

HPBS

[HIGH PERFORMANCE BUILDING STANDARD]

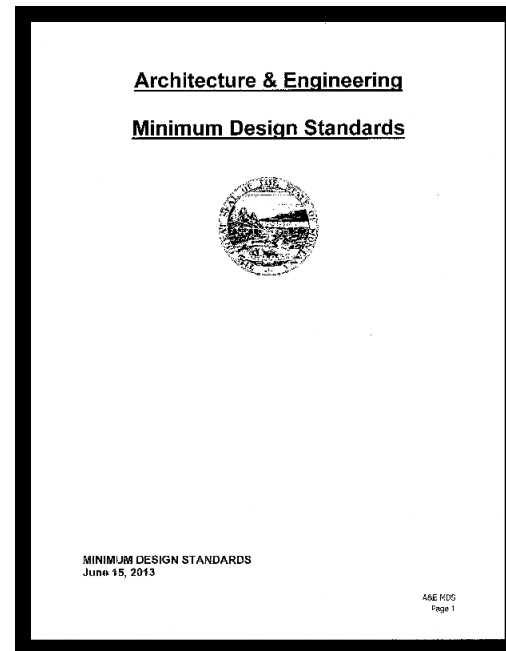


**STATE OF MONTANA HIGH PERFORMANCE BUILDING STANDARDS
MINIMUM REQUIREMENTS
FOR ALL PROJECTS UNDER 17-7-201, MCA**

1.1 DESIGN AND DOCUMENTATION

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

**DRAFT AVAILABLE ON
STATE A&E WEBSITE**



INTRODUCTION...1.1 GENERAL

- A. These High Performance Building Standards are promulgated to implement the directives established in SB 49 which amended Section 17-7-201, MCA.
- B. These High Performance Building Standards were adopted on June 1, 2013, as meeting the requirements of 17-7-213, and are otherwise referred to in this document as the HPBS.
- C. The HPBS will be administered by the Department for all State Projects.



DEFINITIONS

1.2 DEFINITIONS



Public Comment: Define “Cost Effective”

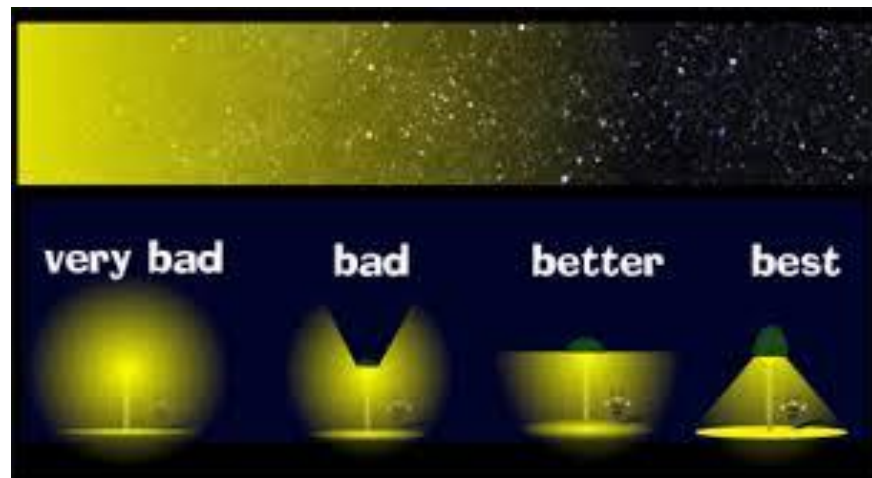
1.2 SUSTAINABLE SITES

- A. Comply with the intent of Construction Activity Pollution Prevention (LEED SS Prerequisite 1). Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.
- B. Comply with the intent of Construction on Appropriate Sites (LEED Credit SS 1). Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.
- C. MT regional priority LEED Credit SS 5.1). Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.



1.2 SUSTAINABLE SITES

- D. Comply with the intent of Protect and Restore Habitat (D. Comply with the intent of Stormwater Design Quantity Control (LEED Credit SS 6.1). Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants.
- E. Comply with the intent of Light Pollution Prevention (LEED Credit SS 8). 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.



1.3 WATER EFFICIENCY

- A. Comply with Water Use Reduction by 20% (ASHRAE, LEED WE Prerequisite 1). *Increase water efficiency within buildings to reduce burden on municipal & ground source water supply and wastewater systems.*
- B. Comply with the intent of Water Efficiency in Landscape and Irrigation (LEED WE Credit 1). *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.*



1.4 ENERGY & ATMOSPHERE

- A. Exceed current Int'l Energy Conservation Code by 20% (MT legislation).
- B. Comply with the intent of Fundamental Building Systems Commissioning (MT A&E requirement, LEED EA Prerequisite 1). *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.*
- C. Comply with the intent of Fundamental Refrigerant Management (LEED EA Prerequisite 2). *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*



1.5 MATERIALS & RESOURCES

- A. Comply with the intent of Storage and Collection of Recyclables / Composting (LEED MR Prerequisite 1, Green Globes). *Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills and incinerators.*
- B. Comply with the intent of Recycled Content (LEED Credit MR 4). *Increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.*



The Wood Issue

- A. Comply with the intent of Regional Materials (LEED Credit MR 5). *Increase demand for 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.*



1.5 MATERIALS & RESOURCES

- D. Comply with the intent of Low-Emitting Materials (LEED Credit IEQ 4.1-4.4 and Green Globes). *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.*

- E. Comply with the intent of Building Durability, Adaptability, and Disassembly (Green Globes). *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.*

1.6 INDOOR ENVIRONMENTAL QUALITY

- A. Comply with the intent of Minimum Indoor Air Quality Performance (ASHRAE 62.1-current, LEED IEQ Prerequisite 1). *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.*
- B. Comply with the intent of Environmental Smoke Control (State Facilities mandate, LEED IEQ Prerequisite 2). *Prevent or minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to environmental smoke.*



IAQ Management

- A. Comply with the intent of Construction IAQ Management Plan (LEED IEQ Credit 3.1/3.2). *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.*



1.6 INDOOR ENVIRONMENTAL QUALITY

- D. Comply with the intent of Indoor Chemical and Pollutant Source Control (LEED IEQ Credit 5). *Minimize building occupant exposure to potentially hazardous particulates and chemical pollutants.*
- E. Comply with the intent of Controllability of Systems—Lighting (LEED IEQ 6.1) *Provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces and promote their comfort and well-being.*
- F. Comply with the intent of Controllability of Systems—Thermal Comfort (LEED IEQ 6.2) *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.*

1.6 INDOOR ENVIRONMENTAL QUALITY

- G. Comply with the intent of Daylight and Views—Daylight (LEED IEQ 8.1)
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.

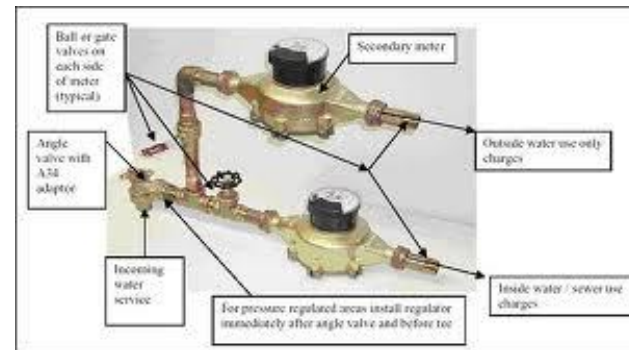


Acoustic Comfort

- G. Comply with the intent of Acoustic Comfort (Green Globes) 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 various spaces and activities. Mitigate **acoustic problems** associated with mechanical equipment and plumbing systems noise and vibration.
- **Public Comment: Define “acoustic problems” and set baseline.**

1.7 OPERATIONS AND MAINTENANCE

- A. Comply with the Intent of Water Performance Measurement (LEED-EB: O&M WE Credit 1). *Measure building and major subsystem water performance over time to understand consumption patterns and identify opportunities for additional water savings. (LEED-EB: O&M suggests whole building metering or sub-metering of irrigation, indoor plumbing fixtures and fittings, cooling towers, domestic hot water, and other process water.)*



Best Management Practices--Energy

- A. Comply with Energy Efficiency Best Management Practices—Planning, Documentation, and Opportunity Assessment. (LEED-EB: O&M EA Prerequisite 1) *Promote continuity of information to ensure that energy-efficient operating strategies are maintained and provide a foundation for training and system analysis. (Develop a building operations manual that includes an occupancy schedule, equipment run-time schedule, design set points for all HVAC equipment, and design lighting levels throughout the building. Provide a systems narrative describing the mechanical and electrical systems and a preventive maintenance plan for equipment.)*



1.7 OPERATIONS AND MAINTENANCE

- C. Comply with Title 75, Chapter 10 MCA Waste and Litter Control.



Minimum IAQ

- Minimum Indoor Air Quality Performance (LEED-EB: O&M IEQ Prerequisite 1) By meeting Indoor Environmental Quality (1.6 A.) current version of ASHRAE 62.1, buildings and renovations will comply with this standard. However, ongoing compliance with ASHRAE 62.1 requires implementation and maintenance of an HVAC system maintenance program to ensure the proper operations and maintenance of HVAC components as they relate to outdoor air introduction and exhaust; also testing and maintenance in the operation of all building exhaust systems, including bathrooms, shower, kitchen and parking exhaust systems and on-going training of facility personnel. A minimum building automation system (BAS) for control monitoring and verification including and automated fault detection for effective O&M energy use monitoring and notification shall be incorporated into the project.



1.7 OPERATIONS AND MAINTENANCE

- E. Implement the Environmentally Preferable Purchasing Policy and Green Cleaning Policy as defined in the Montana Operations Manual.

- E. High-Performance Building Education. (LEED and Green Globes). *Develop and provide opportunities for education on sustainable technologies, policies, and processes appropriate to the building for occupants, visitors, and maintenance personnel. (Suggested opportunities include short case studies, web-based materials, tours, signage, brochures, public presentations, educational learning sessions, advanced maintenance training, professional development, etc.)*



State A&E HPBS Process

- State A&E Managers are responsible for application of HPBS to appropriate state projects as prescribed by legislation.
- Minimum Requirements to apply to all projects.
- Over \$5 million projects--Green Globes, LEED or equivalent certification required.
- HPBS checklist (Exhibit B) to be completed at start of project and at end of project.
- Checklist to be filed with project documents in State A&E archives.

Facilitators for Development of HPBS

StudioFORMA

A R C H I T E C T S

