



DESIGN GUIDELINE 3.1 **SUSTAINABLE DESIGN AND LEED® REQUIREMENTS**

Scope

The University of Michigan is committed to environmental stewardship and promotes implementation of sustainable design concepts. Many of these concepts are incorporated directly into various sections of the U-M Design Guidelines and Master Specifications. This section addresses additional requirements and resources with respect to sustainable design and LEED requirements.

Related Sections

U-M Design Guideline Section:

[2.1 - Owner's Project Requirements and Basis of Design Documents](#)

U-M Master Specification Sections:

[7.0 MS015719 - Construction Air Quality](#)

[7.0 MS017420 - Construction and Demolition Waste Tracking](#)

Related Documents:

[AEC Title Block and Sustainable Facts Diagram](#)

[Building/Project Sustainability Summary](#)

[U-M LEED Project Registration Procedure](#)

Reference Documents:

USGBC, "LEED® Reference Guide for Green Building Design and Construction"

USGBC, "LEED® Reference Guide for Building Design and Construction - Healthcare"

Sustainable Design Requirements

All Projects

Prior to beginning Schematic Design, clarify the design objectives with respect to sustainable design, in conjunction with the U-M Design Manager. It is the University's expectation that sustainability be a consideration for all projects.

U-M Master Specification 015719 - Construction Air Quality shall be included in the contract documents and edited to be project specific. This specification provides requirements for construction air quality including requirements for bio-diesel fuel and exhaust after-treatment devices on construction equipment.

U-M Master Specification 017420 - Construction and Demolition Waste Tracking shall be included in the contract documents. This specification documents the disposal of waste

through use of the U-M Waste Tracking Report. This specification shall not replace construction waste management specification sections and shall not be edited by the A/E.

Document all sustainability design concepts in the project OPR/BOD (Owner's Project Requirements/Basis of Design) document. 2.1 - Owner's Project Requirements and Basis of Design Documents provides a complete description of OPR/BOD requirements.

Upon completion of the Construction Documents phase, use the EPA website to determine if the project is eligible for Designed to Earn ENERGY STAR. A/E to process all required paper work should the project be eligible.

Sustainability Summary

Required for projects over \$10M construction cost.

At the **start** of Schematic Design (SD) phase, assist the Design Manager with completing a Building/Project Sustainability Summary for posting on the AEC website. The Building/Project Sustainability Summary is to be updated at each design phase. A final summary shall be submitted at project completion.

Visual Display Requirements

Required for projects over \$10M construction cost.

Produce a visual display. Include, at a minimum, the following:

- Building name
- Project name
- Project description
- Photo or rendering of project (cross section, perspective, or elevation)
- Site plan to depict project location
- AEC Title Block and Sustainable Facts Diagram (revise to be project specific)
- Simplified, project specific visual graphics to depict sustainability features (e.g. diagrams to explain how system work). Do not provide generic LEED credit descriptions.
- Energy conservation measures
- Overall energy savings when compared to ASHRAE 90.1 baseline. Include ASHRAE 90.1 version used.
- Overall water savings based on the Energy Policy Act of 1992 fixture performance requirements.
- **CD Phase Visual Display:** Recognitions and certifications being pursued (e.g. LEED, Designed to Earn Energy Star).
- **Project Completion Visual Display:** Recognitions and certifications received (e.g. LEED, Designed to Earn Energy Star). Include certification logos.

Design Manger to coordinate review and approval of visual display.

Submit a digital copy of the visual display with Design Deliverables at CD phase for Owner's Review.

Upon completion of the CD phase the visual display to be updated to reflect all Owner's Review comments and the following files are to be provided:

- Complete data files (including all file links necessary to make updates to the visual display) from the graphics program.
- 11x17 digital pdf file in high resolution (minimum 300 pixels/inch resolution) of visual display
- 24x36 digital pdf file in high resolution (minimum 300 pixels/inch resolution) of visual display

After project completion, CD phase visual display to be updated to reflect all accepted Alternates and Owner's Options, recognitions and certifications received. Final visual display to be submitted in the following format:

- Complete data files (including all file links necessary to make updates to the visual display) from the graphics program.
- 11x17 digital pdf file in high resolution (minimum 300 pixels/inch resolution).
- 24x36 digital pdf file in high resolution (minimum 300 pixels/inch resolution).

Contact the AEC Sustainability Coordinator for example visual displays.

LEED Requirements

New Buildings and Additions over \$10M construction cost (new construction only)

All new buildings and additions with an estimated construction budget greater than \$10 million shall contact the Project Design Manager to determine project-specific LEED certification requirements.

LEED Registration

All projects pursuing LEED certification will be registered with LEED Online by the U-M AEC Sustainability Coordinator; from that point on the A/E's designated LEED Administrator will be responsible for assigning and managing the attempted credits within LEED Online. See the U-M LEED Project Registration Procedure for complete details.

LEED Checklist and Communication Process

The A/E's designated LEED Administrator shall be responsible for the management and execution of the following checklist and communication process, in addition to other documentation, calculations and processes required for LEED certification:

- (a) At the conclusion of schematic design, develop a preliminary LEED Checklist utilizing the most current LEED Reference Guide for the appropriate rating system, including Addenda.

- (b) The checklist should identify all items for which credit can be achieved, items for which credit is under consideration, and items for which no credit can be achieved.
- (c) For items "under consideration", clarify steps required for this review and analysis, potential options, and potential cost and benefit. The U-M AEC Sustainability Coordinator and U-M Design Manager will assist in refining this list and provide direction on further action as design progresses to DD and CD phases.
- (d) At the conclusion of DD phase, update the LEED Checklist. A clear direction should be established for "under consideration" items. Items should be included in scope, deleted from consideration, or included as bid alternates.
- (e) At the conclusion of CD phase, update the LEED Checklist. The updated checklist should include any additions and/or subtractions to the project scope that may have occurred during design development and affect the total score anticipated at the conclusion of DD.
- (f) At the conclusion of Bid Award, the A/E's designated LEED Administrator is responsible for the submittal of design phase credits to GBCI® for LEED Review. LEED submittal fees shall be paid by the A/E and listed as a reimbursable expense.
- (g) After GBCI® completes its review of the LEED application, the A/E's designated LEED Administrator shall conference with the project team and the U-M AEC Sustainability Coordinator and present all technical advice received from the GBCI® reviewers. Describe strategies to respond to points denied or information forms not approved. Conduct such conferences after every LEED review phase.
- (h) At the completion of the construction phase, update the LEED Checklist. The updated checklist should include any additions and/or subtractions to the project scope that may have occurred during construction and affect the total score anticipated at the conclusion of CD.
- (i) At the conclusion of the construction phase, the A/E's designated LEED Administrator is responsible for the submittal of design phase to GBCI® credits for LEED Review. LEED submittal fees shall be paid by the A/E and listed as a reimbursable expense.
- (j) Upon receipt of LEED certification, the A/E's designated LEED Administrator shall notify the U-M AEC Sustainability Coordinator. A/E to obtain authorization from the AEC Sustainability Coordinator prior to publishing LEED certification results on any media platform.
- (k) Upon receipt of LEED certification, the A/E's designated LEED Administrator shall notify the U-M AEC Sustainability Coordinator. A/E to obtain authorization from the AEC Sustainability Coordinator prior to publishing LEED certification results on any media platform.

Existing LEED Certified Buildings

Projects within LEED certified buildings shall be implemented so as not to jeopardize sustainable design and the LEED certification. A complete list of LEED certified buildings is located in the Sustainability Section of the AEC website.

Additional Resources

Projects involving demolition are encouraged to divert waste from landfills by taking advantage of recycling opportunities currently available through outside companies. Below is a list of recycling programs that AEC is aware of. Contact the AEC Sustainability Coordinator with questions.

Vinyl Composite Tile

- Armstrong World Industries, Inc.

Acoustic Ceiling Tile

- Armstrong World Industries, Inc.
- USG
- CertainTeed

Carpet

- Calvert's Roll-Off Containers, Inc. (operated by Recycle Ann Arbor)
- Great Lakes Recycling - GLR

Carpet Padding

- Recycle Ann Arbor-Calvert's
- Great Lakes Recycling