



Parks Canada Green Building Directive

March 2012



NAME: Parks Canada Green Building Directive

APPROVAL DATE: See below

EFFECTIVE DATE: April 1, 2012

CONTACT:

Parks Canada: Real Property, Strategy and Plans Directorate

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RESCINDED DOCUMENT: This Directive replaces the Parks Canada Green Building Directive (2007).

REVIEW: This directive will be reviewed on an annual basis by Real Property, and updated/revised as necessary.

AMENDMENTS:

CHANGE / RATIONALE	DATE	APPROVAL

1

 Alan Latourelle
 Chief Executive Officer

 Date



CONTEXT

[The Federal Sustainable Development Act \(2008\)](#) is administered by Environment Canada and requires the development of a [Federal Sustainable Development Strategy](#) (FSDS). The first Federal Sustainable Development Strategy was tabled in Parliament in October 2010. The FSDS promotes sustainable development goals, targets and implementation strategies that reflect current government priorities. Theme IV of the FSDS establishes specific goals and targets aimed at “[Shrinking the Environmental Footprint – Beginning with Government](#)”. Sections 8.1-8.4 of the FSDS present specific mandatory requirements related to buildings that must be implemented by government departments and agencies, including Parks Canada.

Parks Canada is the custodian of over 4,500 buildings across the country, including offices, visitor centres, operation centres, campground facilities, maintenance facilities, housing, kiosks and storage shelters. Many facilities managed by Parks Canada are heritage buildings.

Parks Canada is committed to demonstrating to Canadians that it is a leader in environmental stewardship. Consistent with that commitment, the Agency applies sustainable development practices to the construction, renovation, operation and maintenance as well as disposal or decommissioning of buildings owned and managed by the Agency.

2 PURPOSE

The purpose of this directive is to provide direction consistent with the principles of sustainable development on the planning, construction, renovation, refit, operation, maintenance and deconstruction of buildings owned and managed by the Agency, while respecting the heritage values of existing buildings and protecting cultural and natural resources.

3 SCOPE

This directive applies to the site selection, design, construction, renovation, rehabilitation, maintenance, operation and disposal of buildings (as defined in Section 4) owned and managed by Parks Canada, including staff housing.

This directive does not apply to structures which do not meet the definition of “Building” provided in Section 4 (Definitions).

This directive does not apply to buildings occupied by Parks Canada but which are managed or leased by Public Works and Government Services Canada (e.g. National Office, Service Centres, etc.). In those cases Public Works and Government Services Canada is responsible for the implementation of the FSDS targets. However Parks Canada may play a role in supporting the sustainable design and operational requirements necessary to achieve the required environmental performance level.



4 DEFINITIONS

Building: A permanent fixed structure forming an enclosure which provides protection from elements and includes heating, electricity, water supply and waste water conveyance.

Building Owners and Managers Association (BOMA) BEST: BEST stands for Building Environmental Standards, and represents the direction of the commercial real estate industry in Canada and BOMA Canada's role in providing the mechanisms for common practices across the industry. With four possible levels of certification, users can progress through the program and continually use the framework of the Go Green Best Practices and the Go Green Plus assessment to improve environmental performance and management. The BOMA BEST certification builds on Go Green and Go Green Plus by harmonizing these separate certifications into one program.

Canada Green Building Council: The Canada Green Building Council has been officially established as a national not-for-profit corporation and has signed a licensing agreement with the U.S. Green Building Council for the exclusive implementation of the LEED Green Building Rating System in Canada.

Cultural Resource: a human work, or a place that gives evidence of human activity or has spiritual or cultural meaning, and that is determined to be of heritage value. This value derives from an association with an important aspect or aspects of human history and culture. Parks Canada may apply the term cultural resource to a wide range of resources in its custody, including, but not limited to, landscapes and landscape features, archaeological sites, buildings and structures, engineering works and objects from archaeological or historical origins.

Fit-up: Preparation of interior accommodations for initial Agency occupancy (i.e. accommodation not previously occupied by a federal organization). The work may include alterations and/or improvements to the base building and/or base building systems.

Green building: Buildings designed to minimize resource and energy consumption, minimize environmental degradation and the production of waste, maximize the use of renewable energy and maximize occupant health and comfort.

Green building practices: An integrated framework of design, construction, and operations practices that encompasses the environmental, economic, and social impacts of buildings. Green building practices recognize the interdependence of the natural and built environments and seek to minimize the use of energy, water, and other natural resources and provide a healthy, productive indoor environment.

Heritage building: building that is determined to be of heritage value and is considered as a cultural resource under the *Cultural Resource Management (CRM) Policy*. This term also applies to buildings that have been designated as Classified or Recognized Federal Heritage Buildings under the *Treasury Board Policy on Management of Real Property*.

Integrated design: A holistic process that considers the many disparate parts of a building project, and examines the interaction between design, construction, operations and demolition to optimize the energy and environmental performance of the project.

LEED®: Leadership in Energy and Environmental Design (LEED®) is a national voluntary consensus-based third party certification system designed for rating new construction and major renovations of



commercial, institutional, and high-rise residential buildings. It provides a set of criteria that evaluate project performance from a whole building, whole-life perspective, providing a common understanding for what constitutes a green building in the Canadian context. The following LEED® Canada rating systems are relevant to this directive:

- LEED® Canada for New Construction and Major Renovations: Applies to new construction and major renovations.
- LEED® Canada for Commercial Interiors : Applies to tenant improvements of new or existing office space (Refit or Fitup)
- LEED® Canada for Homes: Applies to single family homes and multifamily buildings up to 3 residential stories.

Each LEED® rating system has four possible levels of certification; Certified, Silver, Gold and Platinum

Life Cycle Approach/Assessment (LCA): Methodology for assessing the environmental performance of materials, assemblies and whole structures over the course of their entire lives, from extraction through manufacturing, transportation, installation, use, maintenance and disposal or recycling. Impacts are measured in terms of a wide range of potential effects, (ex.: non-renewable resource use, water use, global warming potential, ground level ozone (smog) creation, toxic releases to air, water and land).

Majority Lessee – Parks Canada occupies over 50% of the rentable area of a building. The 50% includes the accumulated leases in the building.

Major Renovation: A building that is being stripped to its structure (more than 60% of structural systems) or is going through a mid-life refit that includes significant changes to both the building envelope and the heating, ventilating and air conditioning systems (more than 60% of interior finishes).

New Construction: A newly constructed building that is going through the complete project delivery process from inception to turn over (i.e. occupancy or Commissioning).

Refit: Preparation of existing interior accommodations previously occupied by a federal organization, to meet new requirements, or a refit of space to respond to a change in functional requirement of an organization. The work may include alterations and/or improvements to the base building and/or base building systems. The scope of the work is determined by taking into consideration the life cycle approach, the functional requirements of the new occupant, existing conditions of the previously occupied space, and the duration of the new occupancy.

Rehabilitation: the action or process of making possible continuing or compatible contemporary use of a cultural resource, while protecting its heritage value.

5 ROLES AND RESPONSIBILITIES

5.1 Chief Administrative Officer

- 1) Develop, maintain and communicate policy instruments, best practices, tools and greening strategies that are consistent with Government of Canada direction.
- 2) Provide functional leadership on processes regarding the application of green building practices and achievement of targets.
- 3) Liaison with central agencies, other government departments and industry.



- 4) Monitor and report on compliance and performance as well as develop and communicate Agency reports.

5.2 Vice-Presidents, Operations

- 1) Provide engineering and technical functional leadership and support to field units, develop and coordinate common field unit approaches.
- 2) In collaboration with the CAO, work with Field Units to develop workplans to implement the directive.
- 3) In collaboration with the CAO, monitor compliance of implementation of the Parks Canada Green Building Directive.

5.3 Vice-President, Heritage Conservation and Commemoration Directorate

- 1) Provide direction and guidance on the conservation of the heritage value and character-defining elements of cultural resources (including Federal Heritage Buildings) and on commemorative integrity of national historic sites.

5.4 Field Unit Superintendents

- 1) Implement applicable direction found within the Parks Canada Green Building Directive.
- 2) Maintain records of costs, reports and plans related to buildings.

6 REQUIREMENTS

- 6.1. **New Construction:** Construction of new buildings greater than 1,000 square metres must meet Gold level of the applicable [LEED® Canada rating system](#) or equivalent and must be registered and certified by the Canada Green Building Council, or equivalent.
- 6.2. **New Construction:** Construction of new buildings less than 1,000 square metres must incorporate green building practices and/or strive to meet the equivalent of Gold level of the applicable [LEED® Canada rating system](#), or equivalent, but projects do not require registration or certification.
- 6.3. **Major Renovations:** Major renovations of existing buildings (excluding heritage buildings) over 1,000 square metres and of project value greater than \$1M, must meet Silver level of the applicable [LEED® Canada rating system](#), or equivalent, and must be registered and certified by the Canada Green Building Council, or equivalent.
- 6.4. **Major Renovations:** Major renovations of existing buildings (excluding heritage buildings) not subject to Requirement 6.3 must incorporate green building practices and/or strive to meet the equivalent of Silver level of the applicable [LEED® Canada rating system](#), or equivalent, but projects do not require registration or certification.



- 6.5. **Interior Fitup or Refit:** Fitups and Refits with a project value greater than \$1M within existing buildings (excluding heritage buildings), must meet Silver level of the applicable [LEED® Canada rating system](#), or equivalent, and must be registered and certified by the Canada Green Building Council, or equivalent.
- 6.6. **Interior Fitup or Refit:** Fitups and Refits with a project value of less than \$1M within existing buildings (excluding heritage buildings), must incorporate green building practices and/or strive to meet the equivalent of Silver level of the applicable [LEED® Canada rating system](#), or equivalent, but projects do not require registration or certification.
- 6.7. **Building Assessments:** Existing buildings that meet all of the following criteria must be assessed under the Building Owners and Managers Association (BOMA) BEST Program, or equivalent:
- o The building is used for operations, administration and/or public use;
 - o The office/operations, public use or heated storage floor space combined is greater than 1,000 square metres;
 - o The building is occupied by staff year-round;
 - o The building was built prior to the year 2000.
- The schedule for assessments will be outlined in the Green Building Strategic Workplan developed by Real Property in collaboration with the offices of the Operational Vice Presidents. There is no requirement to have buildings certified under the BOMA BEST Program or equivalent.
- 6.8. **Heritage Buildings:** The rehabilitation of heritage buildings can include sustainable practices such as building material reuse, energy system performance and water and waste system upgrade. These interventions must respect the requirements of the [CRM Policy](#) and of the [Treasury Board Policy on Management of Real Property](#) for Federal Heritage Buildings. The [Standards and Guidelines for the Conservation of Historic Places in Canada](#), which includes rehabilitation and sustainability guidelines, must be consulted.
- 6.9. **Energy Codes:** Construction of new buildings and major renovations must adhere to the National Energy Code of Canada for Buildings or the National Energy Code of Canada for Houses or provincial/territorial energy codes where applicable.

7 BEST PRACTICES

7.1 Use an Integrated Design Approach

An Integrated Design Approach (see Section 4: Definitions), when implemented early on during the planning phase of a project provides the opportunity for all stakeholders in the project (Owners, Architect, Users Contractors) to coordinate and refine objectives in order to design a better and healthier building at a phase when the cost of changes to the design is at its lowest. Industry-recognized assessment and verification tools for a project can be incorporated into projects at the planning/design phase, as a roadmap for the Integrated Design approach.



7.2 Use Sustainable Materials

Consistent with the PWGSC's *Sustainable Buildings Policy* and the FSDS, Parks Canada should use sustainable materials in new construction and renovation projects while taking into account cost, project requirements, greenhouse gas emissions and the principles of sustainable development. For example, sustainably harvested (certified) wood and wood products are widely recognized for their performance characteristics and their contribution to greenhouse gas management and sustainable resource use.

7.3 Use energy and water/wastewater efficient systems and fixtures

When designing all new structures, and planning for replacement, renovation or refit of all existing buildings, Parks Canada should consider the most energy and water/wastewater efficient systems, fixtures, and operational practices that reduce long term costs and greenhouse gas emissions, while at the same time protecting cultural and natural resources and providing continued high quality service levels to visitors. For example, exit signs should be upgraded to photoluminescent signs (now approved in the National Building and Fire Codes) that do not consume electricity nor produce GHG emissions.

7.4 Use a Life Cycle Approach

A Life Cycle approach (LCA) (see Section 4: Definitions) may be used to assess the environmental impact of buildings over the course of their life span, including construction, renovation and decommissioning. The Athena Sustainable Materials Institute's "Environmental Impact Estimator" and "EcoCalculator" are two examples of tools that can assist custodians with the environmental life-cycle assessment. Other sources of LCA information may be found through: The Building Research Establishment Environmental Assessment Method (BREEAM), Green Building Advisor, and ECOTECT.

7.5 Recycling and waste management as part of decommissioning, disposal of buildings

The PWGSC FSDS Green Building Targets document (Sections 8.1.6 and 10.4) recommends, that as part of a Life Cycle management approach, that departments/agencies incorporate waste management into overall green building management practices. The objective is to reduce amount of materials transport to landfill and to reduce greenhouse gas emissions from construction waste, to lower costs of disposal, and to maximize value received from buildings and building materials.

When planning the decommissioning/disposal of a building, Field Units/Service Centres should first evaluate options for sale/removal of buildings or building components, including transfer to other government departments. Crown Assets Distribution (CAD) regional representatives can be contacted for advice/assistance in sale of these assets or components. This may also prove more cost effective than simple demolition and landfill disposal of resulting waste. This may also include transfer of buildings or components to community organizations. See the Treasury Board Directive on the Disposal of Surplus Materials (<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12066§ion=text#cha1>).

Furthermore, a cost/benefit analysis should be done to determine whether or not reusable materials (lumber, fixtures, etc) can be salvaged prior to disposal of waste materials from decommissioned buildings. As a final measure, Field Units/Service Centres should take measures to separate waste materials in accordance with practices of local recycling and waste disposal facilities.



The disposal of Classified and Recognized Federal Heritage Buildings must follow the requirements set out in the *TB Policy on Management of Real Property* and be done in consultation with the Federal Heritage Buildings Review Office. Disposal of heritage buildings designated under Parks Canada's CRM Policy must be done in consultation with the Vice-President, Heritage Conservation and Commemoration Directorate.

8 MONITORING AND REVIEW

Real Property, in collaboration with the offices of the operational Vice-Presidents, will monitor the application of this directive using existing systems and the Parks Canada Investment Plan.

The Office of Internal Audit and Evaluation may periodically conduct audits or evaluations as deemed appropriate.



9 RELATED LINKS

Building Owners and Managers Association (BOMA) BEST:
http://www.bomacanada.ca/programs/program_index.html

Canada Green Building Council (for LEED):
<http://www.cagbc.org/>

Environment Canada (2010). Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada
http://www.ec.gc.ca/dd-sd/F93CD795-0035-4DAF-86D1-53099BD303F9/FSDS_v4_EN.pdf

Government of Canada, ecoAction
<http://ecoaction.gc.ca/index-eng.cfm>

Natural Resources Canada, Office of Energy Efficiency
<http://oeo.nrcan.gc.ca/english/>

Public Works and Government Services Canada, Office of Greening Government Operations:
<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/index-eng.html>

Treasury Board Directive on the Disposal of Surplus Material
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12066§ion=text#cha1>

Treasury Board Policy on Management of Real Property
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12042§ion=text>

Crown Assets Distribution:
<http://crownassets.pwgsc.gc.ca/mn-eng.cfm>

Parks Canada Cultural Resource Management Policy
<http://www.pc.gc.ca/eng/docs/pc/poli/princip/sec3.aspx>

The Standards and Guidelines for the Conservation of Historic Places in Canada
<http://www.historicplaces.ca/en/pages/standards-normes.aspx>