

High Performance and Sustainable Building: *A Federal lay of the land*

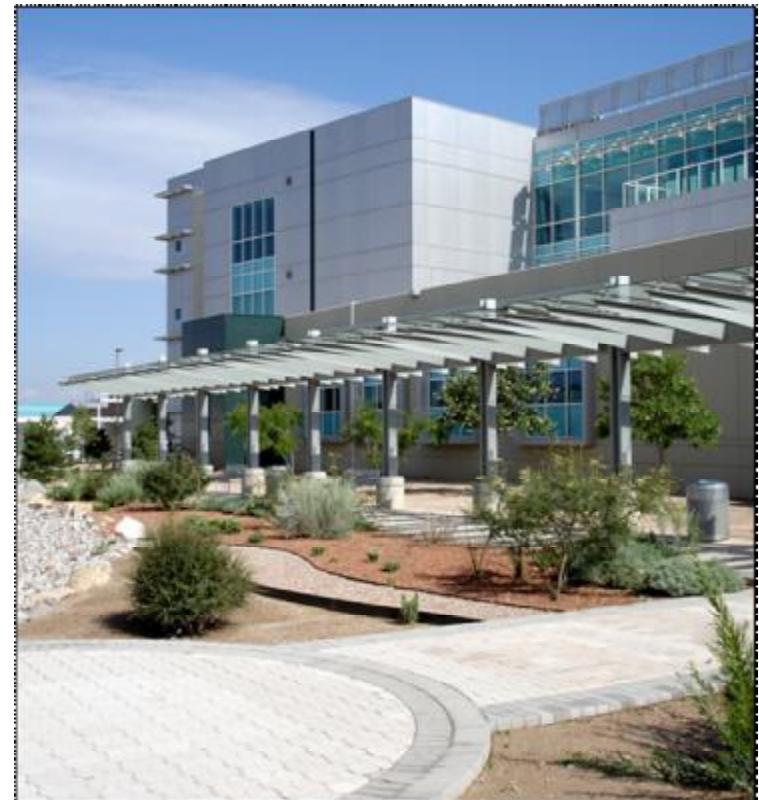


*Lance Davis, AIA, LEED AP
GSA PBS
Sustainable Design Expert*

High Performance Federal Buildings, July 22, 2008

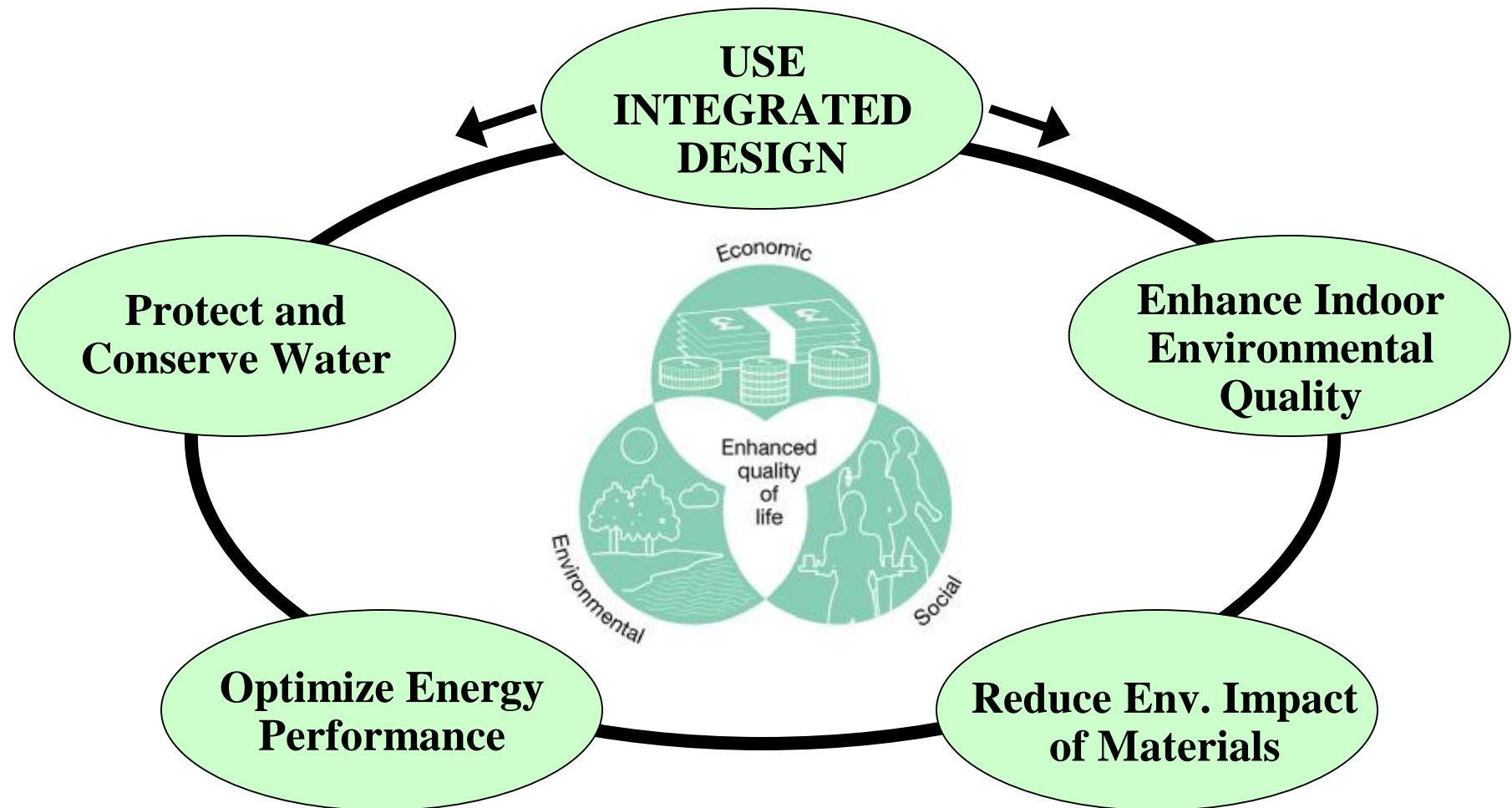
Overview

- Guiding Principles
- The Policy Landscape
- Interagency Sustainability Working Group (ISWG)
- The Feds and LEED
- Tools and Resources
- Focus on Existing Buildings



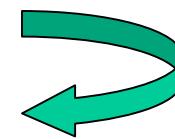
Sandia National Lab
JCEL Building

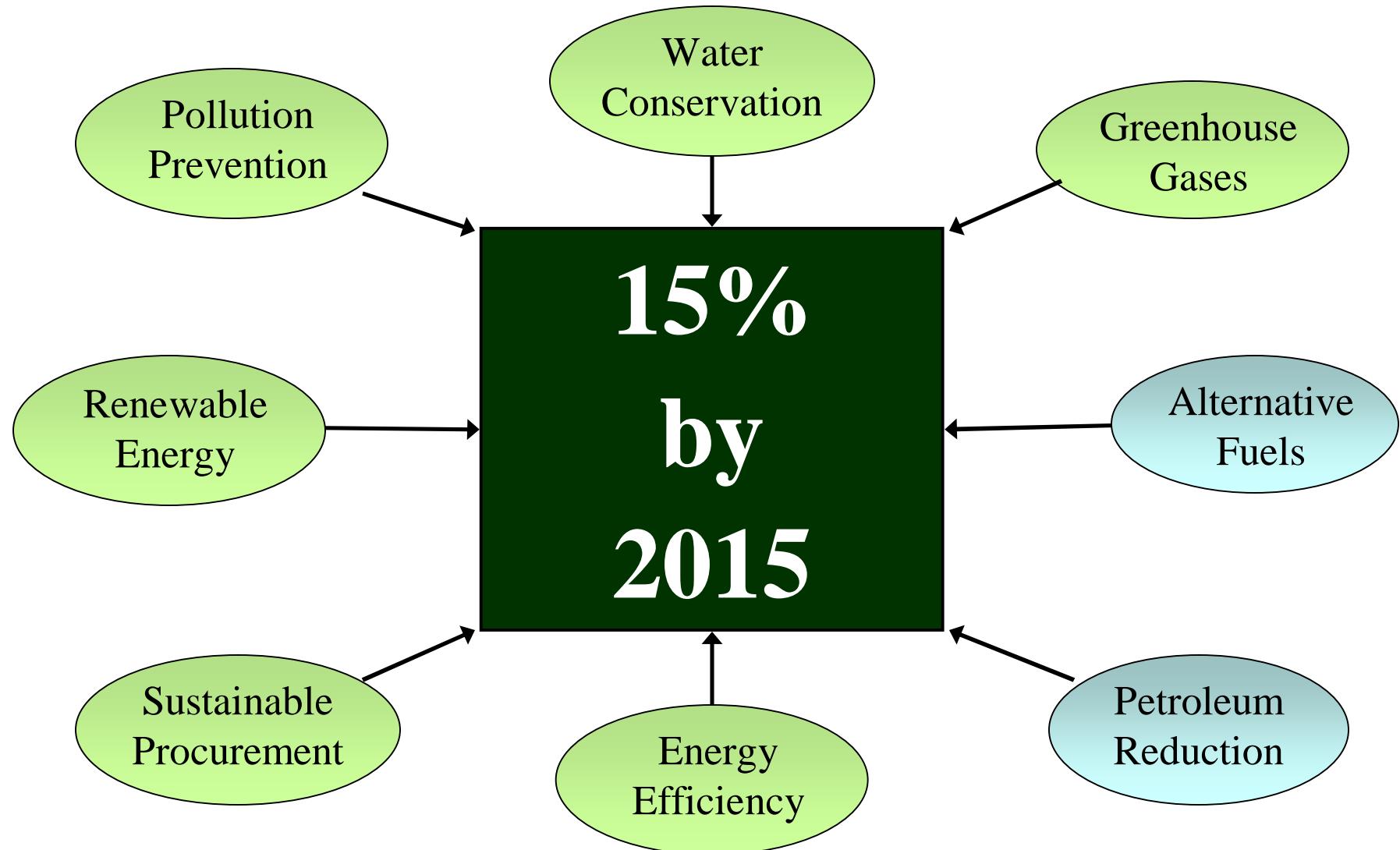
Sustainable MOU Guiding Principles



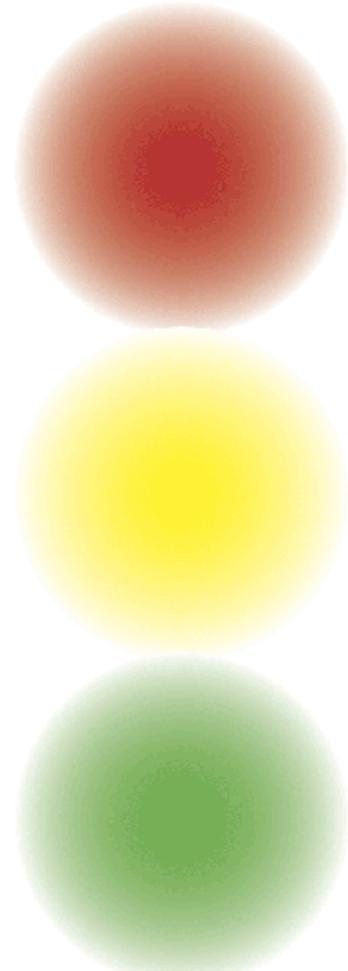
Sustainable buildings balance the triple bottom line by utilizing an integrated approach to design, construction, operation and decommissioning

- **OMB A-11 (2002)** – Section 300 Planning, Budgeting, Acquisition, and Management of Capital Assets
- **EPACT, Section 109 (2005)** – 30% below ASHRAE 90.1-2004; Cost effective sustainable design for new and replacement buildings
- **OMB Environmental Scorecard** – Metric #3 on HPSB
 - Real Property Asset Management Scorecard
- **MOU on Federal Leadership in HPSB (2006)**
- **EO 13423 and Implementing Instructions (2007)**
- **Energy Independence and Security Act (2007)**





- Due in early July and January with all Scorecard reporting
- Tracks and assesses agency implementation of 15% by 2015 requirement
- “Stand-alone” document or incorporate into the agency Asset Management Plan
- Required components include:
 - clear, quantifiable, achievable, and communicated vision
 - HPSB performance targets for all buildings
 - HPSB assessment of the existing building portfolio
 - cross functional team responsible for decision-making on results-oriented action items



Federal HPSB Organization

Management and Oversight

Office of Management and Budget (OMB) – Scorecards

Office of the Federal Environmental Executive (OFEE) – EO 13423

Guidance

Interagency Sustainability Working Group (ISWG)

Office of High Performance Federal Green Buildings (GSA)

Implementation

Agency Working Groups, Offices, ISWG reps

Site-level Facility / Energy Managers and HPSB staff

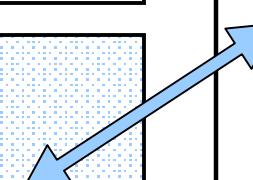
Private Sector and Non-Profits

e.g. USGBC, ASHRAE, etc

Office of High Performance Commercial Green Building (DOE)

Technical Expertise

- Whole Building Design Guide*
- Energy Star Buildings / Products*
- EPA Green Building Program*
- Labs21*
- Data Centers*
- Building Technologies R&D Subcommittee*
- National Institute of Standards and Technology*



Interagency Sustainability Working Group (ISWG)

- **Authority**
 - Working Group under the Interagency Energy Management Task Force since 2001
- **280 members (~65 core) from across the Federal government and industry**
- **Bi-monthly meetings**
- **Purpose:**
 - Serves as forum for information exchange
 - Advocates for sustainable building practices in new construction and existing buildings
 - Eliminates barriers to sustainable design in the Federal sector by developing policy, technical guidance and other resources



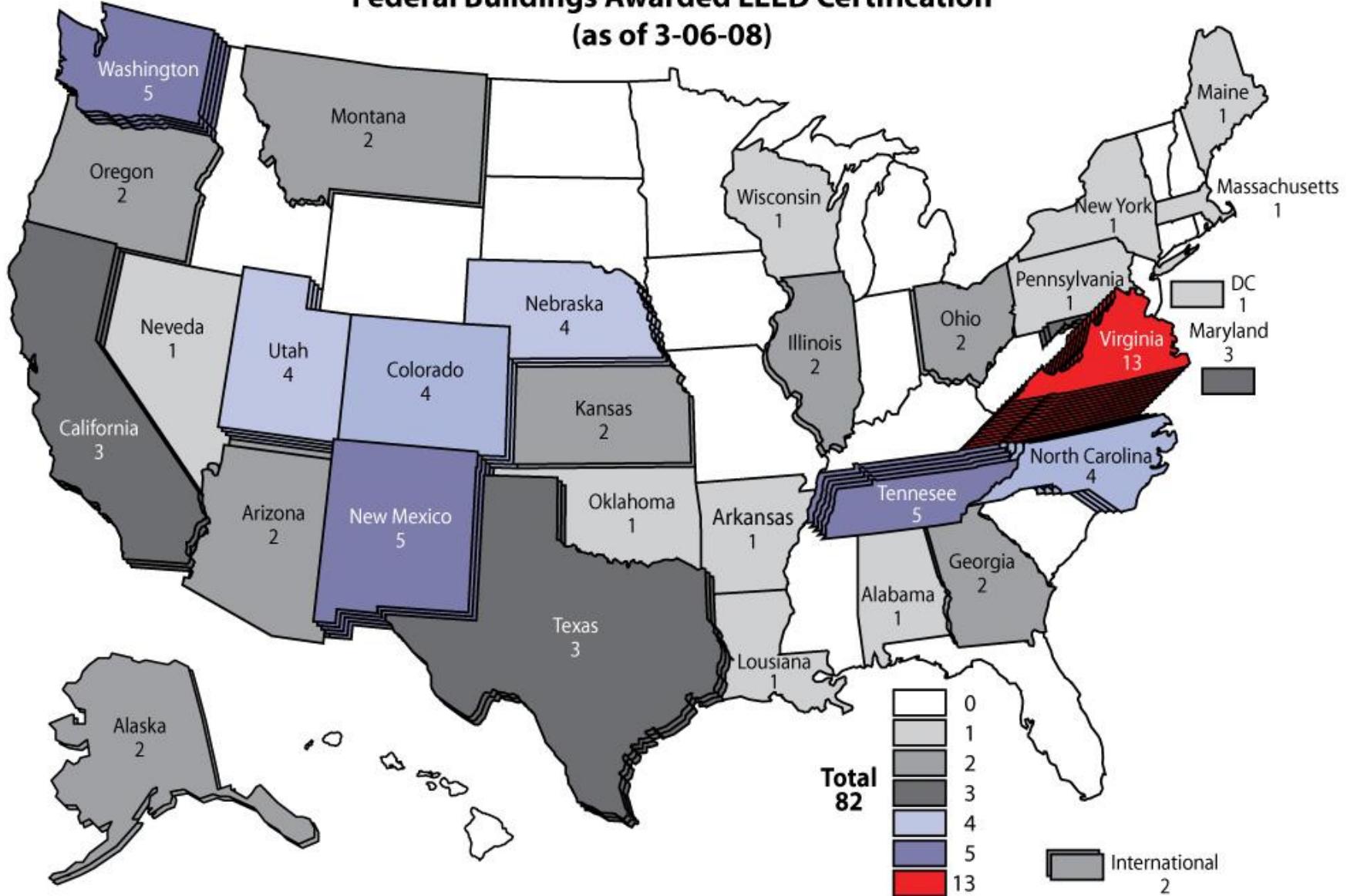
Tour at USGBC Headquarters
Washington, DC



ISWG Bi-Monthly Meeting

82 Federal LEED Buildings!

**Federal Buildings Awarded LEED Certification
(as of 3-06-08)**



Agencies & Building Types

Agency Totals

- DOD 15
- DOE 13
- DOI 9
- GSA 8
- EPA 7
- DOC 3
- HHS 3
- NASA 3
- SSA 3
- DHS 3
- USDA 3
- DOJ 2
- DOT 2
- DOS 2
- DOL 1
- DVA 1

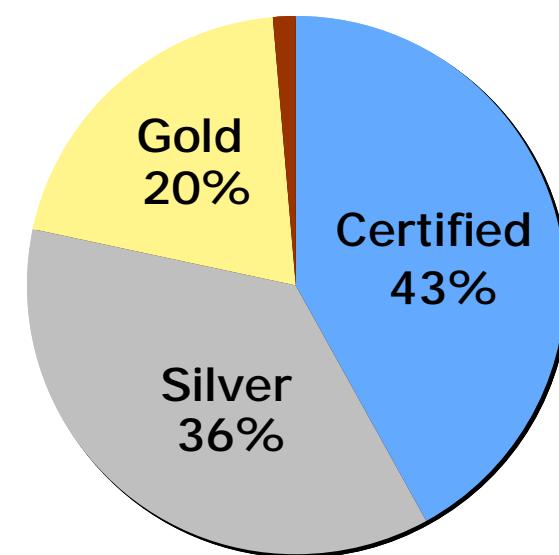
Building Types

- Office 37
- Laboratory 13
- Dormitory 5
- Warehouse 4
- Courthouse 4
- School 4
- Recreation 3
- Visitor Center 2
- Medical Center 1
- Transit Station 1
- Prison 1
- Rescue Station 1
- Restaurant 1

Rating Systems

- New Construction 77
- **Existing Buildings** 2
- Commercial Interiors 2
- Core & Shell 1

Certification Level



* GSA managed 18 additional projects with other federal agencies

** 5 buildings are listed as confidential

*** 23 certified buildings non-Federally owned (mostly build-to-suit lease)



Rating Systems and Agency Policies for NC (draft)

Agency	LEED Goal	Goal Notes
DOE	Gold	Required for NC/MR > \$5M; LEED Gold preference for leases
EPA	Gold	Required for NC > 20,000 sqft
NASA	Silver	Silver is required, strive for Gold
Defense – Army	Silver	Vertical construction required; LEED for Homes adopted
Commerce – NWS	Silver	“Shall strive for minimum of LEED Silver”
USDA – Forest Service	Silver	Required for offices, visitor centers, research facilities >2500 sqft
USDA	Silver	Design for LEED Silver
GSA	Certified	Required for NC/MR, Silver recommended (some regions require)
State	Certified	Required now
Defense – Navy	Certified	Required now, potentially Silver in near future
HHS	Certified	LEED or Green Globes for projects > \$3M
Defense - Pentagon	Certified	Long-term goal of LEED rating for entire Pentagon
Smithsonian	Certified	NC/MR to aim for a minimum of LEED certification
Defense - Air Force	Certified	Required by FY '09, self-certified
Interior	-	Incorporating LEED criteria for NC and EB, not required

Whole Building Design Guide

- Interagency cooperation managed by NIBS
- Design Guidance focused on Federal facilities
- Federal Green Construction Guide for Specifiers
- *FREE* Continuing Education
 - 1) Integrated Design
 - 2) Whole Building Approach to Labs
 - 3) Planning for Secure Buildings
 - 4) Optimizing O&M
- Feb 2008: about 33,500 hits and 57,000 downloads *per day*

WBDG WHOLE BUILDING DESIGN GUIDE The Gateway to Up-To-Date Information on Integrated Whole Building Design Techniques and Technologies ...over 230,000 users and 1.6 million downloads a month

[About / C](#)

[Design Guidance](#) [Project Management](#) [Operations & Maintenance](#) [Documents & References](#)

The Whole Building Design Approach

The goal of 'Whole Building' Design is to create a successful high-performance building. To achieve that goal, we must apply the integrated design approach and the integrated team approach to the project during the planning and programming phases. [Read more](#)



WBDG Focus

New National BIM Standard Released

The NBIMS Executive Committee has released National BIM Standard Version 1 - Part 1: Overview, Principles and Methodologies for public use. This document, which includes contributions by more than thirty subject-experts in the capital facilities industry, incorporates industry comments and now contains new and expanded information about the NBIMS production and use process. [Read more](#)

Services

 [Construction Criteria Base](#)

Popular Links

- [Construction Waste Management Database](#)
- [Building Envelope Design Guide](#)
- [Executive Order 13423 Technical Guidance](#)
- [Federal Green Construction Guide for Specifiers](#)
- [Unified Facilities Criteria](#)
- [Unified Facilities Guide Specifications \(UFGS\)](#)

Periodicals

New and Updated Pages

Mechanical Insulation Design Guide

The National Institute of Building Sciences (NIBS) Mechanical Insulation Committee (NMIC) has developed the Mechanical Insulation Design Guide (MIDG) to provide a comprehensive source of information on the performance and standardization of mechanical insulation in buildings.

News and Events

BIM Storm Hits LA

On January 31, 133 design professionals from 11 organizations participated in an online design charrette in which another 700 people

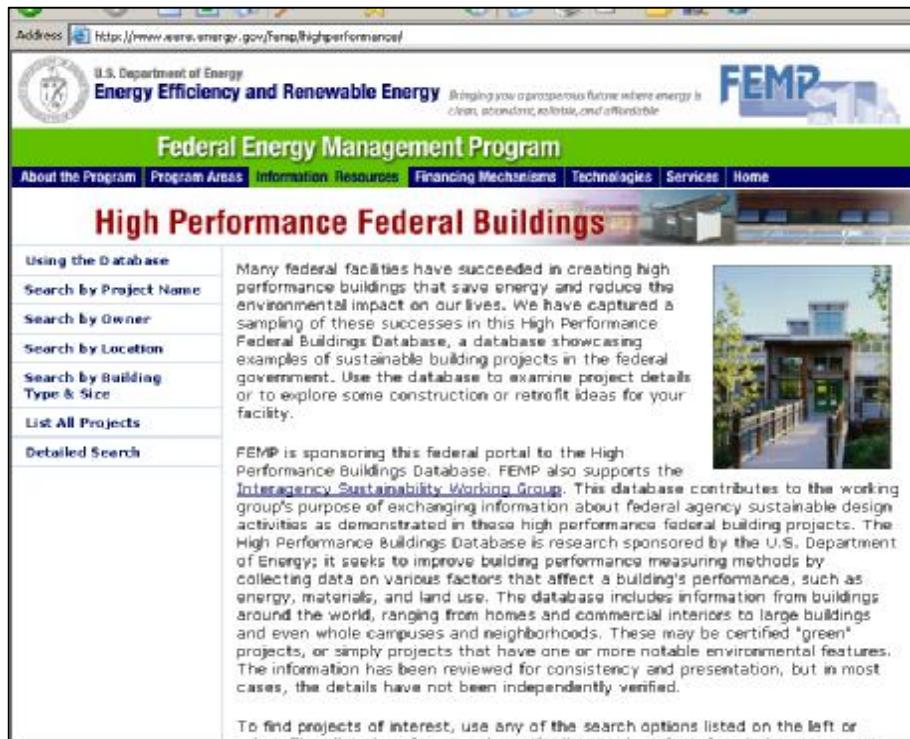
New Version of the United States National CAD Standard

AIA, CSI and NIBS unveil version 4.0 with greater efficiency and improvements. [Read more](#)

www.wbdg.org

DOE Sustainable Building Databases

FEMP's High Performance Federal Buildings Database: *43 Federal Case Studies*



The screenshot shows the homepage of the FEMP High Performance Federal Buildings Database. The top navigation bar includes links for 'About the Program', 'Program Areas', 'Information Resources', 'Financing Mechanisms', 'Technologies', 'Services', and 'Home'. The main content area features a large image of a modern, energy-efficient building with a glass facade and solar panels. To the left, a sidebar lists search options: 'Using the Database', 'Search by Project Name', 'Search by Owner', 'Search by Location', 'Search by Building Type & Size', 'List All Projects', and 'Detailed Search'. The main text area discusses the success of federal facilities in creating high-performance buildings and the purpose of the database.

www.eere.energy.gov/femp/highperformance

BT's High Performance Buildings Database: *99 Total Case Studies*



The screenshot shows the homepage of the BT High Performance Buildings Database. The top navigation bar includes links for 'Search Web', 'Search Site', 'News', 'PageRank', 'Page Info', 'Up', and 'Highlight'. The main content area features a large image of a modern, energy-efficient building with a glass facade and solar panels. To the left, a sidebar lists search options: 'About High Performance Buildings', 'About the High Performance Initiative', and 'News & Events'. The main text area discusses DOE's support for developing commercial buildings that are energy efficient, healthy, and comfortable places to learn, work, and play.

www.eere.energy.gov/buildings/database/

HPSB Database Example

High Performance Federal Buildings

[◀ Federal Projects Home](#)**Using the Database****Search by Project Name****Search by Owner****Search by Location****Search by Building Type & Size****List All Projects****Detailed Search****Selected Projects**Your 43 currently selected project(s) are shown in the table below. ([click here](#) for help).

	Picture	Name	▲	Owner	Location	Building Type	Floor Area (ft ²)	Annual Purchased Energy (kBtu/ft ²)
<input type="checkbox"/>		Alfred A. Arraj U.S. Courthouse		General Services Administration	Denver, CO	Public order & safety	319,000	101
<input type="checkbox"/>		Annie Creek Restaurant and Gift Shop		Xanterra Parks and Resorts	Crater Lake, OR	Restaurant; Retail	10,400	785
<input type="checkbox"/>		Assateaque Island National Seashore		National Park Service	Chincoteague, VA	Recreation; Interpretive Center; Park		
<input type="checkbox"/>		Assateaque Mobile Bathhouse Project		National Park Service	Chincoteague, VA	Park; Other		
<input type="checkbox"/>		BPA Ampere Annex		Bonneville Power Administration (BPA)	Vancouver, WA	Commercial office; Industrial	3,000	
<input type="checkbox"/>		Baca/Dlo'ay azhi Community School		Bureau of Indian Affairs	Prewitt, NM	K-12 education	78,900	33
<input type="checkbox"/>		Bremerton BEQ Building 1044		Naval Base Kitsap-Bremerton	Bremerton, WA	Multi-unit residential	99,800	46.2
<input type="checkbox"/>		CDC Headquarters		Centers for Disease Control and Prevention	Atlanta, GA	Commercial office; Public order & safety	355,000	22.3



New Construction /
Major Renovations

**Existing
Buildings**

Sites, Campuses,
Bases, etc

1. Sustainable Building Guiding Principles for EB (in development)
2. Incorporating HPSB into Real Property Asset Management and Environmental Management Systems
3. Assessment tools for EB and Training (e.g. LEED EB workshops)
4. Addressing additional first cost for some HPSB Guiding Principles



U.S. General Services Administration

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www.wbdg.org/sustainableEO