

1. Introduction

1.1 OBJECTIVES

As the environmental impacts and energy costs that accrue due to the construction and operation of facilities have become known, the Federal government has implemented three Federal Mandates (one law and two Executive Branch policies) for Executive Branch agencies that outline sustainable and energy goals. In addition, on March 30, 2007 VA signed a *Green Buildings Action Plan* that provides guidance for compliance. Instituting these objectives in Federal construction programs will help diminish America's dependence on foreign energy and conserve valuable domestic resources for future generations of Americans.

The VA Sustainable Design Manual is the agency's guidance to define a methodology to achieve these Federal Mandates. The Manual provides guidance in incorporating sustainable design on every phase of a project, from proposals, goal setting, and preliminary planning through design and construction for projects of all sizes. Recognizing that each space acquisition project is unique and will require different strategies, all projects are, nevertheless, required to meet the Federal Mandates as appropriate given the project scope and budget.

1.2 FEDERAL MANDATES

1.2.1 ENERGY POLICY ACT OF 2005 (EPACT) AND DOE INTERIM FINAL RULE

The EPACT requires a minimum 30 percent improvement in energy cost savings from a baseline (not including receptacle and process loads) established in accordance with ASHRAE 90.1 – 2004 for all *new* Federal buildings, where life-cycle cost-effective.

1.2.2 FEDERAL LEADERSHIP IN HIGH PERFORMANCE AND SUSTAINABLE BUILDINGS: MEMORANDUM OF UNDERSTANDING (MOU)

Along with 18 other Federal agencies, VA signed the MOU committing to leadership in the design, construction and operation of high performance/sustainable facilities.

The MOU contains specific measurable requirements for design and construction of all new construction and major renovations, owned or leased, grouped into five main areas:

1. Employ Integrated Design Principles
 - Integrated Design
 - Commissioning
2. Optimize Energy Performance
 - Energy Efficiency
 - Measurement and Verification
3. Protect and Conserve Water
 - Indoor Water
 - Outdoor Water
4. Enhance Indoor Environmental Quality
 - Ventilation and Thermal Comfort

- Moisture Control
 - Daylighting
 - Protect Indoor Air Quality during Construction
5. Reduce Environmental Impact of Materials
- Recycled Content
 - Low-Emitting Materials
 - Biobased Content
 - Construction Waste
 - Ozone Depleting Compounds/Substances

1.2.3 EXECUTIVE ORDER 13423, STRENGTHENING FEDERAL ENVIRONMENTAL, ENERGY, AND TRANSPORTATION MANAGEMENT (EO)

The Executive Order consolidates five prior Executive Orders, integrates sustainable practices into a more cohesive approach to environmental and energy management, and extends the MOU agreement as a mandatory requirement to all Executive Branch Federal agencies. It outlines the following objectives:

- Reduction in life-cycle cost of facilities' environmental and energy attributes
- Improvement in energy efficiency, water conservation, and utilization of renewable energy
- Provision of safe, healthy, and productive built environments
- Promotion of sustainable environmental stewardship

To accomplish these objectives, agencies shall locate, design, construct, maintain, and operate its buildings and facilities in a resource-efficient, sustainable, and economically viable manner, consistent with its mission. The policy includes specific reductions in energy and water use, reductions in the uses of toxic materials and solid waste, increased use of materials with sustainable attributes, and increased amount of offsite and onsite renewable energy generation.

1.3 IMPLEMENTATION

The Federal Mandates for sustainability and energy reduction require all construction projects to comply with sustainability and energy reduction requirements. The Mandates apply to VA new buildings, existing buildings, [VA initiated] leased space, grants, and land development projects such as cemeteries.¹ Although efforts have been made to be comprehensive, no manual or set of instructions will cover every possible building type or option. VA project teams should carry out the Federal Mandates wherever possible, whether or not instructions for a specific project have been included in this manual.

The funding to meet all the Federal Mandates should be included in project budgets starting with the FY2009 budget. Until full funding occurs, projects in progress shall incorporate the sustainability and energy requirements (using life-cycle costing to determine viable energy reduction goals, Energy Savings Performance Contracts, Utility Energy Service Contracts, Enhanced Use Leasing, and other strategies) to the fullest extent possible within the scope and

¹ VA Green Buildings Action Plan Implementing the Memorandum of Understanding on Federal Leadership in High Performance and Sustainable Buildings, signed by Robert J. Henke, VA Assistant Secretary for Management, March 30, 2007

budget allotted. Where full compliance is determined to not be achievable, written justification must be provided to the VA Project Manager and to the VA Central Office responsible for standards that apply to the project.

1.3.1 LEED AND FEDERAL MANDATES

VA has adopted the U.S. Green Building Council LEED rating system as the primary methodology to achieve the Federal Mandates for sustainability and energy efficiency. In addition to meeting the Federal Mandates, VA also supports the goal of LEED Silver or LEED Silver equivalency. Although not required at this time, the project team is encouraged to pursue third party review and formal LEED Certification with the U.S. Green Building Council and display the seal in the facility. At a minimum documentation is required for all LEED credits related to Federal Mandates.



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