



University of Manitoba

**SECTION 4**

**COMMERCIAL &  
INSTITUTIONAL BUILDINGS**

**GREEN BUILDING PROGRAM MANUAL**



## COMMERCIAL & INSTITUTIONAL BUILDINGS

*The best opportunity to incorporate green building measures is during the design and construction of a building because it will set the conditions for sustainable building operation over the life of the building.*

*The Green Building Program (GBP) criteria are standards and practices for commercial and institutional buildings that:*

- *protect occupant health*
- *improve air quality*
- *reduce waste streams*
- *use energy, water and other resources more efficiently*
- *reduce the overall impact of building construction and operation on the environment*
- *minimize the strain on local infrastructure.*

*Any increase in capital cost needed to implement the GBP criteria is typically offset by lower operating costs. Studies show that the initial investment in building construction and materials is only 15% of the lifecycle operating expenses. Wise investment up front pays back in life cycle benefits.*

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## 4.1

# Green Building Program Application to Commercial & Institutional Buildings

The GBP application provides guidance for projects that must:

- 1) report performance of the GBP criteria
- 2) incorporate the GBP criteria into applicable contracts, construction documents and funding/contribution agreements

Every building can be greener. Some projects will be outside the program application parameters. In those cases, the GBP forms and GBP criteria can still be used to guide “green building” project decisions and reap the benefits of a greener building.

### **Commercial & Institutional Program Application Parameters:**

The GBP for Commercial and Institutional buildings applies to:

A) **New construction** projects:

The new building project is identified as a occupancy described in Section 4.1,  
The new building project is owned or funded by a government organization and  
The new building project has a floor area of 600 m<sup>2</sup> (6,458 ft<sup>2</sup>) or larger.

B) Building **renovation** projects:

The new building project is identified as a occupancy described in Section 4.1,  
The building being renovated is owned or funded by a government organization,  
The cost of the renovation is at least 50 per cent of the cost of constructing an equivalent new building and  
The area of renovation is 600 m<sup>2</sup> (6,458 ft<sup>2</sup>) or larger

C) **Additions to or enlargements** of existing buildings:

The addition or enlargement is identified as a occupancy described in Section 4.1,  
The addition or enlargement being added is owned or funded by a government organization and  
The area of addition or enlargement is 600 m<sup>2</sup> (6,458 ft<sup>2</sup>) or larger.

*If the program application parameter applies, the Government organization must report the projects to the GBCT. GBP Forms 1 and GBP Form 2 are used for reporting purposes.*

## Funding

Any government organization included in the Government Reporting Entity (government departments, Crown corporations and government agencies) that uses it's own funds or provides funds for a new construction or major renovation project must participate in the Green Building Program. There is no minimum level for funding. However, these funding sources are exempted:

- provincial tax incentives
- provincial loans or loan guarantees
- designated heritage grants program
- Power Smart Program

## Occupancy Type

The GBP for Commercial & Institutional Buildings applies to the following occupancy types identified in Table 3.1.2.1, Major Occupancy Classification of the Manitoba Building Code:

- Group A – Assembly occupancies – excluding Division 4 open air (ex: community halls, arenas, pools, gymnasias, libraries, schools, colleges)
- Group B – Care or detention occupancies (ex: hospitals, correctional facilities, personal care homes)
- Group D – Business and personal services occupancies (ex: offices, medical offices, police stations)
- Group E – Mercantile occupancies (ex: exhibition halls, stores)

Where a building has more than 80% of total area comprised of an excluded occupancy type such as a garage, unconditioned space or manufacturing floor, contact GBCT to determine how the criteria applies.

## Construction Type

The GBP criteria for Commercial and Institutional projects applies to new construction (new buildings, addition or extension) and major renovation projects. A building renovation is considered to be major if the cost of the renovation is at least 50% the cost of constructing an equivalent new building. The cost for comparison may be identified by using the most current Hanscomb Yardsticks for Costing – Gross Building Costs (see Section E), an equivalent guide (identified) or cost estimate by a qualified construction company or quantity surveyor.

Costs should be calculated for construction only and should not include land, furnishings and equipment, and soft costs such as consultant fees and financing.

## Area

Projects with a total floor area greater than or equal to 600 m<sup>2</sup> (6,458 ft<sup>2</sup>) must apply the GBP criteria.

The total floor area is the total of each horizontal floor area (storey) above grade measured to the outside face of the exterior walls. Where a floor is partially below grade (ex: walk-out basement) and the area has an assigned occupancy, the area is to be included in total. Where space is partially developed (exterior shell and rough-in only) for future development, the area is to be included in the total.

Where total floor area is less than 600 m<sup>2</sup>, government organizations should still encourage funded projects to incorporate the GBP criteria. In those cases, GBP Form 1 & 2 can be used to guide project decisions and help owners achieve the benefits of building green. In those cases reporting is at the discretion of the government organization providing funding.

### **Practical Application Guidance**

*The program recognizes some projects may not be able to incorporate all the GBP criteria. Practicality should be applied where the owner and project team deem that a recommended standard or practice is ineffective or impractical, or would unduly impair the function or operation of the building, addition or renovation. In those cases, a building owner should seek a variance by identifying the criteria in question on GBP Form 1 Section B, and complete Section C: Variance Options. The owner must provide an explanation for why it cannot be satisfied. A Variance must be requested as early as possible to allow the Director of the Green Building Co-ordination Team (GBCT) the opportunity to address the rationale with the owner or project team, as appropriate. All the GBP criteria are achievable by projects in Manitoba. Project teams should make every effort to accommodate the GBP criteria where practicable.*

## **4.2**

### **Descriptions of the Green Building Criteria**

The criteria listed and described in this section are the recommended minimum standards and practices for green building design, construction, material selection and operations. All the GBP criteria should be applied to projects funded by a government organization. Detailed descriptions of the criteria follow the Summary of GBP Criteria for Commercial and Institutional Buildings.

**The green building criteria for commercial and institutional buildings are organized under six categories. Use the following summary in conjunction with the detailed descriptions that follow.**

Criteria labelled with a “**M**” are mandatory and all projects must deliver on these criteria.

Criteria labelled with a “**R**” must report on delivery of that criteria by submitting GBP Form 2 at substantial completion of the building.

All remaining criteria are **recommended** and will be required for variance projects.

## Summary of Green Building Program Criteria

This summary applies to GBP Form 1 & 2 Reporting of Commercial & Institutional Buildings

**M** is mandatory for funded projects, **R** indicates reporting on GBP Form 2. All remaining criteria are recommended.

<b>1. Verification</b>	<p>Benefit: Protects owner investment, proves delivery of green building criteria and provides quality assurance.</p> <p>Evidence must be provided for:</p> <ul style="list-style-type: none"> <li>• energy efficient design ..... <b>M-R</b></li> <li>• environmental impacts ..... <b>M-R</b></li> <li>• building commissioning ..... <b>M-R</b></li> </ul>
<b>2. Planning &amp; Design</b>	<p>Benefit: Maximizes potential for occupant comfort, community infrastructure and financial/environmental sustainability.</p> <p>The design process will include:</p> <ul style="list-style-type: none"> <li>• integrated design process ..... <b>M-R</b></li> <li>• life cycle cost analysis</li> </ul> <p>The design and planning criteria will include:</p> <ul style="list-style-type: none"> <li>• recycling stations..... <b>M</b></li> <li>• active transportation facilities</li> <li>• natural light and views</li> <li>• low water landscape principles</li> <li>• indoor air quality standards ..... <b>M</b></li> <li>• potable water metering ..... <b>M</b></li> <li>• energy consumption metering ..... <b>M</b></li> <li>• access to community amenities</li> </ul>
<b>3. Adaption &amp; Resilience</b>	<p>Benefit: Reduces potential risks associated with climate change and energy supply volatility.</p> <p>The design team should identify and evaluate options for:</p> <ul style="list-style-type: none"> <li>• energy sources ..... <b>M-R</b></li> <li>• adaptability of systems</li> </ul>
<b>4. Sustainable Materials</b>	<p>Benefit: Augments occupant health, supports resource conservation and supports a green economy in Manitoba.</p> <p>Project team should prioritize use of:</p> <ul style="list-style-type: none"> <li>• low or zero emitting materials ..... <b>M</b></li> <li>• water efficient fixtures and fittings ..... <b>M-R</b></li> <li>• Manitoba manufactured products..... <b>M-R</b></li> <li>• products with recycled content ..... <b>M-R</b></li> <li>• salvaged building materials ..... <b>M-R</b></li> </ul>
<b>5. Responsible Construction</b>	<p>Benefit: Protects the community and the environment by using construction practices that avoid waste and pollution.</p> <p>Construction activities must include:</p> <ul style="list-style-type: none"> <li>• pollution prevention planning ..... <b>M</b></li> <li>• waste diversion..... <b>M-R</b></li> </ul>
<b>6. Transition to Occupancy</b>	<p>Benefit: Ensures persistence of green building investments during occupancy.</p> <p>Owners and operators should set policies and practices to:</p> <ul style="list-style-type: none"> <li>• purchase energy efficient electronics and appliances</li> <li>• purchase low emitting products and furnishings</li> <li>• use green cleaning methods</li> <li>• enforce a non-smoking environment ..... <b>M</b></li> <li>• participate in local recycling programs ..... <b>M</b></li> <li>• engage in energy and water use monitoring ... <b>M</b></li> </ul>

## Descriptions of criteria for Commercial and Institutional Buildings

All the green building criteria are achievable by Manitoba projects. However, building owners have options when a green building criteria is impracticable relative to the building's budget, size, complexity or function. The options, where available, are identified on GBP Form 1, Section C: Variance Options.

The green building criteria are labelled MANDATORY or RECOMMENDED. The building owner must review the criteria and confirm the intent to comply on GBP Form 1: Section B. It is the owner's responsibility to ensure the chosen criteria are added to the list of project requirements in the Owner's Project Requirements (OPR) document.

If criteria are not indicated, the government funding organization will request an opinion from the GBCT. If recommended by the GBCT, the government organization may schedule a meeting to review the owner's decision.

# 1. Verification

*Protects owner investment, proves delivery of green building criteria and provides quality assurance.*

## Energy Efficient Design

MANDATORY | REPORT REQUIRED

### **Confirm the building was designed to meet the energy efficiency target of the Manitoba Green Building Regulation, M.R. 38/2013.**

An energy efficient building provides lower utility bills and reduces greenhouse gas emissions.

For government funded projects (including projects owned or funded by government organizations), energy efficient design requirements are established by *The Climate Change and Emissions Reductions Act*, Green Building Regulation M.R. 38/2013. The regulation requires:

1. The building be designed to a targeted energy efficiency level of at least 33% more energy efficient than the same building designed to meet the minimum requirements of the Model National Energy Code for Buildings (1997).
2. The building's design must be proven to achieve the targeted level of energy efficiency by achieving Designation under the Manitoba Hydro Power Smart for Business, New Buildings Program.

The Manitoba Hydro Power Smart for Business New Buildings Program must give pre-approval before beginning any design work. Manitoba Hydro can determine if the project is eligible to participate in the Manitoba Hydro Power Smart for Business, New Buildings Program and qualify for Power Smart Designation.

## Selecting Compliance or Variance

The Manitoba Hydro Power Smart Designation satisfies the Green Building Regulation and the GBP. However, if Manitoba Hydro advises that the project does not qualify for Power Smart Designation, or if a building project cannot attain the energy efficiency design target then the owner must:

- request a Variance on GBP Form 1: Section B and complete Section C: Variance for Energy Efficient Design.
- return the completed GBP Form 1 to the government organization providing funding as early as possible during project planning and design, before construction.

- The GBCT will be consulted on the request. If the Director advises against the variance request, the government organization will arrange a meeting with the owner and the Director of GBCT to discuss alternatives.

### Summary Chart of Compliance and Variance Options for Energy Efficient Design

Situation	Design Tool or Prescriptive Program*	Verification Method*
<u>Compliance:</u> Select Compliance on GBP Form 1: Section B, Energy Efficient Design	Manitoba Hydro Power Smart for Business, New Buildings Program  Design Standards or  Custom Path	Achieve Designation as a Power Smart Building under the Manitoba Hydro Power Smart for Business, New Buildings Program.
<u>Variance: Option 1*:</u> Select Variance on GBP Form 1: Section B, Energy Efficient Design  Complete Form 1: Section C, Variance Energy Efficient Design.	Prepare an energy model based on the building design. (See GBP Guideline 3.2 Energy Modeling. )	Verify the energy model as part of LEED® certification.  Verify the energy model as part of Green Globes™ certification.  Verify the energy model using an experienced energy modeller from the list published by the Canada Green Building Council.
<u>Variance: Option 2*:</u> Select Variance on GBP Form 1: Section B, Energy Efficient Design  Complete Form 1: Section C, Variance Energy Efficient Design	Apply a prescriptive program such as but not limited to:  <i>ASHRAE Advanced Energy Design Guide.</i>  <i>Advanced Buildings™ Core Performance Guide, New Building Institute.</i>	Use a commissioning authority to verify the energy efficiency measures.

\*Other tools, prescriptive programs and verification methods will be considered when identified on Form 1: Section C, Variance Energy Efficient Design.

#### Guidance for Manitoba Hydro Power Smart for Business, New Building Program Designation

Receiving a Power Smart financial incentive for insulation or lighting is not the same as achieving Power Smart Designation. The Manitoba Hydro Power Smart for Business, New Building Program provides both incentive and Designation for energy efficient design and provides technical help to achieve it.

Projects can obtain Power Smart Designation in two ways:

**Prescriptive Path** requires the design team to incorporate the Manitoba Hydro Power Smart design standards into the building's design. If Manitoba Hydro recommends the use of the prescriptive path – the project will not require an energy model to receive the Power Smart designation.

**Custom Design Path** requires the use of integrated design process, building commissioning and energy modelling to confirm the proposed building's design meets the minimum energy efficiency requirements to obtain the Power Smart designation.

To apply:

As early as possible, contact Manitoba Hydro New Buildings Program and obtain the Power Smart New Buildings Program application requirements. **All new building projects must be pre-approved before any design work begins.** To contact the program:

Email: [powersmartforbusiness@hydro.mb.ca](mailto:powersmartforbusiness@hydro.mb.ca)

Phone: 204-360-3676 in Winnipeg ; or toll-free 1-888-624-9376

Link to the *Prescriptive Path Program Guide*

[www.hydro.mb.ca/your\\_business/new\\_building/prescriptive\\_building\\_path\\_guide.pdf](http://www.hydro.mb.ca/your_business/new_building/prescriptive_building_path_guide.pdf)

Link to the *Custom Path Program Guide*

[www.hydro.mb.ca/your\\_business/new\\_building/custom\\_design\\_path\\_guide.pdf](http://www.hydro.mb.ca/your_business/new_building/custom_design_path_guide.pdf)

**Tips:**

1. Don't forget to report results of the energy efficient design in GBP Form 2: Table at Substantial Completion.
2. Be sure the energy efficient design target and reporting are included early in the planning and budgeting for your project. The best method for including it is in the Owner's Project Requirements (OPR) document. This document should be generated in the pre-design stage (See Section 3.1 Green Building Project Co-ordination Guideline and Section 3.6 Owner's Project Requirement Guideline). The Building Commissioner should be able to guide the generation of this document; or contact Power Smart New Building program for a template.
3. Some projects (ex: major renovations) may not be eligible for Power Smart Designation. Confirm with Power Smart and consult with GBCT for alternative compliance requirements.
4. If you are participating in the LEED® certification program:
  - a. PSNBP Designation will NOT guarantee LEED® energy credits. Check with the LEED® program to confirm acceptable proof of compliance for LEED®.
  - b. The LEED® template for Energy and Atmosphere credits may be submitted in lieu of Form 2: Table 1 Energy Efficient Design.

**Environmental Impacts**

MANDATORY | REPORT REQUIRED

**Confirm the building's design and construction had minimal environmental impacts.**

Green buildings minimize the negative environmental impacts and enhance potential health and financial benefits. Investing in green building infrastructure is good for the economy, good for the environment, good for the owner and good for the community:

- It creates consumer demand for environmentally friendly construction materials and products like energy and water efficient equipment, recycled building materials and non-toxic finishes.
- It protects the environment during construction and occupancy.
- It incorporates efficiencies to reduce the demand for energy and water, reducing utility bills and saving money.
- It provides a safe and healthy environment for the occupants who use them.
- It helps the community:
  - protect the ecosystems
  - reduce the amount of waste going to landfill
  - reduce the demand for potable water and wastewater treatment
  - defers expansion plans for landfill, water and wastewater treatment facility
  - prevents expansion costs from being passed on to the residents of the community

When a significant investment is made for a green building it is important to ensure value has been provided.

The most reliable way to prove a new building is green is to establish the specific green criteria at the outset and have the project evaluated by a knowledgeable, independent party. An independent review provides building owners with a report card that confirms green building criteria/standards and practices have been met.

The recognized independent third party for government funded projects is the Canada Green Building Council. The Council evaluates green building projects using LEED® program criteria and awards a certification rating (certified, silver, gold or platinum) to the building owner. The certification supports the claim that a building is green.

Manitoba's GBP also recognizes other third party green building certification/rating systems but considers LEED® Silver certification to be the reference standard attainable for most Manitoba funded projects.

### Selecting Compliance or Variance

At minimum, a LEED® Silver certification for a provincially funded construction project satisfies the requirements of the GBP however, if the building owner and project team deems a LEED® Silver rating to be impractical, a variance request must be submitted to the government organization providing funding. This must be done as early as possible during project planning and design and before construction.

A variance request must describe why a LEED® Silver rating was impractical. It must also propose an alternate green building program or verification method to prove the building design and construction had minimal impacts on the environment. This decision should be reviewed with the project team and supported with a solid rationale.

Situations where a project may not be practicable for LEED® include:

- A LEED® pre-requisite cannot be attained.
- An extraordinary circumstance, event or decision makes pursuing LEED® certification at any level impractical.
- Building complexity or size (less than 1,860 m<sup>2</sup> or 20,000 ft<sup>2</sup>) makes it impractical to pursue LEED® Silver.

If LEED® Silver is not practical, the owner may propose one of the following as an alternate to LEED® Silver certification:

- LEED® certification at a lower level
- Green Globes™ Certification (three globes rating)
- a combination of Power Smart Designation and a narrative from the project team
- other certification system, process or standard

These situations and alternates are suggestions only. They do not guarantee acceptance of the variance request. A complete description of conditions warranting variance is highly recommended. If a variance option is selected, the government organization providing funding will consult with the director of GBCT to determine if it satisfies the intent of the GBP. If the director advises against the request, the government organization may arrange a meeting with the owner and the GBCT to discuss options.

### **Tips:**

1. Don't forget to report on LEED® certification in GBP Form 2: Table 2 at substantial completion. While certification will not likely be completed at that point, evidence of the application for certification will be required.
2. Commit to a green building certification program and target from the very start of the project and include it in the OPR. Clarity of direction is the most efficient path for project development and will save time and money.
3. Target all the equivalent certification program credits, measures and activities described in the Green Building Program criteria. Collectively, they will not be enough to achieve the LEED® Silver target. Additional measures must be selected that are appropriate to the individual project.
4. Be sure that project team members accept responsibility for documentation, reporting and providing regular updates. The updates must confirm that the documents for certification and the activities of the project team are on track. Documentation and performance deliverables for green building certification should be an integral part of the project. Delayed delivery of documentation can cost time and money and may jeopardize certification. To determine project milestones see the GBP **Guideline 3.1 Green Building Project Co-ordination** in the GBP manual.
5. If you are participating in the LEED® certification program, the GBP forms and reports are not a substitute for the documents required to support a LEED® credit. If a LEED® template has been prepared and it contains the information requested in a GBP form, the template may be substituted for a GBP report/table requested on GBP Form 2.

## **Building Commissioning**

MANDATORY | REPORT REQUIRED

### **Confirm the building was designed and constructed to the Owner's Project Requirements, calibrated to the specifications, and the building and staff are made ready for optimal building operation.**

Commissioning is a quality assurance process that ensures building systems are tested for proper function and that they interact according to the owner's requirements and contract documents.

The building commissioner is the owner's advocate and will help establish the OPR as the basis for ensuring the completed building meets the original goals. The commissioner's work is then to track and review the project as it develops from design and drawings to specifications, construction and occupancy.

Hire a building commissioner early in the pre-design stage to oversee all commissioning activities in accordance with ASHRAE 202-2013 Commissioning Process for Buildings and Systems or CSA Z320-11 Building Commissioning. The commissioner will have access to commissioning agents who test the relevant specialty systems and proceed based on established commissioning processes prescribed by ASHRAE or the CSA. More detailed information on building Commissioning is available in **Section 3.5 GBP – Guideline for Building Commissioning**.

**Tips:**

1. Don't forget to report on this criterion on GBP Form 2: Table 4 at substantial completion of the building.
2. If you are participating in the LEED® certification program, fundamental commissioning is a prerequisite. The GBP recommends a scope of commissioning that may also qualify for LEED® credit for enhanced commissioning.
3. Commissioning activities are required for Power Smart Designation in the Custom Path.
4. The extent of commissioning should be established by size and complexity of the project and the requirements of certification programs ex: LEED®, Green Globes™, Manitoba Hydro's Power Smart Program.
5. For more information see:
  - a. CSA Z320-11 Building Commissioning
  - b. ASHRAE 189.1, Standard for the Design of High Performance Buildings, 10.3.1.2 Building Project Commissioning
  - c. ASHRAE Guideline 0-2005, The Commissioning Process
  - d. ANSI/ASHRAE/IES Standard 202-2013, Commissioning Process for Buildings and Systems
  - e. The Manitoba Green Building Services and Products Directory lists building commissioners available in Manitoba

## 2. Planning & Design

*Maximizes the potential for occupant comfort, community infrastructure and financial/ environmental sustainability.*

### Integrated Design Process

MANDATORY | REPORT REQUIRED

#### **Use an integrated design approach and confirm that the appropriate project stakeholders are engaged.**

Integrated Design Process (IDP) is a collaborative process that emphasizes a holistic approach to building design. In IDP, the decision making process is multidisciplinary and includes key stakeholders, from conception to completion. Because of this diversity of participants, the goals and overall project objectives must be clearly established, early.

Integrated design process maximizes opportunities across stakeholder interests and design disciplines. It sets optimal building designs with higher occupant satisfaction and lower capital costs. In IDP, costs are mitigated by exposing the project to wider stakeholder input around the design table rather than on the construction site where changes and delays can be very expensive. An integrated design process also provides great returns when implemented from the onset of the project design. An example of a successful approach may be that extra expenditures for one system (ex: sun shading devices) may reduce costs in other systems (ex: capital and operating costs for a cooling or lighting system).

More detailed information is available in **Section 3.3 GBP – Guideline for Integrated Design Process.**

**Tips:**

1. Don't forget to report on the Integrated Design Process on GBP Form 2: Table 4 Integrated Design Process at substantial completion.
2. Include the people who will be operating the building, early. Their input at the design stage will impact the building operation and potential for savings for the long term.
3. For larger, more complex projects or stakeholder groups, hiring a facilitator may be warranted.

**Life Cycle Analysis**

RECOMMENDED

**Conduct life-cycle cost (LCC) analysis on major building systems.**

A LCC analysis evaluates design options that consider the initial investment for supply and installation of a system plus the cost of operation, debt service, expected disposal and other contributing factors. It can help to establish whether the long term savings of a more expensive, but more energy efficient, piece of equipment is worth the initial investment.

LCC should be performed to evaluate options before major design commitments are made. This practice does not have to apply to all systems. However, it should be considered where project size, performance and complexity will affect affordability and long term operations of the building. Typical systems for LCC analysis may include:

- heating and cooling systems
- renewable energy options
- building envelope systems (ex: windows, insulation, roofing)
- lighting systems

**Tips:**

1. Include LCC in your OPR and indicate your intent to comply on GBP Form 1: Section B.
2. A simple pay back approach, which does not adjust for inflation is not recommended.
3. LCC analysis should not be confused with life cycle assessment (LCA). LCA is a technique that accounts for the environmental impacts associated with a product from raw material extraction, manufacturing processes, transportation and disposal. It is not required for Life Cycle Cost analysis.
4. For more information on applying LCC to a building project:
  - The National Institute of Standards and Technology (NIST); Life-Cycle Cost Analysis
  - The Canada Mortgage and Housing Corporation (CMHC) Life-Cycle Costing Tool

## Recycling Stations

MANDATORY

### Provide permanent space for sorting and storage of recyclables.

Capturing material for recycling reduces demand on municipal landfills and promotes resource conservation as materials are recycled into new products. Planning for space and proper storage of materials helps to maximize collection of materials (ex: paper, cardboard, glass, metals, plastics and organic waste) by making it convenient for the building operators and occupants.

#### *Tips:*

1. Include recycling space in the Owner's Project Requirements and indicate your intent to comply on GBP Form 1: Section B.
2. If you are participating in the LEED® certification program, storage and collection of recyclables is a LEED® prerequisite (MR Prerequisite 1).
3. Recycling programs are available across Manitoba. For more information, go to Green Manitoba's, Recycling website: [greenmanitoba.ca/your-nearest-depot/](http://greenmanitoba.ca/your-nearest-depot/).

## Active Transportation Facilities

RECCOMENDED

### Provide active transportation (AT) facilities.

Provide active transportation to support healthy lifestyles and reduce GHG emissions from fossil fuel based transportation. Facilities for AT should include equipment storage and change facilities to adequately address needs of occupants and accommodate visitors. Bicycle storage and change rooms are typically provided. However, facilities for any active transportation mode may be considered where there is participation and AT infrastructure.

#### *Tips:*

1. Include active transportation facilities in your OPR and indicate intent your to comply on GBP Form 1: Section B.
2. If you are participating in LEED® certification, alternative transportation: bicycle storage and changing rooms (SS4.2) is recommended as a LEED® credit to target.

## Natural Light and Views

RECCOMENDED

### Provide natural lighting and views to the exterior from occupied spaces.

Maximize the use of natural lighting to save on energy costs, provide occupants with exposure to a full light spectrum and create a connection to the outdoors. Natural daylight and views increase productivity by reducing stress, depression and providing a sense of well-being.

#### *Tips:*

1. Include natural light and views in your OPR and indicate intent to comply on GBP Form 1: Section B.
2. If you are participating in LEED® certification, daylight and views (IEQ8.1 and IEQ8.2) are recommended as LEED® credits to target.

**Apply low water landscape principles and practices.**

Low water landscaping principles and practices save money and other resources by cutting maintenance costs. They also need little or no potable water for irrigation. Low water use landscaping techniques and practices are often referred to as “xeriscaping”.

Generally, site plans and landscape design should:

- include plants that need less water
- group plants with similar water needs together
- reduce use of lawn turf
- include features that trap snow and other moisture
- amend soils to improve water absorption
- include application of mulches to slow evaporation from the soil and prevent erosion
- use automated irrigation systems with a high efficiency label (ex: US EPA Water Sense label), if needed

**Tips:**

1. Include low water landscaping principles and practices in your OPR and indicate you intent to comply on GBP Form 1: Section B.
2. If you are participating in LEED® certification, water efficient landscaping (WEC1) is recommended as a LEED® credit to target.
3. For more information on applying low water landscaping principles and practices, consult a landscape architect or go to: [\*Creating the Prairie Xeriscape\* by Sara Williams](#).

**Design ventilation in accordance with ASHRAE 62.1-2007 (sections 4-7, Ventilation for Indoor Air Quality).**

Manitobans spend about 90% of their lives inside buildings. Enhanced indoor air quality requirements promote occupant comfort, health and well-being by providing better, fresher air in those buildings. Strategies for air quality also include limiting sources of indoor air contaminants, and controlling the introduction of outdoor air contaminants. The ASHRAE standard provides guidance to achieve this.

**Tips:**

1. Include the enhanced ventilation standard in your OPR. This measure is Mandatory criteria of the GBP.

## Potable Water Metering

MANDATORY

### **Install a permanent meter to measure potable water use for the building and grounds.**

Efficient potable water use saves money and reduces excessive sewer outputs. Installed water meters provide the most basic means to monitor and manage water use and reduce loads on the municipal water infrastructure and reduce the associated utility costs.

Additional meters or sub-meters for building processes or equipment that use larger quantities of water may be desirable for more precise management of water use. This is not a requirement of the GBP but may be valuable to the building operators.

#### **Tips:**

- 1. Include permanent water meters in the OPR. This measure is mandatory under of the GBP.*
- 2. If you are participating in LEED® certification, providing permanent water meters is only one part of the LEED® prerequisite requirements for Water Use Reduction (WEp1).*
- 3. Other resources and standards, include consulting your water utility service, or see the American Water Works Association Guideline (AWWA) M6 Water Meters – Selection, Installation, Testing and Maintenance.*

## Energy Metering

MANDATORY

### **Install a permanent meter to measure each energy source used in the building and grounds.**

Efficient energy use saves money and reduces GHG emissions. Installed energy meters provide the most basic means to monitor and manage energy use to and cut demands on the power infrastructure and associated utility costs.

Permanent meters should measure electricity, fossil fuel utilities (ex: natural gas, propane) and energy from central plants (ex: steam or chilled water). Thermal or mechanical energy from sources such as ground source heat (geothermal) or passive solar heat are not required to be metered by the GBP. Their benefits should be reflected in the overall reduced energy consumption.

Owners should consider energy sub-metering for ongoing energy management benefits. However, this is not a mandatory requirement of the GBP.

#### **Tips:**

- 1. Include permanent energy meters in the OPR. This measure is mandatory under the GBP.*
- 2. If you are participating in LEED® certification, providing permanent energy meters is only one part of the LEED® prerequisite requirements for Minimum Energy Performance (EAp2). Also, measurement and verification (EAc5) could be considered if sub-metering energy sources are being considered.*
- 3. For more information on installing energy meters and sub-metering, consult your utility provider*

**Locate the building close to community amenities.**

Locating buildings close to established community amenities saves money and resources by using existing municipal and utility infrastructure. It encourages healthy lifestyle choices by making active or public transportation more convenient and reduces development pressure on undeveloped or natural sites. Examples of community amenities include:

banks	place of worship	groceries	day care centres	public transit
laundries	libraries	cleaners	fitness facilities	shops
schools	entertainment	parks	restaurants	

**Tips:**

1. Not all projects will have the opportunity to choose a building site. Apply this criteria where there's opportunity to choose from different building sites.
2. Include access to community amenities in your OPR and indicate your intent to comply on GBP Form 1: Section B.
3. If you are participating in LEED® certification, development density and community connectivity (SSc2) and alternative transportation (SSc4) are recommended as a LEED® credits to target.

### 3. Adaptation & Resilience

*Reduces potential risks associated with climate change and energy supply volatility.*

**Evaluate the use of renewable energy sources.**

Using renewable energy sources for buildings can reduce operating costs, GHG emissions. It also supports a green energy industry in Manitoba. Examples of renewable energy options include:

- solar (electric, thermal, passive)
- biomass
- ground source heat
- hydro (electricity)

Renewable energy sources and systems should be prioritized for space and domestic water heating, ventilation, lighting, and other major building loads (not including temporary, back-up or emergency power). However, a practical, cost effective life-cycle approach is recommended. Using a renewable energy source is not required if a renewable energy source was not selected, identify on GBP Form 2, Table 5: Energy Source the renewable energy source(s) that were considered.

Use LCC analysis to compare the long term cost implications of renewable energy sources against fossil fuel energy sources (natural gas, propane). If renewable sources are not found to be cost-effective, particularly for the base heating loads, then only high efficiency fossil fuel based systems may be considered.

Although electricity in Manitoba is a renewable hydro electric energy source, avoid using electric resistance systems (conventional baseboard heaters) as the primary heating source for a building.

**Tips:**

1. Don't forget to report on the use of Energy Sources on GBP Form 2: Table 5 to identify primary and secondary energy sources as well as any other energy sources that were considered. GBP Form 2 is submitted at substantial completion of the building.
2. Include consideration for renewable energy options in the OPR. This measure is a Mandatory criterion of the GBP.
3. If you are participating in LEED® certification:
  - a. Note that the LEED® credit for On-Site Renewable Energy (EAc2) recognizes renewable energy as it applies to electricity generation only, not heat. The GBP recognizes renewable energy providing heat and cooling such as passive solar thermal technology, solar walls or ground source heat pumps.
  - b. The LEED® template for Optimizing Energy Performance (EAc1) may be submitted in lieu of GBP Form 2, Table 5 provided that a narrative describing the other considered energy sources is also included.
4. Consider hybrid systems and combinations of energy sources to provide flexibility and options for energy management, redundancy during power outages or to better serve intermittent loads such as ventilation.
5. For more information on renewable energy sources and potential funding opportunities in Manitoba see:

*Manitoba Green Building and Energy Efficiency, Energy Division, Manitoba Innovation Energy and Mines and the Manitoba Hydro Power Smart Ground Source Heat Pump incentive.*

**Adaptability of Systems**

RECOMMENDED

**Design the main heating system to accommodate integration or conversion to other energy sources in the future.**

A flexible central heating system increases building longevity. It allows building systems to convert to other energy sources should fuel pricing or fuel availability change.

Design systems to accept more than one energy source or require that the heating system be easily converted. A hot water radiant heating system for example can be heated by a gas, electric or bio mass boiler.

**Tips:**

1. Include energy source flexibility for the heating system in your OPR and indicate intent to comply on GBP Form 1: Section B.

## 4. Sustainable Materials

*Augments occupant health supports resource conservation and supports green economy in Manitoba.*

### Low or Zero Emitting Materials

MANDATORY

#### Select low-emitting finishes, products and materials.

Products and materials can emit toxic chemicals harmful to humans and accumulate in the indoor air. Volatile organic compounds (VOC) and urea formaldehyde are the most common chemicals emitted from manufactured products and materials. At one end of the scale, these chemicals can be simple irritants to occupants or they can cause allergy problems. At the other end of the scale, they can be carcinogenic and are linked to numerous cancers.

Permanently installed products and materials for use on the interior of the building should have low or no VOC content and no added urea formaldehyde resin. Specifying products that carry a third-party certification label can help achieve desired outcomes:

- Ecologo
- Green Seal
- Standard Carpet and Rug Institute Green Label
- Florscore Program

These above specifications should focus on the following materials:

- adhesives
- sealants
- paints
- flooring systems
- ceiling systems
- composite wood and agrifiber products (ex: particle board, plywood, medium density fiberboard (MDF), door cores)

#### **Tips:**

1. Include a requirement for low-emitting finishes, products and materials in your OPR and indicate intent to comply on GBP Form 1: Section B.
2. If you are participating in LEED® certification, low-emitting materials (IEQ c4.1 to 4.4) are recommended as LEED® credits to target.

**Select water fixtures and fittings in accordance with, or more efficient than, ASHRAE 189.1 (2011) Standard for The Design of High Performance Buildings (where ASHRAE requirements exceed Manitoba Plumbing Code).**

Efficient water use can reduce building operating costs and municipal costs for wastewater infrastructure. Reducing wastewater also reduces risk of raw sewage spills into rivers and lakes.

Specify water use efficiency requirements and ensure they are accommodated in the design of the whole building plumbing system and operational planning.

Use caution when installing water efficient fixtures in existing building systems. Higher efficiency fixtures, fittings and appliances use and eject less water and may have implications on the plumbing infrastructure connected to them.

**Tips:**

1. *Include a requirement for water efficient fixtures and fittings in your OPR. This measure is mandatory under the GBP.*
2. *Report which water efficient fixtures and fittings were installed on GBP Form 2: Table 6. GBP Form 2 is submitted at substantial completion of the building.*
3. *If you are participating in LEED® certification, water use reduction (WE p1) is a LEED® prerequisite **and** a mandatory criterion for the GBP. Water Use Reduction (WE c3) is recommended as a LEED® credit to target. The LEED® template for Water Use Reduction may be submitted in lieu of completing the GBP Form 2:Table 6 Water Efficient Fixtures and Fittings.*
4. *For more information,:*
  - *ASHRAE 189.1 (2011) Standard for The Design of High Performance Buildings, section 6.3.2 Building Water Use Reduction*
  - *Manitoba Plumbing Code*
  - *US EPA WaterSense label*

**Select products manufactured in Manitoba.**

Selecting products manufactured regionally reduces the GHG emissions for transporting materials to the project site and supports the development of a green economy in Manitoba.

Manitoba building products should be selected where functionally appropriate and cost effective.

**Tips:**

1. *Include consideration for Manitoba building products in your OPR. This measure is mandatory under the GBP.*
2. *Report which Manitoba building products were used on GBP Form 2: Table 7 Products Manufactured in Manitoba. GBP Form 2 is submitted at substantial completion of the building.*
3. *If you are participating in LEED® certification, regional materials (MR c5) is recommended as a LEED® credit to target. The LEED® template for this credit may be attached to GBP Form 2 in lieu of completing Table 7, Products Manufactured in Manitoba.*
4. *For more information see: Manitoba green building products, product distributors and service providers listed on the Manitoba Green Building Products and Services Directory website: [greenbuildingproductsmb.ca/home/](http://greenbuildingproductsmb.ca/home/).*

**Specify products with recycled content.**

Using building products with recycled content conserves resources, reduces demand on landfill sites and supports development of recycling as part of a green economy in Manitoba.

Building products with recycled content should be selected where functionally appropriate and cost effective.

**Tips:**

1. *Include consideration for building products with recycled content in your OPR. This measure is mandatory under the GBP.*
2. *Report which building products were used on GBP Form 2: Table 8. GBP Form 2 is submitted at substantial completion of the building.*
3. *If you are participating in LEED® certification, recycled content (MR c4) is recommended as a LEED® credit to target. The LEED® template for this credit may be attached to GBP Form 2 in lieu of completing Table 8, Products with Recycled Content.*
4. *Building products with recycled content that are available in Manitoba are listed on the Manitoba Green Building Products and Services Directory website.*

**Consider reusing existing buildings and salvaged building components.**

Selecting salvaged building components and materials for use in a new building can save cost, conserve valuable virgin resources, reduce demand on landfill sites and support development of building salvage as part of a green economy in Manitoba.

Opportunities for salvaged building components and materials should be identified early in the design process. They should be included for refurbishment and installation in a new building where functionally appropriate and cost effective.

**Tips:**

1. Include consideration for salvaged building products with recycled content in your OPR. This measure is mandatory under the GBP.
2. Report what salvaged building products were used on GBP Form 2: Table 9, Salvaged Building Materials. GBP Form 2 is submitted at substantial completion of the building. Note that where no salvaged product or material has been used, a report of “Not Applicable” is acceptable.
3. If you are participating in LEED® certification, materials reuse (MR c1) is recommended as a LEED® credit to target. The LEED® template for this credit may be attached to GBP Form 2 in lieu of completing Table 9, Salvaged Building Materials.
4. For more information see: *Building product salvage companies in Manitoba* listed on the *Manitoba Green Building Products and Services Directory* website: [greenbuildingproductsmb.ca/home/](http://greenbuildingproductsmb.ca/home/)

## 5. Responsible Construction

*Protects the community and the environment by using construction practices that avoid waste and pollution.*

### Pollution Prevention & Planning

MANDATORY

**Require plans for Erosion and Sedimentation Control and Indoor Air Quality Management during construction.**

Preventing pollution and contamination during the construction process reduces negative environmental and human health impacts during construction. It protects natural waterways from air and water-borne contaminants, reduces potential respiratory irritation and enhances health and comfort during and after construction.

A requirement for pollution and contamination prevention plans should be specified in construction documents. Ensure the plans are implemented during construction. When oversights to the plan occur, they should be noted and corrected.

For more information, see GBP – **Guideline 3.4 Pollution and Contamination Prevention Planning.**

**Tips:**

1. *Include requirements for Erosion and Sedimentation Control and Indoor Air Quality Management Plans in your OPR. These plans are Mandatory under the GBP.*
2. *If you are participating in LEED® certification, construction activity pollution prevention (SS p1) is a prerequisite of LEED® and a mandatory requirement of the GBP. Construction IAQ Management Plan: During Construction (IEQ c3.1) is mandatory under the GBP and recommended as a LEED® credit to target.*

**Waste Diversion**

MANDATORY | REPORT REQUIRED

**Divert construction and demolition waste from landfills.**

A large percentage of waste from construction and demolition can be reused or recycled. Doing so may reduce costs and will also conserve valuable virgin resources, reduce demand on landfill sites and support development of salvage and recycling business in Manitoba.

Require that a construction waste management plan is developed and implemented. The materials should be separated onsite to be recycled or reused.

The materials may include but are not limited to:

- wood
- concrete/brick/stone/asphalt
- metals
- drywall
- paper
- plastic

See GBP – **Guideline 3.4 Pollution Prevention Planning.**

**Tips:**

1. *Include construction and demolition waste diversion in your OPR. This measure is mandatory under the GBP.*
2. *Report what was diverted on GBP Form 2: Table 10, Waste Diversion. GBP Form 2 is submitted at substantial completion of the building.*
3. *If you are participating in LEED® certification, construction waste management (MR c2) is mandatory under the GBP and recommended as a LEED® credit to target. The LEED® template associated with this credit may be attached to GBP Form 2 in lieu of completing Table 10, Waste Diversion and MUST BE reported by weight, not volume.*

## 6. Transition to Occupancy

*Ensure persistence of green building investments during occupancy.*

### Energy Efficient Electronics and Appliances

RECOMMENDED

#### **Purchase energy efficient electronics and appliances.**

The first step of purchasing equipment is to evaluate if the purchase is even necessary. If it is, adopt a policy or business practice to purchase energy efficient electronics and appliances. They can prolong the benefits of green building investments, save energy and water costs, and help keep the building infrastructure running at peak performance.

Plug in loads comprise up to 15% of a building's total electrical energy consumption. It's advantageous to require energy and water efficiency for original or replacement equipment. The more energy efficient a product is, the less it costs to operate.

Specify Energy Star and/or WaterSense qualified products to ensure the purchased equipment is efficient.

#### **Tips:**

1. Ensure the purchasing policy is written and available to all building staff and occupants who may be involved in buying this equipment
2. More information is available online at Sustainable Procurement in Manitoba Website under the Goods and Services tab: [www.manitobasustainableprocurement.com/](http://www.manitobasustainableprocurement.com/).

### Low Emitting Products and Furnishings

RECOMMENDED

#### **Purchase low emitting products and furnishings when doing building maintenance or renovation.**

Buying low emitting products during occupancy and operation of a green building preserves indoor air quality and protects the health and well-being of building occupants.

Adopt practices or policies for purchase of low emitting products (ex: paints, solvents, flooring, cleaning products, furniture) during building maintenance or renovations throughout the building's occupied life

For more information, see the criteria for **Low or Zero Emitting Materials** under Sustainable Materials.

#### **Tips:**

1. Ensure that the purchasing policy is written and available to all building staff and occupants who may be involved in buying this equipment.
2. More information is available on-line at Sustainable Procurement in Manitoba website: [www.manitobasustainableprocurement.com/](http://www.manitobasustainableprocurement.com/).

## Green Cleaning Methods

RECOMMENDED

### **Require green cleaning methods, equipment and products.**

Green cleaning methods, equipment and products have positive environmental attributes (ex: biodegradability, low toxicity, reduced packaging, low life cycle energy use). Green cleaning can:

- minimize harmful effects on custodial workers and building occupants
- improve indoor air quality
- reduce water and ambient air pollution

Adopt the most current requirements for cleaning services described in the **Sustainable Procurement in Manitoba** website: [www.manitobasustainableprocurement.com/](http://www.manitobasustainableprocurement.com/).

#### **Tips:**

1. *Ensure that a green cleaning policy, manual or procedure is written and available to all building staff and occupants who may be involved in buying or providing cleaning services,*

## Non-Smoking Environment

MANDATORY

### **Implement a non-smoking policy in and around the building.**

A non-smoking environment protects occupants from the negative effects of tobacco smoke and second hand smoke.

Smoking in public buildings is already prohibited in Manitoba. Owners should refer to *The Non-Smokers Health Protection Act* and, supporting regulations to determine if the building is exempted from having a non-smoking policy by regulation. Owners should post non-smoking signs and enforce compliance with provincial legislation.

#### **Tips:**

1. *Include requirements for a Non-Smoking environment in your OPR under the GBP and by legislation.*
2. *If you are participating in LEED® certification, environmental tobacco smoke control (IEQ p2) is a prerequisite of LEED® **and** a mandatory requirement under the Green Building Program.*
3. *For more information, see The Non-Smokers Health Protection Act, Manitoba.*

## Recycling Program

MANDATORY

### **Participate in local recycling programs.**

Recycling material from everyday occupancy of a building can save costs. Conserves valuable virgin resources, reduces demand on landfill sites and support development of recycling as part of a green economy in Manitoba.

Promote and support local recycling programs. Use the designated areas in the building for separation, collection and storage of recyclable materials (ex: paper, corrugated cardboard, glass, metals, plastics and organic wastes).

#### **Tips:**

1. *If you are participating in LEED® certification, storage and collection of recyclables (MR p1) is a prerequisite of LEED® and a mandatory requirement of the GBP.*
2. *For more information about recycling in Manitoba, see:*
  - a. *The Green Manitoba website, “Recycling” tab at [greenmanitoba.ca/splash/](http://greenmanitoba.ca/splash/).*
  - b. *Sustainable Procurement in Manitoba website, “Recycling Services” under the Goods and Services, Waste Management tab <http://www.manitobasustainableprocurement.com/>.*

## Energy and Water Use Tracking

MANDATORY

### **Monitor building energy and water use during occupancy to ensure building is operating optimally.**

On-going monitoring of energy and water use can save money, energy and water, prevent premature deterioration of building equipment and help resolve obvious inefficiencies and waste.

Monitor energy and water use closely using consumption data, not just utility bills on a regular basis.

Generate a utility report at least annually comparing year-to-year building energy and water use to identify trends in building performance and possible savings opportunities

Energy and water consumption monitoring is the basis for effective building and energy management and should be combined with periodic building recommissioning.

**Sample report for energy and water use:**

<b>Building Name and Address</b>				
BUILDING AREA XX,XXX (m <sup>2</sup> )	YEAR 1	YEAR 2	YEAR 3	YEAR 4
ENERGY				
Electricity	Kwh/m <sup>2</sup>			
Natural Gas	eKwh/m <sup>2</sup>			
WATER				
Water	L or m <sup>3</sup>			

**Sample report of energy and water cost:**

<b>Building Name and Address</b>				
BUILDING AREA XX,XXX (m <sup>2</sup> )	YEAR 1 \$/ m <sup>2</sup>	YEAR 2 \$/ m <sup>2</sup>	YEAR 3 \$/ m <sup>2</sup>	YEAR 4 \$/ m <sup>2</sup>
ENERGY				
Electricity				
Natural Gas				
WATER				
Water				

**Tips:**

1. National Resources Canada offers the free, on-line tool Energy Star /Portfolio Manager for basic energy use tracking and energy performance benchmarking. An Energy Star rating is available for some building types – check the National Resources Canada website at: [www.nrcan.gc.ca/energy/efficiency/buildings/energy-benchmarking/](http://www.nrcan.gc.ca/energy/efficiency/buildings/energy-benchmarking/).
2. Manitoba Hydro can provide basic annual electricity and natural gas consumption reports directly. Contact your Manitoba Hydro account representative for details.
3. Consider sharing the building energy and water consumption with the community to increase awareness of the potential for conservation.

Buildings that receive funding from government (departments, Crown corporations and agencies) are encouraged to enroll in a **free** online energy and water management program (Energy Star Portfolio Manager) supported by Natural Resources Canada. The program calculates building performance attributes (ex: water, energy and greenhouse gas emissions). If your organization would like a customized presentation or webinar, or you would like to speak to someone about this valuable tool, email [info.services@nrcan-rncan.gc.ca](mailto:info.services@nrcan-rncan.gc.ca). Or [greenbuilding@gov.mb.ca](mailto:greenbuilding@gov.mb.ca). Free online training is available at: <http://www.energystar.gov/buildings/>.

## 4.3

### Reporting & Forms

Manitoba's Green Building Policy applies to building projects funded by government organizations.

Government organizations are required to:

- ensure the green building program criteria is incorporated into the building project
- report using GBP Form 1 and GBP Form 2
- collect GBP forms and send them to Green Building Co-ordination Team (GBCT) to demonstrate compliance with the Manitoba Green Building Policy.

The forms for the Manitoba Green Building Program (GBP) were designed for two purposes:

1. Provide reporting and compliance information to the government of Manitoba.
2. Provide a tool to help in project management:
  - a. identifies green building requirements
  - b. commits the project team to deliver the requirements
  - c. assigns responsible parties on the project team with specific deliverables

#### Definitions:

**Government Reporting Entity (GRE):** This refers to organizations government uses to deliver its goods and services. It includes core government and crown corporations, government businesses and public sector organizations (ex: regional health authorities, school divisions, universities,, colleges. For the list of government organizations included in the GRE see the Green Building Program Manual, Section 2.2 or go to the Province of Manitoba – Annual Report, Volume 1, Summary Financial Statements, Schedule 8.

**Funder:** This is a government organization included in the GRE that provides funding (in whole or in part) for a building project.

**Funder's Contact:** This is the person who manages the funding for a building project/contribution agreement or contract. The person may be a project officer, funding officer, project manager or financial officer representing the funder.

**Funder's GBP Liaison:** This is the person responsible for the government organization's corporate compliance with Green Building Policy and Green Building Regulation appointed by a deputy minister or equivalent.

**Building Owners:** This is the owner of the building, or the funding recipient.

## Instructions for Funder (Funder's contact and GBP liaison)

If you need assistance completing the forms, refer to the Green Building Program (GBP) manual at <http://www.gov.mb.ca/mit/greenbuilding/index.html> or email questions to the GBCT at [greenbuilding@gov.mb.ca](mailto:greenbuilding@gov.mb.ca)

- PDF fillable versions of GBP Form 1 and Form 2 PDF can be downloaded at: [www.gov.mb.ca/mit/greenbuilding/index.html](http://www.gov.mb.ca/mit/greenbuilding/index.html)
- Transmittal Forms 1 & 2 are available from the funder's GBP liaison or from the GBCT.

### Funder's contact:

1. Ensure GBP requirements are communicated to building owners and funding recipients.
2. Provide building owner or funding recipient with GBP Form 1 and GBP Form 2.
3. Collect GBP Form 1 before completion of schematic design phase and prior to the start of construction.
4. Review GBP Form 1, ensure Sections A and B (and Section C if applicable) are completed. The mandatory criteria in Section B must be acknowledged (boxes checked). If not, consult GBCT to determine if follow-up actions are required.
5. Complete the top section of the Transmittal for GBP Form 1.
6. Provide Transmittal and GBP Form 1 to the funder's GBP liaison.
7. Collect GBP Form 2 at substantial completion of building, before the final release of government funds or grant funds.
8. Review GBP Form 2 to ensure tables are completed and supporting templates and letters are attached. Call GBCT if questions arise.
9. Complete the top section of the Transmittal for GBP Form 2.
10. Provide Transmittal, GBP Form 2, and attachments to the funder's GBP liaison.

### Funder's GBP liaison:

1. Review GBP Form 1 and complete the liaison section of the Transmittal for GBP Form 1.
2. Send Transmittal and GBP Form 1 to the GBCT. Keep copies for policy compliance records.
3. Review GBP Form 2 and attachments. Complete the Liaison section of the Transmittal for GBP Form 2.
4. Send Transmittal, attachments and GBP Form 2 to the GBCT. Keep copies as record of policy compliance.

## Instructions for building owner/funding recipient

If you need assistance completing the forms, refer to the Green Building Program manual at <http://www.gov.mb.ca/mit/greenbuilding/index.html> or email questions to the GBCT at [greenbuilding@gov.mb.ca](mailto:greenbuilding@gov.mb.ca).

### Building owner/funding recipient:

1. Obtain GBP Form 1 and GBP Form 2 from the funder's contact.
2. Review each section of GBP Form 1 & GBP Form 2.

#### Prior to completion of schematic design phase and prior to construction

3. Complete and return Form 1 to the Funder's Contact.
  - Complete Section A: Building Information.
  - Complete Section B: *Review each criteria and mark with a " ✓ " the ones selected for the funded building project. Some criteria have reporting requirements on GBP Form 2.*
  - Complete and sign the Acknowledgement by Owner.
  - Complete Section C only if a Variance was indicated in Section B.

If a Variance is requested the funder must consult with the GBCT for a decision. GBCT's decision is relevant and could affect a condition of the funding agreement. Wait for GBCT's opinion in the event their decision impacts project planning or cost.

- Review GBP Form 2 when completing GBP Form 1 and assign reporting responsibilities to the members of the project team.
4. Review the requirements of the Green Building Program regularly with the project team. Ensure the project team collects the information required for GBP Form 2.

#### At substantial completion

5. Complete and return GBP Form 2 with attachments to the funder's contact. The final disbursement of funds may be withheld until GBP Form 2 is completed to the funder's satisfaction.

Copies of GBP Forms are presented here for information only. PDF versions of each form can be downloaded from: [www.gov.mb.ca/mit/greenbuilding/index.html](http://www.gov.mb.ca/mit/greenbuilding/index.html)



## GBP Form 1: Project Information

Manitoba's Green Building Program applies to all new building construction, major renovation and building addition projects owned or funded by a provincial government organization. Government organizations require:

- The Green Building Program (GBP) criteria to be incorporated into the project, and
- Project reporting using GBP Forms 1 & 2.

### INSTRUCTIONS TO BUILDING OWNER<sup>1</sup>

Complete the GBP Forms and return to FUNDER<sup>2</sup>:

- 1) GBP Form 1 must be returned before completion of schematic design, prior to construction.

GBP Form 1 has three sections. Complete Section A and B. Complete Section C ONLY if a VARIANCE is indicated in Section B.

- Section A: Building Information**
- Section B: Green Building Program Criteria**
- Section C: Variance Options**

- 2) GBP Form 2 must be returned at substantial completion of the building.

Descriptions of the program criteria are provided in the GBP Manual at <http://www.gov.mb.ca/mit/greenbuilding/index.html>

### Section A: Building Information

<b>Project Name:</b> <input type="text"/>	
<b>Project Address:</b>	
Street: <input type="text"/>	
City: <input type="text"/>	Postal Code: <input type="text"/>
<b>Building Type:</b>	
<input type="checkbox"/> Office <input type="checkbox"/> School <input type="checkbox"/> Hospital <input type="checkbox"/> Recreation Centre <input type="checkbox"/> Community Hall <input type="checkbox"/> Arena	
<input type="checkbox"/> Other (Identify) <input type="text"/>	
<b>Project Type:</b>	
<input type="checkbox"/> New Construction <input type="checkbox"/> Major Renovation <input type="checkbox"/> Addition/Enlargement <input type="checkbox"/> Lease	
<b>Estimated Building Area</b> (total floor area <sup>3</sup> ): <input type="text"/> m <sup>2</sup>	
<b>Estimated construction cost<sup>4</sup>:</b> \$ <input type="text"/>	
<b>Estimated total capital cost<sup>5</sup>:</b> \$ <input type="text"/>	
<b>Property Legal Description:</b> <input type="text"/>	
<b>Estimated Construction Start</b> MM/YYYY	<b>Estimated Occupancy</b> MM/YYYY
<b>Building Owner:</b>	
Organization/Other: <input type="text"/>	

<sup>1</sup>**BUILDING OWNER:** The legal owner of the property. May be an individual or an organization. To complete these forms, the owner may assign a delegate.

<sup>2</sup>**FUNDER:** Government organization that provides funds for the project.

<sup>3</sup>**Total Floor Area:** Total of each horizontal floor area where each floor above grade is measured to the outside face of the exterior wall. Where a floor is partially below grade (e.g. "walk out basement") and area is to be occupied, floor area is to be included in total. Where exterior envelope is complete but interior is left unfinished for future occupancy, area is to be included in total.

<sup>4</sup>**Construction Cost:** The direct costs related to construction. Does not include design fees or land. Construction costs include materials, labour and installation.

<sup>5</sup>**Capital Cost:** Includes construction costs, design and other professional fees plus other costs related to the project.

## Section B: Green Building Criteria

All the green building criteria identified in Section B are achievable by Manitoba projects however; the BUILDING OWNER has options if the green building criteria are impracticable relative to the building's budget, size, complexity or function. Review Green Building Program Manual Section 4 for guidance.

The following program criteria are labeled MANDATORY or RECOMMENDED. Review the criteria and mark with a "✓" the ones selected for the building project. Some criteria have reporting requirements on GBP Form 2. Review GBP Form 2 and assign reporting responsibilities before submitting this form to the FUNDER.

NOTE: The FUNDER will consult with Manitoba's Green Building Coordination Team (GBCT) for an opinion if a MANDATORY criteria is not selected or a VARIANCE is requested. The FUNDER will convey the opinion to the OWNER and convene a meeting if required.

### Verification

Protects the owner's investment, proves delivery of green building criteria and provides quality assurance. Check the box next to each criteria that will be included in the project.

<p>Confirm the building design meets the energy efficiency target of the Manitoba Green Building Regulation M.R. 38/2013.</p> <p>Select either compliance or variance option:</p> <p><input type="checkbox"/> <b>Compliance:</b> Project will obtain the Manitoba Hydro Power Smart Designation to satisfy requirement of the Green Building Regulation, M.R. 38/2013.</p> <p><input type="checkbox"/> <b>Variance:</b> Project cannot practicably obtain the Manitoba Hydro Power Smart Designation therefore an alternate method of verification is proposed. <b>Complete Section C: Variance for Energy Efficient Design.</b></p>	<p><b>Mandatory</b> <input type="checkbox"/></p> <p>Reporting Required GBP Form 2, Table 1</p>
<p>Confirm the building's design and construction had minimal environmental impacts.</p> <p>Select either compliance or variance option:</p> <p><input type="checkbox"/> <b>Compliance:</b> Project will obtain a minimum of LEED® Silver (Leadership in Energy and Environmental Design) building certification.</p> <p><input type="checkbox"/> <b>Variance:</b> Project cannot practicably obtain LEED® Silver and therefore an alternate method of verification is proposed. <b>Complete Section C: Variance for Environmental Measures.</b></p>	<p><b>Mandatory</b> <input type="checkbox"/></p> <p>Reporting Required GBP Form 2, Table 2</p>
<p>Commission the building. Confirm building was designed and constructed to the Owner's Project Requirements (OPR), calibrated to the specifications, and building staff received training and system manuals.</p> <p>Select either compliance or variance option:</p> <p><input type="checkbox"/> <b>Compliance:</b> A commissioning professional independent of the project's design or construction firm will conduct building commissioning.</p> <p><input type="checkbox"/> <b>Variance:</b> Commissioning services will be provided by the design or construction firm involved with the project.</p>	<p><b>Mandatory</b> <input type="checkbox"/></p> <p>Reporting Required GBP Form 2, Table 3</p>
<h3>Planning &amp; Design</h3> <p>Maximizes potential for occupant comfort, community infrastructure and financial/environmental sustainability. Check the box next to each criteria that will be included in the project.</p>	
Utilize an integrated design approach and confirm the appropriate project stakeholders are engaged.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 4
Conduct life cycle cost analysis on major building systems.	<b>Recommended</b> <input type="checkbox"/>
Provide permanent space for sorting and storage of recyclables.	<b>Mandatory</b> <input type="checkbox"/>
Provide active transportation facilities (ex: bicycle storage and change rooms).	<b>Recommended</b> <input type="checkbox"/>
Provide natural light and views to the exterior from occupied spaces.	<b>Recommended</b> <input type="checkbox"/>
Apply low water landscaping principles and practices.	<b>Recommended</b> <input type="checkbox"/>
Design ventilation in accordance with ASHRAE 62.1-2007 (sections 4-7, Ventilation for Indoor Air Quality).	<b>Mandatory</b> <input type="checkbox"/>
Install a permanent meter to measure potable water use for the building and grounds.	<b>Mandatory</b> <input type="checkbox"/>
Install a permanent meter to measure each energy source used in the building and grounds.	<b>Mandatory</b> <input type="checkbox"/>
Locate the building close to community amenities.	<b>Recommended</b> <input type="checkbox"/>

<b>Adaptation &amp; Resilience</b>	
<i>Reduces potential risks associated with climate change and energy supply volatility. Check the box next to each criteria that will be included in the project.</i>	
Evaluate the use of renewable energy sources.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 5
Design the main heating system to accommodate integration or conversion to other energy sources in the future.	<b>Recommended</b> <input type="checkbox"/>
<b>Sustainable Materials</b>	
<i>Augments occupant health, supports resource conservation and supports a green economy in Manitoba. Check the box next to each criteria that will be included in the project.</i>	
Select low-emitting finishes, furnishings, products and materials.	<b>Mandatory</b> <input type="checkbox"/>
Select water efficient fixtures and fittings in accordance with, or more efficient than, ASHRAE 189.1 (2011) Standard for the Design of High Performance Buildings (where ASHRAE requirements exceed Manitoba Plumbing Code).	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 6
Select products manufactured in Manitoba.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 7
Specify products with recycled content.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2 Table 8
Consider reusing existing buildings and salvaged building components.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 9
<b>Responsible Construction</b>	
<i>Protects community and the environment by using construction practices that avoid waste and pollution. Check the box next to each criteria that will be included in the project.</i>	
Require plans for Erosion and Sedimentation Control and Indoor Air Quality Management during construction.	<b>Mandatory</b> <input type="checkbox"/>
Divert construction and demolition waste from landfills.	<b>Mandatory</b> <input type="checkbox"/> Reporting Required GBP Form 2, Table 10
<b>Transition to Occupancy</b>	
<i>Ensures persistence of green building investments during occupancy. Check the box next to each criteria that will be included in the project.</i>	
Purchase energy efficient electronics & appliances.	<b>Recommended</b> <input type="checkbox"/>
Purchase low emitting products and furnishings when doing building maintenance or renovation.	<b>Recommended</b> <input type="checkbox"/>
Require green cleaning methods, equipment and products.	<b>Recommended</b> <input type="checkbox"/>
Implement a non-smoking policy in and around the building.	<b>Mandatory</b> <input type="checkbox"/>
Participate in local recycling programs.	<b>Mandatory</b> <input type="checkbox"/>
Monitor building energy and water use during occupancy to ensure building is operating optimally.	<b>Mandatory</b> <input type="checkbox"/>
<b>Acknowledgment by Building Owner</b>	
<b>Check the boxes that apply and sign below.</b>	
<input type="checkbox"/> I will convey the selected criteria in Section B to the project team.	
<input type="checkbox"/> I am proposing a VARIANCE and Section C is attached. (check if applicable)	
<input type="checkbox"/> I am providing GBP Form 1 to the FUNDER before completion of schematic design, prior to construction.	
<input type="checkbox"/> I will provide GBP Form 2 and supporting documentation to the FUNDER at substantial completion of the building.	
<b>Print Name:</b> _____	
_____ SIGNATURE OF BUILDING OWNER	_____ DATE

### Section C: Variance Options

Section C must be completed if a VARIANCE OPTION is requested in Section B.

All VARIANCE proposals are submitted to the FUNDER and are reviewed by the GBCT. GBCT's opinion will be communicated back to the BUILDING OWNER via the FUNDER.

#### VARIANCE FOR ENERGY EFFICIENT DESIGN:

Project will not obtain the Manitoba Hydro Power Smart Designation to satisfy requirement of the Green Building Regulation, M.R. 38/2013. Complete the following sections:

Describe why full compliance option was not selected:

- Renovation project – not eligible for Power Smart Designation.
- Other – Provide narrative.

Identify the energy efficiency design target for the building project.

- Building will be designed to be at least 33 percent more energy efficient than a similar building designed to meet the minimum requirements of the Model National Energy Code of Canada for Buildings (1997).
- If not, specify the building's energy efficiency design target:

Identify the tool or program of prescriptive measures used to achieve the identified energy efficiency design target. Indicate the tool or program.

- An energy model
- Prescriptive program such as: (Select one)
  - ASHRAE Advanced Energy Design Guide
  - Advanced Buildings™ Core Performance Guide, New Buildings Institute
  - Other (Identify)

Indicate how the energy efficiency design target will be independently verified.

- Verified during the process of LEED® certification.
- Verified during the process of Green Globes™ certification.
- Verified by an experienced Energy Modeler from the list published by the Canada Green Building Council (CaGBC).
- Energy efficiency measures will be verified by a commissioning authority.
- Other (Identify)

#### FOR INTERNAL USE ONLY

This section is completed by the Director of GBCT.

- Variance is approved as proposed.
- Variance is approved with amendment – see attached.
- More information is required – see attached.
- Recommended for exemption from the Manitoba Green Building Regulation, M.R. 38/2013

**Project Name:**

<span style="border: 1px solid gray; display: inline-block; width: 95%; height: 12px;"></span>		<span style="border: 1px solid gray; display: inline-block; width: 95%; height: 12px;"></span>
SIGNATURE OF DIRECTOR GREEN BUILDING CO-ORDINATION TEAM		DATE

This section is completed by the Minister of Manitoba Infrastructure and Transportation.

- Exemption from the Manitoba Green Building Regulation, M.R. 38/2013 is approved

<span style="border: 1px solid gray; display: inline-block; width: 95%; height: 12px;"></span>		<span style="border: 1px solid gray; display: inline-block; width: 95%; height: 12px;"></span>
SIGNATURE OF MINISTER OF MANITOBA INFRASTRUCTURE AND TRANSPORTATION		DATE

**VARIANCE FOR ENVIRONMENTAL IMPACTS**

*Project will not obtain LEED® Silver certification. Complete the section below.*

**Reason:** Describe why LEED® Silver certification will not be obtained. (Select one)

A LEED® prerequisite cannot be achieved. (Identify the prerequisite, provide explanation.)

An extraordinary circumstance makes pursuing LEED® Silver certification impractical. (Explain)

The building's complexity or size (less than 1,860m<sup>2</sup> or 20,000 ft<sup>2</sup>) makes it impracticable to pursue LEED® (Explain)

Other (Provide narrative)

**Alternate:** Propose an alternate target, process or program in lieu of LEED® certification.

The project will achieve a lower level of LEED® certification.

The project will meet or exceed a 3 Globes rating under the Green Globes™ NC v.2 certification program.

The project will achieve a different green building certification. Specify the program and level:

A green building certification is not being targeted. In lieu, a written report will be provided at substantial completion. The report will include:

- A brief narrative for each of the Green Building Criteria defined in GBP Form 1: Section B. The narrative will:
  - Confirm the criteria was specified in project contracts and construction documents.
  - Describe how the GBP criteria was verified by a project professional or consultant. If the Green Building Criteria was not verified, describe why.
  - Include the signature of the person who prepared sections of the narrative, and the signature of a peer who reviewed the narrative.
- Include a letter from the owner acknowledging the narrative was reviewed by the owner and the project team.

Other (Describe) **NOTE: Power Smart designation is not an approved alternate for this section.**

**FOR INTERNAL USE ONLY**

*This section is to be completed by the Director of the GBCT*

Variance is approved as proposed.

Variance is approved with amendment – see attached.

More information is required – see attached.

Variance is not approved; and compliance option is recommended.

**Project Name:**

SIGNATURE OF DIRECTOR GREEN BUILDING CO-ORDINATION TEAM

DATE

## GBP Form 2: Project Report

**TO BE COMPLETED BY THE BUILDING OWNER.**

Provide GBP Form 2 to the FUNDER at substantial completion.

This information is used by the GBCT for program evaluation and analysis. GBCT may request proof of performance for any GBP criteria in addition to the following reports (Tables 1–11).

Use the following chart to assign reporting responsibilities to the members of your project team when completing GBP Form 1 and to perform a completeness check before submitting GBP Form 2 to your FUNDER.

	Assign reporting responsibilities for each Table. <i>(Typical assignments in grey)</i>	Completeness Check Verify that the table or template and letter are completed/attached	
		Table	Template in Lieu of Table <i>(Ensure the template provides all the information requested in the Table)</i>
<b>Table 1:</b> Energy Efficient Design	Mechanical Engineer	<input type="checkbox"/>	<input type="checkbox"/>
Obtain Power Smart designation letter	Architect	<input type="checkbox"/> Letter Attached	
<b>Table 2:</b> Environmental Impacts	Sustainability Consultant	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> Report Attached (if applicable)	
<b>Table 3:</b> Building Commissioning	Commissioner	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 4:</b> Integrated Design Process	Architect	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 5:</b> Energy Sources	Mechanical Engineer	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 6:</b> Water Efficient Fixtures and Fittings	Mechanical Engineer	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 7:</b> Manitoba Manufactured Products	Architect or Contractor	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 8:</b> Products with Recycled Content	Architect or Contractor	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 9:</b> Use of Salvaged Building Materials	Architect or Contractor	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 10:</b> Waste Diversion	Contractor	<input type="checkbox"/>	<input type="checkbox"/>
<b>Table 11:</b> Acknowledgment by Owner	Owner	<input type="checkbox"/>	

**Table 1: Energy Efficient Design**

Enter Values or Information	
Provide the building's energy efficiency design target	<input type="text"/> % better than Model National Energy Code for Buildings (1997)
Indicate the tool or program used to achieve the building's energy efficiency design target.	Identify either the tool or the program: <input type="checkbox"/> Energy modeling The modeling software used: <input type="text"/> <input type="checkbox"/> Prescriptive Program Identify: <input type="text"/>
Indicate how the building's energy efficiency design target was verified.	<b>Select all that apply</b> <input type="checkbox"/> Power Smart Designation. The letter is attached. <input type="checkbox"/> LEED® certification. <input type="checkbox"/> Green Globes™ certification. <input type="checkbox"/> Experienced energy modeler from the list published by the Canada Green Building Council (CaGBC). A letter is attached. <input type="checkbox"/> Verified by a commissioning professional. <input type="checkbox"/> Other (identify) <input type="text"/>

**Table 2: Environmental Impacts**

<p><b>Indicate method of verification.</b></p>	<p><input type="checkbox"/> LEED® certification.</p> <p>Indicate level _____</p> <p>Estimate certification date: _____</p> <p><input type="checkbox"/> Other Certification (<i>describe</i>) _____</p> <p>Indicate level _____</p> <p>Estimate certification date: _____</p> <p><input type="checkbox"/> Written Report required by variance (<i>attach report if applicable</i>)</p> <p><input type="checkbox"/> Other (<i>describe</i>) _____</p>
<p><b>Access to green building certification account.</b></p>	<p>Provide the following to allow GBCT access to the LEED® or other certification account identified above</p> <p>Account Number _____</p> <p>Password _____</p> <p>Authorization Granted by the Authority who Registered the Project</p> <p><b>Print name:</b> _____</p> <p>_____ SIGNATURE</p> <p>_____ DATE</p>

**Table 3: Building Commissioning**

*Indicate the activities performed by the commissioning professional.*

- Participated in the development of the Owner's Project Requirements (OPR)
- Developed the building commissioning plan
- Reconciled the Basis of Design (BoD) to the requirements of the OPR
- Conducted a design review
- Included the commissioning requirement in the project specifications
- Developed construction checklists and functional test requirements
- Verified /spot checked project submittals
- Conducted commissioning team meetings
- Conducted periodic site visits with team members for review of construction
- Verified /spot checked the completion of construction checklists by the trades
- Witnessed start up and execution of functional testing
- Verified that training and manuals were provided to building operator, maintenance and building occupants
- Coordinated the provision of training for building operator, maintenance and building occupants
- Assembled the systems manual
- Issued a commissioning report to the owner
- Reviewed the commissioning report with the owner and project team.

**Table 4: Integrated Design Process**

		<b>IDP Meeting Types</b> (Indicate participation in meetings with a ✓) <b>Refer to IDP Guideline in Manitoba GBP Manual Section 3 for definition of meeting types.</b>							
<b>Major Stakeholders</b> (Note: all stakeholders are not required by all projects)	<b>Company or Organization</b>	<b>Development and Review of Owner's Project Requirements</b>	<b>Comprehensive Project Planning Meetings</b>	<b>Programming Meetings</b>	<b>Facility Performance Meetings</b>	<b>Multi disciplinary Team Meetings</b>	<b>General Contractor and Sub Contractor Meetings</b>	<b>Construction Meetings</b>	<b>Post Occupancy Meetings</b>
Building Owner or delegate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Architect		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commissioning Professional		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landscape Architect		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interior Designer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mechanical Engineer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electrical Engineer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Contractor		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Building Operator		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainability Consultant		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Manager		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IDP Facilitator		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction Manager		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Civil Engineer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structural Engineer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy Modeller		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specialized Consultants		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occupant Representative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other disciplines and stakeholders (add to list as required)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Table 5: Energy Sources**

(for example: wind, solar, ground source, electricity, natural gas, diesel, bio-mass, etc.)

Purpose	Primary Energy Source	Secondary	Considered
Heating			
Cooling			
Service Water			
Power (non-emergency)			
Power (emergency)			
Other			

**Table 6: Water Efficient Fixtures and Fittings**

Fixture/Fitting	Lavatory & hand faucet	Shower Head	Pre-rinse spray valve	Water closet (toilets)	Urinals	Other	Other	Other
Quantity								
Flow Rate								

**Table 7: Manitoba Manufactured Products**

(List of up to 7)

Product	MB Manufacturer
1.	
2.	
3.	
4.	
5.	
6.	
7.	

**Table 8: Products with Recycled Content**

(List of up to 7)

Product	Manufacturer
1.	
2.	
3.	
4.	
5.	
6.	
7.	

**Table 9: Use of Salvaged Building Materials**

(List of up to 7, indicate NA under product if none were used)

Product	Source (Dealer/Distributor)
1.	
2.	
3.	
4.	
5.	
6.	
7.	

**Table 10: Waste Diversion**

Description of Material	Tonnes	Destination (landfill, recycler or other (specify))
1.		
2.		
3.		
4.		
5.		
6.		
7.		

**Table 11: Acknowledgment by BUILDING OWNER**

**Project Name:** \_\_\_\_\_

Is the property address or project name different than reported on GBP Form 1?  Yes  No  
 If Yes – provide new address or name.  
 \_\_\_\_\_

Is the building Total Floor Area<sup>1</sup> (m<sup>2</sup>), building type or project type different than reported on GBP Form 1?  Yes  No  
 If Yes – provide new information.  
 \_\_\_\_\_

**Actual Construction Start Date:** \_\_\_\_\_ **Date of Substantial Completion:** \_\_\_\_\_  
 MM/YYYY MM/YYYY

**Construction Cost<sup>2</sup> \$** \_\_\_\_\_  
**Total Capital Cost<sup>3</sup> \$** \_\_\_\_\_

**Contact:** The GBCT may request additional information about this project or conduct follow up surveys.  
 Do you consent to a follow up by the GBCT?  Yes  No

If yes, provide a name and the contact's information for future correspondence.  
**Name:** \_\_\_\_\_  
**Title:** \_\_\_\_\_  
**Phone:** \_\_\_\_\_  
**Email:** \_\_\_\_\_

**Check the boxes that apply and sign below.**

I have reviewed Tables 1-10 provided by the Project Team and deem them to be complete and accurate to the best of my knowledge.

Letters or documents identified in the completeness check are attached.

I am providing this Form to the FUNDER at substantial completion of the building.

\_\_\_\_\_  
 SIGNATURE OF BUILDING OWNER

\_\_\_\_\_  
 DATE

<sup>1</sup>**Floor Area:** Total of each horizontal floor area where each floor above grade is measured to the outside face of the exterior wall. Where a floor is partially below grade (e.g. "walk out basement") and area is to be occupied, floor area is to be included in total. Where exterior envelope is complete but interior is left unfinished for future occupancy, area is to be included in total.

<sup>2</sup>**Construction Cost:** Costs related to construction. Does not include design fees or land. Construction costs include materials, labour and installation.

<sup>3</sup>**Capital Cost:** Includes construction costs, design and other professional fees plus other costs related to the project.