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SUSTAINABLE DESIGN

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CHAPTER A-14

SUSTAINABLE DESIGN

14.1 GENERAL.

14.1.1 Scope. This chapter states criteria, requirements and guidance for sustainable design. Specific submittal requirements in this chapter supplement the requirements of Volume 1.

14.1.2 Objective. The objective of the Corps of Engineers (COE) is to incorporate sustainable design into all projects to the maximum extent feasible in coordination with functional, operational, cost and other project requirements.

14.1.3 Requirement. Unless indicated otherwise in Specific Instructions or predesign conference, all projects shall comply with paragraph 14.2 Applicable Publications and the requirements of this chapter.

14.1.4 LEED Project Certification. Generally, LEED certification by Green Building Certification Institute (GBCI) at Silver level is required per UFC 1-200-02 on all DoD projects that meet LEED Minimum Program Requirements (MPR). For all projects that meet MPR, LEED Silver certification by GBCI is required except when indicated otherwise in the predesign conference or Specific Instructions. Government validation review during project execution does not relieve or modify in any way the responsibility to satisfy all requirements for LEED certification as defined by GBCI.

14.1.5 LEED Project Registration. All projects that require certification are required to be registered at LEED OnLine, use the LEED format and forms for project documentation, and have all project LEED documentation compiled at LEED Online. For campus projects the party responsible for campus site design is also responsible for registering the Master Site and the campus Block, administering the Block and coordinating with all other involved building design teams. Some projects may have been previously registered during Code 3 activities. At the predesign conference coordinate with the Savannah District Project Manager (SAS PM) on whether the Government has previously registered any portion of the project. Unless indicated otherwise in Specific Instructions or predesign conference, register the project, pay registration fees, administer the on-line project and transfer the Project Administrator role for the registered on-line project to the SAS Project Manager when services are complete. Registration requirement applies to all full design and Code 3 services. See Technical Requirements paragraph 14.10 for instructions on registering projects, LEED registrations for RFPs and transfer of Project Administrator role.

14.1.5.1 Special Operations Forces (SOF) and Sensitive Projects. For some projects the User prohibits posting drawings on the internet for security reasons. For all SOF projects and all other security-sensitive facility projects located on Army property, coordinate with User on acceptability of posting drawings and other project data at LEED Online prior to registering the project. If User prohibits online posting of drawings, coordinate with SAS Project Manager and prepare waiver request to do the following: not obtain formal certification but meet all achievement requirements, document all LEED credits in accordance with USACE LEED-NC Submittals for Unregistered Projects spreadsheet, obtain qualified technical review of LEED documentation by SAS staff. Conform to waiver instructions in the 16 Dec 2013 Army SDD policy update memorandum (see Applicable Publications).
14.1.6 Unregistered Projects. Projects that do not meet MPR and projects that are not registered will provide LEED documentation using and in accordance with USACE LEED Submittals for Unregistered Projects (NC v2.2, NC 2009 or Schools v3 document as applicable), located at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx.

14.1.7 GBCI Design Review. GBCI Design Review (split certification) is required at the completion of final design for all full design projects that are registered. For all full design registered projects, apply for LEED Design Review, pay Design Review fees to GBCI and coordinate directly with GBCI on review results. Apply for Design Review no later than 15 days after resolution of final design review comments. In the case where multiple design teams are working on the same project, coordinate design review submission with the other teams (Master Site must be submitted first). Provide evidence of GBCI Design Review application date and copies of all GBCI correspondence to Project Manager. Coordinate with Project Manager, revise design and LEED documentation as necessary and resubmit/appeal denied design credits to achieve all credits and prerequisites that are denied by GBCI Design Review due to design error.

14.1.8 LEED Accredited Professional. Provide a LEED Accredited Professional who is responsible for ensuring compliance with requirements herein, coordinating GBCI review, ensuring correct interpretation of LEED credit requirements by the design team, providing guidance and assistance to PDT members in developing suitable and complete documentation, tracking overall LEED accomplishments, monitoring individual actions of PDT members responsible for each specific LEED credit, and ensuring LEED documentation is complete and correct and uploaded to LEED OnLine if applicable. In the case where multiple design teams are working on the same project the LEED AP will facilitate coordination between teams to complete the LEED documentation for the overall project.

14.1.9 Enhanced Commissioning. For all projects that meet MPR the LEED Enhanced Commissioning credit is required and the Government will provide the Commissioning Authority (CxA) unless indicated otherwise in Specific Instructions or predesign conference. Coordinate with the CxA during design development on full designs. Incorporate this in RFPs.

14.1.10 Thermal Comfort Verification. For all projects where the Government provides the Commissioning Authority (CxA) and the project earns LEED v3 credit IEQ 7.1 Thermal Comfort – Design, the CxA will perform all activities to earn LEED v3 credit IEQ 7.2 Thermal Comfort – Verification unless indicated otherwise in Specific Instructions or predesign conference. Incorporate this in RFPs.

14.1.11 Energy & Sustainability Record Card. Regardless of the source of funds, a completed Energy & Sustainability Record Card is required for each non-Air Force building that is new construction over 5,000sf, major renovation of building over 5,000sf, or has work with a project cost greater than $2.5 million regardless of scope. See http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx for E&S Record Card excel spreadsheet and follow “SAS Instructions for Completion of Energy & Sustainability Record Card” (also posted at same website).
14.1.12 ASHRAE 189.1 Compliance Forms. Refer to UFC 1-200-02, High Performance and Sustainable Building Requirements and provide completed ASHRAE 189.1 Compliance Forms and attachments for all applicable ASHRAE 189.1 requirements for each facility in the project. This requirement applies to all projects. For horizontal construction projects provide one set of compliance forms for the project. Documentation for Sections 5, 6, 7 and 8 except VOCs are due at final design. Documentation for Section 8 VOCs and Sections 9 and 10 are to be incorporated into LEED Documentation Notebook during construction. Obtain ASHRAE 189.1 Compliance Forms from ASHRAE (2009 compliance forms are acceptable). LEED documentation may be substituted for individual item compliance documentation if the LEED requirement matches or exceeds the ASHRAE 189.1 requirement. If LEED documentation is substituted, annotate the ASHRAE 189.1 Compliance Form to indicate what LEED credit or prerequisite to see for compliance documentation. Indicate all items that are not required by the UFC as “not applicable” on the Compliance Forms.

14.1.13 Plans for Operation. Beginning FY16 all projects located on Army property (except DoD Medical) are required to comply with ASHRAE 189.1-2011 Section 10.3.2 Plans for Operation in accordance with ECB 2014-12. Include in project budget for Code 3 activities. For full designs comply with Designer of Record (DOR) requirements indicated in SAS Plans for Operation Implementation document located at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx. Incorporate this requirement, including distribution of tasks per SAS Implementation document, in RFPs.

14.2 Applicable Publications. The following publications form a part of this Manual. Comply with all Applicable Publications except where indicated otherwise.


14.3 Preconcept Submittal Requirements.

LEED Project Checklist. Each scheme submitted shall include a LEED Project Checklist identifying the LEED points earned and those points which have good potential to be developed
by the scheme. Each scheme and LEED Project Checklist shall include in the “Yes” column at least the minimum required points. Air Force projects - substitute Air Force MILCON Sustainability Requirements Reporting Scoresheet for LEED Project Checklist.

14.4 CODE 3 DESIGN REQUIREMENTS.

Comply with paragraph 14.1.3. Submittal content and format shall be as described in applicable year Project Definition Report (PDR) instructions (obtained from SAS PM).

14.4.1 LEED OnLine Project Registrations. Register projects at LEED Online in accordance with paragraph 14.1.5. Include LEED registration information in the PDR (rating tool, version, all registered block/project numbers and names, name of SAS PM that Project Administrator role has been transferred to).

14.4.2 Energy & Sustainability Record Card. Submit Energy & Sustainability Record Card for each applicable facility in accordance with paragraph 14.1.11.

14.5 CONCEPT/EARLY PRELIMINARY (35 PERCENT) DESIGN SUBMITTAL REQUIREMENTS.

14.5.1 LEED Project Checklist. Provide completed LEED Project Checklist for each building showing credits project will pursue. Air Force projects - substitute Air Force MILCON Sustainability Requirements Reporting Scoresheet for LEED Project Checklist.


14.6 PRELIMINARY (60 PERCENT) SUBMITTAL REQUIREMENTS.

LEED Project Checklist. Provide completed LEED Project Checklist for each building showing credits project will pursue. Implement concept submittal review comments. Air Force projects - substitute Air Force MILCON Sustainability Requirements Reporting Scoresheet for LEED Project Checklist.

14.7 FINAL DESIGN SUBMITTAL REQUIREMENTS.

14.7.1 LEED Design Credit Documentation. All LEED design credit documentation is due at Final Submittal. This includes all Project Information Forms, all LEED-defined design prerequisites, all LEED-defined design credits attempted and the following credits if attempted: SS5.1, SS7.1 and EA5. If construction credit MR6 is attempted, a spreadsheet indicating estimated total materials cost for DIV 2-10 and all specified rapidly renewable materials with quantities and estimated material costs for each is required as a final design submittal and attachment to specification 01 33 29.37. For registered projects provide completed Forms and all attachments. For unregistered projects provide all documentation and attachments indicated as due at final design in the applicable USACE LEED Submittals for Unregistered Projects.
spreadsheet located at
http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx. Provide completed LEED Project Checklist for each building showing credits that have been incorporated into the project. Implement all prior submittal review comments. Air Force projects - substitute Air Force MILCON Sustainability Requirements Reporting Scoresheet for LEED Project Checklist. **Include this as an appendix to the Final Design Analysis.**

14.7.2 LEED OnLine. For all registered projects upload all general project data (PI Forms and uploads) and design credit data required by LEED Online by final submittal date. Invite the Government Team Members indicated in paragraph 14.10.5.4 to LEED Online projects no later than date of final submittal.

14.7.3 LEED Boundary. Show and label all building LEED project boundaries and LEED campus boundaries as applicable **in contract drawings.** If LEED project boundary is coincident with project limits of construction, note this in contract drawings. For campus projects follow the applicable LEED Application Guide for Multiple Building and On-Campus Projects (AGMBC) guidance for determining individual building and campus boundaries.

14.7.4 Energy & Sustainability Record Card. Incorporate Energy & Sustainability Record Card requirements for each applicable facility into contract documents in accordance with paragraph 14.1.11. Submit Energy & Sustainability Record Card for each applicable facility in accordance with paragraph 14.1.11. Include as an appendix to the Design Analysis.

14.7.5 ASHRAE 189.1 Compliance Forms. Incorporate ASHRAE 189.1 Compliance Forms requirements into contract documents in accordance with paragraph 14.1.12. Submit ASHRAE 189.1 Compliance Forms in accordance with paragraph 14.1.12. Include as an appendix to the Design Analysis.


14.8 **CORRECTED FINAL DESIGN SUBMITTAL REQUIREMENTS.**

14.8.1 Corrected Final Submittal. The corrected final submittal is not to be considered a normal design level and will be provided in those cases in which the review comments require revision due to A-E error or omission. Implement final submittal review comments and **submit all revised documents that show implementation of the comments.**

14.8.2 GBCI Design Review. See paragraph 14.1.7 “GBCI Design Review” for design review application which occurs in conjunction with corrected final design.

14.8.3 Energy & Sustainability Record Card. Submit Energy & Sustainability Record Card excel file for each applicable facility in accordance with paragraph 14.1.11.
14.9 REQUIREMENTS FOR PREPARATION OF DESIGN/BUILD RFP SOLICITATION PACKAGES.

14.9.1 General. Comply with paragraph 14.1.3.

14.9.2 Air Force projects. Submit Air Force MILCON Sustainability Requirements Reporting Scoresheet at final RFP submittal (separate submittal – not in the RFP).

14.9.3 School Projects. See paragraph 14.10.5.10 below for additional requirements for school projects.

14.9.4 Energy & Sustainability Record Card. Incorporate Energy & Sustainability Record Card requirements for each applicable facility into RFP in accordance with paragraph 14.1.11. Submit Energy & Sustainability Record Card excel file to Project Manager at final RFP submittal (separate submittal – not in the RFP).

14.9.5 ASHRAE 189.1 Compliance Forms. Incorporate ASHRAE 189.1 Compliance Forms requirements into RFP in accordance with paragraph 14.1.12.


14.10 TECHNICAL REQUIREMENTS.

14.10.1 General. Comply with paragraph 14.1.3. Document all instances of noncompliance with justification in Design Analysis. If a waiver request is needed, prepare the waiver request and all supporting technical documentation.

14.10.2 Conflicts. Where ECB 2014-12 conflicts with UFC 1-200-02 or the USACE Army LEED Implementation Guide, ECB 2014-12 shall take precedence. Where UFC 1-200-02 conflicts with the USACE Army LEED Implementation Guide, UFC 1-200-02 shall take precedence (example: paragraph 18b “REQUIRED CREDITS” is not applicable). Where UFC 1-200-02 conflicts with AT/FP, fire protection or operational security requirements, those requirements take precedence.

14.10.3 Federal Recycled/Recovered Products Preferred Procurement Program (EPA Comprehensive Procurement Guidelines or CPG). The Resource Conservation and Recovery Act (RCRA) of 2002 required the U.S. Environmental Protection Agency (EPA) to create procurement preferences for recycled content products that are applicable to all federal procurement (to designate products for recycled content). SAS UFGS 01 62 35 37 RECYCLED/RECOVERED/BIOBASED MATERIALS, located at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx, addresses this requirement. Include this section in all full design projects and follow the specifier notes contained in this UFGS for incorporation of designated products and editing of other technical sections.

14.10.4 Federal Biobased Products Preferred Procurement Program (FB4P). The Farm Security and Rural Investment Act (FSRIA) of 2002 required the U.S. Department of Agriculture (USDA) to create procurement preferences for biobased products that are applicable to all federal procurement (to designate products for biobased content). SAS UFGS 01 62 35 37 RECYCLED/RECOVERED/BIOBASED MATERIALS, located at
http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx, addresses this requirement. Include this section in all full design projects and follow the specifier notes contained in this UFGS for incorporation of designated products and editing of other technical sections.

14.10.5 LEED Guidance.

14.10.5.1 SAS Guide Specifications. Several SAS UFGS are located at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx. They address many of the requirements in this paragraph. Use these SAS UFGS in all applicable projects. Follow the specifier notes contained in these UFGS for editing of specifications.

14.10.5.2 Air Force projects. Require Contractor submittal of Air Force MILCON Sustainability Requirements Reporting Scoresheet submittal at construction completion in the contract documents for full design projects. Require Contractor submittal of the scoresheet at final design and again at construction completion in the RFP for design-build projects.

14.10.5.3 LEED OnLine Registration Instructions. Comply with the following when completing LEED project registrations. Include these instructions in all DB RFPs that require LEED registration by DB Contractor.

A. Project Title:
1st part of title identify client - ARMY, AIR FORCE or DOD as applicable
2nd part of title - project number from DD1391
3rd part of title – project and building name as applicable (if a separate registration is needed for each building in the project the name needs to indicate which building)
EXAMPLE: “ARMY 55355 Bks Complex Ph3 COF 2”
EXAMPLE: “DoD 328166 McNair School”
EXAMPLE: “AIR FORCE 329238 Avionics Facility”

B. Project Owner Information
General Owner Organization: U.S. Army Corps of Engineers
May we publish project owner information?: pick “yes”
Owner Type: pick “Government Use: Federal”
Main Office: leave blank
Primary Contact: The Primary Contact is the USACE Project Manager. Confirmation of Agent Form is not needed.

C. Address
Populate the 2nd address line with 4 digit base identifier (see E&S Record Card instructions for these), 5 digit category code (on DD1391 under PRIMARY FACILITY) and RPUID if known (currently assigned at facility turnover, planned to be assigned and indicated on DD1391).

14.10.5.4 Government LEED Team Members. For all SAS registered projects invite and assign “QA/QC” role to:
Judith.f.milton@usace.army.mil
Stephen.d.bentley@usace.army.mil
For all Fort Bragg registered projects invite and assign “QA/QC” role to:
Lynda.s.pfau.ctr@mail.mil
Include these instructions in all DB RFPs that require LEED registration by DB Contractor.

14.10.5.5 DoD Exemption to MPR 6. Invoke this exemption on all projects (LEED 2009 and beyond – not applicable to v2.2). Follow instructions “MPR 6 Department of Defense Exemption Process” located at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx. Include these instructions in all DB RFPs.

14.10.5.6 Transfer of LEED Online Project Administrator Role. Comply with the following and incorporate these requirements in all construction contracts and DB RFPs as applicable.

A. CODE 3 SERVICES:
   - Design team that performs Code 3 services obtains all LEED registrations and pays registration fees (person who registers is Project Administrator). No input beyond registration is required – project is registered at this time only to ensure it can be executed using the same rating tool under which it is budgeted and is not subject to LEED rating tool updates.
   - Design team transfers Project Administrator role to SAS Project Manager (PM) at completion of Code 3 services.

B. DESIGN BID BUILD (DBB) PROJECTS:
   - Designer of Record (DOR) obtains all required LEED registrations and pays registration fees (coordinate with SAS PM on prior registrations in predesign conference). For all prior registrations, SAS PM transfers Project Administrator role to DOR at start of design.
   - DOR pays for and obtains GBCI Design Review.
   - Construction contract requires Contractor to pay for and obtain LEED certification (responsibility for design credits and GBCI Design Review by others).
   - DOR transfers Project Administrator role to SAS PM after GBCI Design Review is complete.
   - SAS PM transfers Project Administrator role to Construction Contractor after award.
   - If construction contract is awarded before GBCI design review is complete, DOR assigns Team Manager role to Construction Contractor POC at start of construction to provide interim access to LEED OnLine.
   - Construction Contractor pays for and obtains final LEED certification and transfers Project Administrator role to SAS Project Engineer after final LEED certification is complete.
   - SAS Project Engineer coordinates with installation and, according to their direction, either transfers Project Administrator role to installation POC or contacts GBCI to cancel the project.

C. DESIGN-BUILD (DB) PROJECTS
   - If LEED registrations were obtained at Code 3, SAS PM transfers Project Administrator role to Construction Contractor after award. If LEED registrations were not obtained at Code 3, DB Contractor obtains all required LEED registrations and pays registration fees (RFP Preparer coordinate with SAS PM on prior registrations during RFP development).
   - DB Contractor pays for and obtains LEED certification and transfers Project Administrator role to SAS Project Engineer after final LEED certification is complete.
- SAS Project Engineer coordinates with installation and, according to their direction, either transfers Project Administrator role to installation POC or contacts GBCI to cancel the project.

14.10.5.7 Male/Female Ratio. Incorporate the following instructions as applicable. Include these instructions in RFPs where applicable. A document titled DoD Gender Ratio Exemption containing these instructions is posted at http://www.sas.usace.army.mil/About/DivisionsandOffices/EngineeringDivision/EngineeringDesignCriteria.aspx.

USGBC has granted approval for all LEED v2.2, 2009 and v4 Department of Defense projects in regards to WEp1 Water Use Reduction to use a standard 80:20 male to female gender ratio in the water use calculations for the military occupants. This blanket approval applies to all Department of Defense projects registered under LEED v4, 2009 and v2.2 regardless of registration date.

When a DOD project claims this exemption, they must provide the following within the Special Circumstances Narrative box in WEp1:

This is a project under U.S. Department of Defense ownership and is taking advantage of the approval that USGBC granted to the U.S. Department of Defense as of April 2, 2014 to use a standard 80:20 male to female gender ratio in the water use calculations for the military occupants.

Project Name: XXX
Project Address, City and State: XXX
DOD Base or Installation name: XXX

All other forms and documentation should be provided as typically required.

14.10.5.8 Reporting of LEED Certifications. Include a requirement in all construction contracts and DB RFPs that Contractor shall notify SAS SDD POC Judy Milton by email when any certification is received at judith.f.milton@usace.army.mil. Notification to include installation, project number, building name and RPUID, rating tool, number of points, certification level and date of certification.

14.10.5.9 Range Buildings. Coordinate with User on building compliance with LEED MPR 5 (minimum occupancy rate). If any building in the project meets MPR 4 (minimum floor area) and MPR 5, develop and show on drawings a LEED Project Boundary that meets MPR 3 and MPR 7. In this case LEED Project Boundary does not coincide with construction limits.

14.10.5.10 Schools. School projects will utilize the LEED for Schools rating tool instead of LEED-NC. For SS Prerequisite 2 Environmental Site Assessment, the DOR shall review the environmental site assessment documents prepared by the Installation (as part of predesign coordination for DBB full design or included as an appendix in RFP by RFP Preparer in DB RFP) and provide all additional services and documentation needed to meet the LEED prerequisite requirements.

14.10.6 Fort Bragg Projects. Projects located at Fort Bragg are required to comply with Fort Bragg list of required and prohibited LEED credits and, for all Fort Bragg required credits not obtained, submit a Fort Bragg waiver form that indicating the reason for not obtaining the credit. Obtain current Fort Bragg list from SAS Project Manager. Obtain waiver Form from SAS Project Manager if needed. Incorporate these requirements into full designs and RFPs for projects located at Fort Bragg.