

Green Building Policy for Government of Manitoba Funded Projects

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Manitoba Interdepartmental
Green Building Policy Working Group

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Green Building Policy for Government of Manitoba Funded Projects

1. Vision, Purpose and Goals

The vision of this policy is to create a significant improvement in how new and renovated buildings that are funded by the Government of Manitoba perform over their entire life cycle from an environmental, energy and economic perspective.

“Green building” is a term used to describe projects that are sited to promote liveable communities; protect sensitive lands and preserve natural resources; are energy efficient and/or use renewable energy; incorporate environmentally-friendly building materials and practices; and promote occupant health and well-being.

This policy stems from compelling evidence from other jurisdictions, and a growing number of projects in Manitoba, that green buildings offer Manitoba taxpayers significantly better value than conventional practices when a full range of costs and benefits are calculated. This document is also a response to the recognition that overcoming barriers to the wider adoption of green building practices in Manitoba’s public sector requires new policy and support.

The general purpose of this policy document is to provide the green building principles and practices that are to be used for projects that are funded either in whole or in part by the Government of Manitoba. Specific goals are to:

- Reduce overall expenditures through improved building performance, full cost accounting and a life-cycle approach to costing.
- Reduce Manitoba’s exposure to the price volatility and long-term supply concerns associated with the use of non-renewable fossil fuel imported from outside the province (i.e. natural gas, fuel oil and propane).
- Create a common and consistent framework for green building standards across provincial government departments, crown corporations and agencies as well as other levels of government (i.e. municipalities, local government districts) or entities that receive provincial government funding for building projects.
- Minimize the negative environmental impacts associated with building site selection, construction, renovation, operation, maintenance, repair and demolition or deconstruction without impairing the intended use or function of the building.

- Lower greenhouse emissions from Manitoba's building sector by improving energy efficiency and expanding the use of clean renewable energy.
- Capitalize on other benefits often achieved by green buildings such as healthier, more productive indoor environments and improved asset value.
- Create economic opportunities for Manitoba businesses by stimulating the demand for green building products and services.

2. Background

The buildings sector is a significant contributor to depletion of natural resources and is a major cause of greenhouse gas emissions, air and water pollution, solid waste, deforestation, toxic waste, health hazards and other negative consequences.

However, green buildings have demonstrated that they significantly reduce these impacts and achieve many other benefits when compared to conventional building practice. For a building owner or operator, these potential benefits include:

- Avoided capital costs (e.g. reduced infrastructure costs, reduced material use, savings in construction waste disposal, downsized mechanical equipment, financial incentives and tax credits, etc.)
- Reduced operating costs (e.g. lower energy costs, lower water and sewage charges, greater durability and fewer repairs, reduced cleaning and maintenance, reduced cost to reconfigure office space and relocate workers, reduced waste generation, etc.)
- Other economic benefits (e.g. increased property value, easier employee recruiting, reduced employee turnover, reduced liability risk, positive public image, generation of new economic development opportunities etc.)

From a broader societal perspective, the benefits of green buildings include:

- Health and productivity (e.g. reduced absenteeism, improved worker productivity, improved learning in schools, faster recovery from illness in health care facilities, etc.)
- Community and social (e.g. reduced demand on municipal services, reduced traffic congestion and sprawl, support of local businesses, etc.)
- Environmental (e.g. reduced greenhouse gas emissions, less use of non-renewable energy sources, minimized ozone depletion, reduced toxic emissions, reduced resource extraction impacts, protection of biodiversity, less local and regional air and water pollution, etc.)

Passed in 1998, Manitoba's Sustainable Development Act recognizes that the economy, the environment, human health and social well-being should be managed for the equal benefit of both present and future generations. The legislation states that economic decisions, including purchasing decisions, should adequately take into account their environmental, human health and social consequences.

The Act also recognizes that the public sector, through its internal operations and procurement practices, has an integral role in promoting environmental awareness and sustainable development. Manitoba's Sustainable Development Procurement Goals developed in response to the Act specifically reference pollution prevention and human health, reduction of fossil fuel emissions, resource conservation and community economic development. Government departments and publicly funded agencies are required under this legislation to apply the principles of sustainable development in their operations.

The Manitoba Building Code (MBC) is primarily a minimum set of requirements for health, safety, fire protection and structural sufficiency. It also has some minimum energy efficiency standards for housing and a strategy is being developed to add similar requirements for commercial and institutional buildings. However, the MBC currently does not have any minimum standards or recommendations for green building design, construction or renovation. As a consequence, provincial government departments, crown corporations and agencies must instead rely upon voluntary guidelines and standards from a variety of programs (e.g. CBIP, C-2000, R-2000, Power Smart, LEED[®], etc.) to reduce the environmental impact or energy use that result from their building projects.

During the 2005/06 Estimates process, departments that incur capital investment expenditures were requested to include green standards when reviewing all capital-related projects. Subsequently, Treasury Board directed that a provincial green building policy be developed. As a result, an Interdepartmental Green Building Policy Working Group was established to guide development and implementation of the policy (see Appendix A for a listing of the participating departments and their representatives). This document is the first step in what will be an ongoing process of further development and refinement of this policy.

Commentary: For a copy of an extensive cost-benefit analysis of green buildings, see:

- *A Report to California's Sustainable Buildings Task Force*
http://www.usgbc.org/Docs/Resources/CA_report_GBbenefits.pdf

For a review of literature and case studies from Canada, the United Kingdom and the United States that demonstrate that green buildings are not only good for the environment, they also have many financial and other benefits, see:

- *Royal Institute for Chartered Surveyors*
<http://www.rics.org/Builtenvironment/Sustainableconstruction/Green%20value.html>

3. Scope

3.1 Building Projects Covered by this Policy – This policy applies to the site selection, design, construction and renovation of non-residential buildings (excluding industrial and farm buildings). Unless otherwise permitted under Sub-Sections 3.2 and 5.3, all new buildings and additions to existing buildings greater than 500 sq. m. (5400 sq. ft.) in gross floor area as well as renovations of existing buildings where the economics of new construction apply, shall meet or exceed the design, environmental and energy requirements described in Section 4.

Commentary: Although not mandatory, projects smaller than 500 sq. m. (5400 sq. ft.) should follow the requirements in Section 4 to the greatest extent that is practical.

The “economics of new construction” refers to major renovation projects where the estimated renovation costs exceed 50% of the cost of a new building of equivalent size and function. Where renovation costs are less than 50%, and major building components or systems are to be replaced for reasons not related to environmental or energy performance, the requirements in Section 4 are not mandatory but should be followed to the greatest extent practical.

Future versions of this policy will address minimizing the environmental impacts from building operation, maintenance, repair and demolition or deconstruction. The policy may also be expanded to include residential buildings (both single family and multi-family) and leased accommodations.

3.2 Organizations Affected by this Policy – This policy applies to all Government of Manitoba departments, crown corporations and agencies as well as other entities that are either provincially funded or receive a direct capital contribution for a building or renovation project described in Sub-Section 3.1 with the exception of organizations receiving funding from either the:

- Power Smart Program operated by Manitoba Hydro; or
- Designated Heritage Building Grants Program operated by the Historic Resources Branch of Manitoba Culture, Heritage and Tourism.

Commentary: These programs typically provide a small but worthwhile incentive that leverage much larger investments in energy efficiency or building conservation. It is not the intent of this policy that these incentives trigger the need for a large-scale environmental upgrading where the incentive factor is lost and the owner therefore might not take up the necessary energy retrofit or conservation work.

- 3.3 Consultation Period – Upon its approval in principle by Treasury Board, this policy shall be subject to a 90-day consultation period to allow organizations identified in Sub-Section 3.2 to review and comment on the document before a final version is issued by the Green Building Coordination Unit.

Commentary: Although various drafts of this policy have been reviewed by the Interdepartmental Green Building Policy Committee, it is recognized that not all stakeholders have yet had an opportunity to consider the policy and offer suggestions on how it can be clarified or improved.

- 3.4 Transition Period and Effective Date – Except as provided in Sub-Section 4.5, this policy shall affect all building or renovation projects and organizations noted in Sub-Sections 3.1 and 3.2 in two phases:

- Phase One (Transition Period): Compliance shall be voluntary for all projects that receive funding approval between April 1, 2006 and March 31, 2007.
- Phase Two (Effective Date): Compliance shall be mandatory after April 1, 2007 for all projects.

Commentary: Projects approved during Phase One, and those that have received approval prior to April 1, 2006 but have not entered the detailed design stage, should follow the requirements in Section 4 to the greatest extent that is practical.

4. Design, Environmental and Energy Requirements

- 4.1 Integrated Design Process – Projects covered by this policy shall use an integrated design process.

Commentary: The design process itself is the most important contributor to the realization of high performance buildings. An integrated design process (IDP) is a holistic, collaborative and comprehensive design process that brings together all design professionals and specialty consultants, along with the building owner, the occupant(s), and other direct stakeholders to design the building as a team. It is not a series of meetings where responsibilities and tasks are assigned, but instead a process whereby people work together to design the building.

An IDP for a specific project often begins with a series of intensive one-day to three-day long design charrettes. Team formation and goal setting are critical early stage components.

For more information about the Integrated Design Process, see:

- *C-2000 Integrated Design Process (Natural Resources Canada)*
http://www.buildingsgroup.nrcan.gc.ca/projects/idp_e.html
- *Green Design and Construction Process (Pennsylvania Governor's Green Government Council)*
<http://www.gggc.state.pa.us/gggc/lib/gggc/documents/3process.pdf>

4.2 Environmental Requirements – All building projects covered by this policy shall achieve a minimum of a Silver rating under the Canada Green Building Council's "LEED® Canada NC Version 1.0 Green Building Rating System for New Construction and Major Renovations".

Commentary: LEED® (Leadership in Energy and Environmental Design) is a consensus-based rating system that provides third-party verification of green buildings. It awards points for meeting specific performance criteria, which are organized into six categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovation & Design Process (see Appendix B). Green building projects using LEED® are certified with a rating - Certified, Silver, Gold, or Platinum – that is determined by the total number of points attained.

Many governments across North America have adopted LEED® as a green building standard for all new public construction projects. In Canada's public sector these include Public Works and Government Services Canada, Alberta Infrastructure, City of Vancouver, City of Calgary and soon the City of Edmonton.

4.3 Energy Efficiency Requirements – In addition to a LEED® rating of Silver or better, all building projects covered by this policy must also:

- achieve at least 3 additional LEED® points for increased levels of energy performance above the prerequisite standard;
- comply with Manitoba Hydro's Power Smart Design Standards; and
- participate (if eligible) in Natural Resources Canada's Commercial Building Incentive Program or EnerGuide for Existing Buildings Program.

Commentary: These additional LEED® points for energy performance require a reduction in projected energy use at the design stage of at least 33% for new buildings and additions relative to a reference building defined by the Commercial Building Incentive Program (CBIP) and 24% for major renovations relative to a reference building defined by CBIP. For comparison, the average projected savings are about 36% for the 600 CBIP projects so far in Canada

For information about the standards and programs noted above, please see the following links:

- *Leadership in Energy and Environmental Design (Canada Green Building Council)*
<http://www.cagbc.org/>
- *Commercial Building Incentive Program (Natural Resources Canada)*
<http://oee.nrcan.gc.ca/commercial/financial-assistance/newbuildings/index.cfm?attr=20>
- *EnerGuide for Existing Buildings (Natural Resources Canada)*
<http://oee.nrcan.gc.ca/commercial/existing.cfm>
- *Power Smart Design Standards (Manitoba Hydro)*
http://www.hydro.mb.ca/saving_with_ps/psmart_design_standards.shtml

- 4.4 Low or Zero Carbon Renewable Energy Sources – Except for temporary, back-up or emergency power, or as permitted in Sub-Section 4.5, all new buildings covered by this policy shall use only renewable low or zero carbon energy sources and systems for space heating, domestic water heating, ventilation, lighting and other major building loads (e.g. ground source heat pumps, passive solar, thermal solar, photovoltaics, wind, biomass, etc.) to minimize greenhouse gas emissions that contribute to climate change.

Commentary: Because in most years more than 95% of the electricity generated in Manitoba is supplied by renewable hydro resources, and the next increments of generation are large-scale wind and run-of-the river hydro electric dams, grid-supplied electricity shall be considered a low carbon energy source. However, conventional electric resistance heating should be avoided (except for small incidental loads) to minimize contributions to peak system loads.

For information about low or zero energy carbon renewable energy sources, see:

- *Renewable Energy Deployment Initiative (Natural Resources Canada)*
<http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=455>

- 4.5 Offsets for Carbon-Based Energy Sources – For projects approved after April 1, 2008 where avoiding the use of non-renewable, carbon based energy sources including natural gas, fuel oil or propane is not feasible or cost-effective, credits shall be purchased or other action taken to offset the project’s estimated greenhouse gas emissions and the cost of these credits or action considered in optimizing the building’s energy performance.

Commentary: Some examples of where it might not be feasible or cost-effective to avoid the use of non-renewable fossil fuels are when a building project is to be serviced by an extension of an existing district heating system that uses fossil fuel; if dual fuel capability is required for safety or security; where the local electric distribution system is already at capacity; or in a remote northern community.

The certification of emission reduction credits and markets to sell or purchase these credits are emerging. The implementation of this requirement to offset greenhouse gas emissions has been delayed to allow more time for these initiatives to develop. Where feasible, future purchases of credits to offset carbon-based energy sources should be obtained from sources that fund carbon reduction projects in Manitoba.

- 4.6 Adaptive Reuse and Deconstruction of Existing Buildings – Consideration shall be given to the adaptive reuse of existing buildings, especially those of significant cultural or historic value, to capture the embodied energy and other resources that these buildings contain. Where it isn’t feasible to reuse an existing non-designated building, the deconstruction and reuse of the building materials rather than demolition should be explored.

Commentary: For guidelines and standards about the preservation, rehabilitation, restoration and retrofitting of historic buildings, please refer to:

- *Standards and Guidelines for the Conservation of Historic Places in Canada (Parks Canada)*
http://www.pc.gc.ca/docs/pc/guide/nldclpc-sqchpc/index_E.asp
- *Exploring the Connection Between Built and Natural Heritage (Heritage Canada Foundation)*
<http://www.heritagecanada.org/eng/GreenReport2Eng-Read.pdf>

5. Policy Administration and Support

- 5.1 Green Building Coordination Unit – A Green Building Coordination Unit shall be established to administer and support this policy. Duties of this unit include:
- Development and distribution of an implementation guide and web site for the effective communication and application of this policy.

- Outreach and education for organizations that will be impacted by this policy.
- Building partnerships to ensure that the necessary skills, tools and awareness are developed to ensure that the policy is effectively implemented.
- Providing interpretations about the application of this policy and issuing revisions or clarifications.
- Monitoring the impact and outcomes generated by this policy.
- Drafting a future expansion of the policy to cover residential buildings, leased accommodations, residential buildings and issues related to minimizing environmental impacts from building operation, maintenance, repair and demolition.
- Coordinating the Interdepartmental Green Building Policy Working Group.

5.2 Independent Verification – Independent, third-party verification shall be used to confirm that the design, environmental and energy standards described in Section 4 have been met. This verification must be in writing and provided by:

- the Canada Green Building Council for LEED®;
- Natural Resources Canada for the Commercial Building Incentive Program and EnerGuide for Existing Buildings; and
- Manitoba Hydro for Power Smart Design Standards.

5.3 Equivalencies, Reduced Requirements or Exemptions – Project proponents may suggest alternatives to the requirements of this policy at the schematic design and cost estimating stage. This request should be directed to the Green Building Coordination Unit identified in Sub-Section 5.1 and demonstrate that:

- the intent of the policy will still be met;
- the energy and performance of the building project will still meet or exceed the specific standards described in Section 4; and
- the life-cycle cost of the building project will be the same or less.

Lower levels of environmental and energy performance may be also acceptable where it can be demonstrated by a registered architect, engineer or certified engineering technologist who is also a LEED® Accredited Professional or CBIP Design Assessor that the requirements specified in Section 4 are either not cost-effective on a life cycle basis or would unduly impair the usability, function or appearance of the proposed building, addition or renovation.

Certain projects may be exempted from some or all of the requirements in Section 4 where it can be demonstrated that the nature of the building's occupancy, need or site conditions make it impractical to follow the this policy (e.g. designated historical buildings, temporary buildings, building renovations needed in response to a public emergency, unoccupied buildings, buildings with specialized functions, etc.).

Commentary: All exempted projects must still attempt to incorporate green building principles and practices to the greatest extent practical.

5.4 Technical Support and Policy Interpretation – For technical assistance with interpreting the application of this policy, or to submit a request for an equivalency, exemption or reduction in the required level of environmental or energy performance, please contact the Green Building Coordination Unit.

Commentary: It is anticipated that the Green Building Coordination Unit will be appointed in early Fiscal 2006/07. For technical support and policy interpretations on an interim basis, contact Shaun Loney Director of Energy Policy at Manitoba Energy, Science and Technology (sloney@gov.mb.ca or 945-5801).

6. Budgeting and Financial Implications

Based on green building experience in Manitoba and other jurisdictions, it is expected that any increase in capital cost needed to satisfy this policy will be modest and should be more than offset by lower operating costs, improved productivity and enhanced asset value. To minimize any financial impacts, the use of financial incentives and in-kind technical support from the Federal Government and Manitoba Hydro should be maximized.

However, it is recognized that some adjustments may be needed to the normal design fees and capital construction cost guidelines used by government departments, crown corporations and agencies. These adjustments should be based on a life-cycle basis using the following factors:

- 10% discount rate
- (TBD)% annual escalation rate for electricity costs
- (TBD)% annual escalation rate for natural gas, propane and fuel oil costs
- 3% annual escalation rate for building operating costs (excluding energy)
- Up to 1% reduction in staffing costs due to improved productivity
- \$15 per tonne for greenhouse gas emissions

Commentary: For examples of good practice regarding life cycle assessments of the energy and environmental performance of buildings, please refer to:

- *ASTM Standards on Building Economics, Fifth Edition*
<http://www.astm.org/cgi-bin/SoftCart.exe/BOOKSTORE/COMPS/111.htm?L+mystore+fhex2432>
- *Handbook 135, Life-Cycle Costing Manual for the Federal Energy Management Program*
<http://www.eere.energy.gov/femp/program/lifecycle.cfm?print>
- *Building for Energy and Economic Sustainability*
<http://www.bfrl.nist.gov/oa/software/bees.html>

For more information about budgeting or to discuss financial implications of implementing this policy, please contact Todd Callin at the Treasury Board Secretariat (tcallin@gov.mb.ca or 945-1081).

7. Reporting and Evaluation

7.1 Monitoring and Review – The impacts of this policy will be assessed on an ongoing basis by Green Building Coordination Unit and adjusted when necessary after consultation with the Interdepartmental Green Building Policy Working Group. An interim review of the policy will be completed by March 31, 2008 and a more in-depth review by March 31, 2009.

Commentary: The evaluation of this policy and its implementation will follow the guidelines available from the following sources:

- *Treasury Board of Canada Secretariat's Centre of Excellence for Evaluation*
http://www.tbs-sct.gc.ca/eval/common/us-nous_e.asp
- *Canadian Evaluation Society*
<http://www.evaluationcanada.ca>

7.2 Pre-Construction and Post-Occupancy Surveys – To enable the impact of this policy to be effectively monitored, organizations identified in 3.2 shall complete the following forms for each building project that falls within the scope of this policy and submit these forms to the Green Building Coordination Unit:

- Pre-Construction Green Building Survey at the schematic design phase and cost estimating phase (see Appendix C)
- Post-Occupancy Green Building Survey within six months of project completion and occupancy (see Appendix D)

7.3 Project Contact Person – For each building project affected by this policy, organizations identified in 3.2 shall appoint a contact person who will be deemed to be responsible for ensuring compliance with this policy.

Appendix A – Interdepartmental Green Building Policy Working Group

<u>Representative</u>	<u>Department</u>	<u>Program (Position)</u>
Co-Chairs:		
Shaun Loney	Energy Science and Technology	Energy Development Initiative (Director Energy Policy)
Todd Callin	Finance	Treasury Board Secretariat (Capital Planning Analyst)
Working Group Members:		
Dianne McCoy	Agriculture, Food and Rural Initiatives	Administrative Services (Administrative Officer)
Dimple Roy	Conservation	Sustainable Resource Mgmt. (Policy Analyst)
Patrick Done	Culture, Heritage and Tourism	Community Places Program (Director)
David Firman (Alternate)	Culture, Heritage and Tourism	Historic Resources (Architect)
Georges Marchildon	Education, Citizenship and Youth	Public Schools Finance Board
Robert Bisson (Alternate)	Education, Citizenship and Youth	Public Schools Finance Board
Robert Walger	Energy Science and Technology	Energy Development Initiative (Project Manager)
Ken Klassen	Energy Science and Technology	Energy Development Initiative (Policy Analyst)
Terry Kozak	Family Services and Housing	MHRC (Analyst)
Mike Burrows	Family Services and Housing	Manitoba Housing Authority (Electrical Safety Officer)
Norman Blackie	Health	Capital Planning (Senior Planner)
Angela Driver (Alternate)	Health	Capital Planning (Project Manager)
Rod Berschied	Transportation & Govt. Services	Corporate Accommodation Planning (Director)
Gerry Shuster	Transportation & Govt. Services	Technical and Energy Services (Manager)

Ex-Officio

Sig Laser	Industry, Economic Development and Mines	CEDC (Project Manager)
Rodney McDonald	Manitoba Hydro	Power Smart (Sustainability and Standards Specialist)

Appendix B – LEED® Canada NC 1.0 Project Checklist

<u>Sustainable Sites</u>		<u>14 Points</u>
<input type="checkbox"/>	Prereq 1 Erosion & Sedimentation Control	Required
<input type="checkbox"/>	Credit 1 Site Selection	1
<input type="checkbox"/>	Credit 2 Development Density	1
<input type="checkbox"/>	Credit 3 Redevelopment of Contaminated Sites	1
<input type="checkbox"/>	Credit 4.1 Alternative Transportation , Public Transportation Access	1
<input type="checkbox"/>	Credit 4.2 Alternative Transportation , Bicycle Storage & Changing Rooms	1
<input type="checkbox"/>	Credit 4.3 Alternative Transportation , Alternative Fuel Vehicles	1
<input type="checkbox"/>	Credit 4.4 Alternative Transportation , Parking Capacity	1
<u>Water Efficiency</u>		<u>5 Points</u>
<input type="checkbox"/>	Credit 1.1 Water Efficient Landscaping , Reduce by 50%	1
<input type="checkbox"/>	Credit 1.2 Water Efficient Landscaping , No Potable Use or No Irrigation	1
<input type="checkbox"/>	Credit 2 Innovative Waste Water Technologies	1
<input type="checkbox"/>	Credit 3.1 Water Use Reduction , 20% Reduction	1
<input type="checkbox"/>	Credit 3.2 Water Use Reduction , 30% Reduction	1
<u>Energy & Atmosphere</u>		<u>17 Points</u>
<input type="checkbox"/>	Prereq 1 Fundamental Building Systems Commissioning	Required
<input type="checkbox"/>	Prereq 2 Minimum Energy Performance	Required
<input type="checkbox"/>	Prereq 3 CFC Reduction in HVAC&R Equipment	Required
<input type="checkbox"/>	Credit 1 Optimize Energy Performance	1 to 10
<input type="checkbox"/>	Credit 2.1 Renewable Energy , 5%	1
<input type="checkbox"/>	Credit 2.2 Renewable Energy , 10%	1
<input type="checkbox"/>	Credit 2.3 Renewable Energy , 20%	1
<input type="checkbox"/>	Credit 3 Best Practice Commissioning	1
<input type="checkbox"/>	Credit 4 Ozone Protection	1
<input type="checkbox"/>	Credit 5 Measurement & Verification	1
<input type="checkbox"/>	Credit 6 Green Power	1
<u>Materials & Resources</u>		<u>14 Points</u>
<input type="checkbox"/>	Prereq 1 Storage & Collection of Recyclables	Required
<input type="checkbox"/>	Credit 1.1 Building Reuse : Maintain 75% of Existing Walls, Floors and Roof	1
<input type="checkbox"/>	Credit 1.2 Building Reuse : Maintain 90% of Existing Walls, Floors and Roof	1
<input type="checkbox"/>	Credit 1.3 Building Reuse : Maintain 50% of Interior Non-Structural Elements	1
<input type="checkbox"/>	Credit 2.1 Construction Waste Management : Divert 50% from Landfill	1
<input type="checkbox"/>	Credit 2.2 Construction Waste Management : Divert 75% from Landfill	1

<input type="checkbox"/>	Credit 3.1 Resource Reuse: 5%	1
<input type="checkbox"/>	Credit 3.2 Resource Reuse: 10%	1
<input type="checkbox"/>	Credit 4.1 Recycled Content: 7.5% (post-consumer + ½ post-industrial)	1
<input type="checkbox"/>	Credit 4.2 Recycled Content: 15% (post-consumer + ½ post-industrial)	1
<input type="checkbox"/>	Credit 5.1 Regional Materials: 10% Extracted and Manufactured Regionally	1
<input type="checkbox"/>	Credit 5.2 Regional Materials: 20% Extracted and Manufactured Regionally	1
<input type="checkbox"/>	Credit 6 Rapidly Renewable Materials	1
<input type="checkbox"/>	Credit 7 Certified Wood	1
<input type="checkbox"/>	Credit 8 Durable Building	1

Indoor Environmental Quality **15 Points**

<input type="checkbox"/>	Prereq 1 Minimum IAQ Performance	Required
<input type="checkbox"/>	Prereq 2 Environmental Tobacco Smoke (ETS) Control	Required
<input type="checkbox"/>	Credit 1 Carbon Dioxide (CO₂) Monitoring	1
<input type="checkbox"/>	Credit 2 Ventilation Effectiveness	1
<input type="checkbox"/>	Credit 3.1 Construction IAQ Management Plan: During Construction	1
<input type="checkbox"/>	Credit 3.2 Construction IAQ Management Plan: During Construction	1
<input type="checkbox"/>	Credit 4.1 Low-Emitting Materials: Adhesives & Sealants	1
<input type="checkbox"/>	Credit 4.2 Low-Emitting Materials: Paints & Coatings	1
<input type="checkbox"/>	Credit 4.3 Low-Emitting Materials: Carpet	1
<input type="checkbox"/>	Credit 4.4 Low-Emitting Materials: Composite Wood & Laminate Adhesives	1
<input type="checkbox"/>	Credit 5 Indoor Chemical & Pollutant Source Control	1
<input type="checkbox"/>	Credit 6.1 Controllability of Systems: Perimeter Spaces	1
<input type="checkbox"/>	Credit 6.2 Controllability of Systems: Non-Perimeter Spaces	1
<input type="checkbox"/>	Credit 7.1 Thermal Comfort: Compliance	1
<input type="checkbox"/>	Credit 7.2 Thermal Comfort: Monitoring	1
<input type="checkbox"/>	Credit 8.1 Daylight & Views: Daylight 75% of Spaces	1
<input type="checkbox"/>	Credit 8.2 Daylight & Views: Views 90% of Spaces	1

Innovation & Design Process **5 Points**

<input type="checkbox"/>	Credit 1.1 Innovation in Design	1
<input type="checkbox"/>	Credit 1.2 Innovation in Design	1
<input type="checkbox"/>	Credit 1.3 Innovation in Design	1
<input type="checkbox"/>	Credit 1.4 Innovation in Design	1
<input type="checkbox"/>	Credit 2 LEED® Accredited Professional	1

PROJECT TOTAL (maximum 70 points) _____

Certified: 28-32 points **Silver:** 33-38 points **Gold:** 39-51 points **Platinum:** 52-70 points

Appendix C – Pre-Construction Green Building Survey

(to be developed)

Appendix D – Post-Occupancy Green Building Survey

(to be developed)