

ARCHITECTURE & ENGINEERING

HIGH-PERFORMANCE BUILDING STANDARDS



ADOPTED VERSION 3
REVISED MARCH 2019

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STATE OF MONTANA
HIGH PERFORMANCE BUILDING STANDARDS GOALS
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Based on Section 17-7-201 MCA, and adopted under 17-7-213 MCA, the Department of Administration (through its Architecture & Engineering Division) establishes High-Performance Building Standards for the construction, renovation, and maintenance of public buildings in this state as well as all new state-leased buildings

These standards have been developed to improve the capacity of the state to design, build, and operate high-performance and resilient buildings. An integrated design process to optimize all major high-performance attributes, including but not limited to, energy performance, flexibility, durability, life-cycle performance, enhance indoor environmental quality and conserve natural resources is encouraged for all projects. (17-7-201(3) and 17-7-213(2.a)

The overall goal of the HPBS is that state-owned and/or leased buildings will meet construction and operational standards that are cost-effective and:

1. Exceed the International Energy Conservation Code most recently adopted by the department of labor and industry by 20% or to the extent that is cost-effective over the life of the building or major renovation (17-7-213 1.b).
2. Increase the use of environmentally and socially sustainable (17-7-213 2.c), building materials, finishes, and furnishings from Montana and within the region with an emphasis on functionality, durability, and maintenance (17-7-231 2.d);
3. Encourage comprehensive energy plans for buildings that implement energy efficiency, passive design, utilization of local energy sources and local renewable energy sources;
4. Protect and conserve the natural resources of the state (17-7-213 2.a);
5. Reduce and properly manage waste generation;
6. Establish life-cycle cost analysis as the appropriate and most efficient analysis to determine the cost-effectiveness, including productivity, deferred maintenance, and operational considerations (17-7-213 2.b) of a building project;
7. Continue to ensure that the systems of each building project are designed, installed, and tested to perform according to the design intent and operational needs of the building;
8. Implement a comprehensive data base for all high-performing buildings; Encourage contribution of project data to Energy Star Portfolio Manager.
9. The State Agency for whom the Project was built shall strive to operate and maintain all State Projects at optimal efficiency, providing a healthy working environment, and controlling long-term cost.
10. Develop building plans and other long-term strategic planning processes to incorporate the concepts of high-performance buildings, including support for alternative transportation options.

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1.1 GENERAL

- A. These High-Performance Building Standards are promulgated to implement the directives established in SB 49 of the 61st Legislature, which amended Section 17-7-201 and added 17-7-213 MCA.
- B. These High-Performance Building Standards were initially adopted on December 1, 2013, with version #2 adopted on December 1, 2016, as meeting the requirements of 17-7-213 MCA, and are otherwise referred to in this document as the HPBS.
- C. The HPBS will be administered by the Department for all State Projects that are approved by the Legislature through the process defined in 17-7-202 MCA.

1.2 DEFINITIONS

- A. "Checklist for Minimum Requirements" shall be the checklist required for all projects as defined in the attached Exhibit B to these HPBS.
- B. "Contracting Agency" means the agency responsible for administering the Project including the HPBS compliance.
- C. "Cost Effectiveness" means coordination and reconciliation of budget and project scope to meet the HPBS with consideration of the project's life-cycle, productivity, deferred maintenance and operational considerations as determined by the Contracting Agency in collaboration with the project team.
- D. "Department" means the State of Montana, Department of Administration, Architecture & Engineering Division.
- E. "Effective Date" shall be the date which defines the most current version of the HPBS.
- F. "Appropriate Standard" means a high-performance green building standard other than LEED or Green Globes as selected by the Contracting Agency in collaboration with the project team, which provides a measurement tool that when used leads to outcomes similar to LEED, Green Globes, WELL, Living Building Challenge, EDGE, etc.
- G. "Green Globes Rating" means a rating under the current version of the Green Globes system as operated by the Green Building Initiative (GBI).
- H. "High-Performance Building Attributes" includes, but are not limited to, (a) energy efficiency; (b) durability; (c) life-cycle performance; (d) occupant productivity; (e) indoor environmental quality; (f) conservation of natural resources; (g) functionality; (h) flexibility; (i) safety; (j) security; (k) accessibility; (l) sustainability; (m) operations and maintenance; and (n) other attributes specific to the State Project under consideration as determined by the Contracting Agency.
- I. "High-Performance Building Standards (HPBS)" means those standards, requirements and exemptions adopted/updated by the Department in collaboration with the Montana university system and other state agencies.

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- J. “Integrated Design” means a collaborative method for designing buildings which emphasizes viewing the building as an interconnected and interdependent whole rather than an accumulation of its separate components in order to strive for optimization of all major high-performance building attributes.
- K. ” Integrated Design Process” means multidisciplinary collaboration, including appropriate key stakeholders and design professionals, from conception to completion of design phases. Decision-making protocols and complementary design principles must be established early in the process in order to satisfy the goals of multiple stakeholders while achieving the overall project objectives. This process should include the General Contractor or Construction Manager when using an alternative delivery method process. Projects executed under a normal design/bid/build process would, by their nature, exclude Contractor input.
- L. “International Energy Conservation Code” means the current version of the IECC adopted by the State of Montana.
- M. “LEED Certification” means certification under the current version of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design building rating standard.
- N. “Life-cycle cost analysis” refers to the cost of ownership over the life of an asset, system, or component. Typical areas of expenditure which are included in calculating the life-cycle cost includes, planning, design, construction and acquisition, operations, maintenance, renewal and rehabilitation, depreciation and cost of finance and replacement or disposal.
- O. “Major Renovation” is a project which will increase the capacity, effect a major change in use, increase the efficiency or economy of operation, or extend the life of an existing fixed asset to a major degree and which is funded or authorized under the State of Montana Long-Range Building Program.
- P. “Natural Resources of the State” shall generally be defined to include, but not limited to, the forests, surface and subsurface water, energy sources, minerals, land and air of the State of Montana.
- Q. “New Building” means any new building that is funded or authorized under the State of Montana Long-Range Building Program.
- R. “New State-Leased Buildings” means any lease entered into by the State which requires major renovation of an existing building or a lease for a new building (i.e. build-to-own building).
- S. “Optimize Energy Performance” shall be defined as achieving increasing levels of energy performance a minimum of 20% above the baseline in the prerequisite IECC standard to reduce environmental and economic impacts associated with excessive energy use as described in Article 1.3.A below.
- T. “Optimization of Major High-Performance Building Attributes” means prioritizing and/or aligning the appropriate attributes utilizing the Office of Federal High-Performance Buildings’ “Guiding Principles for Sustainable Federal Buildings” as

applicable to the Project type under consideration. The Principles used shall be determined by the Contracting Agency and based upon the type of Project under consideration.

- U. Owner's Basic Requirements (OBR) means the current version of the adopted by the Contracting Agency.
- V. "State Projects" means all new construction, renovation, alteration and equipping and furnishing during construction, renovation or alteration funded under 17-7-202 that are new buildings, major renovations, or new state-leased buildings as provided in 17-2-213 (1)

1.3 REQUIREMENTS

- A. All State Projects shall exceed the International Energy Conservation Code by 20% above the baseline or to the extent that is cost-effective over the life of the building or major renovation as determined by the Contracting Agency.
- B. All State Projects shall comply with the Owner's Basic Requirements (OBR) described in the HPBS Exhibit A as well as comply with Article 1.3.A.
- C. All State Projects funded or authorized by the Legislature greater than \$10,000,000 shall achieve a LEED Certification of a minimum Silver level or a Green Globes Rating of a minimum Two Globes rating or equivalent certification level in other Appropriate Standard as well as comply with Article 1.3.A. The Contracting Agency in conjunction with the Department may determine, on a project-by-project basis, if third-party certification or rating is not feasible or appropriate.
- D. If any requirements in this Article 1.3 are feasible for an applicable project and are attempted but not met, a post-project review shall be held to document the reasons why the requirement was not achieved. This document shall be archived in the final project closeout documents.

1.4 DOCUMENTATION

- A. All State Projects that are required to exceed the International Energy Conservation Code by 20% shall include the written documentation which shall be archived in the final project closeout documents.
- B. All State Projects that are required to submit the HPBS Checklist for Minimum Requirements (Exhibit B) shall include a copy of this checklist in the final archived project closeout documents. 3rd-party certification documentation may be used in lieu of the HPBS Checklist for Minimum Requirements (Exhibit B).
- C. All State Projects that are required to achieve a minimum LEED Silver Certification, Green Globes Two Globes rating or an equivalent certification level in other Appropriate Standard shall include the certification/rating documentation in the final archived project closeout documents.
- D. The Contracting Agency's Project Manager shall be responsible for management and archiving of any appropriate documentation.

1.5 ONGOING REVIEW

- A. The HPBS shall be reviewed by the Department every three years to coincide with the three-year cycle of the International Building Code (IBC). This review shall be conducted in collaboration with Montana university system and other state agencies. Applicable updates and revisions enacted will be incorporated into the current version which will be identified with a current Effective Date so that Users can confirm that they are working with the governing version.

END OF HIGH-PERFORMANCE BUILDING STANDARDS

EFFECTIVE DATE of Revision: MARCH 2019

STATE OF MONTANA
HIGH PERFORMANCE BUILDING STANDARDS
MINIMUM REQUIREMENTS FOR ALL PROJECTS (EXHIBIT A)
REVISED MARCH 2019

(CORRESPONDING CHECKLIST FOR SUBMITTAL IS EXHIBIT B)

1.1 DESIGN AND DOCUMENTATION

- A. Incorporate an integrated design process.
- B. Integrate cost-effectiveness analysis early in the project.
- C. Incorporate Contracting Agency Owner's Basic Requirements (OBR).
- D. The Checklist for Minimum Requirements (Exhibit B) shall be maintained and completed by the Contracting Agency.

1.2 SUSTAINABLE SITES

- A. Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation. (Comply with the intent of LEEDv4 SS prerequisite Construction Activity Pollution Prevention.)
- B. Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site. (Comply with the intent of LEEDv4 Location and Transportation: High Priority Sites credit.)
- C. Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity. (Comply with the intent of LEEDv4 SS Credit Protect and Restore Habitat, a Montana regional priority credit in LEED.)
- D. Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants. (Comply with the intent of Stormwater Design Quantity Control, LEEDv4 SS credit Rainwater Management.)
- E. Minimize light trespass from the building and site, reduce sky-glow to increase night access, improve nighttime visibility through glare reduction and reduce development impact from lighting on nocturnal environments. (Comply with the intent of LEEDv4 SS credit Light Pollution Reduction.)

1.3 WATER EFFICIENCY

- A. Increase water efficiency within buildings to reduce burden on municipal & ground source water supply and wastewater systems. (Comply with Water Use Reduction by 20% as per ASHRAE and LEEDv4 WE prerequisite Indoor Water Use Reduction.)
- B. Limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation. (Comply with the intent LEEDv4 prerequisite of Water Efficiency in Landscape and Irrigation.)

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- C. Install Building-Level Water Metering. Water Metering should be digital and capable of logging data for more than one month, able to integrate with Building Automation Systems and other IT networks, and can sample, at the minimum, at 15-minute intervals. (Comply with ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings for designing water metering and sub-metering systems.)

1.4 ENERGY & ATMOSPHERE

- A. Exceed current Int'l Energy Conservation Code by 20% where cost-effective. (Comply with Montana Legislation.)
- B. Verify that the project's energy-related systems are installed, calibrated, and perform according to the owner's project requirements (OPR), basis of design (BOD), and construction documents. (Comply with the LEEDv4 EA prerequisite intent of Fundamental Building Systems Commissioning and MT A&E requirement.)
- C. Reduce stratospheric ozone depletion through zero use of chlorofluorocarbon (CFC)-based refrigerants in new base building heating, ventilating, air conditioning, and refrigeration (HVAC&R) systems. (Comply with the intent of LEEDv4 EA prerequisite Fundamental Refrigerant Management.)
- D. Install Building-Level Energy Metering. (Comply with ASHRAE 189.1, Standard for Design of High-Performance Green Buildings for designing energy metering and sub-metering systems.)
- E. Energy Consumption Management. Measurement devices with remote communication capability shall be designed to collect energy consumption data for each energy supply to the building, including gas/propane, electricity, and district energy sources. Energy Metering should be digital and capable of logging data for more than one month, able to integrate with the Building Automation Systems and other IT networks, and can sample, at a minimum, at 15-minute intervals. (Comply with ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings for designing energy consumption measurement system.)

1.5 MATERIALS & RESOURCES

- A. Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills and incinerators. (Comply with the intent of Storage and Collection of Recyclables / Composting in LEEDv4 MR prerequisite Storage and Collection of Recyclables, Green Globes).
- B. Specify building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials. (Comply with intents of LEEDv4 Materials credits or Green Globes Materials credits.)
- C. Specify building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation. (Comply with the intent of LEED and Green Globes regional materials and "Buy Montana" preference.)

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- D. Salvage and recycling of construction waste is preferred in order to divert waste from landfills. (Comply with the intents of LEED and Green Globes construction waste management credits.)
- E. Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants. Products include adhesives and sealants, paints and coatings, flooring systems, composite woods and agrifibers, and furniture. (Comply with the intent of Low-Emitting Materials in LEEDv4 MR credit Low Emitting Materials or Green Globes.)
- F. Specify durable and low-maintenance building materials and assemblies that can withstand the following: sunlight, temperature and humidity changes, condensation, and wear-and-tear associated with the amount and type of traffic expected; Implement a building design that promotes building adaptability; Specify fastening systems that allow for easy disassembly. (Comply with the Green Globes credit intent of Building Durability, Adaptability, and Disassembly.)

1.6 INDOOR ENVIRONMENTAL QUALITY

- A. Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants. Meet ASHRAE-62.1, current version. (Comply with the LEEDv4 IEQ credit intent of Minimum Indoor Air Quality Performance.)
- B. Prevent or minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to environmental smoke. (Comply with the intent of Environmental Smoke Control from Montana Clean Indoor Air Act.)
- C. Reduce indoor air quality (IAQ) problems resulting from construction or renovation and promote the comfort and well-being of construction workers and building occupants. Develop and implement plan during both construction and prior to occupancy. (Comply with the intent of LEEDv4 IEQ credit Construction IAQ Management Plan.)
- D. Minimize building occupant exposure to potentially hazardous particulates and chemical pollutants. (Comply with the LEEDv4 IEQ credit intent in Enhanced Indoor Air Quality strategies.)
- E. Provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces and promote their comfort and well-being. (Comply with the LEEDv4 IEQ credit intent of Controllability of Systems—Lighting.)
- F. Provide a high level of thermal comfort system control by individual occupants or groups in multi-occupant spaces and promote their comfort and well-being. Definition of thermal comfort shall be as defined by LEED as control over at least 1 of the following primary factors in the occupant's vicinity: air temperature, radiant temperature, air speed and humidity. Comply with the LEEDv4 IEQ credit intent of Controllability of Systems—Thermal Comfort.)

- G. Provide building occupants with a connection between indoor spaces and the outdoors through introduction of daylight and views into the regularly occupied areas of the building. (Comply with the LEEDv4 IEQ credit intent of Daylight and Views—Daylight.)
- H. Provide optimum protection from undesirable outside noise. Specify appropriate sound transmission class rating of perimeter walls in response to external noise levels. Provide noise attenuation of the structural systems and measures to insulate primary spaces from impact noise. Specify acoustic controls to meet the acoustic privacy requirements. Specify measures to meet speech intelligibility and requirements for carious spaces and activities. Mitigate acoustic problems associates with mechanical equipment and plumbing systems noise and vibration. (Comply with the intent of Acoustic Comfort in Green Globes or LEEDv4 IEQ credit Acoustic Performance.)

1.7 OPERATIONS AND MAINTENANCE

- A. Design temperature control system to monitor all installed building water consumption meters and display the monitored points on a graphic interface. (REFERENCE ASHRAE 189.1)
- B. Design temperature control system to monitor all installed building energy meters and display the monitored points on a graphical interface. (REFERENCE ASHRAE 189.1)
- C. During design specify and help develop a building operations manual that includes occupancy schedules, equipment run-time schedules, design sequences of operation and set points for all HVAC equipment, and design lighting levels throughout the building. Provide a systems narrative describing the mechanical and electrical systems. As part of the O&M manual, assist and direct contractors to develop a preventative maintenance plan for equipment, include HVAC equipment schedules, electrical panel schedules, and fire alarm equipment schedules. Equipment schedules will reflect installed equipment rather than design recommendations. Final O&M Manual to include the final commissioning report, air and water balance report, and final warranty inspection report. Specify O&M manual to be provided in digital format. (REFERENCE LEED v4.1 Operations and Maintenance.)
- D. Design temperature control system to monitor air distribution systems airflow and amount of supplied outside air. These points should be broken out per Air Distribution system and displayed on a graphical interface. (REFERENCE LEEDv4.1 Operations and Maintenance.)
- E. Consider using advanced BIM models in design as one way to collect, organize and quickly assess specific equipment data.
- F. Include training of installed equipment and completed O&M manual as part of the training requirements for building operators and owner. Include specific High-Performance Building Education as it pertains to the project and invite building owners and occupants to participate. As part of the design team, discuss the high-performance building measures implemented during the building occupant training.

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- G. Incorporate a one-year warranty check that includes review of water and energy consumption and occupant feedback; develop a process for addressing thermal comfort complaints if more than 20% of occupants are dissatisfied. Document all changes and correction made during the warranty period. Develop final report with findings and recommendations.
- H. Plan for Continuous Re-tuning/Retro-Commissioning (REFERENCE LEED v4.1 Operations and Maintenance.)

Develop Continuous Commissioning Plan to maintain optimal building performance including:

1. Monitoring building energy use, develop building energy baseline, and evaluate changes in energy use utilizing submetering and point trending control system.
 2. Monitoring HVAC system performance utilizing the temperature control system, executing functional testing of system, and verifying proper system operation.
 3. Train staff on proper operation of building at completion of construction, provide continuous training in order to optimize performance of building HVAC and temperature controls.
- I. Use Whole Building Design Guide, Operations and Maintenance (REFERENCE <http://www.wbdg.org>)

Develop Comprehensive Operation & Maintenance Plan in order to operate the building as designed and constructed, while maintaining peak efficiency and optimal occupant comfort including:

1. Facility Condition Assessment tool to manage the building's physical asset.
2. Computerized Maintenance Management System (CMMS) to manage preventative maintenance of building HVAC and Temperature Control Systems.
3. Maintain As-Built Drawings of Building utilizing Computer Aided Design Software.
4. Maintain O & M Manuals and Systems Manual through the life of the building.
5. Develop a Cleaning Program that utilizes environmentally friendly cleaning products and safe cleaning methods to maintain a healthy work environment and protects the building interior and exterior surfaces over the life of the building.

END OF HPBS MINIMUM REQUIREMENTS FOR ALL PROJECTS

EFFECTIVE DATE of Revision: MARCH 2019

STATE OF MONTANA
HIGH PERFORMANCE BUILDING STANDARDS
CHECKLIST FOR MINIMUM REQUIREMENTS (EXHIBIT B)
REVISED MARCH 2019

Project:

Agency:

Project A/E #:

ATTACH NARRATIVE FOR ALL NON-APPLICABLE ITEMS.

1.1 DOCUMENTATION

- A. All State Projects that are required to submit the HPBS Checklist For Minimum Requirements shall include a copy of this checklist in the final archived project closeout documents. This checklist is not required for projects that are certified through a third-party rating system.
- B. Checklist and narrative are to be completed by the Contracting Agency's project manager.

1.2 CHECKLIST

DESIGN AND DOCUMENTATION (**Exhibit A, Section 1.1**)

- Incorporated an integrated design process.
Not applicable to project _____ (initials of project manager)
Date of Charrette(s) _____
- Integrated cost-effectiveness analysis early in the project.
Not applicable to project _____ (initials of project manager)
Date/Project Phase _____
- Incorporated State A&E's Owner's Basic Requirements (OBR).
Date of Review _____
- The Checklist for Minimum Requirements (Exhibit B) is being maintained and completed by the Contracting Agency.
Date filed and initials of Project manager _____

SUSTAINABLE SITES (**Exhibit A, Section 1.2**)

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- Complied with the intent of Construction Activity Pollution Prevention (LEEDv4 SS prerequisite Construction Activity Pollution Prevention).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Construction on Appropriate Sites (LEEDv4 Location and Transportation credit: High Priority Sites).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Protect and Restore Habitat (MT regional priority, LEEDv4 SS credit Protect and Restore Habitat).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Stormwater Design Quantity Control (LEEDv4 SS credit Rainwater Management).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Light Pollution Prevention (LEEDv4 SS credit Light Pollution Reduction).
Not applicable to project _____ (initials of project manager)

WATER EFFICIENCY (Exhibit A, Section 1.3)

- Complied Water Use Reduction by 20% (ASHRAE, LEEDv4 WE prerequisite Indoor Water Use Reduction).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Water Efficiency in Landscape and Irrigation (LEEDv4 WE prerequisite Outdoor Water Use Reduction).
Not applicable to project _____ (initials of project manager)
- Complied with ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings for designing water metering and sub-metering systems.

ENERGY & ATMOSPHERE (Exhibit A, Section 1.4)

- Exceed Int'l Energy Conservation Code by 20% (MT legislation) where cost effective.
Anticipated percentage reduction _____
- Complied with Fundamental Building Systems Commissioning (as required by State A/E, LEEDv4 prerequisite Fundamental Building Systems Commissioning and Verification).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Fundamental Refrigerant Management (LEEDv4 prerequisite Fundamental Refrigerant Management).

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Not applicable to project _____ (initials of project manager)

- Complied with ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings for designing energy metering and sub-metering systems.
- Complied with ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings for designing energy consumption measurement systems.

MATERIALS & RESOURCES (Exhibit A, Section 1.5)

- Complied with the intent of Storage and Collection of Recyclables / Composting (LEEDv4 Storage and Collection of Recyclables/Composting, or Green Globes requirements).

Not applicable to project _____ (initials of project manager)

- Complied with the intent of Recycled Content (LEEDv4 MR credits or Green Globes Materials credits.)

Percentage achieved _____

Not applicable to project _____ (initials of project manager)

- Complied with the intent of Regional Materials (LEEDv4 or Green Globes regional materials and "Buy Montana" preference in Governor's Executive Order to consider MT lumber products)

Percentage achieved _____

Not applicable to project _____ (initials of project manager)

- Complied with the intents of LEED and Green Globes Construction Waste Management Credits.

Percentage achieved _____

Not applicable to project _____ (initials of project manager)

- Complied with the intent of Low-Emitting Materials (LEEDv4 Low Emitting Materials or Green Globes).

Not applicable to project _____ (initials of project manager)

Check those included in project that comply:

- Paints and coatings _____
- Adhesives and sealants _____
- Flooring systems _____
- Composite wood and agrifibers _____
- Furniture _____

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- Complied with the intent of Building Durability, Adaptability, and Disassembly (Green Globes).
Not applicable to project _____ (initials of project manager)

INDOOR ENVIRONMENTAL QUALITY (Exhibit A, Section 1.6)

- Complied with the intent of Minimum Indoor Air Quality Performance (ASHRAE 62.1-current, LEEDv4 IEQ prerequisite Minimum Indoor Air Quality Performance).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Environmental Smoke Control (Montana Clean Indoor Air Act.)
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Construction IAQ Management Plan (LEEDv4 Construction IAQ Management Plan).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Indoor Chemical and Pollutant Source Control (LEEDv4 IEQ Enhanced Indoor Air Quality Strategies).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Controllability of Systems—Lighting (LEEDv4 IEQ credit-Controllability of Systems--Lighting).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Controllability of Systems—Thermal Comfort (LEEDv4 IEQ credit-Controllability of Systems—Thermal Comfort).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Daylight and Views--Daylight (LEEDv4 IEQ credit Daylight).
Not applicable to project _____ (initials of project manager)
- Complied with the intent of Acoustical Comfort (Green Globes or LEEDv4 IEQ credit Acoustic Performance).
Not applicable to project _____ (initials of project manager)

OPERATIONS AND MAINTENANCE (Exhibit A, Section 1.7)

- Complied with ASHRAE 189.1 Design of temperature control on water system

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Not applicable to project_____ (initials of project manager)

Complied with ASHRAE 189.1 Design of temperature control on energy system.
Not applicable to project_____ (initials of project manager)

Complied with intent of LEEDv4.1 Operations and Maintenance in developing a building operation manual in digital format.
Not applicable to project_____ (initials of project manager)

Complied with the intent of LEEDv4.1 Operations and Maintenance Design of temperature control system for outdoor air distribution and measurement.
Not applicable to project_____ (initials of project manager)

Considered using advanced BIM model.
Not applicable to project_____ (initials of project manager)

Included training on installed equipment and review of O&M manual with staff.
Not applicable to project_____ (initials of project manager)

Included a one-year warranty check with process and final report development.
Not applicable to project_____ (initials of project manager)

Developed a plan for Continuous Re-tuning and Retro-Commissioning
Not applicable to project_____ (initials of project manager)

Used Whole Building Design Guide, Operations and Maintenance Standard to set project standards.

Not applicable to project_____ (initials of project manager)

Signature of Project Manager

Date

END OF HPBS CHECKLIST FOR MINIMUM REQUIREMENTS (EXHIBIT B)

EFFECTIVE DATE of Revision: MARCH 2019