

**ADDENDUM TO THE  
B3 STATE OF MINNESOTA SUSTAINABLE BUILDING GUIDELINES (MSBG)**  
www.csbr.umn.edu/B3

**Introduction**

The original Version 1.0 of the B3 Minnesota Sustainable Building Guidelines was issued early in 2004 with Version 1.1 issued in July of 2004. Since that time that the guidelines have been applied to the early phases of several pilot projects funded with state bond proceeds. During the pilot project phase, several issues have emerged that are leading to clarifications and enhancements to the guidelines. These changes will be released as Version 2.0 on July 1, 2006. In the meantime, there are some important clarifications to the guidelines and required documentation that are explained in this Addendum. **Project teams can continue using the original version, however in most cases, the revised guidelines will require less work and produce clearer information.**

The intent of the revisions to come out in July is to meet three goals:

- To simplify and streamline the process for design teams by describing requirements more concisely and only asking for essential information .
- To provide better, easier-to-use tools to calculate the actual outcomes of the project.
- To reflect recent changes in ASHRAE Ventilation standards

The guidelines addressed in this Addendum are:

- P.2 Planning for Conservation
- P.6 Lowest Life Cycle Cost
- I.2 Indoor Air Quality and Ventilation Baseline
- I.4 Ventilation Based on Anticipated Pollutants
- M.1 Evaluation of Design for Resource Use
- M.2 Evaluation of Material Properties for Improved Performance

Consultants should submit the Outcome Documentation packets at the end of each phase to:

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## **P.2 Planning for Conservation**

*NOTE: In Version 1.1, this guideline required a narrative description of the process of Planning for Conservation. This aspect of P.2 has not changed. Another related guideline (M-1. Evaluation of Design for Resource Use) required documentation of the life cycle impacts of planning for conservation strategies. To simplify guideline M-1 and put the documentation of planning for conservation strategies in this guideline (P.2) where it belongs in the process, quantitative data is now required under P.2.*

*For now, design teams can fill out the tables shown below indicating the amount of space reduction or space reuse. When Version 2.0 is released in July, values for average cost, energy and material savings for each square foot of avoided new construction will be provided in a spreadsheet. Values will also be provided for the average cost and material savings for each square foot of reused or renovated space. In later phases of design, more precise costs, energy, and material savings can be inserted into the spreadsheet by the design team.*

### **Intent (Proposed revision)**

Maximize utilization of facilities and modify them less over time by careful analysis of needs and resources. Building less, remodeling existing facilities, and designing for flexibility lead to reductions in cost, energy, and environmental impacts of materials.

### **Required Performance Criteria (Proposed revision)**

- Evaluate the assumptions to build, expand or remodel facilities using these questions.
  - Can the current facilities be shared or better utilized to reduce or eliminate the need for additional space?
  - Can the current facilities be used more hours of the day or more days of the week to reduce or eliminate the need for additional space?
  - Can the current space be reconfigured within its shell to meet the need?
  - If not, can an existing building be reconfigured within its shell to meet the need?
  - If not, would an addition to the current space or another existing building meet the need?
  - If not, how can new space be optimized (including shared use of some facilities) and the building footprint be minimized?
  - For all options, how can the space be configured best for future use and adaptability?
- Document the process in narrative showing that a thorough review of planning for conservation options was completed.
- Create and fill out tables as shown below and add narrative as appropriate.

**Planning for Conservation Strategy Documentation Table**  
(with sample entries shown)

**1. Reduce program needs**

Strategy	Square footage avoided	Comment
Eliminate space 1	1000	Use neighboring facility
Reduce space 2	500	Share conference rooms
Reduce space 3	200	Unnecessarily large lobby
Eliminate space 4	1000	Use space 16 hours a day
Reduce space 5	2000	Telecommuting of staff
TOTAL	4700	

**2. Reuse existing building**

Strategy	Square footage reused	Comment
Reuse building 1	6000	Remodel for offices
TOTAL	6000	

**3. Create flexible and adaptable space**

Strategy	Square footage affected	Comment
High ceilings	10000	Adaptable to multiple uses
Raised floor	20000	Less costly to renovate

Option: For Item 3, use narrative in place of table if more appropriate.

**P.6 Lowest Life Cycle Cost**

*NOTE: In its original form, this guideline required life cycle cost analysis but did not specify how to apply it to the project. In the proposed revision, life cycle cost analysis must be applied to three whole building energy use scenarios generated in guideline E.1. More extensive life cycle cost analysis is optional.*

**Intent**

Determine the lowest life cycle cost when comparing design alternatives.

**Required Performance Criteria (Proposed revision)**

- Perform a life cycle cost on the energy strategies for the whole building based on three energy use scenarios generated in guideline E.1 using the life cycle cost calculation embedded in the Energy and Atmosphere Outcome Documentation spreadsheet (will be coming in Version 2.0.)

**Recommended Performance Criteria (Proposed Revision)**

- Include more extensive life cycle cost analysis of any design alternatives at the assembly, system or component scale.

## **I.2 Indoor Air Quality and Ventilation Baseline**

*NOTE: In Version 2.0, this guideline will be changed to adopt 62.1-2004 and associated revisions in 2007 and 2010 as the basic reference.*

## **I.# Ventilation Performance Validation**

*NOTE: This is a proposed new guideline for Version 2.0. The intention of this guideline is to promote good indoor air quality to be maintained over time by requiring that ventilation design intent be demonstrated on a regular basis to building owners and operators.*

## **I.4 Ventilation Based on Anticipated Pollutants**

*NOTE: In Version 1.1, this guideline recommends calculation of ventilation based on pollutant concentrations. In Version 2.0, this guideline is eliminated.*

## **M.1 Life Cycle Assessment of Building Assemblies**

**(Previous title: M.1 Evaluation of Design for Resource Use)**

*NOTE: In Version 1.1, this guideline required life cycle assessment of strategies ranging from reduced space needs to choice of building assembly materials. Tools for the analysis were suggested but no direct method was provided.*

*In Version 2.0, all calculations of the environmental impacts from strategies that reduce space, reuse buildings, or design for adaptability and flexibility are now determined in P.2 Planning for Conservation. In Version 2.0, a spreadsheet will be provided where the design team selects the assemblies and environmental impacts are calculated automatically. This new spreadsheet will replace Forms M-A, M-1, M-2A and M-2B. Teams may also perform their own customized comparisons using life cycle analysis software..*

*Until the next revision in July 2006, teams may do one of the following: 1) still use Version 1.1 documentation, 2) provide a narrative on how guidelines issues have been addressed, or 3) leave the documentation as "to be determined" and complete the documentation the guideline once Version 2.0 has been issued.*

### **Intent (Proposed revision)**

To perform a Life Cycle Assessment of alternatives for building assembly material choices during schematic design. Building assembly choices early in the process significantly affect global warming, air pollution, water pollution, energy use, and waste.

### **Required Performance Criteria (Proposed revision)**

- Evaluate at least two alternative scenarios for building assembly material choices on the project. Assemblies to be documented are foundation, beams and columns, intermediate floors, roof, exterior walls, windows, and interior partitions. Outcomes are global warming potential, air pollution index, water pollution index, primary energy, and solid waste produced over the life cycle of the material. The analysis is

calculated over a 60-year life cycle. The tool for these calculations is the spreadsheet provided which has pre-run assembly scenarios based on the Athena Environmental Impact Estimator software. Teams may alternately run the Athena Environmental Impact Estimator themselves for a more customized approach.

**Recommended Performance Criteria (Proposed revision)**

- Life Cycle Assessment of interior finish materials is not required in this guideline. Teams are encouraged to use BEES or other tools to perform similar types of analysis. This type of assessment usually occurs in the DD or CD phase.

**M.2 Evaluation of Material Properties for Improved Performance**

*NOTE: In Version 1.1, this guideline requires documentation of material properties in the table in Appendix M-2A. It also requires a life cycle assessment of the materials in the table in Appendix M-2B. There is an option to provide narrative information where LCA is not available. In Version 2.0, Forms M-A, M-1, M-2A and M-2B will be replaced or eliminated. A narrative describing the type and extent of materials with certain properties is required. Further documentation of specific material properties is recommended. Until the next revision in July 2006, teams may do one of the following: 1) still use Version 1.1 documentation, or 2) provide a narrative on how guideline issues have been addressed.*

**Intent**

To encourage the use of materials and products that meet specific prescriptive requirements understood to provide improved life cycle performance.

**Required Performance Criteria (Proposed revision)**

This guideline does not require implementation of any minimum level of materials or products meeting these criteria. However, it is required to document efforts to utilize these materials in narrative form indicating the specific properties and extent of the application.

Material properties to be documented in narrative form are listed below. Indicate specific property and extent of application.

- Salvaged or reused material
- High recycled content
- Locally/regionally produced and manufactured.
- Made from rapidly renewable agricultural byproducts
- Certified wood products
- Maximum durability
- Able to be reused, recycled, or that are biodegradable
- Designed for disassembly

**Recommended Performance Criteria (Proposed revision)**

Indicate detailed volume and cost information as required by LEED or other guidelines.