DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

2 JUN 2011

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ USAF/A7C
1260 Air Force Pentagon
Washington, DC 20330-1260

SUBJECT: Air Force Sustainable Design and Development (SDD) Implementing Guidance

This memorandum reinforces the Air Force commitment to incorporate sustainable concepts in the planning, programming, design, construction, and operation of facilities and infrastructure. Beginning with FY12 and *regardless of funding source*, all permanent construction activity on Air Force installations in the United States (including Alaska and Hawaii) and its territories on permanent Active Air Force installations, resulting in Air Force Real Property Assets, shall comply with the requirements of this memorandum. This policy shall apply to overseas construction activities to the extent practical, considering mission objectives, and Host Nation agreements. The requirements of the following directives are incorporated into this memorandum:

- Executive Order (EO) 13327, Federal Real Property Asset Management, 6 Feb 04
- Public Law 109-58, Energy Policy Act (EPAct) 2005, 8 Aug 05
- Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding and Guiding Principles, 24 Jan 06
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management, 26 Jan 07
- Public Law 110-140, Energy Independence and Security Act (EISA) of 2007, 19 Dec 07
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance, 8 Oct 09
- Deputy Under Secretary of Defense (Installations and Environment) Memorandum, 19 Jan 10, Subject: DoD Implementation of Storm Water Requirements under Section 438 of the Energy Independence and Security Act (EISA)
- Deputy Under Secretary of Defense (Installations and Environment) Memorandum, 25 Oct 10, Subject: Department of Defense Sustainable Buildings Policy
- 10 CFR Part 433, Energy Efficiency Standard for the Design and Construction of New Federal Commercial and Multi-Family High Rise Residential Buildings
- 10 CFR Part 436, Subpart A – Methodology and Procedures for Life Cycle Cost Analyses
- FY12 Defense Planning and Programming Guidance

The following sustainability requirements apply to the Air Force Construction program:

a. All new vertical construction, and major renovations[1] (Restoration & Modernization), **meeting the USGBC LEED 2009 Minimum Program Requirements (MPRs)** (see attachments 1 and 2) – All facilities in this category shall fully incorporate Federal

[1] For the purposes of this memorandum, a major renovation project is defined as changes to a building that provide significant opportunity for substantial improvement in the sustainable design elements of the building, including energy efficiency, as determined by the signatory of the DD Form 1391. For major renovation projects seeking formal LEED certification, criteria established in the MPRs and the LEED Reference Guide must also be met.

requirements for High Performance and Sustainable Buildings (HPSB) (see attachment 3); shall be registered in USGBC LEED-Online; *shall be formally certified and achieve at a minimum LEED Silver certification* (or meet a comparable level of achievement with an overseas third-party green building rating system); and shall achieve not less than 20 points (40 percent of the Silver point threshold) dedicated toward energy efficiency and water conservation.

b. All new vertical construction, and major renovations (R&M), **not meeting the USGBC LEED 2009 MPRs**, shall fully incorporate the Federal requirements for HPSBs and shall pursue LEED credits (or credits in an equivalent overseas third-party green building rating system), relevant to the scope of the project, to the maximum extent practicable (see attachment 3). For horizontal, utility, and industrial projects, attachments 4, 5, and 6 have been provided as guidance to indicate appropriate thresholds of compliance with this memorandum. The project types are defined in ETL 08-13, *Incorporating Sustainable Design and Development (SDD) and Facility Energy Attributes in the Air Force Construction Program* as:

- Vertical – Includes typical building construction for which LEED-NC was developed as a metric
- Horizontal – Includes site development, heavy earthwork, construct and repair roads, runways, taxiways, aircraft aprons, containment, sidewalks, parking lots, revetments, curbs, and gutters
- Utility - Includes electric, gas, water, steam, and wastewater, including substations, lift stations, oil/water separators, storage tanks, petroleum, oil, lubricants (POL) lines, and transformers
- Industrial – Includes all enclosed facilities for which mechanical cooling/heating is provided for less than 50 percent of the building square footage

The following paragraphs apply to all projects subject to the requirements of paragraphs a and b above, and other construction activities noted herein.

Apply life cycle cost criteria as specified in 10 CFR 436 Subpart A - Methodology and Procedures for Life Cycle Cost Analyses; EO 13327, Federal Real Property Asset Management; AFI 32-1021, Planning and Programming Military Construction (MILCON) Projects; and AFI 32-1032, Planning and Programming Appropriated Funded Maintenance Repair and Construction Projects, as appropriate.

As a continuation of the Air Force commitment to low impact development, implement the DUSD (I&E), DoD Implementation of Storm Water Requirements under Section 438 of Energy Independence and Security Act (EISA) policy for FY11 O&M and MILCON projects (see attachment 7 for implementing guidance). In exceptional circumstances where project considerations may affect the practicability of implementing the DoD guidance in FY11 O&M projects and FY11 or FY12 MILCON projects, low impact development design strategies will continue to be consistent with existing applicable Air Force design guidance.

The requirements of this memorandum are not optional. Sustainable elements necessary to comply with this memorandum cannot be eliminated to save scope or cut cost. The DD Form 1391 shall include the scope and the cost estimate to achieve the requirements of this memorandum. A separate line item entitled "SDD, EPAct05, EO 13423, EISA 438, and EO 13514" shall list the scope and estimated cost. In lieu of a cost estimate, an allowance, not exceeding 2 percent of the total construction cost, may be identified on the DD Form in the "SDD, EPAct05, EO 13423, EISA 438, and EO 13514" line item.

For MILCON projects, a Federal government employee of the design/construction agent (as the Owner's Agent) and the BCE, or his/her designee (as the Owner) shall sign the LEED Project Registration Agreement and the LEED Certification Agreement as appropriate.

The Air Force MILCON Sustainability Requirements Reporting Scoresheet (attachment 3) shall be used for reporting Air Force compliance with the Federal HPSB requirements and LEED status, of all MILCON project types listed in paragraphs a and b of this memorandum. AFCEE MILCON Project Managers shall send the Air Force MILCON Sustainability Requirements Reporting Scoresheet to AFCEE.TDB.MILCONrptg@us.af.mil, at: 1) the initial design charrette; 2) the RFP/35 percent design; 3) design complete; and 4) construction complete phases of all MILCON projects addressed by this memorandum. Any decisions based on cost constraints leading to deletion of sustainable concepts, or certification of the project, shall be included in the documentation. At the completion of the project provide HPSB status information to the installation Civil Engineering office for the purpose of updating the ACES-RP, RPA Sustainability Code field.

Specific roles and responsibilities in support of this memorandum are:

ORGANIZATION	ROLES AND RESPONSIBILITIES
HQ USAF/A7C	Development and dissemination of sustainable development policy. POC: Gene Gallogly, AF/A7CA, thomas.gallogly@us.af.mil Development and dissemination of MILCON program policy. POC: Robert Gill, AF/A7CP, robert.gill@us.af.mil
AFCEE	Provide guidance documents and technical support, to include planning, design criteria, the delivery process, and general guidance on sustainability and LEED certification. POC: Paula Shaw, AFCEE/TDBS, paula.shaw@us.af.mil
AFCESA	Provide guidance documents and technical support to include engineering criteria, construction standards, life cycle and sustainable costs, and operations and maintenance issues. POC: Clifford Fetter, AFCESA/CEOA,
	clifford.fetter@us.af.mil Provide guidance documents and technical support to include energy and water conservation, and renewable energy technologies. POC: Ken Walters, AFCESA/CEN, kenneth.walters.1@us.af.mil

As new LEED rating systems are introduced by USGBC, AFCEE and AFCESA will evaluate the potential for incorporation into the Air Force Construction Program and will forward recommendations to HQ USAF/A7C for guidance update consideration.

TIMOTHY A. BYERS, Maj Gen, USAF
The Civil Engineer
DCS/Logistics, Installations & Mission Support

7 Attachments:

1. LEED 2009 Minimum Program Requirements (MPR)
2. LEED 2009 MPR Supplemental Guidance
3. Air Force MILCON Sustainability Requirements Reporting Scoresheet, LEED 2009
4. Guidance on Applying LEED Principles to Air Force Horizontal Construction Projects
5. Guidance on Applying LEED Principles to Air Force Utility Construction Projects
6. Guidance on Applying LEED Principles to Air Force Industrial Construction Projects
7. Implementing Guidance to Meet EISA 2007 Section 438 Requirements

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LEED 2009
Minimum Program Requirements

Apply to

LEED 2009 for New Construction and Major Renovations, LEED 2009 for Core & Shell development, LEED 2009 for Schools, LEED 2009 for Commercial Interiors, and LEED 2009 for Existing Buildings: Operations & Maintenance

Do not apply to LEED for Homes, LEED for Neighborhood Development, or any LEED rating system adopted prior to 2009

Version November 2009

This version adds to the April 2009 version clarifying language, but not new requirements, that was approved by the LEED Steering Committee and the USGBC Executive Committee in November 2009

INTRODUCTION

This document identifies the MPRs, or minimum characteristics that a project must possess in order to be eligible for LEED Certification. These requirements define the types of buildings that the LEED Green Building Rating Systems were designed to evaluate, and taken together serve three goals: to give clear guidance to customers, to protect the integrity of the LEED program, and to reduce complications that occur during the LEED certification process. The requirements in this document will apply to all those, and only those projects seeking to demonstrate conformance with the rating systems listed above.

Definitions, exceptions, and more extensive guidance relating to these MPRs are available in a separate document titled: *LEED 2009 MPR Supplemental Guidance*. Terms that are *italicized and underlined* here are defined in the Supplemental Guidance document (they are marked as such only the first time that they appear).

At this time U.S. Green Building Council, Inc. has authorized the Green Building Certification Institute (GBCI) to confer LEED Certification. GBCI has agreed to consider requests for exceptions to MPRs that are not already defined in the LEED 2009 MPR Supplemental Guidance document on a case-by-case basis for special circumstances.

In addition to complying with the MPRs, a project must also demonstrate compliance with all rating system requirements in order to achieve LEED Certification.

1. MUST COMPLY WITH ENVIRONMENTAL LAWS

New Construction, Core & Shell, Schools, Commercial Interiors

The *LEED project building or space*, all other *real property* within the *LEED project boundary*, and all *project work* must comply with applicable federal, state, and local building-related environmental laws and regulations in place where the project is located. This condition must be satisfied from the date of *LEED project registration* or the commencement of *schematic design*, whichever comes first, up and until the date that the building receives a *certificate of occupancy* or similar official indication that it is fit and ready for use.

Existing Buildings: O&M

The LEED project building, all other real property within the LEED project boundary, any project work, and all *normal building operations* occurring within the LEED project building and the LEED project boundary must comply with applicable federal, state, and local building-related environmental laws and regulations in place where the project is located. This condition must be satisfied from the commencement of the LEED project's initial LEED-EB: O&M *performance period* through the expiration date of the LEED Certification.

All Rating Systems

A lapse in a project's compliance with a building-related environmental law or regulation that results from an unforeseen and unavoidable circumstance shall not necessarily result in non-compliance with this MPR. Such lapses shall be excused so long as they are remediated as soon as feasibly possible.

2. MUST BE A COMPLETE, PERMANENT BUILDING OR SPACE

All Rating Systems

All LEED projects must be designed for, constructed on, and operated on a permanent location on already existing *land*. LEED projects shall not consist of mobile structures, equipment, or vehicles. No building or space that is designed to move at any point in its lifetime may pursue LEED Certification.

New Construction, Core & Shell, Schools

LEED projects must include the new, ground-up design and construction, or *major renovation*, of at least one commercial, institutional, or high-rise residential building in its *entirety*.

Commercial Interiors

The LEED project scope must include a *complete interior space* distinct from other spaces within the same building with regards to at least one of the following characteristics: ownership, management, lease, or party wall separation.

Existing Buildings: O&M

LEED projects must include at least one existing commercial, institutional, or high-rise residential building in its entirety.

3. MUST USE A REASONABLE SITE BOUNDARY

New Construction, Core and Shell, Schools, Existing Buildings: O&M

1. The LEED project boundary must include all contiguous land that is associated with and supports normal building operations for the LEED project building, including all land that was or will be disturbed for the purpose of *undertaking the LEED project*.
2. The LEED project boundary may not include land that is owned by a party other than that which owns the LEED project unless that land is associated with and supports normal building operations for the LEED project building.
3. LEED projects located on a campus must have project boundaries such that if all the buildings on campus become LEED certified, then 100% of the gross land area on the campus would be included within a LEED boundary. If this requirement is in conflict with MPR #7, Must Comply with Minimum Building Area to Site Area Ratio, then MPR #7 will take precedence.
4. Any given parcel of real property may only be attributed to a single LEED project building.
5. *Gerrymandering* of a LEED project boundary is prohibited: the boundary may not unreasonably exclude sections of land to create boundaries in unreasonable shapes for the sole purpose of complying with prerequisites or credits.

Commercial Interiors

If any land was or will be disturbed for the purpose of undertaking the LEED project, then that land must be included within the LEED project boundary.

4. MUST COMPLY WITH MINIMUM FLOOR AREA REQUIREMENTS

New Construction, Core and Shell, Schools, Existing Buildings: O&M

The LEED project must include a minimum of 1,000 square feet (93 square meters) of gross floor area.

Commercial Interiors

The LEED project must include a minimum of 250 square feet (22 square meters) of gross floor area.

5. MUST COMPLY WITH MINIMUM OCCUPANCY RATES

New Construction, Core & Shell, Schools, and Commercial Interiors

Full Time Equivalent Occupancy

The LEED project must serve 1 or more *Full Time Equivalent* (FTE) occupant(s), calculated as an annual average in order to use LEED in its entirety. If the project serves less than 1 annualized FTE, optional credits from the Indoor Environmental Quality category may not be earned (the prerequisites must still be earned).

Existing Buildings: O&M

Full Time Equivalent Occupancy

The LEED project must serve 1 or more Full Time Equivalent (FTE) occupant(s), calculated as an annual average in order to use LEED in its entirety. If the project serves less than 1 annualized FTE, optional credits from the Indoor Environmental Quality category may not be earned (the prerequisites must still be earned).

Minimum Occupancy Rate

The LEED project must be in a state of *typical physical occupancy*, and all building systems must be operating at a capacity necessary to serve the current occupants, for a period that includes all performance periods as well as at least the 12 continuous months immediately preceding the first submission for a review.

6. MUST COMMIT TO SHARING WHOLE-BUILDING ENERGY AND WATER USAGE DATA

All Rating Systems

All certified projects must commit to sharing with USGBC and/or GBCI all available actual whole-project energy and water usage data for a period of at least 5 years. This period starts on the date that the LEED project begins typical physical occupancy if certifying under New Construction, Core & Shell, Schools, or Commercial Interiors, or the date that the building is awarded certification if certifying under Existing Buildings: Operations & Maintenance. Sharing this data includes supplying information on a regular basis in a free, accessible, and secure online tool or, if necessary, taking any action to authorize the collection of information directly from service or utility providers. This commitment must carry forward if the building or space changes ownership or lessee.

7. MUST COMPLY WITH A MINIMUM BUILDING AREA TO SITE AREA RATIO

All Rating Systems

The gross floor area of the LEED project building must be no less than 2% of the gross land area within the LEED project boundary.

LEED 2009 MPR

SUPPLEMENTAL GUIDANCE

Version 1.0 **November 2009**

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INTRODUCTION

The LEED 2009 MPR Supplemental Guidance was written to help project teams understand how their buildings and their spaces can meet the Minimum Program Requirements (MPRs). This document builds on the MPRs by establishing exceptions, providing direction for specific situation, defining key terms, and describing the intent behind each MPR. This Supplemental Guidance is the dynamic partner of the MPRs: it will evolve over time to respond to a changing and complex industry while the requirements themselves will remain the same.

ABOUT THE MPRS

The MPRs list the basic characteristics that a project must possess to be eligible for certification under the LEED 2009 rating systems, therefore defining a broad category of buildings that the LEED 2009 rating systems were designed to evaluate. They were developed over a period of nine months by USGBC staff and committee members, and were officially approved in April, 2009 by the LEED Steering Committee (LSC). In November 2009, the LSC and the USGBC Executive Committee approved of additional MPR language that clarified, but did not add to, the existing requirements. When new rating system versions become available, the MPRs will be completely revised and re-approved. Please find the MPRs at the following locations:

- stated throughout this document
- condensed for all rating systems here: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=2014

APPLICABLE RATING SYSTEMS

Projects registering under the following rating systems, including those that upgrade from past versions, are subject to the MPRs: New Construction and Major Renovations 2009 (NC), Core & Shell 2009 (CS), Schools 2009, Commercial Interiors 2009 (CI), and Existing Buildings: Operations 2009 (EB: O&M). *The MPRs do NOT apply to LEED for Homes, LEED for Neighborhood Development, rating systems that have not yet launched, and pre-2009 rating systems.*

VERSIONS OF THIS DOCUMENT

This document will be regularly updated as necessary to provide additional clarification on the intent and application of the MPRs. All changes and additions will be clearly communicated as highlighted text within each new version. Retired versions will be archived and permanently accessible.

Projects must comply with the version of this document that is current at the time of the project's registration. It is the responsibility of the project team to be familiar with the current version when registering a project. Versions published after a LEED project's registration may be referenced by project teams for additional clarifications, if desired.

SUBMITTING QUESTIONS ABOUT THE MPRS

The process for submitting alternative compliance or interpretation requests regarding MPRs is still under development. This process and fees related thereto will be described in a later

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version of this document. All general inquires relative to the MPRs should be sent to GBCI from this website: http://www.gbci.org/customerserv.aspx.

IF MPR COMPLIANCE IS IN QUESTION

If it becomes known that a LEED project is or was in violation of an MPR, certification may be revoked, or the certification process may be halted. These situations will be handled on a case by case basis according to GBCI's challenge policy.

UNUSUAL BUILDING TYPES

Some buildings have characteristics that are not specifically prohibited by the MPRs, but nonetheless make them unsuitable for evaluation under the LEED rating systems. If a project team recognizes that their building has such a characteristic, they are encouraged to implement green building strategies but refrain from attempting LEED certification. The decision not to attempt certification is at the discretion of the project team only. In general, GBCI will not prevent a building or space from attempting LEED certification as a result of an unusual characteristic that is not addressed by the MPRs.

PRECERTIFICATION AND RECERTIFICATION

Projects pre-certifying under LEED CS must meet the MPRs applicable to all LEED CS projects. Projects re-certifying under LEED EB: O&M must meet the MPRs applicable to all LEED EB: O&M projects.

RATING SYSTEM SELECTION

The MPRs, and this document, do not deal with rating system selection, i.e., choosing the proper LEED rating system for a given project. Please find guidance on this topic in the introductions to each rating system and in the rating system selection wizard tool found in the registration process in LEED Online.

DOCUMENTING COMPLIANCE WITH THE MPRS

The LEED project owner must confirm that the project complies with each of the MPRs by completing checkboxes and an initial box in the Project Information form #1 in LEED Online v3. Unless there is a special circumstance, project teams are not required to submit additional documentation to prove compliance.

MULTIPLE BUILDINGS

With a few exceptions, this document excludes guidance specific to multiple building projects. Such guidance is under development and will be included in a later version of this document.

Please find <u>underlined</u> terms in the definitions section at the end of this document.

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1. MUST COMPLY WITH ENVIRONMENTAL LAWS.

MPR Language

All Rating Systems:

A lapse in a project's compliance with a building-related environmental law or regulation that results from an unforeseen and unavoidable circumstance shall not necessarily result in non-compliance with this MPR. Such lapses shall be excused so long as they are remediated as soon as feasibly possible.

New Construction, Core & Shell, Schools, Commercial Interiors:

The *LEED project building or space*, all other *real property* within the *LEED project boundary*, and all *project work* must comply with applicable federal, state, and local building-related environmental laws and regulations in place where the project is located. This condition must be satisfied from the date of *LEED project registration* or the commencement of *schematic design*, whichever comes first, up to and until the date that the building receives a *certificate of occupancy* or similar official indication that it is fit and ready for use.

Existing Buildings: O&M:

The LEED project building, all other real property within the LEED project boundary, any project work, and all *normal building operations* occurring within the LEED project building and the LEED project boundary must comply with applicable federal, state, and local building-related environmental laws and regulations in place where the project is located. This condition must be satisfied from the commencement of the LEED project's initial LEED-EB: O&M *performance period* through the expiration date of the LEED Certification.

Intent:

The purpose of this MPR is to highlight the importance of environmental laws and regulations that apply to LEED projects. While all building projects ought to comply with all legal requirements, as the LEED rating systems are standards for excellence in green building, it is appropriate and logical to specifically require LEED certified buildings to comply with applicable environmental laws and regulations. Such legislation establishes a baseline standard for sustainability.

THIS MPR DOES NOT INTEND TO:

- align LEED, USGBC, or GBCI with any form of government
- give USGBC/GBCI the opportunity to penalize project teams or building owners for unintended, short term, minor offenses

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- extend to environmental laws that are not related to the design, construction, and operation of a LEED project building
- force project teams to make extensive and unnecessary effort to verify compliance with environmental building laws

Specific Allowed Exceptions:

- *Short- term lapse*
  As stated in the MPR, a lapse in a building's compliance with an environmental law that results from unforeseen and unavoidable circumstances will not be considered as a basis for revocation of LEED certification. However, the LEED project team must demonstrate a dedicated effort to return the building to compliance as soon as feasibly possible. As a precaution and at the project team's discretion, the building owner may notify GBCI of any lapse in compliance and efforts to bring the building back into compliance. The MPR form under 'Project Information Forms' in LEED Online should be used for this purpose. If the lapse occurs after certification (applicable only to EB: O&M certified projects), the project team may contact GBCI through regular customer service at http://www.gbci.org/customerserv.aspx.

- *Exemption granted by authorities*
  If the project is granted an exemption from a building-related environmental law from governmental authorities for any reason, then that project is exempt from this MPR in regards to that particular law. In the event that this occurs, a description of the situation leading to the exemption and proof of the exemption (such as an official letter from the granting authority) must be provided in the MPR form under 'Project Information Forms' in LEED Online.

- *Special consideration for LEED for Commercial Interiors projects*
  Only the gross floor area within the LEED project boundary of a LEED CI project must comply with this MPR, NOT the building that the project is located in.

- *Special consideration for LEED for Core and Shell projects*
  For LEED-CS projects, interior fit-out work conducted by a tenant is NOT subject to this MPR unless strategies implemented in the fit-out space contribute to earned credits for that project via the tenant sales and lease agreement path. For the purposes of this exception, a tenant is considered an entity which is leasing space from the owner.

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Additional Information and Clarification

- *Applicable building-related environmental laws*

  DEFINITION

  For the purposes of this MPR, an 'environmental law' is considered to be a statute, rule, treaty, convention, executive order, regulation, or ordinance that seeks to protect the natural environment and/or human health which may be negatively impacted by activities surrounding the design, construction, development, and (for those using EB: O&M), operation of a building.

  LOCATION

  This MPR applies to ALL LEED projects, regardless of location, and includes all existing building-related environmental laws in the jurisdiction where the LEED project is located. For US projects, this includes laws at the federal, state, and local level.

  CATEGORIES

  Categories containing laws that fall under the purview of this MPR include, but are not limited to the following: wetlands, noise, runoff, asbestos, air quality, pollution, sewage, pesticides, safety, and forestry.

  EXAMPLES

  The following are examples of US federal building-related environmental laws and regulations that USGBC generally expects will fall under the purview of this MPR for most LEED projects. This list is not intended to be exhaustive, only illustrative: its purpose is to further orient project teams as to the meaning of this MPR and to assist project teams in determining which laws fall under the purview of this MPR. **It is the project team's responsibility to know which laws apply to the building and to verify that the project is in compliance.**

  - Clean Water Act
  - OSHA Safety and Health Regulations for Construction
  - Endangered Species Act
  - OSHA Recording and Reporting Occupational Injuries and Illness

- *New laws and regulations*
  This MPR includes new laws, regulations, and ordinances as they are enacted.

- *Conflicts between LEED 2009 requirements and laws*
  In the rare case that an applicable building-related environmental law covered by this MPR conflicts with an MPR, or a LEED prerequisite or credit, the law will take precedence. Project teams may still comply with the MPR and achieve the prerequisite or credit by submitting a Project CIR requesting approval of an alternative compliance path that satisfies both the law and the intent of the LEED requirement.

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- *Law enforcement*
  By verifying that a LEED project complies with this MPR, it is assumed that project owners are accurately and willingly attesting that the LEED project complies with applicable building-related environmental laws. LEED is a voluntary program that rewards exemplary building performance. In no way will USGBC or GBCI act as law enforcement. With this MPR, USGBC and GBCI are using established laws only to ascertain that the LEED project is meeting a minimum environmental standard.

- *MPR #1 and Sustainable Sites Credit 1 (SSc1) Site Selection in LEED NC, LEED CS, and LEED for Schools*
  The intent and requirements of SSc1 differs from that of this MPR. This MPR requires compliance with the law, and SSc1 rewards voluntary land use choices. A point may be earned under SSc1 if the LEED project complies with a series of criteria. Projects that do not meet these criteria demonstrate unsustainable, but not illegal development practices. SSc1 essentially builds on the requirements of MPR #1.

- *Settlements*
  It is recognized that, in the case of an alleged environmental law violation, building owners sometimes agree on a settlement with EPA or other governmental agency to make reparations for their actions. Guidance on how this MPR will be applied in such a situation is forthcoming. If you are in this situation and need to know if you are in compliance with this MPR, please contact GBCI through this website http://www.gbci.org/customerserv.aspx.

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2. MUST BE A COMPLETE, PERMANENT BUILDING OR SPACE

MPR Language

All Rating Systems:

All LEED projects must be designed for, constructed on, and operated on a permanent location on already existing *land*. LEED projects shall not consist of mobile structures, equipment, or vehicles. No building or space that is designed to move at any point in its lifetime may pursue LEED Certification.

New Construction, Core & Shell, Schools:

LEED projects must include the new, ground-up design and construction, or *major renovation*, of at least one commercial, institutional, or high-rise residential building in its *entirety*.

Commercial Interiors:

The LEED project scope must include a *complete interior space* distinct from other spaces within the same building with regards to at least one of the following characteristics: ownership, management, lease, or *party wall separation*.

Existing Buildings: O&M:

LEED projects must include at least one existing commercial, institutional, or high-rise residential building in its entirety.

Intent:

The LEED rating systems were designed to evaluate complete buildings and spaces in fixed locations. Partial buildings or spaces are unsuitable for LEED certification because, when analyzed under the requirements of LEED prerequisites and credits, they create results inconsistent with those of whole buildings or spaces. Also, partial certification can easily appear to encompass an entire building or space, sending a false message to users.

Permanency is an important requirement because a significant percentage of LEED prerequisites and credits are dependent on location, making a mobile building or space unacceptable. The stipulation for already existing land responds to the fact that artificial land masses displace and disrupt marine ecosystems. Buildings that generate the need to develop such land do not meet the overall intent of the LEED rating system. Anything less than a distinct, complete, and permanent project on existing land will not be able to accurately demonstrate compliance with LEED.

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THIS MPR DOES NOT INTEND TO:

- exclude a building or space that could be fairly evaluated through the LEED certification process if the exclusion is based on a technicality
- exclude buildings with an unusual design or built through non-traditional means that could be fairly evaluated through the LEED certification process

Specific Allowed Exceptions:

- *Movable buildings and parts of buildings*
  Prefabricated or modular structures and moveable building elements of any variation may be certified once permanently installed and/or established as part of the LEED project building in the location that they are intended to stay for the life of the complete structure.

- *Horizontally attached buildings (including additions)*
  Horizontally attached buildings may be certified independently, provided that the following two conditions are met:
  a) they are physically distinct (see definition in Glossary)
  b) they have unique addresses or names.
  If these conditions are not met, the structure is considered a single building and must be certified as such.

- *Vertically Attached Buildings*
  Currently, structures that are vertically stacked are not recognized as distinct buildings that may apply separately to LEED. Buildings may only be distinguished if they are horizontally attached. However, an alteration to this rule that would allow some vertically stacked structures to certify separately is under consideration. There is no timeline for the release of this alteration. If you would like to certify a building that is built on top of or below another building please contact GBCI through this website http://www.gbci.org/customerserv.aspx.

- *Buildings constructed on top of or below underground public infrastructure*
  Buildings vertically connected to, but physically distinct from public infrastructure such as a transportation hub, may be considered a building in its entirety and certified independently of the infrastructure.

- *Special consideration for LEED for Commercial Interiors projects*
  MOBILITY
  Buildings in which CI projects are located must be immobile, and are subject to the same guidance on the subject of permanency as projects that are certifying under whole building rating systems.
  ALREADY EXISTING LAND
  Buildings in which CI projects are located are NOT required to be built on already existing land.

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- *Special Consideration for LEED for Core & Shell projects*
  For a project certifying under CS, the project is considered a 'building in its entirety' without interior fit-outs complete

- *Artificial land mass or support structures*

  - Buildings located on previously constructed docks, piers, jetties, infill, and other manufactured structures in or above water or other bodies are permissible, provided that artificial land is previously developed, i.e., once supported hardscape or another building before the development of the LEED project.
  - Buildings cantilevered over water, highways, or other bodies are acceptable.
  - Existing land to which soil or other material has been added is acceptable.

- *Multi-tenant buildings certifying under LEED EB: O&M*
  Multi-tenant buildings certifying under LEED EB: O&M may exclude up to 10% of the gross floor area from some prerequisites and credits as outlined in the LEED EB: O&M reference guide and the submittal forms in LEED Online.

- *Floor separation may be used to define a complete interior space*
  Ownership, management, lease, and party walls are listed in the MPR as acceptable methods for defining complete interior spaces for LEED-CI. Floors and ceilings, i.e. the structural component separating two floors, may also define two complete interior spaces if one floor is unaffected by construction work, even if both floors serve the same occupant.

- *Owner-occupied buildings and CI: Certifying space not separate by ownership, management, lease, party wall, or floor*
  There are many situations in which a single entity owns, manages, and occupies an entire building, and wishes to certify a renovated portion of the building which is not separate from other portions by a party wall or floor. For example, a single floor in an academic building might be divided into labs and offices, and only the labs undergo a renovation. Such a space is not automatically disqualified from attempting to certify under LEED CI. Project teams with this situation must submit a narrative in Project Information Form #1 in LEED Online v3 confirming that the conditions below are met.
    a) It is unreasonable or impossible to draw a project boundary where there is separation by ownership, management, lease, or party wall separation.
    b) The LEED project boundary is not drawn in such a way as to specifically avoid floor area that would not comply with other MPRs, prerequisites, or attempted credits.
    c) The LEED project boundary is drawn at a clear functional and physical barrier such that the LEED certification, if awarded, could not easily be perceived to extend to uncertified floor area.
    d) The LEED project boundary is not drawn in such a way as to create an unreasonably difficult review process that results from the reviewer's inability to distinguish between strategies, services, or materials in the LEED certifying space and the non-LEED certifying space. For example, it would be best if the LEED project boundary coincided with an HVAC zone boundary.

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e) If the project is on multiple floors, the renovation or fit-out work is conducted under a single construction contract and signage will be used to clearly indicate which floors/space is LEED certified. The floors need not be adjacent.

Additional Information and Clarification

- *Movable buildings*
  - Structures not compliant with this MPR include cars, motor homes, trains, boats, ships, planes, and transient exhibits of any kind.
  - If, for any reason, a LEED 2009 certified building is moved from the location cited at the time of LEED certification, it will no longer be in compliance with this MPR.

- *Certifying buildings with movable parts*
  Buildings with large movable parts, such as a retracting ceiling in a stadium, are acceptable.

- *Certifying temporary buildings*
  The amount of time that a building or space is intended to remain standing does not affect compliance with this MPR.

- *Multi-party ownership*
  Multiple-party ownership of a certifying building or space is acceptable. Proper accountability for MPR and rating system conformance must be in place.

- *Building types*
  The categories of buildings suitable for LEED - commercial, institutional, and high rise residential are intentionally inclusive, and are in no way exclusive. They cover a wide range of building types, including industrial. GBCI will not prevent a building from attempting certification due to its use. However, building use may restrict project teams to one rating system or another. For example, single family homes are restricted to LEED for Homes. Information on rating system selection can be found in the introduction to each rating system and the wizard tool found in the registration process in LEED Online v3.

- *No exceptions for projects with EQp2 conflicts*
  Some project buildings, such as casinos, typically have difficulty achieving LEED certification due to a smoking policy that conflicts with Indoor Environmental Quality prerequisite 2, Environmental Tobacco Smoke Control (EQp2). There will be no exceptions to this MPR to allow for partial building certification of such buildings. Project teams are encouraged to carefully review option 2 in EQp2 to explore opportunities to achieve LEED certification despite a smoking room located within a project.

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3. MUST USE A REASONABLE SITE BOUNDARY

MPR Language

New Construction, Core and Shell, Schools, Existing Buildings: Operations and Maintenance

1. The *LEED project boundary* must include all contiguous land that is associated with and supports normal building operations for the LEED project building, including all land that was or will be disturbed for the purpose of *undertaking the LEED project*.

2. The LEED project boundary may not include land that is owned by a party other than that which owns the LEED project unless that land is associated with and supports normal building operations for the LEED project building.

3. LEED projects located on a campus must have project boundaries such that if all the buildings on campus become LEED certified, then 100% of the gross land area on the campus would be included within a LEED boundary. If this requirement is in conflict with MPR #7, Must Comply with Minimum Building Area to Site Area Ratio, then MPR #7 will take precedence.

4. Any given parcel of real property may only be attributed to a single LEED project building.

5. *Gerrymandering* of a LEED project boundary is prohibited: the boundary may not unreasonably exclude sections of land to create boundaries in unreasonable shapes for the sole purpose of complying with prerequisites or credits.

Commercial Interiors

If any land was or will be disturbed for the purpose of undertaking the LEED project, then that land must be included within the LEED project boundary.

Intent:

In order to ensure fair and consistent evaluation for all projects under the Sustainable Sites credit category, it is necessary to have guidelines for an acceptable LEED project boundary. All site conditions and impacts related to a building must be considered and addressed in the certification process to ensure a complete and thorough examination of the environmental impact of a building.

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THIS MPR DOES NOT INTEND TO:

- force project teams to create an awkward or misrepresentative LEED project boundary that does not reflect actual land use
- prevent project teams from making appropriate use of land to earn prerequisites and credits
- imply that land left outside of the LEED project boundary should not also benefit from environmentally sensitive land use practices.

Specific Allowed Exceptions:

- *Assigning real property for subsequent certification under EB: O&M*

  SINGLE BUILDING

  LEED projects certifying under EB: O&M may use some or all of the same real property that was used in the previous Design and Construction OR EB: O&M certification. The boundary does not need to be drawn in the same location – as long as the requirements of this MPR are met, the project team may re-draw the project line at their discretion.

  MULTIPLE BUILDINGS

  A single building previously certified as part of a multiple building LEED project may wish to pursue subsequent LEED certification under EB: O&M independently. Real property within the original collective boundary can be re-attributed to that single building for the EB: O&M certification.

- *Including non-contiguous parcels in the LEED project boundary*

  Non-contiguous parcels of land may be included within the LEED project boundary if the conditions below are met.

  a) Non-contiguous parcels must be separated by land that is owned and operated by an entity different than the owner of the land that the LEED project building sits on.
  b) All parcels separate from the parcel that the LEED building sits on must directly support or be associated with normal building operations.
  c) Non-contiguous parcels are no more than ¼ mile (0.40 kilometer) walking distance apart.
  d) There is a clear walking path between the parcels
  e) All real property within the LEED project boundary, including the non-contiguous parcel(s), is subject to the requirements of all MPRs, prerequisites, and attempted credits. For example, two sets of storm water calculations would need to be provided for two separate parcels to demonstrate compliance with Sustainable Sites credit 6.
  f) All land within the LEED project boundary must be governed by a common regulatory jurisdiction and is owned, leased, or managed by the same organizational entity.
  g) A description of the non-contiguous parcels of land within the LEED project boundary, the land between them, and compliance with items (a) through (f)

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above must be provided in the Additional Details section of Project Information form #1 in LEED Online v3.

- *Land outside the LEED project boundary used for compliance with specific credits*

  LEED -EB: O&M, SUSTAINABLE SITES CREDIT 5

  Any off-site land used to earn this credit is not required to be included in the LEED project boundary, and therefore is not subject to consideration for prerequisite, other credit, or other MPR compliance EXCEPT MPR#7.

  ALL RATING SYSTEMS: STORM WATER DESIGN CREDITS

  The nature of storm water calculations often necessitates that land outside the LEED project boundary be considered when determining compliance for these credits. Also, it may be necessary to discharge site runoff to a regional or master stormwater management system, such as a retention pond. This additional real property does not need to be included in the LEED project boundary or be considered for prerequisite, other credit, or other MPR compliance.

- *Facilities (including parking) outside the LEED project boundary used for compliance with specific credits*

  Facilities (including parking) that are not within the LEED project boundary but are used to demonstrate compliance with a credit or prerequisite, as allowed per the rating system and reference guide, need not be considered for other prerequisite, credit, or MPR compliance. However, those facilities cannot be used to show compliance for other LEED projects, unless the sufficient capacity is present.

  EXAMPLE

  Off-site showers used to show compliance with Sustainable Sites credit 4.2, Alternative Transportation, Bicycle Storage and Changing Rooms in LEED NC need not be included in the calculations for Water Efficiency prerequisite 1, and cannot be used to earn this credit for an additional LEED project unless the required shower-to-FTE ratio is met for both projects.

- *Real property no longer attributed to a certified building*

  If a certified building is demolished, all real property attributed to that LEED project may be assigned to another LEED project.

- *Easements and leases*

  Land that the LEED project owner leases or has an easement on may be included within the LEED project boundary.

- *Shared construction sites*

  A LEED project boundary must include all land disturbed for that project's construction, regardless of overlapping construction activity for other projects. For information on overlapping LEED project boundaries, please see the bullet below entitled 'Site boundary guidance for phased building projects, or building on land that was designated for a previously certified LEED project'.

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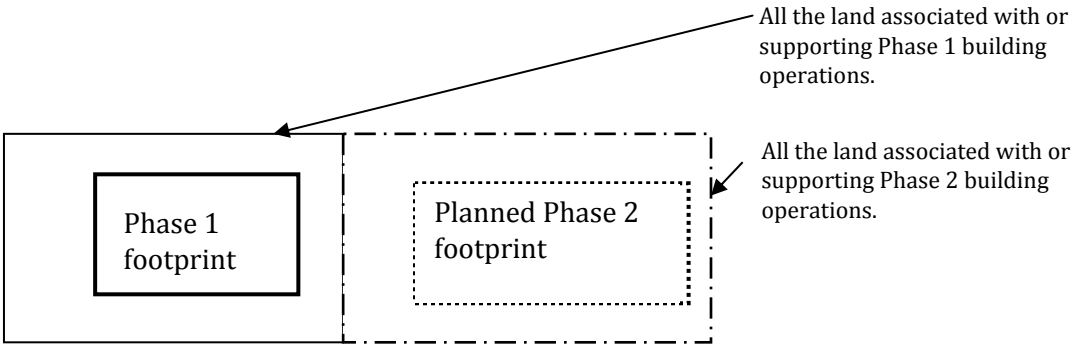
- *Site boundary guidance for phased building projects, or building on land that was designated for a previously certified LEED project*
  Project teams with phased building projects often wish to certify each phase as it is completed.

  Phased building projects are either 1) buildings with planned future additions or 2) sites with a master plan for multiple buildings. If a phased project falls into the first category, the bullet entitled 'Horizontally Attached Buildings', in the MPR #2 section, must be consulted for information on whether or not the different phases are permitted to certify separately.

  Phased projects with multiple buildings will often be able to easily designate a LEED project boundary (LPB) for each building, such as in this example:



  For projects with multiple phases of the same building, or a building located on land that is a part of an already certified LEED project, overlapping LEED project boundaries is inevitable. An exception to the fourth stipulation in this MPR - "Any given parcel of real property may only be attributed to a single LEED project building" – may be made in this situation if certain criteria are met. **Note that the purpose of this exception is to protect the integrity of certified LEED projects while allowing the future projects to successfully pursue LEED certification.** Please see below an illustration of what is required and allowable in this situation, with corresponding written guidance on the next page.

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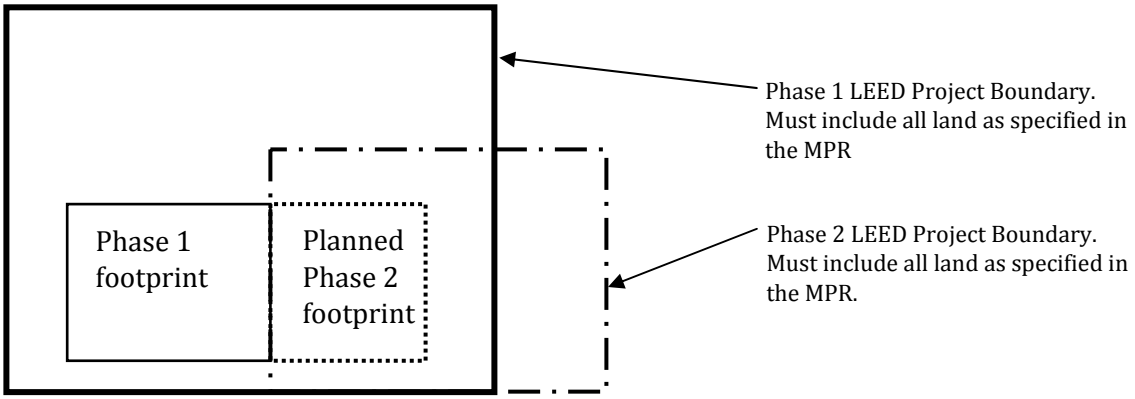
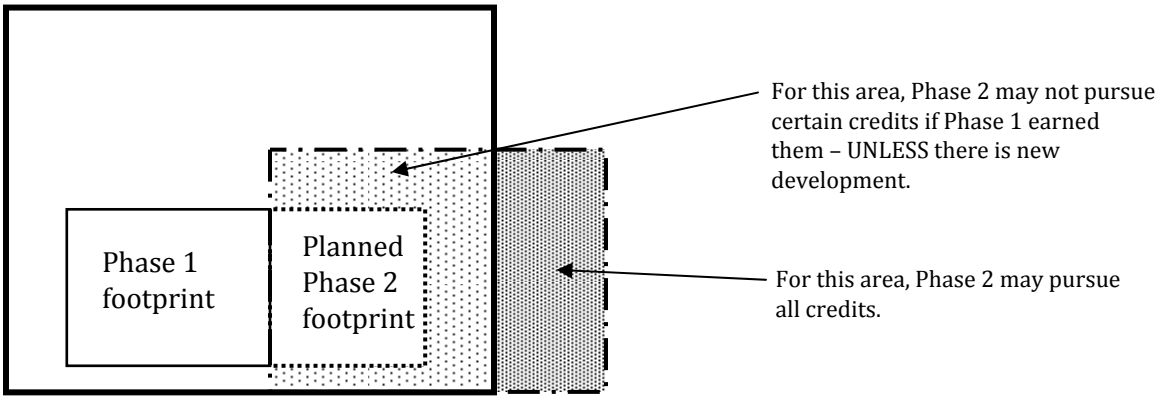
EXAMPLE: JONES ELEMENTARY SCHOOL, USING THE LEED FOR SCHOOLS 2009 RATING SYSTEM

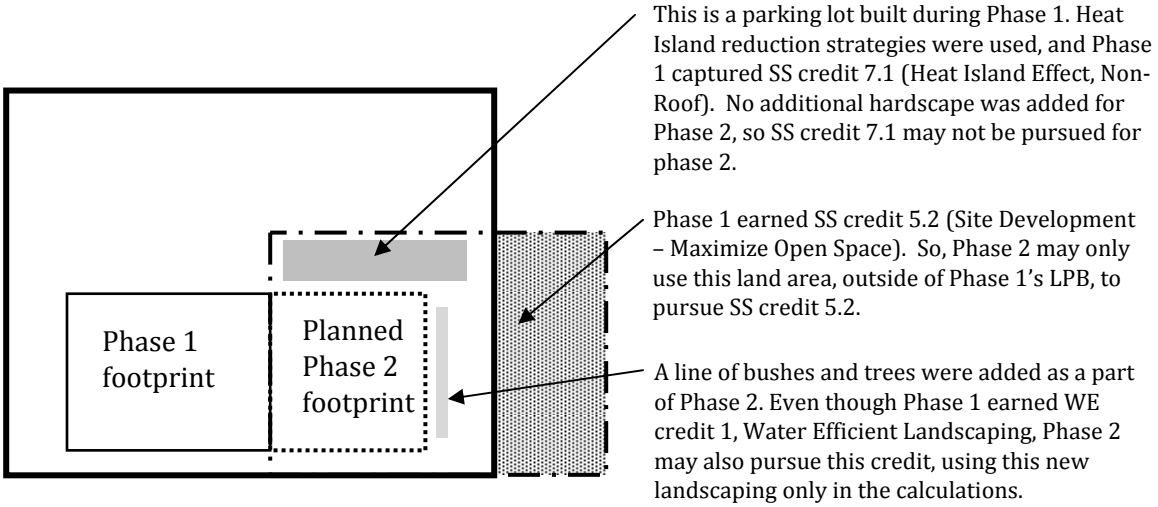
Description of phases



Description of overlapping areas



Example results of overlapping areas



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LEED PROJECT BOUNDARY GUIDELINES FOR THE FIRST PHASE

The first building in a phased building project must include all land as required by this MPR. Land designated for a future building may not be excluded.

LEED PROJECT BOUNDARY GUIDELINES FOR SUBSEQUENT PHASES

A subsequent building in a phased building project must include/exclude land as required by this MPR with the exception of the fourth stipulation: 'Any given parcel of real property may only be attributed to a single LEED project building.' This exception may be made if the following conditions are met.

a) Information on previous project must be disclosed. The project team must inform the LEED reviewer when they are developing on land belonging to a previously certified LEED project. The name, LEED project number, LEED project boundary, and list of credits earned must be disclosed. This information may be disclosed in Project Information Form #1 in LEED Online v3.
b) Land necessary to earned SS credit 5.1 or 5.2 for a previous project must not be displaced. A subsequent building phase located on land that is part of a certified LEED project MAY NOT displace land that is critical to a previous phase's compliance with SS credit 5.1 or 5.2. The Phase 1 project team must take into consideration future phases when applying for SS credit 5.1 and 5.2. If unforeseen circumstances result in an infringement on this policy, the project team must submit a Project CIR to request consideration for an alternative solution that satisfies the intent of SS credit 5.1 and 5.2.
c) Credits are not double counted. Overlapped LEED project boundaries restrict project teams' ability to pursue certain credits, as detailed below.

SS credit 3, Brownfield Redevelopment: The same brownfield redevelopment effort can contribute to capturing this credit for only one LEED project.

SS credit 5.1, Site Development – Protect or Restore Habitat: Land area that contributed to an earlier LEED project's capture of this credit via Case 2 (Previously Developed Areas or Graded Sites), may not be used by a later project to capture the credit.

SS credit 5.2, Site Development – Maximize Open Space: Land area that contributed to an earlier LEED project's capture of this credit may not be used by a later project to capture the credit.

SS credit 7.1, Heat Island Effect, Non-Roof: Strategies that contributed to an earlier LEED project's capture of this credit may not be used by a later project. If there is new development during a later phase on the same land (such as new sidewalk), then strategies associated with that new feature may contribute to the capture of the credit for that phase.

WE credit 1, Water Efficient Landscaping: Strategies that contributed to an earlier LEED project's capture of this credit may not be used by a later project. If there is new development during a later phase on the same land (such as new shrubbery

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plantings), then strategies associated with that new feature may contribute to the capture of the credit for that phase.

NOTE on SS prerequisite 2, Environmental Site Assessment: The same documentation may be used to show compliance for multiple LEED projects.

Additional Information and Clarifications

- *Defining land that is associated with and directly supports a building*
  This MPR requires that 'The LEED project boundary must include all contiguous land that is associated with and supports normal building operations for the LEED project building....'. This includes land which is altered in any way as a result of the LEED project construction, and features enjoyed by building users, such as:
  - hardscape, such as parking and sidewalks
  - septic treatment equipment
  - stormwater treatment equipment
  - landscaping

  Often, these features are shared with other nearby buildings. In this case, the project team must make a judgment and divide the land reasonably among the buildings. See guidance for shared hardscape and construction site situations below.

- *Shared hardscape and on-site parking facilities*
  If a LEED project building shares use of a parking lot, parking garage, or other amenity with another building, then those amenities must be allocated according to the percentage of use for each building. A brief description of the situation and any related calculations should be provided in Project Information form #1 in LEED Online v3. The project team must only show that the appropriate percentage of amenities is included within the boundary for their own project. It is also their responsibility to ascertain that they do not inappropriately cross boundaries with another LEED project.
  EXAMPLE
  Two neighboring stores are being constructed, and one is pursuing LEED certification. A new parking lot with fifty spaces will be shared by the two stores. The certifying store estimates that it will use twenty parking spaces on a regular basis to serve its employees and customers. Therefore, the project team must draw its LEED project boundary to include twenty spaces and forty percent of the supporting hardscape (driveways, sidewalks, etc).

- *Supporting infrastructure not owned by building owner*
  Infrastructure supporting the LEED project building may be omitted from the LEED project boundary if it is not owned by the LEED project owner AND if it is not included in the scope of construction work for the LEED project. This omittance must be done consistently throughout the submission.

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- *Small buildings within the LEED project boundary*
  Occasionally, there are small buildings physically close to the LEED project building, and associated with its normal building operations. Such a building may be included within the LEED project boundary and excluded from required compliance with MPRs, prerequisites, and credits (unless specifically addressed below) if the conditions listed below are met. Temporary structures erected for the purposes of supporting construction administration work and that will be removed at construction completion are not subject to this MPR and will not be required to certify.
  a) The building must be ineligible to apply for LEED certification because it does not meet MPR #2, Must Be A Complete, Permanent Building or Space, MPR#4, Must Comply with Minimum Floor Area Requirements, or MPR #5 Must Comply with Minimum Occupancy Rates.
  b) The building must comply with MPR #1, Must Comply with Environmental Laws
  c) The building must comply with all Sustainable Sites prerequisites.
  d) No credit may be claimed for strategies implemented in the building.
  e) Only two such buildings may be included within the LEED project boundary.

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4. MUST COMPLY WITH MINIMUM FLOOR AREA REQUIREMENTS.

MPR Language

New Construction, Core and Shell, Schools, Existing Buildings: Operations and Maintenance

The LEED project must include a minimum of 1,000 square feet (93 square meters) of gross floor area.

Commercial Interiors

The LEED project must include a minimum of 250 square feet (22 square meters) of gross floor area.

Intent:

The thresholds and calculations that make up the system of evaluation in LEED begin to break down and lose meaning once the building or space being evaluated reaches relatively diminutive proportions. A building or space that is too small would compromise the integrity of the LEED certification system.

THIS MPR DOES NOT INTEND TO:

- exclude small buildings and spaces for any reason other than that stated in the intent: simply that they cannot be fairly analyzed by the LEED rating system
- imply that small buildings and spaces do not also have an impact on the environment and their occupants, and therefore also have the opportunity to achieve green building excellence in their design and construction

Specific Allowed Exceptions

None

Additional Information and Clarifications

- Open air stadiums, kiosks, and similar building types satisfy this MPR if the minimum required amount of gross floor area is met for some part of the structure. The definition of gross floor area must be carefully reviewed when considering such a building for compliance with this MPR. For example, many parking garage structures will not meet this definition if they are essentially large roofed-over areas, because such areas are not counted within the total gross floor area.

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5. MUST COMPLY WITH MINIMUM OCCUPANCY RATES

MPR Language

New Construction, Core & Shell, Schools, and Commercial Interiors:

Full Time Equivalent Occupancy

The LEED project must serve 1 or more *Full Time Equivalent* (FTE) occupant(s), calculated as an annual average in order to use LEED in its entirety. If the project serves less than 1 annualized FTE, optional credits from the Indoor Environmental Quality category may not be earned (the prerequisites must still be earned).

Existing Buildings: O&M:

Full Time Equivalent Occupancy

The LEED project must serve 1 or more Full Time Equivalent (FTE) occupant(s), calculated as an annual average in order to use LEED in its entirety. If the project serves less than 1 annualized FTE, optional credits from the Indoor Environmental Quality category may not be earned (the prerequisites must still be earned).

Minimum Occupancy Rate

The LEED project must be in a state of *typical physical occupancy*, and all building systems must be operating at a capacity necessary to serve the current occupants, for a period that includes all performance periods as well as at least the 12 continuous months immediately preceding the first submission for a review.

Intent:

Many credits and prerequisites throughout the LEED rating systems evaluate the impact of the LEED project building on the building users, particularly those in the Indoor Environmental Quality credit category. USGBC believes it is appropriate and necessary to require that a minimum number of people benefit from the strategies implemented in order to earn the credits.

In EB: O&M, compliance with many prerequisites and credits is evaluated based on actual usage patterns. Therefore, it is necessary to require that typical usage of the LEED project building is underway during the performance periods, so that accurate measurements can be taken.

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THIS MPR DOES NOT INTEND TO:

- imply that buildings and spaces with a small amount of human traffic do not also have an impact the few occupants they do have, and therefore also have the opportunity to achieve green building excellence in their design and construction
- exclude buildings that experience fluctuations in occupancy

Specific Allowed Exceptions

MINIMUM OCCUPANCY RATE *APPLICABLE TO EBOM ONLY*

- *Unexpected and temporary decline in occupancy (applicable to EBOM only)*
  If occupancy unexpectedly and temporarily falls below the required threshold within the period of time subject to this MPR*, but still meets the requirement using a weighted average (as described below), the project team must submit a description of the situation as well as the measures they have taken to keep the reduced occupancy numbers from affecting the results for each prerequisite and credit that deals with occupancy. Explanations specific to a prerequisite or credit should be given in the optional section for that prerequisite or credit, and general descriptions should be given in the MPR form under 'Project Information Forms' in LEED Online.

*As stated in the MPR language, the period of time subject to this MPR includes at least the 12 continuous months immediately preceding the first submission for a review and all performance periods.

Additional Information and Clarifications

FULL TIME EQUIVALENT OCCUPANCY *APPLICABLE TO ALL RATING SYSTEMS*

- *Calculation method for determining annual FTE (the calculation for determining weighted occupancy for EB: O&M is below)*
  Although each building varies in regular occupancy, the purpose of setting the baseline annual FTE is to ensure sufficient occupancy to warrant awarding points in the EQ credit category.
  Annual FTE is based on the average 40 hour work week, assuming 48 total work weeks in the year. Based on this assumption, one annual FTE is defined as one person spending eight hours a day for 240 days in the building, or 1920 hours annually. The calculation can be done by average FTE occupants per day, week, or month:
  By day, must be greater than or equal to 240: (total occupant hours in an average day/8) x number of occupied days
  By week, must be greater than or equal to 48: (total occupant hours in an average week/40) x number of occupied weeks
  By month, must be greater than or equal to 12: (total occupant hours in an average month/160) x number of occupied months

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EXAMPLE

A religious worship facility has an hour-long service once a week for a year, and an average of thirty people attends each service. The building stands empty the remainder of the time. The annual FTE calculation for this building is:

(30 total occupant hours in an average day / 8) x 52 occupied days = 195

So, the combined occupant hours result in the equivalent of one person spending 195 eight hour days in the facility. EQ credits may not be pursued. However, if it gains 10 new members, this MPR would be satisfied:

40 total occupant hours in an average day / 8) x 52 occupied days = 260

- Only occupant hours that the building intends and expects to accommodate under normal building operations shall be included in annual FTE calculations.

MINIMUM OCCUPANCY RATE *APPLICABLE TO EBOM ONLY*

- *Space types subject to this MPR*
  Gross floor area that is designed to be regularly occupied should be the focus when determining compliance with this MPR.
  Any common space such as a lobby or bathroom that receives any use as well as any space that does not typically have occupants (such as closets or mechanical rooms) counts toward compliance with this MPR. Common space that is not receiving any use – for example, a bathroom on a floor completely devoid of occupants – does not count toward compliance.

- *Determining typical physical occupancy*
  The definition of typical physical occupancy is 'The state in which normal building operations are underway and the building is in use by the average number of full time equivalent occupants for which it was designed.'
  To determine the average number of full time equivalent occupants the building was designed for, project teams must assess buildings on a case by case basis, using reasonable judgment. Design intentions, floor area capacity, and building system capacity must all be considered. Atypical or indeterminate cases must be described in the Project Information forms #1 in LEED Online v3.
  All buildings except for hotels are considered to be in compliance with this MPR if more than 50% of its floor area is fully occupied (i.e., in a state of typical physical occupancy), as time-averaged over the performance period for all prerequisites and attempted credits, including the 12 months leading up to the initial submittal of application for review. The threshold for hotels is 55%.
  Any building that experiences occupancy of less than 100% during a performance period should refer to the LEED EB: O&M Reduced Occupancy Guidance when completing submittal requirements. This document can be found here:
  http://www.gbci.org/customerserv.aspx.

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EXAMPLE

A hotel has 100 equally sized rooms, and no common space aside from a small lobby. Since the hotel was built, sixty of the rooms have been full as an annual average, taking into account all seasons. Therefore, it is considered to be in compliance with this MPR because sixty exceeds the minimum threshold of 55%.

EXAMPLE

There is a school with nine equally sized classrooms, and circulation space equal to the square footage of one classroom. Four of the classrooms are not being used, but the other five are being fully used. Therefore, occupancy for the entire building is at 60%. If attendance in the three of the classrooms drops to 50% each, then occupancy for the entire building drops to 45%, and compliance with this MPR is in question.

- *Minimum Occupancy Rate Threshold Change*

  In fall 2009, the minimum occupancy rate threshold for EB: O&M changed from the historic number 75% to the 55% and 50%, as detailed above. This change was as a result of a scrutiny of marketplace conditions, and was approved by the LEED Steering Committee (LSC). This threshold is not expected to change again in the foreseeable future. If and when it does change to become more stringent, the change will only apply to projects registered after the date the change is announced.

- *Calculation method for determining weighted occupancy (the calculation for determining annual FTE is in a separate section)*

  A LEED project building experiencing fluctuating occupancy rates during the period of time subject to this MPR* may utilize the following formula in determining compliance:

  [(number of days at x% capacity * x%) + (number of days at y% capacity * y%) + (…)] / total days in operation

EXAMPLE

An office building with ten equally sized floors submits for preliminary review on January 1, exactly a year after its earliest performance period began. It is open 260 days a year. The building operated at full capacity for the first 150 work days of that year. Unexpectedly, six floors become vacant (occupancy drops to 40%) for 50 days. Then, those six floors become occupied again, each operating at half its capacity for the last 60 days (occupancy for the entire building rises to 60%).

[(150*1) + (50*.4) + (60*.6)] / 260 = 79%

Because offices are required to be at 50% capacity at a minimum, this building is in compliance with this MPR.

* As stated in the MPR language, the period of time subject to this MPR includes at least the 12 continuous months immediately preceding the first submission for a review and all performance periods.

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- *Project area is leased but not occupied*
  Leased but unoccupied space does not comply with this MPR because it is not considered physically occupied.

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6. MUST ALLOW USGBC ACCESS TO WHOLE-BUILDING ENERGY AND WATER USAGE DATA

MPR Language

All certified projects must commit to sharing with USGBC and/or GBCI all available actual whole-project energy and water usage data for a period of at least 5 years. This period starts on the date that the LEED project begins typical physical occupancy if certifying under New Construction, Core & Shell, Schools, or Commercial Interiors, or the date that the building is awarded certification if certifying under Existing Buildings: Operations & Maintenance. Sharing this data includes supplying information on a regular basis in a free, accessible, and secure online tool or, if necessary, taking any action to authorize the collection of information directly from service or utility providers. This commitment must carry forward if the building or space changes ownership or lessee.

Intent:

The goal of decreased energy and water use consumption is a major component of LEED certification. Tracking actual building consumption and comparing it to the usage proposed in design cases, or tracked during a performance period, is essential to the individual success of each LEED certified building and the ongoing evaluation and development of the LEED program.

By providing usage data, LEED project owners will not only be taking a very active part in advancing the green building movement, but they will also be provided feedback about the performance of their building in the context of comparable buildings. As well, buildings that achieve LEED certification in a Design and Construction rating system will be able to more easily pursue certification under LEED for Existing Buildings, Operations and Maintenance with readily available performance data.

Access to complete and accurate information on every LEED building project's performance allows the USGBC to aggregate individual building information and perform program evaluations on its efficacy such as average LEED energy and water savings relative to national and regional averages. Aggregate figures on carbon emissions, costs, and other environmental impacts associated with building energy usage are of significant interest to USGBC and GBCI as well as green building advocates, builders, owners, and operators. USGBC will use all building data to inform the continuous improvement of the LEED rating systems, develop related educational programming, identify key areas of needed research and present clear, unbiased results to the building community. Building performance feedback will be provided to LEED project owners based on the information by making comparisons to national or known comparable datasets.

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THIS MPR DOES NOT INTEND TO:

- penalize project teams with buildings that do not perform as well as intended
- create insurmountable technical or legal barriers to registering a LEED project

Specific Allowed Exceptions:

- *Where whole project meters are cost-prohibitive or physically impractical to install*
  Owners of LEED project buildings or spaces that do not have meters in place that measure energy and/or water usage for the entire LEED certified gross floor area will not be expected to supply energy and/or water usage data unless and until such meters are installed. Many Commercial Interiors projects, higher education campuses, and military bases will fall into this category.

- *Sale, Assignment or other Transfer of Ownership*
  To own a LEED certified project is to participate in the ongoing evolution of the green building movement. In that spirit, and in keeping with the intent of this MPR, the owner's commitment to provide whole-building energy and usage data is expected to carry forward to the next owner if all or part of a LEED certified project is sold, re-assigned or otherwise transferred. However, it is recognized that this may not always be possible, and GBCI will respect the realities of situations in which reasonable efforts to maintain the commitment are not successful. In this situation, the initial building owner will no longer be required to provide the data or access to the data.

Additional Information and Clarifications

- *Correlation of actual performance to design performance*
  Data collection is for research purposes only, and project teams are required simply to share data, NOT to show that design cases submitted during certification were accurate. For projects in NC, CI, CS, and Schools, actual performance will usually vary from projected performance. This MPR addresses the act of data sharing, not the content of the data. (Note that projects certifying under LEED EB: O&M are required to submit performance data *during* the certification process, and this *does* affect if, and what level of certification will be achieved.)

- *Determining typical physical occupancy*

  The definition of Typical Physical Occupancy', as given in the definitions section below, is: 'The state in which normal building operations are underway and the building is in use by the average number of people that it was designed for.'
  To determine the average number of full time equivalent occupants that the building was designed for, project teams must assess buildings on a case by case basis, using reasonable judgment. Design intentions, floor area capacity, and building system capacity must all be considered.

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Projects certifying under LEED for New Construction, Commercial Interiors, Core & Shell, and Schools must begin sharing data once 50% of the gross floor area meets the definition of typical physical occupancy.

- *Process of data collection*
  The process of data collection as well as the specific data that will be collected is currently under development, and a more detailed description will be released as soon as it is available.

- *Reporting Results*
  Analysis of the data will be made publicly available on a regular basis (schedule to be determined).

- *Facilitating certification under LEED for Existing Buildings: Operations & Maintenance*
  All building performance data collected may be used to meet the submittal requirements of the EB: O&M application.

- *Core & Shell projects do not require special treatment*
  Metering and data collection for Core & Shell projects does not differ from other projects. Data may be collected from spaces that the LEED project team did not fit out as part of their core and shell design and construction – this is normal and acceptable.

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7. MUST COMPLY WITH A MINIMUM BUILDING AREA TO SITE AREA RATIO

MPR Language

The *gross floor area* of the LEED project building must be no less than 2% of the gross land area within the LEED project boundary.

Intent:

Because LEED is a rating system for buildings, it is appropriate to restrict the amount of land associated with a LEED certified project. While it is recognized that large sections of real estate may be affected by human activity generated by a building as well as an owner's general land use decisions, this stipulation has been put into place to ensure that an overabundance of land associated with a LEED certification does not occur and certain Sustainable Sites credits are awarded fairly.

THIS MPR DOES NOT INTEND TO:

- imply that land left outside of the LEED project boundary should not also benefit from the environmentally sensitive land use practices

Specific Allowed Exceptions

None

Additional Information and Clarifications

- *Calculation method for determining gross floor area to site area ratio*

  [Gross Floor Area (sf) / Site Area (sf)] x 100

  EXAMPLE

  A 4000 square foot building is located on a five acre (217,800 sq ft) site:

  [4000/ 217,800] x 100 = 1.8%

  This building must claim only 4.6 acres (200,000 sq ft) within its LEED project boundary to meet the 2% building area to site area minimum.

- There is no maximum building area to site area ratio.

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- Site area (or, gross land area) includes all land within the LEED project boundary, including the footprint of the LEED project building.

- If a LEED project boundary must be adjusted in order to meet this MPR, the adjustment must be done such that the new boundary also complies with MPR #3, Must Use a Reasonable Site Boundary. If there is a conflict, this MPR takes precedence. In other words, the project team may eliminate land that is usually required by MPR #3 to be within the project boundary, in order to comply with this MPR. However, the elimination must be done in a reasonable fashion: the project team cannot remove land specifically because it would not comply with another MPR, prerequisite, or credit requirements.

- If there is not any land included within the LEED project boundary (as will typically be the case with LEED CI projects), the project will be in compliance with this MPR by default.

- Off-site land used to earn Sustainable Sites credit 5 in EB: O&M must be included in the calculations for this MPR.

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GLOSSARY

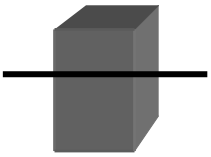
Certificate of Occupancy: A document issued by a local authority indicating that premises comply with provisions of zoning, building ordinances, building code, and/or approved plans and specifications. This is often required before premises can be occupied and title transferred.

Complete Interior Space: At a minimum, all the gross floor area within the exterior walls of a building that is within a single occupant's control and contains all building components altered as part of the LEED-certifying construction scope. Ownership, management, lease, and party walls are acceptable methods for defining two complete interior spaces. Floors/ceilings, i.e. the structural component separating two floors, may also define two complete spaces if one floor is unaffected by construction work, even if both floors serve the same occupant.

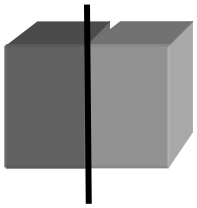
Design and Construction Rating Systems: Any LEED rating system that addresses both the design and construction of a building or interior space. Includes LEED for New Construction and Major Renovation, LEED for Core & Shell, LEED for Schools, LEED for Commercial Interiors, LEED for Retail, and LEED for Healthcare.

Entirety: The sum of the constructed components that make up a building which is physically distinct from another building. Must include all vertically attached components of the building.

This horizontal dividing line CANNOT distinguish the top half of this structure from the bottom half as a building in its entirety:



This vertical dividing line CAN distinguish the building on the right from the building on the left, if they are physically distinct and separate addresses or names:



Full Time Equivalent (FTE): A regular building occupant who spends 40 hours per week in the building or space, or the equivalent. Part-time or overtime occupants have FTE values based on their hours per day.

Gerrymander: To divide and assign land in such a way as to give unfair, inconsistent representation to one parcel over another.

Gross Floor Area: *(based on ASHRAE definition)* Sum of the floor areas of the spaces within the building, including basements, mezzanine and intermediate-floored tiers, and penthouses with headroom height of 7.5 ft (2.2 meters) or greater. Measurements must be taken from the exterior

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faces of exterior walls OR from the centerline of walls separating buildings, OR (for LEED CI certifying spaces) from the centerline of walls separating spaces. Excludes non-enclosed (or non-enclosable) roofed-over areas such as exterior covered walkways, porches, terraces or steps, roof overhangs, and similar features. Excludes air shafts, pipe trenches, and chimneys.

Gross Square Feet/Square Meters: see 'Gross floor area'.

Normal Building Operations: The complete activities and functions intended to take place within the building and on associated property.

Land: Any part of the earth's surface not covered by a body of water.

LEED Project: All real property within the LEED project boundary, including the building(s) or space(s), all structures, land, etc. which collectively is attempting or has earned certification.

LEED Project Boundary: The line drawn on a site plan submitted to GBCI indicating the limits of the real property for which the project team is attempting or has earned certification.

LEED Project Building: The structure which is attempting or has earned certification.

LEED Project Space: The gross floor area which is attempting or has earned certification.

LEED Project Registration: The process through which the project team establishes a LEED project in LEED Online. This process is considered complete once payment is received by USGBC and/or GBCI.

Major Renovation: Construction work that is extensive enough such that normal building operations cannot be performed while the work is in progress, and/or a new certificate of occupancy is required.

Operational Activities: See 'Normal Building Operations'.

Party Wall: A wall without openings erected as a common support to structures on both sides.

Performance Period: The continuous, unbroken time during which sustainable operations performance for a building and/or site is being measured.

Physically Distinct: The condition in which a building has both of the following:

a) exterior walls that are party walls or are separate from adjoining buildings by air space
b) lighting, HVAC, plumbing, and other mechanical systems that are separate from the systems of adjoining buildings.

LEED project boundary lines that "slice" through party walls must not pass through any mechanical, electrical and plumbing (MEP) service infrastructure. Exceptions include buildings served by a common or shared chiller plant or heating water, or steam supply pipes (i.e., not air ducts), and only if the thermal energy serving the structure to be separated is sub-metered.
Note that the definition of 'physically distinct' has special implications for complicated retail and mixed use situations, and specific guidance on this issue will be provided upon the release of LEED for Retail. In the meantime, if this definition proves insufficient for a potential LEED project, GBCI should be contacted: http://www.gbci.org/customerserv.aspx.

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Project Work: See 'Undertaking the LEED Project'.

Regularly occupied spaces: Areas where workers are seated or standing as they work inside a building. In residential applications, these areas are all spaces except bathrooms, utility areas, and closets or other storage rooms. In schools, they are areas where students, teachers, or administrators are seated or standing as they work or study inside a building.

Real Property: Land and land alterations that are a direct result of human activities that subsequently support an active land use, including structures of any kind.

Schematic Design: The initial phase of architectural work that establishes the scope and physical outline of the project.

Substantial Completion of Construction: The point at which work on the building project is sufficiently complete in accordance with all construction contract documents, and any strategies that the project is receiving recognition for under LEED are fully implemented, except for operations-related strategies (such as a thermal comfort survey).

Typical Physical Occupancy: The state in which normal building operations are underway and the building is being used by the average number of full time equivalent occupants for which it was designed.

Undertaking the LEED Project: All design, construction, and development work that contribute to the creation of the LEED project building.

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General Information

	Project ID (e.g. ABCD12345)
	Building Name
	Project Type
	Installation
	City
	State
	MAJCOM
	PM Name
	PA ($k)
	Building Size (SF)
	Program Year (FY####)
	Project Phase
	Design Started (FY####)
	BOD (MM/DD/YY)
	Pursuing formal LEED® Certification
	Date Project Registered with USGBC (MM/DD/YY)
LEED® 2009	**LEED® Rating System**
0	**LEED® Credits Achievable**
Prerequisites Not Achieved	**LEED® Certification Level Achievable (per AF SDD Policy (July 2007))**
	LEED® Credits Awarded by GBCI (e.g. 42)
	LEED® Certification Level Awarded by GBCI
	LEED® Energy and Water Credits Achievable
	Date Project Certified by GBCI (MM/DD/YY)
	Registration Fees ($)
	Certification Fees ($)
0%	**HPSB Compliant**
0%	**Water Conservation Achieved (% below EPAct 1992)**
0%	**Energy Efficiency Achieved (% below ANSI/ASHRAE/IESNA Standard 90.1-2007)**
	Cost to Implement EISA 438 (Pre-Development Hydrology)
	Comments

Color Coding: See Instructions Tab for more detail

Drop-Down Box	Drop-Down Box Stoplight	Custom Subquestions
No Entry	Yes - Credit Achieved	Not Required
Custom General Information	Maybe - Credit Maybe	
LEED Prerequisite	No - Credit not Achieved	

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Federal Requirements for High Performance Sustainable Buildings (HPSB)

HPSB I: Employ Integrated Design Principles

Achievable Points 0 — Possible Points 2

	HPSB I.1	**Integrated Design**	1
	HPSB I.2	**Commissioning**	1

HPSB II: Optimize Energy Performance

Achievable Points 0 — Possible Points 5

	HPSB II.1	**Energy Efficiency, Achieve Option 1 or 2 and insert design percentage**		1
	1		Reduce energy use 30% Below ANSI/ASHRAE/IESNA Standard 90.1- 2007, OR	
	2		If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1-2007, will the design achieve the maximum level of energy efficiency that is life-cycle cost-effective?	
			Insert percentage below ANSI/ASHRAE/IESNA Standard 90.1-2007 in terms of energy use (e.g. 32)	
			Insert building energy intensity (Btu/SF) calculated with the energy model per 10 CFR 433	
			Roof Attributes (Recommended)	
			Cool roof (LEED SS cr 7.2 or Energy Star)	
			Green roof	
			Solar electric	
			Solar thermal	
			Solar passive	
			Achieve "Designed to Earn the Energy Star" rating - Benchmark from first year of operation (Recommended)	
	HPSB II.2	**Preferential use of ENERGY STAR or FEMP-designated equipment, when lifecycle cost effective**		1
	HPSB II.3	**On-site Renewable Energy - Solar Hot Water Heater System**		1
			Lifecycle cost assessment found solar hot water heater system not effective	
			When lifecycle cost effective, solar hot water system installed - min 30% demand	
			Insert percentage achieved	
	HPSB II.4	**On-site Renewable Energy**		1
			Lifecycle cost assessment found renewable energy generation projects not effective	
			When lifecycle cost effective, renewable energy generation projects installed	
			Renewable energy type	
			Insert first renewable energy type, if applicable	
			Insert second renewable energy type, if applicable	
			Insert generation capacity (kW)	
			Insert percentage of total building	
	HPSB II.5	**Measurement and Verification - Advanced Metering**		1
			Water Metering: Select N/A if not used	
			Electric Metering: Select N/A if not used	
			Natural Gas Metering: Select N/A if not used	
			Steam Metering: Select N/A if not used	
	HPSB II.6	**Project Case Study Entered in High Performance Federal Buildings Database (Recommended)**		
	EISA 2007 II.7	**Reduction in fossil fuel-generated energy consumption (Recommended)**		
	EISA 2007 II.8	**Data Center Energy Consumption (Recommended)**		

HPSB III: Protect and Conserve Water

Achievable Points 0 — Possible Points 7

	HPSB III.1	**Indoor Water - 20% Reduction**		1
			Insert percentage achieved	
	HPSB III.2	**Outdoor Water - Reduce Potable Water Use by 50%**		1
	HPSB III.3	**Outdoor Water - Stormwater runoff**		1
	HPSB III.4	**Outdoor Water - Achieve Pre-Development Hydrology when technically feasible, when disturbance > 5,000 GSF**		1
			Insert cost to implement	
	HPSB III.5	**Process water potable water use**		1
			Energy efficiency measures using water were considered and the cost was included in lifecycle cost assessment	
			Energy efficiency measures using water were not considered for the design	
	HPSB III.6	**Water-Efficient Products**		1
	HPSB III.7	**Water Efficient Products - Irrigation Contractors**		1

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HPSB IV: Enhance Indoor Environmental Quality				
Achievable Points	0		Possible Points	9
	HPSB IV.1	**Thermal Comfort, ASHRAE 55-2004**		1
	HPSB IV.2	**Ventilation: ASHRAE 62.1-2007**		1
	HPSB IV.3	**Moisture Control**		1
	HPSB IV.4	**Daylighting - 75% of Spaces**		1
	HPSB IV.5	**Daylighting - Controllability of Systems**		1
	HPSB IV.6	**Low Emitting Materials**		1
	HPSB IV.7	**Protect Indoor Air Quality during Construction**		1
	HPSB IV.8	**Protect Indoor Air Quality after Construction**		1
	HPSB IV.9	**Environmental Tobacco Smoke (ETS) Control**		1
HPSB V: Reduce Environmental Impact of Materials				
Achievable Points	0		Possible Points	6
	HPSB V.1	**Recycled Content**		1
	HPSB V.2	**Biobased Content**		1
	HPSB V.3	**Environmentally Preferable Products**		1
	HPSB V.4	**Waste and Materials Management - Recycling**		1
	HPSB V.5	**Waste and Materials Management - Divert 50% from Disposal**		1
	HPSB V.6	**Ozone Depleting Compounds**		1
HPSB Totals			Possible Points	**29**
0	**Federal Requirements Achieved (29 line items)**			
0	**Federal Requirements Maybe Achieved**			
0	**Federal Requirements Not Achieved**			
0%	**Percentage of Federal Requirements Achieved**			

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LEED® 2009 Checklist

LEED® Credits and/or Prerequisites that meet HPSB Requirements
LEED® Credits and/or Prerequisites that align closely with HPSB Requirements
LEED® Credits that meet USAF Energy & Water Criteria (may depend on technologies & strategies)

Sustainable Sites				
Achievable Points	0	**Sustainable Sites**	Possible Points	26
	Prereq 1	Construction Activity Pollution Prevention (HPSB GP3)		Required
	Credit 1	**Site Selection**		1
	Credit 2	**Development Density & Community Connectivity**		5
	Credit 3	**Brownfield Redevelopment**		1
	Credit 4.1	**Alternative Transportation -** Public Transportation Access		6
	Credit 4.2	**Alternative Transportation -** Bicycle Storage & Changing Rooms		1
	Credit 4.3	**Alternative Transportation -** Low-Emitting & Fuel Efficient Vehicles		3
	Credit 4.4	**Alternative Transportation -** Parking Capacity		2
	Credit 5.1	**Site Development,** Protect or Restore Habitat		1
	Credit 5.2	**Site Development,** Maximize Open Space		1
	Credit 6.1	Stormwater Design, Quantity Control (HPSB GP3)		1
	Credit 6.2	Stormwater Design, Quality Control (HPSB GP3)		1
	Credit 7.1	**Heat Island Effect -** Non-Roof		1
	Credit 7.2	**Heat Island Effect -** Roof		1
	Credit 8	**Light Pollution Reduction**		1
			Select which LEED® Interior Lighting Option was used	
Water Efficiency				
Achievable Points	0		Possible Points	10
	Prereq 1	Water Use Reduction - 20% Reduction (HPSB GP3)		Required
	Credit 1	Water Efficient Landscaping (HPSB GP3)		2 to 4
		2	Reduce Potable Water Use by 50% (HPSB GP3)	2
		4	No Potable Use or Irrigation (HPSB GP3)	2
	Credit 2	**Innovative Wastewater Technologies**		2
	Credit 3	Water Use Reduction (HPSB GP3)		2 to 4
		2	30% Reduction (HPSB GP3)	2
		3	35% Reduction (HPSB GP3)	1
		4	40% Reduction (HPSB GP3)	1
Energy & Atmosphere				
Achievable Points	0		Possible Points	35
	Prereq 1	Fundamental Commissioning of the Building Energy Systems (HPSB GP1)		Required
	Prereq 2	Minimum Energy Performance (HPSB GP2)		Required
	Prereq 3	Fundamental Refrigerant Management (HPSB GP5)		Required
	Credit 1	Optimize Energy Performance (HPSB GP2)		1 to 19
		1	12% for New Buildings/8% for Existing Building Renovations	1
		2	14% for New Buildings/10% for Existing Building Renovations	1
		3	16% for New Buildings/12% for Existing Building Renovations	1
		4	18% for New Buildings/14% for Existing Building Renovations	1
		5	20% for New Buildings/16% for Existing Building Renovations	1
		6	22% for New Buildings/18% for Existing Building Renovations	1
		7	24% for New Buildings/20% for Existing Building Renovations	1
		8	26% for New Buildings/22% for Existing Building Renovations	1
		9	28% for New Buildings/24% for Existing Building Renovations	1
		10	30% for New Buildings/26% for Existing Building Renovations	1
		11	32% for New Buildings/28% for Existing Building Renovations	1
		12	34% for New Buildings/30% for Existing Building Renovations	1
		13	36% for New Buildings/32% for Existing Building Renovations	1
		14	38% for New Buildings/34% for Existing Building Renovations	1
		15	40% for New Buildings/36% for Existing Building Renovations	1
		16	42% for New Buildings/38% for Existing Building Renovations	1
		17	44% for New Buildings/40% for Existing Building Renovations	1
		18	46% for New Buildings/42% for Existing Building Renovations	1
		19	48%+ for New Buildings/44%+ for Existing Building Renovations	1
	Credit 2	On-Site Renewable Energy (HPSB GP2)		1 to 7
		1	On-site 1%	1
		2	On-site 3%	1
		3	On-site 5%	1
		4	On-site 7%	1
		5	On-site 9%	1
		6	On-site 11%	1
		7	On-site 13%	1
	Credit 3	Enhanced Commissioning (HPSB GP1)		2
	Credit 4	Enhanced Refrigerant Management (HPSB GP5)		2
	Credit 5	Measurement & Verification (HPSB GP2)		3
	Credit 6	**Green Power**		2

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Materials & Resources				
Achievable Points	0		Possible Points	14
	Prereq 1	**Storage & Collection of Recyclables (HPSB GP5)**		Required
	Credit 1.1	**Building Reuse,** Maintain Existing Walls, Floors & Roof		1 to 3
		1	Maintain 55% of Existing Walls, Floors & Roof	1
		2	Maintain 75% of Existing Walls, Floors & Roof	1
		3	Maintain 95% of Existing Walls, Floors & Roof	1
	Credit 1.2	**Building Reuse,** Maintain 50% of Interior Non-Structural Elements		1
	Credit 2	**Construction Waste Management (HPSB GP5)**		1 to 2
		1	50% Recycled or Salvaged	1
		2	75% Recycled or Salvaged	1
	Credit 3	**Materials Reuse**		1 to 2
		1	5%	1
		2	10%	1
	Credit 4	**Recycled Content (HPSB GP5)**		1 to 2
		1	10%	1
		2	20%	1
	Credit 5	**Regional Materials**		1 to 2
		1	10% Extracted, Processed & Manufactured	1
		2	20% Extracted, Processed & Manufactured	1
	Credit 6	**Rapidly Renewable Materials (HPSB GP5)**		1
	Credit 7	**Certified Wood (HPSB GP5)**		1
Indoor Environmental Quality				
Achievable Points	0		Possible Points	15
	Prereq 1	**Minimum IAQ Performance (HPSB GP4)**		Required
	Prereq 2	**Environmental Tobacco Smoke (ETS) Control (HPSB GP4)**		Required
	Credit 1	**Outside Air Delivery Monitoring**		1
	Credit 2	**Increased Ventilation**		1
	Credit 3.1	**Construction IAQ Management Plan, During Construction (HPSB GP4)**		1
	Credit 3.2	**Construction IAQ Management Plan, Before Occupancy (HPSB GP4)**		1
	Credit 4.1	**Low Emitting Materials, Adhesives & Sealants (HPSB GP4)**		1
	Credit 4.2	**Low Emitting Materials, Paints & Coatings (HPSB GP4)**		1
	Credit 4.3	**Low Emitting Materials, Flooring Systems (HPSB GP4)**		1
	Credit 4.4	**Low Emitting Materials, Composite Wood & Agrifiber Products (HPSB GP4)**		1
	Credit 5	**Indoor Chemical & Pollutant Source Control**		1
	Credit 6.1	**Controllability of Systems, Lighting (HPSB GP4)**		1
	Credit 6.2	**Controllability of Systems,** Thermal Comfort		1
	Credit 7.1	**Thermal Comfort, Design (HPSB GP4)**		1
	Credit 7.2	**Thermal Comfort,** Verification		1
	Credit 8.1	**Daylight & Views - Daylight 75% of Spaces (HPSB GP4)**		1
	Credit 8.2	**Daylight & Views** - Views for 90% of Spaces		1
Innovation & Design Process				
Achievable Points	0		Possible Points	6
	Credit 1.1	**Innovation in Design 1.1**		1
			Select if ID 1.1 was for energy and/or water	
	Credit 1.2	**Innovation in Design 1.2**		1
			Select if ID 1.2 was for energy and/or water	
	Credit 1.3	**Innovation in Design 1.3**		1
			Select if ID 1.3 was for energy and/or water	
	Credit 1.4	**Innovation in Design 1.4**		1
			Select if ID 1.4 was for energy and/or water	
	Credit 1.5	**Innovation in Design 1.5**		1
			Select if ID 1.5 was for energy and/or water	
	Credit 2	**LEED® Accredited Professional**		1
Regional Priority Credits				
Achievable Points	0		Possible Points	4
	Credit 1.1	**Regional Priority 1.1**		1
			Select if RP 1.1 was for energy and/or water	
	Credit 1.2	**Regional Priority 1.2**		1
			Select if RP 1.2 was for energy and/or water	
	Credit 1.3	**Regional Priority 1.3**		1
			Select if RP 1.3 was for energy and/or water	
	Credit 1.4	**Regional Priority 1.4**		1
			Select if RP 1.4 was for energy and/or water	
LEED Project Totals	**(pre-certification estimates)**		Possible Points	110
0	LEED® Credits Achievable			
0	LEED® Credits Maybe Achievable			
0	LEED® Credits Not Achievable			
	LEED® Energy and Water Credits Achievable (when pursuing LEED® Certification)			
Prerequisites Not Achieved	**LEED® Certification Level Achievable**			
N/A	**LEED® Horizontal Benchmark Level**			
N/A	**LEED® Utility Benchmark Level**			
N/A	**LEED® Industrial Benchmark Level**			

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80-110

MILCON Sustainable Building Requirements Scoresheet Instructions	
Color Coding	
Green text	**LEED® Credits and/or Prerequisites that align closely with Federal High Performance Sustainable Buildings (HPSB) Requirements** These credits and/or prerequisites align closely with the associated HPSB Guiding Principle. They could be either more or less stringent or have different measurement metrics. In the case where one is more stringent than the other, achieving the more stringent one does not imply the less stringent is achieved.
Blue Text	**LEED® Credits and/or Prerequisites that meet Federal High Performance Sustainable Buildings (HPSB) Requirements** These credits and/or prerequisites have the same requirements as the associated HPSB Guiding Principle. This does not guarantee achieving the LEED Credit, as some documentation methods may vary.
Gray Text	**Recommended (Federal Requirement not fully defined at this time)**
Purple Text	**Summary Calculations fo LEED and HPSB Scores**
Light Orange Cell	Cell uses a drop down box for set values. User should select using the drop-down box.
Light Gray Cell	Cell is populated by other cells. User is not required to enter values.
White Cell	Cell is for custom entry of General Building Information. Boxes that appear when cell is selected give further instruction on entering data. Some cells restrict values that can be entered - which is explained if incorrectly entered
Light Blue Cell (When used, conditional formatting changes text to Green, Yellow, or Red depending on entry)	Cell uses a drop down box for LEED Prerequisites and allows for "Yes", "Maybe" and "No"
	Cell uses a drop down box and user is designating "Yes"
	Cell uses a drop down box and user is designating "Maybe"
	Cell uses a drop down box and user is designating "No"
Light Green Cell (When used, conditional formatting changes cell to Green, Yellow, or Red depending on entry)	Cell provides a drop-down box for the user to select which LEED Credits and HPSB Requirements that the project is attempting. When a "Yes", "Maybe", or "No" is selected the cell follows the stoplight convention to visually represent progress. The stoplight convention is also used for "Yes", "Maybe" or "No" totals. Some light green boxes also have an option for "N/A" when used for subquestions
	Cell uses a drop down box and user is designating "Yes" or "N/A" when applicable
	Cell uses a drop down box and user is designating "Maybe"
	Cell uses a drop down box and user is designating "No"
Dark Blue Cell, White Text	**LEED® Credits that meet USAF Energy & Water Criteria (may depend on technologies & strategies). The DoD Sustainable Buildings Policy and AF Sustainable Design and Development Memorandum require a minimum of 20 energy and water credits for all projects seeking LEED certification. SS Credits 7.1-7.2, WE Credits 1.1 - 3, EA Credits 1-3 and Credits 5-6, IEQ Credit 1 and Credit 8.1 are always energy and water projects according to AF policy. SS Credit 8 is an energy and water credit if the project uses Option 1 for Indoor Lighting. Innovation and Design and Regional Priority Credits must be specified as energy and water projects for inclusion.**
Light Yellow Cell	Cell is for custom entry on how the project is pursuing LEED Credits and HPSB requirements. These are subquestions.
Dark Gray Cell	Cell is for selections that does not count towards achieving HPSB status

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
	The High Performance Sustainable Building Requirements (Dec 08) described below are also found on the FedCenter website:	High Performance Sustainable Building Guidance (Dec 08)
	For more information on LEED® Credits that meet or align closely with federal requirements as well as other credits a building can pursue towards the Silver certification level, review the LEED® New Construction and Major Renovations 2009 Rating System:	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
Color Code	**LEED® Credits and/or Prerequisites that align closely with Federal High Performance Sustainable Buildings (HPSB) Requirements** These credits and/or prerequisites align closely with the associated HPSB Guiding Principle. They could be either more or less stringent or have different measurement metrics. In the case where one is more stringent than the other, achieving the more stringent one does not imply the less stringent is achieved. **LEED® Credits and/or Prerequisites that meet Federal High Performance Sustainable Buildings (HPSB) Requirements** These credits and/or prerequisites have the same requirements as the associated HPSB Guiding Principle. This does not guarantee achieving the LEED Credit, as some documentation methods may vary. **Recommended (Federal Requirement not fully defined at this time)** **LEED® Credits that meet USAF Energy & Water Criteria (may depend on technologies & strategies). The DoD Sustainable Buildings Policy and AF Sustainable Design and Development Memorandum require a minimum of 20 energy and water credits for all projects seeking LEED certification. SS Credits 7.1-7.2, WE Credits 1.1 - 3, EA Credits 1-3 and Credits 5-6, IEQ Credit 1 and Credit 8.1 are always energy and water projects according to AF policy. SS Credit 8 is an energy and water credit if the project uses Option 1 for Indoor Lighting. Innovation and Design and Regional Priority Credits must be specified as energy and water projects for inclusion.**	Air Force Sustainable Design and Development Policy Memorandum (July 2007)
	HPSB I: Employ Integrated Design Principles	
HPSB I.1: Integrated Design	Use a collaborative, integrated planning and design process that • Initiates and maintains an integrated project team as described on the Whole Building Design Guide in all stages of a project's planning and delivery, http://www.wbdg.org/design/engage_process.php • Integrates the use of OMB's A-11, Section 7, Exhibit 300: Capital Asset Plan and Business Case Summary • Establishes performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures incorporation of these goals throughout the design and lifecycle of the building • Considers all stages of the building's lifecycle, including deconstruction.	HPSB Guidance
Requirement Source Document(s)	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB I.2: Commissioning	Employ commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met. This should include an experienced commissioning provider, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.	HPSB Guidance
Requirement Source Document(s)	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EA Prerequisite 1: Fundamental Commissioning of Building Energy Systems LEED EA Credit 3: Enhanced Commissioning	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
	HPSB II: Optimize Energy Performance	
HPSB II.1: Energy Efficiency.	For new construction, reduce the energy use by 30 percent compared to the baseline building performance rating per the American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE)/Illuminating Engineering Society of North America (IESNA) Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential, except for the performance rating formula in G1.2, which should be used as follows (from 10 CFR 433.5): Percentage improvement = 100 x (Baseline building consumption—Proposed building consumption) ÷(Baseline building consumption—Receptacle and process loads). This differs from the LEED calculation. For major renovations, reduce the energy use by 20 percent below pre-renovations 2003 baseline. Laboratory spaces may use the Labs21 Laboratory Modeling Guidelines. ENERGY STAR qualified low-slope roofs (2:12 inches or less) have an intial solar reflectance greater than or equal to 0.65 and is greater than or equal to 0.50 three years after installation. Steep slope roofs (greater than 2:12 inches) have an intial solar reflectance greater than or equal to 0.25 and is greater than or equal to 0.15 three years after installation	HPSB Guidance
Requirement Source Document(s)	10 CFR 433.5, Federal Leadership in High Performance and Sustainable Buildings MOU	GPO Access: 10 CFR 433.5
LEED Credit(s) aligns closely with HPSB:	LEED EA Prerequisite 2: Minimum Energy Performance LEED EA Credit 1: Optimize Energy Performance	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB II.2: Preferential use of ENERGY STAR or FEMP-designated equipment, when lifecycle cost effective	Use ENERGY STAR® and FEMP-designated Energy Efficient Products, where available.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB II.3: On-site Renewable Energy - Solar Hot Water Heater System	Per the Energy Independence and Security Act (EISA) Section 523, meet at least 30% of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.	HPSB Guidance
Requirement Source Document(s):	EISA Sec. 523, Federal Leadership in High Performance and Sustainable Buildings MOU	Energy Independence and Security Act of 2007
LEED Credit(s) aligns closely with HPSB:	LEED EA Credit 2: On-Site Renewable Energy	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB II.4: On-site Renewable Energy	Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective. Renewable energy types include: Geothermal, GSHP, Solar PV, Solar CP, Solar Thermal, Wind, Hydro, Daylighting, Waste to Energy.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EA Credit 2: On-Site Renewable Energy	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB II.5: Measurement and Verification - Advanced Metering	Per the Energy Policy Act of 2005 (EPAct) Section 103, install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434, include equivalent meters for natural gas and steam, where natural gas and steam are used. Per A7C Memorandum,*DoD Facilities Metering Installation Initiative* (27 April 2006), all new construction should install potable water meters.	HPSB Guidance
Requirement Source Document(s):	EPAct 2005 Section 103, EISA 2007 Section 434, Federal Leadership in High Performance and Sustainable Buildings MOU	Energy Policy Act of 2005
LEED Credit(s) aligns closely with HPSB:	LEED EA Credit 5: Measurement and Verification	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
HPSB II.6: Project Case Study Entered in High Performance Federal Buildings Database	As a recommendation, enter data and lessons learned from sustainable buildings into the High Performance Buildings Database.	HPSB MOU
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	http://femp.buildinggreen.com/
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
EISA 2007 II.7: Reduction in fossil fuel-generated energy consumption	For new Federal buildings and Federal buildings undergoing major renovations…(I) The buildings shall be designed so that the fossil fuel generated energy consumption of the buildings is reduced, as compared with such energy consumption by a similar building in fiscal year 2003 (CBECS or RECS data from EIA), by the percentage specified...FY2010 (55%), 2015 (65%), 2020 (80%), 2025 (90%), and 2030 (100%). *The DOE Rulemaking is not yet complete*	Energy Independence and Security Act of 2007
Requirement Source Document(s):	EISA 2007, Sec. 433, (a)(D)(i)	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
EISA 2007 II.8: Data Center Energy Consumption	EISA 2007 Section 453 directs DOE and EPA to initiate a voluntary national information program for widely used data centers and data center equipment for which there is significant potential for energy savings. *The DOE/EPA guidance is not yet issued.*	Energy Independence and Security Act of 2007
Requirement Source Document(s):	EISA 2007, Sec. 453	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
	HPSB III: Protect and Conserve Water	
HPSB III.1: Indoor Water - 20% Reduction	Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the EPAct 1992, Uniform Plumbing Codes 2006, and the International Plumbing Codes 2006 fixture performance requirements. The installation of water meters is encouraged to allow for the management of water use during occupancy. The use of harvested rainwater, treated wastewater, and air conditioner condensate should also be considered and used where feasible for nonpotable use and potable use where allowed.	HPSB Guidance
Requirement Source Document(s):	EPAct 1992, Federal Leadership in High Performance and Sustainable Buildings MOU	THOMAS EPAct 1992
LEED Credit(s) aligns closely with HPSB:	LEED WE Credit 3: Water Use Reduction - Reduce by 30% (3.1), 35% (3.2), 40% (3.3)	
LEED Credit(s) meet HPSB:	LEED WE Prerequisite 1: Water Use Reduction - 20% Reduction	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB III.2: Outdoor Water - Reduce Potable Water Use by 50%	Use water efficient landscape and irrigation strategies, such as water reuse, recycling, and the use of harvested rainwater, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities). The installation of water meters for locations with significant outdoor water use is encouraged.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED WE Credit 1.2: Water Efficient Landscaping - No Potable Water Use or Irrigation	
LEED Credit(s) meet HPSB:	LEED WE Credit 1.1: Water Efficient Landscaping - Reduce by 50%	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB III.3: Outdoor Water - Stormwater runoff	Employ design and construction strategies that reduce storm water runoff and discharges of polluted water offsite.	HPSB Guidance
Requirement Source Document(s):	AF ETL 03-1, Federal Leadership in High Performance and Sustainable Buildings MOU	Engineering Technical Letter (ETL) 03-1 - Stormwater Construction Standards
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED SS Prerequisite 1: Construction Activity Pollution Prevention	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
HPSB III.4: Outdoor Water - Achieve Pre-Development Hydrology when technically feasible, when disturbance > 5,000 GSF	Per EISA Section 438, to the maximum extent technically feasible, maintain or restore the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow using site planning, design, construction, and maintenance strategies.	HPSB Guidance
Requirement Source Document(s):	OUSD Memo 19 Jan 2010, EISA 2007 Sec 438, Federal Leadership in High Performance and Sustainable Buildings MOU	OUSD Memo EISA Section 438
LEED Credit(s) aligns closely with HPSB:	LEED SS Credit 6.1: Stormwater Design - Quantity Control LEED SS Credit 6.2: Stormwater Design - Quality Control	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:		
HPSB III.5: Process water - potable water use	Per the Energy Policy Act of 2005 Section 109, when potable water is used to improve a building's energy efficiency, deploy lifecycle cost effective water conservation measures.	HPSB Guidance
Requirement Source Document(s):	EPAct 2005, Sec. 109, Federal Leadership in High Performance and Sustainable Buildings MOU	Energy Policy Act of 2005
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB III.6: Water-Efficient Products	Specify EPA's WaterSense-labeled products or other water conserving products, where available.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB III.7: Water Efficient Products - Irrigation Contractors	Choose irrigation contractors who are certified through a WaterSense labeled program.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
	HPSB IV: Enhance Indoor Environmental Quality	
HPSB IV.1: Thermal Comfort, ASHRAE 55-2004	Meet ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy, including continuous humidity control within established ranges per climate zone.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED EQ Credit 7: Thermal Comfort - Design	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB IV.2: Ventilation: ASHRAE 62.1-2007	Meet ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED EQ Prerequisite 1: Minimum Indoor Air Quality Performance	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB IV.3: Moisture Control	Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.	HPSB Guidance
Requirement Source Document(s):	ETL 04-3: Design Criteria for Prevention of Mold in Air Force Facilities (Achieves HPSB GP4, Moisture Control), Federal Leadership in High Performance and Sustainable Buildings MOU	AF ETL 04-3
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB IV.4: Daylighting - 75% of Spaces	Achieve a minimum daylight factor of 2 percent (excluding all direct sunlight penetration) in 75 percent of all space occupied for critical visual tasks.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EQ Credit 8.1: Daylight and Views - Daylight	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
HPSB IV.5: Daylighting - Controllability of Systems	Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EQ Credit 6.1: Controllability of Systems - Lighting	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB IV.6: Low Emitting Materials	Specify materials and products with low pollutant emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EQ Credits 4.1-4.4: Low-Emitting Materials - Adhesives and Sealants (4.1), Paints and Coatings (4.2), Flooring Systems (4.3), and Composite Wood and Agrifiber Products (4.4)	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB IV.7: Protect Indoor Air Quality during Construction	Follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction, 2007.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EQ Credit 3.1: Construction Indoor Air Quality Management Plan - During Occupancy	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB IV.8: Protect Indoor Air Quality after Construction	After construction and prior to occupancy, conduct a minimum 72-hour flush-out with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent. After occupancy, continue flush-out as necessary to minimize exposure to contaminants from new building materials.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EQ Credit 3.2: Construction Indoor Air Quality Management Plan - Before Occupancy	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB IV.9: Environmental Tobacco Smoke (ETS) Control	Implement a policy and post signage indicating that smoking is prohibited within the building and within 25 feet of all building entrances, operable windows, and building ventilation intakes during building occupancy.	HPSB Guidance
Requirement Source Document(s):	GSA Federal Register: December 22, 2008 (Volume 73, Number 246), Federal Leadership in High Performance and Sustainable Buildings MOU	Federal Register - Protecting Federal Employees from Environmental Tobacco Smoke
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED EQ Prerequisite 2: Environmental Tobacco Smoke (ETS) Control	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
	HPSB V: Reduce Environmental Impact of Materials	
HPSB V.1: Recycled Content	Per Section 6002 of the Resource Conservation and Recovery Act (RCRA), for EPA-designated products, specify products meeting or exceeding EPA's recycled content recommendations. For other products, specify materials with recycled content when practicable. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building.	EPA's Comprehensive Procurement Guideline Website
Requirement Source Document(s):	RCRA 2002, Sec 6002, Federal Leadership in High Performance and Sustainable Buildings MOU	RCRA 2002
LEED Credit(s) aligns closely with HPSB:	LEED MR Credit 4.1-4.2: Recycled Content - 10% of Content (4.1), 20% of Content (4.2)	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	

High Performance Sustainable Building Requirements and LEED® 2009 References		Links
HPSB V.2: Biobased Content	Per Section 9002 of the Farm Security and Rural Investment Act (FSRIA), for USDA-designated products, specify products with the highest content level per USDA's biobased content recommendations. For other products, specify biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building.	USDA's Biopreferred Website
Requirement Source Document(s):	FSRIA 2002 Section 9002, Federal Leadership in High Performance and Sustainable Buildings MOU	FSRIA 2002
LEED Credit(s) aligns closely with HPSB:	LEED MR Credit 6: Rapidly Renewable Materials LEED MR Credit 7: Certified Wood	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	None	
HPSB V.3: Environmentally Preferable Products	Use products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products or services that serve the same purpose. A number of standards and ecolabels are available in the marketplace to assist specifiers in making environmentally preferable decisions.	WBDG Federal Green Construction Guide
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	None	
HPSB V.4: Waste and Materials Management - Recycling	Incorporate adequate space, equipment, and transport accommodations for recycling in the building design.	HPSB Guidance
Requirement Source Document(s):	EO 13423, Sec 2(e), Federal Leadership in High Performance and Sustainable Buildings MOU	Executive Order 13423
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED MR Prerequisite 1: Storage and Collection of Recyclables	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB V.5: Waste and Materials Management, Divert 50% from Disposal	During a project's planning stage, identify local recycling and salvage operations that could process site-related construction and demolition materials. Provide salvage, reuse and recycling services for waste generated from major renovations, where markets or onsite recycling opportunities exist. During construction, recycle or salvage at least 50 percent of the non-hazardous construction, demolition and land clearing materials, excluding soil, where markets or onsite recycling opportunities exist.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	None	
LEED Credit(s) meet HPSB:	LEED MR Credit 2.1: Construction Waste Management	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
HPSB V.6: Ozone Depleting Compounds	Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.	HPSB Guidance
Requirement Source Document(s):	Federal Leadership in High Performance and Sustainable Buildings MOU	
LEED Credit(s) aligns closely with HPSB:	LEED EA Credit 4: Enhanced Refrigerant Management	LEED(R) for New Construction & Major Renovations 2009 - Nov 2008
LEED Credit(s) meet HPSB:	LEED EA Prerequisite 3: Fundamental Refrigerant Management	

ATTACHMENT 4

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE HORIZONTAL CONSTRUCTION*

Project Checklist

Sustainable Sites		6 Possible Points
Prereq 1	Construction Activity Pollution Prevention	Required
Credit 1	Site Selection	1
Credit 3	Brownfield Redevelopment	1
Credit 5.1	Site Development - Protect or Restore Habitat	1
Credit 6.1	Stormwater Design - Quantity Control	1
Credit 6.2	Stormwater Design - Quality Control	1
Credit 8	Light Pollution Reduction	1
Water Efficiency		4 Possible Points
Credit 1	Water Efficient Landscaping	2-4
Materials & Resources		8 Possible Points
Credit 2	Construction Waste Management	1-2
Credit 3	Materials Reuse	1-2
Credit 4	Recycled Content	1-2
Credit 5	Regional Materials	1-2
Innovation & Design Process		6 Possible Points
Credit 1.1	Innovation in Design	1
Credit 1.2	Innovation in Design	1
Credit 1.3	Innovation in Design	1
Credit 1.4	Innovation in Design	1
Credit 1.5	Innovation in Design	1
Credit 2	LEED Accredited Professional	1
Regional Priority		4 Possible Points
Credit 1.1	Regional Priority	1
Credit 1.2	Regional Priority	1
Credit 1.3	Regional Priority	1
Credit 1.4	Regional Priority	1
Project Totals		28 Possible Points

* Projects may pursue other LEED 2009, NC credits, not listed, towards meeting benchmark.

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE HORIZONTAL CONSTRUCTION

MET BENCHMARK LEVELS

Certified	7 - 8 points
Silver	9 - 10 points
Gold	11 - 13 points
Platinum	14 - 28 points

ATTACHMENT 5

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE UTILITY CONSTRUCTION*

Project Checklist

Sustainable Sites		7 Possible Points
Prereq 1	Construction Activity Pollution Prevention	Required
Credit 1	Site Selection	1
Credit 3	Brownfield Redevelopment	1
Credit 5.1	Site Development - Protect or Restore Habitat	1
Credit 5.2	Site Development - Maximize Open Space	1
Credit 6.1	Stormwater Design - Quantity Control	1
Credit 6.2	Stormwater Design - Quality Control	1
Credit 8	Light Pollution Reduction	1
Water Efficiency		4 Possible Points
Credit 1	Water Efficient Landscaping	2-4
Materials & Resources		2 Possible Points
Credit 2	Construction Waste Management	1-2
Innovation & Design Process		6 Possible Points
Credit 1.1	Innovation in Design	1
Credit 1.2	Innovation in Design	1
Credit 1.3	Innovation in Design	1
Credit 1.4	Innovation in Design	1
Credit 1.5	Innovation in Design	1
Credit 2	LEED Accredited Professional	1
Regional Priority		4 Possible Points
Credit 1.1	Regional Priority	1
Credit 1.2	Regional Priority	1
Credit 1.3	Regional Priority	1
Credit 1.4	Regional Priority	1
Project Totals		23 Possible Points

* Projects may pursue other LEED 2009, NC credits, not listed, towards meeting benchmark.

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE UTILITY CONSTRUCTION

MET BENCHMARK LEVELS

Certified	5 – 6 points
Silver	7 – 8 points
Gold	9 – 10 points
Platinum	11 – 23 points

ATTACHMENT 6

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE INDUSTRIAL FACILITIES*

Project Checklist

Sustainable Sites		15 Possible Points
Prereq 1	Construction Activity Pollution Prevention	Required
Credit 1	Site Selection	1
Credit 3	Brownfield Redevelopment	1
Credit 4.2	Alternative Transportation - Bicycle Storage & Changing Rm	1
Credit 4.3	Alternative Transportation - Low Emitting & Fuel Efficient Vehicles	3
Credit 4.4	Alternative Transportation - Parking Capacity	2
Credit 5.1	Site Development - Protect or Restore Habitat	1
Credit 5.2	Site Development: Maximize Open Space	1
Credit 6.1	Stormwater Design - Quantity Control	1
Credit 6.2	Stormwater Design - Quality Control	1
Credit 7.1	Heat Island Effect - Non-Roof	1
Credit 7.2	Heat Island Effect - Roof	1
Credit 8	Light Pollution Reduction	1

Water Efficiency		10 Possible Points
Prereq	Water Use Reduction – 20% Reduction	Required
Credit 1	Water Efficient Landscaping	2-4
Credit 2	Innovative Wastewater Technologies	2
Credit 3	Water Use Reduction	2-4

Energy and Atmosphere		26 Possible Points
Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
Prereq 2	Minimum Energy Performance	Required
Prereq 3	Fundamental Refrigerant Management	Required
Credit 1	Optimize Energy Performance	1-10
Credit 2	On-Site Renewable Energy	1-7
Credit 3	Enhanced Commissioning	2
Credit 4	Enhanced Refrigerant Management	2
Credit 5	Measurement & Verification	3
Credit 6	Green power	2

Materials & Resources		14 Possible Points
Prereq 1	Storage & Collection of Recyclables	Required
Credit 1.1	Building Reuse - Maintain Existing Walls, Floor & Roof	1-3
Credit 1.2	Building Reuse - Maintain 50% Interior Non-Structural	

	Elements	1
Credit 2	Construction Waste Management	1-2
Credit 3	Materials Reuse	1-2
Credit 4	Recycled Content	1-2
Credit 5	Regional Materials	1-2
Credit 6	Rapidly Renewable Materials	1
Credit 7	Certified Wood	1

Indoor Environmental Quality		10 Possible Points
Prereq 1	Minimum IAQ Performance	Required
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
Credit 1	Outdoor Air Delivery Monitoring	1
Credit 2	Increased Ventilation	1
Credit 3.1	Construction IAQ Management Plan - During Occupancy	1
Credit 3.2	Construction IAQ Management Plan - Before Occupancy	1
Credit 4.1	Low-Emitting Materials - Adhesives & Sealants	1
Credit 4.2	Low-Emitting Materials - Paints & Coatings	1
Credit 4.3	Low-Emitting Materials - Carpet Systems	1
Credit 4.4	Low-Emitting Materials - Composite Wood & Agrifiber Products	1
Credit 5	Indoor Chemical & Pollutant Source Control	1
Credit 8.1	Daylight & Views – Daylight	1

Innovation & Design Process		6 Possible Points
Credit 1.1	Innovation in Design	1
Credit 1.2	Innovation in Design	1
Credit 1.3	Innovation in Design	1
Credit 1.4	Innovation in Design	1
Credit 1.5	Innovation in Design	1
Credit 2	LEED Accredited Professional	1

Regional Priority		4 Possible Points
Credit 1.1	Regional Priority	1
Credit 1.2	Regional Priority	1
Credit 1.3	Regional Priority	1
Credit 1.4	Regional Priority	1

Project Totals	85 Possible Points

* Projects may pursue other LEED2009, NC credits, not listed, towards meeting benchmark.

APPLYING LEED™ 2009, NC PRINCIPLES TO AIR FORCE INDUSTRIAL FACILITIES

MET BENCHMARK LEVELS

Certified	30 - 37 points
Silver	38 - 44 points
Gold	45 - 59 points
Platinum	60 - 85 points

Attachment 7 - Implementing Guidance to Meet EISA 2007 Section 438 Requirements

Applicability. This guidance applies to projects that construct facilities with a footprint greater than 5,000 gross square feet, or expand the footprint of existing facilities by more than 5,000 gross square feet (See DoD policy memorandum, 19 Jan 2010, Subject: DoD Implementation of Storm Water requirements under Section 438 of the Energy Independence and Security Act (EISA) for details). If any DoD or other federal agency has an applicable construction project on Air Force installations, they will comply with this guidance. Air Force overseas installations and activities will strive to achieve Low Impact Development (LID) approaches consistent with applicable host nation requirements and in accordance with the host nation Final Governing Standards (FGS), Overseas Environmental Baseline Guidance Document (OEBGD) or applicable international agreements, e.g., Staus of Force Agreements.

Estimating pre- and post-development hydrologic parameters. Air Force planners and designers and Construction Agents use standard engineering practices to estimate development hydrologic parameters. Unified Facilities Criteria 3-230-01 1 Aug 2006, Surface Drainage Design reviews three methods appropriate to the scope of EISA 2007 Section 438 compliance. These are: 1) the rational method, 2) National Resource Conservation Service (formerly Soil Conservation Service) technical release 55 (TR-55) method, and 3) the U.S. Geological Survey (USGS) regression equations. Planners and designers should choose a method that is practical and appropriate to the scope of the project. For example, watershed continuous models like EPA's BASINS and HSPF would not typically be appropriate.

Maximum Extent Technically Feasible (METF). Restoring predevelopment hydrology can be difficult to achieve and Congress recognized this potential difficulty by including the METF language in the statute. For projects where technical infeasibility exists, document and quantify that storm water strategies, such as infiltration, evapotranspiration, and harvesting were employed to the METF. If the design objective cannot be met within in the project footprint, LID measures may be applied at nearby locations on DoD property (e.g., downstream from the project) within available resources. The land surrounding the project site is available to implement the appropriate Green Infrastructure (GI)/LID practices where optimal. Although the performance requirements of EISA Section 438 apply only to the project footprint, the flexibility exists to utilize the entire federal property in implementing the storm water strategies for the project.

Documentation: All site-specific technical constraints that limit the full attainment of the design objective shall be documented and retained in the project record. Documentation of technical infeasibility should include, but may not be limited to, engineering calculations, geologic reports, hydrologic analyses, and site maps. The installation construction project engineer validates the designer has met METF.

Retention / Detention Ponds. Any construction of permanent retention or detention ponds is strongly discouraged. If retention/ detention option is selected, written documentation for options considered and justification for the choice should be included in the design analysis, Additionally Bird Aircraft Strike Hazard (BASH) as well as other storm water management, maintenance and real property issues should be addressed. Where cost effective and allowed, LID measures should consider on site reuse of storm water for landscape/irrigation purpose to meet the water conservation requirements of EO 13514.

Post-construction analysis: Installations verify the effectiveness of as-built storm water features by periodic site visits to document the storm water LID systems and practices are functioning as intended.

INSTRUCTIONS FOR ACES-PM INPUTS FOR EISA 2007 SECTION 438

In the unique field of an applicable project input the words “EISA 438.” In the Value field input one of the following:

Unique Field Value Input	Definition
YES	This project is a federal project with a footprint greater than 5,000 SF and **can** demonstrate with documentation the project maintains or restores, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Alternatively the installation may report project compliance with this metric by reporting completion of an installation-wide stormwater management hydrology evaluation that defines the installation pre-development condition and demonstrates through established hydrology methods and tools the post-development parameters of temperature, rate, volume and duration of storm water flow do not exceed pre-development parameters at the federal property boundary to the maximum extent technically feasible.
NO	This project is a federal project with a footprint greater than 5,000 SF and **cannot** demonstrate with documentation that storm water design objectives were met through practices that infiltrate, evapotranspire and/or harvest and use the rainfall to the maximum extent technically feasible.

If a project is not applicable to EISA 2007 Section 438 no Unique Field data inputs are required.