

SUSTAINABLE DESIGN AND LEED® REQUIREMENTS

Introduction

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 Guidelines:

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

U-M Master Specifications:

[01510 - Construction Air Quality](#)

[01525-Construction and Demolition Waste Tracking](#)

Related Documents:

[Building/Project Sustainability Summary](#)

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

[U-M Baseline LEED Checklist](#)

[U-M Post-Occupancy Thermal Comfort Survey](#)

[U-M Post-Occupancy Thermal Comfort Corrective Action Plan](#)

[U-M Refrigerant Calculation Table](#)

[U-M Comprehensive Transportation Management Plan](#)

[U-M OS1 Green Cleaning Program](#)

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 [01510 - 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. It is also intended to include those items required by the LEED IEQ credit pertaining to construction indoor air quality management.

SID-K

U-M Master Specification [01525-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 be edited by the A/E.

Document all sustainability design concepts in the project OPR/BOD (Owner's Project Requirements/Basis of Design) document. [SID-B - 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 e eligible.

Projects Requiring Regental Approval

At the end 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.

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 be designed to achieve a minimum of Leadership in Energy and Environmental Design (LEED) Silver certification using the appropriate rating system. Certification shall be obtained from the Green Building Certification Institute, Inc. (GBCI®).

In rare cases, projects may be exempt based on special building considerations:

- (a) Exceptions will be granted rarely and based on unusual building requirements driven by programmatic needs, such as specialized HVAC system requirements, specialized laboratories or high performance computing facilities with extreme energy requirements, and for specialty buildings outside the realm of the LEED rating systems.
- (b) Requests for exemption must be justified in writing, reviewed by the Associate Vice President for Facilities and Operations, and approved by the U-M Sustainability Executive Council.

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 Project Manager will be responsible for assigning and managing the attempted credits within LEED Online. See the [U-M LEED Project Registration Procedure](#) for complete details.

All projects pursuing LEED certification shall utilize the following checklist and communication process, in addition to other processes required for certification:

SID-K

- (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) The [U-M Baseline LEED Checklist](#) outlines the credits that are likely achievable by projects pursuing LEED certification, based on past projects at the University. Carefully review the baseline checklist and consult with the U-M AEC Sustainability Coordinator before electing not to pursue any credit indicated as likely achievable.
- (d) For items "under consideration", clarify steps required for this review and analysis, potential options, and potential cost and benefit. The U-M Design Manager will assist in refining this list and provide direction on further action as design progresses to DD and CD phases.
- (e) 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.
- (f) 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.
- (g) After GBCI[®] completes its review of the LEED application, the LEED Project Manager shall conference with the project team and the U-M AEC Sustainability Team 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.

The [U-M Post-Occupancy Thermal Comfort Survey](#) and the [U-M Post-Occupancy Thermal Comfort Corrective Action Plan](#) are to be used when pursuing LEED-NC credit for thermal comfort verification. For projects pursuing this LEED-NC credit, this survey will be administered by the University of Michigan utilizing an internal procedure that complies with the credit requirements specified in USGBC's "LEED® Reference Guide for Green Building Design and Construction".

Existing LEED Certified Buildings

Projects within LEED certified buildings shall be implemented so as not to jeopardize sustainable design and the LEED certification. Click [here](#) for a complete list of LEED certified buildings.

Additional Resources

The [U-M Refrigerant Calculation Table](#) is a tool that is available for use during the selection of refrigerants and heating, ventilating, air conditioning and refrigeration (HVAC&R) equipment. For projects pursuing LEED-NC certification, this table provides guidance in determining HVAC&R compliance with LEED-NC 2009 EAc4 Enhanced Refrigerant Management.

The [U-M Comprehensive Transportation Management Plan](#) demonstrates a quantifiable reduction in personal vehicle usage through campus wide alternative transportation programs. Consider the use of this when pursuing Exemplary Performance for LEED-NC Alternative Transportation credits. A complete description of this credit is located in USGBC's "LEED® Reference Guide for Green Building Design and Construction".

The [U-M OS1 Green Cleaning Program](#) describes the comprehensive cleaning system used by U-M Plant Building and Grounds Services. For projects pursuing LEED-NC, consider the use of this document when seeking Innovation in Design credit for Green Housekeeping.

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.

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