



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE SPACE COMMAND

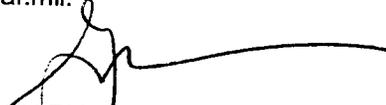
14 AUG 2002

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ AFSPC/CE  
150 Vandenberg Street, Suite 1105  
Peterson AFB CO 80914-4150

SUBJECT: Sustainable Development Policy (AFSPC CEC Policy P02002)

1. Consistent with HQ USAF/ILE subject memo dated 19 Dec 01, (Atch 1) Air Force Space Command's policy is to apply sustainable development to our projects to include AFSPC MILCON, non-privatized housing, special programs, Non Appropriated Fund (NAF) and Minor Construction (P-341) projects.
2. To meet the Air Force requirements, the HQ AFSPC goal is to meet the following minimums per fiscal year: FY04 – 20%, FY05 – 35%, FY06 – 50%, FY07 – 65%, FY08 – 80%, FY09 – 100% of the total number of projects will be designed sustainable. Each fiscal year HQ AFSPC/CEC will select the projects to be designed using this sustainable criterion.
3. All projects will have a self-assessment metric applied in accordance with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) rating system. This assessment will gauge the percentage of sustainable design for each of the selected "sustainable" projects for each FY as well as the relative sustainability achieved for the non-selected projects. The Command objective is to meet the minimum LEED™ certification designation labeled "Certified" for all selected sustainable projects.
4. As our design/construction agent, we entrust you with the responsibility of executing this policy and guidance, and supporting us in achieving our goals.
5. If you have any questions please contact our OPRs Ms. Mariann P. Schofield, HQ AFSPC/CECP, DSN 692-3340, E-mail, Mariann.Schofield@Peterson.af.mil or Mr. Will S. Williams, HQ AFSPC/CECP, DSN 692-5047, E-mail Will.Williams@Peterson.af.mil.

  
GARY T. MAHER, GS-15, DAFC  
Chief, Engineering Division

Attachments:

1. Sustainable Development Policy, 19 Dec 01 (w/attachments)
2. AFSPC Bullet Background Paper

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

19 DEC 2001

MEMORANDUM FOR SEE DISTRIBUTION

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

SUBJECT: Sustainable Development Policy

It is Air Force policy to apply sustainable development concepts in the planning, design, construction, environmental management, operation, maintenance and disposal of facilities and infrastructure projects, consistent with budget and mission requirements. A sustainable facility achieves optimum resource efficiency and constructability while minimizing adverse impacts to the built and natural environments through all phases of its life cycle. The goals of sustainable development are to conserve energy, water, and raw materials; prevent environmental degradation caused by construction, operations, and disposal of facilities; and create built environments which are livable, healthy, maintainable, and productive. Refer to Attachment 1 for more information on sustainable development.

Sustainable development requires integrated programming and project planning that can best be accomplished by a multidisciplinary team of planners, designers, end users, construction and maintenance specialists, and environmental specialists. Comprehensive planning should take into account those principles promoted in the Office of the Secretary of Defense (OSD) Sustainable Planning Guide referenced in Attachment 2. Setting sustainable development goals early in the planning, programming and budgeting process and ensuring these goals are attained during design and construction is critical to project success. Selection of knowledgeable and experienced consultants is another key to success. According to the Federal Acquisition Regulation (FAR), consultants for planning, environmental, design and related professional services shall be selected partially on the basis of their "specialized experience and technical competence in the type of work required, including, where appropriate, experience in energy conservation, pollution prevention, waste reduction, and the use of recovered materials." This selection criterion shall be given importance when used jointly with the other criteria specified in the FAR.

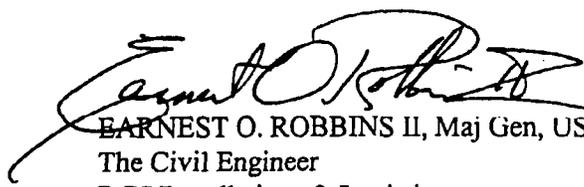
The United States Green Building Council's (USGBC) "Leadership in Energy and Environmental Design (LEED™)" Green Building Rating System is the Air Force preferred self-assessment metric. It may also be used as a tool to help apply the principles of sustainable development. LEED™ is a self-assessment system designed for rating new and existing commercial, institutional, and high-rise residential buildings. The system awards points based on the number of LEED™ credits earned. These credits are earned by using products, systems, strategies, or technologies described in LEED™. The LEED™ credits are opportunities, not

requirements. Where actions or criteria identified in LEED™ are not applicable to a specific project, are not cost effective, or are not in compliance with current Air Force criteria, LEED™ allows use of alternative features or practices. LEED™ is in use nationwide and is already familiar to many architectural-engineer and construction firms employed by the Air Force.

Each MAJCOM should review their future projects beginning with the FY04 MILCON program (including non-privatized housing), and incorporate sustainable development using LEED™ criteria. At least twenty percent of each MAJCOM's projects should be selected as LEED™ pilot projects in FY04, with increasing percentages of projects qualifying for a certification in subsequent years. The Air Force Sustainable Facilities Guide will provide tools and suggested guidelines for selecting candidate projects. The goal is to have all MILCON projects in the FY09 program capable of achieving LEED™ certification. Submission to the USGBC for actual LEED™ certification is at MAJCOM discretion. Unspecified Minor Construction (P-341) and housing privatization projects should also be considered when implementing sustainable development. This policy does not apply to Host Nation or NATO funded projects.

Sustainable development concepts will benefit the Air Force by creating high-performance buildings with long-term value. They are to be integrated into the development process and balanced with all other design criteria to achieve best value for the Air Force. The economic analysis process need not change, but the elements to consider will now include sustainable technologies and their potential for long-term savings.

HQ AFCEE and HQ AFCESA provide guidance documents and technical support to help you execute this sustainable development policy. AFCEE's expertise includes planning, the facility delivery process, and environmental management. AFCESA provides expertise for design criteria, construction standards, life cycle and sustainable costs, energy and water conservation, and operations and maintenance issues. This policy will be incorporated in the next revision of AFI 32-1023, Design and Construction Standards and Execution of Facility Construction Projects. Additional information regarding Air Force specific references/guidance is included at Attachment 2. If the members of your staff have any questions, please have them contact your respective POC at HQ AFCEE or HQ AFCESA/CES.



EARNEST O. ROBBINS II, Maj Gen, USAF  
The Civil Engineer  
DCS/Installations & Logistics

#### Attachments

1. Defining and Describing Sustainable Development
2. References for Incorporating Sustainable Development Concepts into Air Force Projects

**DISTRIBUTION:**

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## Attachment 1

### Defining and Describing Sustainable Development

Sustainable development is an investment in the future. Through conservation, improved maintainability, recycling, reuse, reduction and other actions and innovations, we can meet today's needs without compromising the ability of future generations to meet their own. Sustainable development supports an increased commitment to environmental stewardship and conservation, and results in an optimal balance of cost, environmental, societal and human benefits while meeting the mission and function of the intended facility or infrastructure.

Sustainable development produces facilities and infrastructure that meet mission requirements in a cost-effective manner while minimizing resource loss and damage to the environment. Conscientious site planning and use of renewable or recycled resources will minimize environmental impacts and resource loss during construction. Designers can minimize operational impacts by selecting materials and systems that reduce the demand for energy and water, allow renewable energy use, and avoid maintenance practices that require the use of undesirable raw materials or chemicals. Sustainable development optimizes each project's total economic and environmental impacts and performance throughout its life cycle.

Sustainable development is achieved through a process of minimizing each project's adverse economic and environmental impacts and optimizing performance throughout its life cycle. It requires changes to the facility delivery process to ensure the "best fit" of the built environment to the natural environment. These changes include:

- Setting sustainable development goals early in project planning, and following through during design and construction to ensure their achievement;
- Including planners, programmers, and environmental managers as active participants in the project management team;
- Selecting architectural-engineer firms with knowledge and experience in sustainable design;
- Educating the construction contractor about the sustainable development goals of the project.

Sustainable development in the built environment includes six fundamental principles:

(1) **Optimize Site Potential.** Creating sustainable buildings starts with proper site selection, including consideration of the reuse or rehabilitation of existing buildings. The location, orientation, and landscaping of a building affect the local ecosystems, transportation methods, and energy use.

(2) **Minimize Energy Consumption.** A building should rely on optimizing system efficiencies and employing conservation measures. Renewable energy technologies should be used in facility projects whenever feasible and cost effective. New facilities should meet or exceed current Air Force energy performance goals.

(3) Protect and Conserve Water. Fresh water is an increasingly scarce resource near many of our bases. A sustainable building should reduce, control or treat site runoff, use water efficiently, and implement as many Federal Energy Management Program Water Efficiency Improvement Best Management Practices as practicable.

(4) Use Environmentally Preferable Products. Buildings should be constructed of materials that minimize lifecycle environmental impacts such as global warming, resource depletion, and toxicity. In a materials context, life cycle includes raw materials acquisition, product manufacturing, packaging, transportation, installation, use, and ultimate disposal.

(5) Enhance Indoor Environmental Quality (IEQ). The IEQ of a building has a significant impact on occupant health, comfort, and productivity. Among other attributes, a building should optimize daylighting, be well ventilated, control moisture, and avoid the use of materials with high-VOC emissions.

(6) Optimize Operational and Maintenance Practices. Buildings should be designed to take into account the energy and environmental impacts of operating and maintaining the building. Designers are encouraged to specify materials and systems that reduce maintenance requirements, and/or require less water, energy, and toxic chemicals to maintain.

The Construction Criteria Base (CCB) has for many years been the official DoD distribution system for all facilities-related criteria. CCB is currently being expanded into a new system called the Whole Building Design Guide (WBDG) that will offer far greater capability as a design tool. The WBDG will be the primary portal for sustainable development information and methodologies. It can be accessed at <http://www.wbdg.org/index.htm>.

## Attachment 2

### References for Incorporating Sustainable Development Concepts into Air Force Projects

#### Planning

The *Feasibility Study for Implementing Sustainable Development Concepts and Principles into the Army, Navy, Air Force, and Marine Corps Land and Facilities Planning Processes and Programs* or **Sustainable Planning: A Multi-Service Assessment 1999**, was sponsored by the Office of the Secretary of Defense and is the first Department-wide attempt by the DOD to address sustainability and sustainable planning at a policy level. The purpose of the study was to establish a common understanding of sustainable development principles, and to use that understanding to assess opportunities to include sustainability in military planning. A key aspect of the report is the joint DOD approach in seeking practical applications of sustainability within the unique culture of the military. Other governmental guidance is provided through the US HUD and USEPA's "Smart Growth" program and planning guidance. Additionally, the American Planning Association has published a guide for sustainable planning.

- OSD Sustainable Planning: A Multi-Service Assessment 1999  
<http://www.denix.osd.mil/denix/DOD/Library/Sustain/assessment99.pdf>
- Smart Growth Network: <http://www.smartgrowth.org/index2.html>
- American Planning Association, Policy Guide on Planning for Sustainability:  
<http://www.planning.org/govt/sustdvpg.htm>

#### Design

- The Whole Building Design Guide (WBDG) is an Internet resource providing a portal to a wide range of building-related design guidance, criteria and technology. It is intended for use by federal, military and private sector architects, engineers, and project managers.

- The United States Green Building Council (USGBC) has created the "Leadership in Energy and Environmental Design (LEED™)" Rating System. It may be used as a guide to apply the principles of sustainable development. The LEED™ Rating System may also be utilized simply as a voluntary self-assessment tool for measuring a project's achievements in sustainable development without submitting for a certified rating. Points are awarded for achievements in five areas: Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; and Indoor Environmental Quality. Some parts or sections may not be appropriate for AF use. One specific part under the Energy and Atmosphere section, *Optimize Energy Performance*, is not recommended for Air Force use. This part should not be used because it uses energy cost budget as the method for developing the performance of a building. The preferred Air Force method is to use the energy use budget to design facilities based on BTU/SF/YR.

AFCEE's Sustainable Development web page provides single point access to Air Force guidance and a variety of supporting information. AFCESA's web pages provide similar single point access for Air Force Energy and Water Management guidance and a variety of supporting information

- Whole Building Design Guide: <http://www.wbdg.org/index.htm>
- United States Green Building Council (USGBC) LEED™ Green Building Rating System: <http://www.usgbc.org/>
- PRO-ACT Fact Sheet on Sustainable Development: [http://www.afcee.brooks.af.mil/pro\\_act/fact/Aug98a.htm](http://www.afcee.brooks.af.mil/pro_act/fact/Aug98a.htm)
- Air Force *Environmentally Responsible Facilities Guide* and *Sustainable Development Toolbox* (to be replaced by the "AF Sustainable Facilities Guide" in FY02): <http://www.afcee.brooks.af.mil/green/greenhome.asp>
- Air Force *Guide to Green Purchasing*: <http://www.afcee.brooks.af.mil/EQ/ap/gg/default.asp>
- Air Force *Construction and Demolition Waste Management Guide*: <http://www.afcee.brooks.af.mil/green/resources/resources.asp>
- Energy policy and guidance: <http://www.afcesa.af.mil/Directorate/CES/Mechanical/Energy/default.htm>
- Federal Energy Management Program (FEMP), Technical Assistance: <http://www.eren.doe.gov/femp/techassist.html>
- Water Efficiency policy and guidance and Improvement BMPs <http://www.afcesa.af.mil/Directorate/CES/Civil/Water/Water.htm>.

### **Environmental Management**

There is a wide range of source material addressing natural resources, pollution prevention and environmental quality. Both governmental and non-governmental sources are of value. The US Department of Energy has played a significant role in this field through its Federal Energy Management Program and the DOE Center of Excellence for Sustainable Development. Many more government and nonprofit conservation organizations are concerned about waste and environmental abuse of the nation's natural resources. Links to many of these sites are included on the sites listed below.

- The Sustainable Communities Network, a clearinghouse for a wide range of sustainable concepts and applications: <http://www.sustainable.org/>
- DOE Center of Excellence for Sustainable Development: <http://www.sustainable.doe.gov/>
- Federal Energy Management Program (FEMP), Technical Assistance: <http://www.eren.doe.gov/femp/techassist.html>
- FEMP Water Efficiency Improvement BMPs are also available on the AFCESA website at <http://www.afcesa.af.mil/Directorate/CES/Civil/Water/Water.htm>

BULLET BACKGROUND PAPER  
ON  
AFSPC SUSTAINABLE DEVELOPMENT

PURPOSE

AFSPC installations are required to apply the Air Force and AFSPC Sustainable Development (SD) policy. More importantly, the policy is grounded in "what's best for the built and natural environment." Sustainability has many benefits related to quality of life, life cycle cost savings (energy, materials and maintenance are three examples) and the natural environment. Since the continuing burden of environmental liability and resource conservation is increasing due to dissemination of laws at the federal, state and local level; it makes sense to apply our knowledge of Sustainable Development to not only place a minimal burden on the environment, but to reduce our general compliance burden. It is also a wise investment of tax dollars that can enhance our work environment and our neighbors' perception of our impact on their lives. The goals of sustainability, as stated in the Air Force (SD) policy, are to "conserve energy, water and raw materials; prevent environmental degradation caused by construction, operations and disposal of facilities and create built environments which are livable, healthy, maintainable and productive."

BACKGROUND

HQ AFSPC/CE policy letter ( June 2002), "Sustainable Development Policy," echoes the Air Force policy and directs the incorporation of sustainable design into our MILCON projects, with the our goals to incrementally increase every fiscal year to obtain the 100% SD goal of the Air Force by FY09.

HQ USAF/ILE policy letter (19 Dec 2001), "Sustainable Development Policy," requires Air Force Civil Engineers to apply sustainable principles to MILCON, Housing, and P-341 projects.

Executive Order 13148 (21 April 2000), "Greening the Government through Leadership in Environmental Management," replaced EO 12856. This EO makes agency heads responsible for integrating environmental accountability into day-to-day activities such as planning and decision-making across all agency missions, activities, and functions. It also incorporates broad language essentially holding employee performance accountable for actions.

Executive Order (EO) 13123 (3 June 1999), "Greening the Government through Efficient Energy Management," requires agencies to reduce energy consumption/sq ft by 30 percent in 2005 and 35 percent in 2010 based on 1985 data. Industrial and Lab facilities have a different requirement (20 percent in 2005 and 25 percent in 2010 based on 1990 data). It requires expansion of renewable energy by requiring us to install

2,000 solar energy systems at facilities by 2000 and 20,000 systems by 2010. The EO also requires reduction in the production of Greenhouse Gases, water conservation measures, petroleum consumption, and source energy.

Several additional EOs will affect our decisions on facilities and their construction/renovation. These are:

EO 13221, "Energy Efficient Standby Power Devices,"

EO 13101, "Greening the Government Through Waste Prevention, Recycling and Federal Acquisition,"

EO 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements,"

EO 12845, "Requiring Agencies to Purchase Energy Efficient Computer Equipment,"

EO 12780, "Federal Agency Recycling and the Council on Federal Recycling and Procurement Policy,"

EO 11988, "Floodplain Management,"

EO 11990, "Protection of Wetlands,"

EO 11288, "Prevention, Control and Abatement of Water Pollution by Federal Activities,"

EO 11514, "Protection and Enhancement of Environmental Quality"

## STRATEGY

- We can pre-select certain classes of projects (which have demonstrated good SD opportunities) for inclusion in the sustainable development program in the requirements programming phase
- Most every project will have elements that qualify for some type of sustainable development
- We plan for success, so the planning process is the first opportunity to incorporate many of the sustainable elements – set the goals early
- Follow-up the planning during the design and construction processes
- Include planners, programmers and environmental managers during the project execution
- Select A-E companies with appropriate SD backgrounds (knowledge, expertise motivation)
- Bring-in the construction contractor early in the process and educate them regarding the project goals (will need contracting support for this) Successfully executed projects will consider
  - Siting/Reuse/Planning
  - Design criteria,
  - Construction standards,
  - Life cycle and sustainable costs,
  - Energy and water conservation, and
  - Operations and maintenance issues

## RECOMMENDATIONS

Each project will be unique in its adaptability to SD, but will have a few steps in common.

- 1) The planning process should consider the environmental benefit of reuse/siting/orientation.
- 2) The A&E contract should have sustainable design principles integrated into the statement of work (SOW).
- 3) If the contract does not have SD principles in the SOW, the A&E contractor should be required to include them into any project design they develop.
- 4) Contracting should be brought into the loop early on, to ensure the contractors bidding on the work will know the requirements
- 5) It is helpful if the construction contractor(s) can be brought into the design
- 6) This will be an iterative process and everyone on the design/construction team will be in a learning mode.
- 7) Upon project completion, make sure you've documented the amount of sustainability that was built-in by using the LEED scoring system for our MILCON projects. The A&E can be required to complete LEEDs analysis. (keep the documentation with the project file – you may want to share lessons learned with others)

## ADDITIONAL RESOURCES

There are many references to assist in planning and execution of projects available from the HQ AFCEE website at <http://www.afcee.brooks.af.mil> . Choose the "design and construction" link and then select the "sustainable development" link:

- US Air Force CE Sustainability Policy:  
<http://www.afcee.brooks.af.mil/green/resources/policymemo.doc>
- US Air Force Environmentally Responsible Facilities Guide:  
<http://www.afcee.brooks.af.mil/green/brochure/brochure.asp>
- US EPA Construction Checklist:  
<http://www.afcee.brooks.af.mil/green/resources/EPAchecklist.doc>
- ACC Sustainable Facilities Guide:  
<http://www.afcee.brooks.af.mil/green/case/accsfguide.pdf>
- Sustainable Building Sourcebook: <http://www.greenbuilder.com/sourcebook>
- Sustainable Building Tech Manual: <http://www.sustainable.doe.gov/pdf/sbt.pdf>
- Environmental Landscaping: <http://www.afcee.brooks.af.mil/pro-act/fact/dec98.asp>
- Sustainable Development Toolbox:  
<http://www.afcee.brooks.af.mil/green/resources/toolbox/TOOLBOX.asp>

The following links are from the DENIX website at <https://www.denix.osd.mil/denix/dod/library/library.html#sustain> (you must have a DENIX account for this link)

- Whole Building Design Guide: <http://www.wbdg.org/index.asp>
- Green Base of the Future: <http://www.3di.com/qbof>

The US EPA also has some sustainability resources such as:  
<http://www.epa.gov/region3/sdwork/network.htm>

Ms Schofield/HQ AFFSPC/CECP/mps/23 May 02