - 3% |
| LEED® Silver | 2 - 5% |
| LEED® Gold | 4 - 6% |
| LEED® Platinum | 5 - 8% |

The incremental green building costs for commercial and light industrial buildings tend to be on the lower scale however; smaller buildings (under 50,000ft²) 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.

2. THE SOFT COSTS

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:

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.

2. Commissioning

A prerequisite of the LEED® process, involves an outside team (3rd 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.

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

4. Energy Modelling

Prerequisite for LEED®, to establish energy efficiency estimates.

5. THE GREENING / HARD COSTS

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.

6. THE HIDDEN BENEFITS OF LEED®

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*

7. THE INCENTIVE PROGRAM - DETAILS

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 |

8. ADDITIONAL INFORMATION RESOURCES

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/>

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Toll Free: 1-866-941-1184

Fax: 613-241-4782

CaGBC Alberta Chapter

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Edmonton AB T5G 3G4

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

Easy: Off the shelf, readily available product or technology

 Low – no Risk

 Many precedents of application

 Low – no user and maintenance training issues

Moderate: Low – moderate risk

 Some training or user modification required

 Changed or increased maintenance requirements

 Some precedents of application

Difficult: Medium-high perception of risk

 Use and maintenance training required

 Few or no precedents of application

Definitions of Capital Costs

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

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

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

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

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

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

| CaGBC LEED® Accredited Professionals in the Calgary Region | |
|---|--|
| Inter-Disciplinary Consultants | |
| 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 |
| Architects and Interior Design Consultants | |
| 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 |

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|--|--|
| 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 |
| Engineering Consultants | |
| 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 |

| Project Management, General Contracting and Commissioning Consultants | |
|--|--|
| 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 |