



Federal Government Sustainability Practices

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Overview of Federal Government Facilities

Wide variety of facilities, spanning all government functions, including:

- **National Park visitor centers**
- **Army barracks**
- **Prisons**
- **Post Offices**
- **Embassies**
- **Data Centers**
- **Schools**

Overall, this makes up
445,000 facilities and **3.0**
billion Square Feet



Example: Argonne National Laboratory, one of the U.S. government's oldest and largest science and engineering research facilities, is at the forefront in developing sustainable buildings practices.

Overview of Policies and Practices

There is no single, comprehensive government-wide green building standard:

Three main “policy tools” generally impact specific areas of sustainable development

- The Energy Policy Act (EPAAct) of 1992  •Use of recycled content in building materials, overall energy use reduction requirements
- Resource Conservation and Recovery Act  •Energy and water efficiency
- Executive Orders  •Waste recycling

Each government agency has the ability to set its own policies above and beyond government regulations

Policy Drivers and Methods

Public opinion on sustainable practices within Federally owned facilities



The White House sets the sustainability “agenda” (backing legislation, executive orders)

This direction is interpreted, measured and communicated



The Office of the Federal Environmental Executive (OFEE) is responsible for promoting “sustainable environmental stewardship throughout the government”.

Standards, rating and recommendations



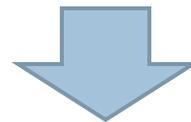
Agriculture



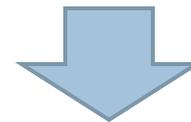
Justice



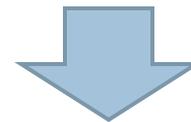
Transportation



Defense



Education



Homeland
Security



Etc....

Example: LEED Certification Incentives in the Pentagon

Innovation: Contracting Policies at the Pentagon



Incentivizing contractors to complete projects with LEED certification standards

- Privatizes the sustainability effort
- Allows for specialization
- Focused on leveraged areas within complex projects
 - Massive turnover of incandescent bulbs to CFLs
 - Moving IT systems to “the cloud”
 - Improving space efficiency
 - Encouraging public transportation use for thousands of workers

The Result:

By outsourcing the creation of standards and application of sustainable practices to contractors and LEED, the Federal government is able to simplify the process of running sustainable facilities

Justifying Sustainability: Cost Savings

Innovation: General Services Administration Building In San Francisco



Description/Benefits

- Using LEED certification standards, the GSA is able to easily quantify savings against **existing** facilities
 - Natural lighting
 - Shared office space
 - Efficient windows

Taxpayers support sustainability even more when it is cheaper than current options.

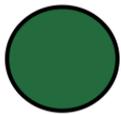
The Bottom Line: The building has been designed to reduce energy costs by 45 percent and is expected to save **\$500,000** per year in taxpayer dollars.

Data Collection and Measures of Success

Example: Department of Defense

- Office of Management and Budget now produces a scorecard for ALL sustainability related metrics
- Scores are related to specific measurable goals established by the OFEE
- Each government agency is rated according to the following scale
 - Facilities practices are incorporated into several categories – one is shown below

Source: <http://www.denix.osd.mil/ombscorecard/>



GREEN: Demonstrates implementation of Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (GP) for new, existing and leased buildings; and is on track to meet 15% goal by 2015 by reporting that at least 5% of buildings >5,000 GSF meet GP as reported in the Federal Real Property Profile (FRPP).



YELLOW: Incorporates Guiding Principles into all new design contracts for construction, major renovations and leases and at least 5 percent of GSF of its building inventory over 5,000 GSF meets GP as reported in FRPP.



RED: Cannot demonstrate compliance with GP on new construction, major renovations, or leases; and/or less than 5 percent of building inventory, either by number of buildings or GSF, over 5,000 GSF meets GP as reported in FRPP.



Green Buildings

Sustainable green buildings:
0.06% of buildings sustainable
0.46% GSF of inventory sustainable



Score: **RED**

Barriers to Implementation of Sustainable Practices in Federal Facilities

The OFEE Has Identified four main barriers to increased sustainability within Federal facilities:

1. **Financial and Budgetary Structure Challenges**
2. **Education Needs**
3. **Limited Research**
4. **Lack of Clear Federal Policy**



Financial and Budgetary Structure Challenges

Initial Costs vs. Life Cycle Costing



Description

- Taxpayers often assume that sustainable buildings **cost more**
- Budgeting decisions are based on **“initial costs”** rather than **“life cycle costs”**
- Politicians in budget crunches can make short-term decisions to alleviate immediate problems

Solving Financial and Budgetary Structure Challenges

Life Cycle Costing – CDC Laboratory in Atlanta, GA



- **LEED certification on the design for a new laboratory guaranteed \$175k In savings per year**
- The CDC was able to get funding more quickly by realizing these savings and comparing the **initial cost** to the **life cycle cost**

Specific Life-Cycle Savings Innovations Include:
Sunlight receptive light switches to conserve electricity
Rainwater collection systems to provide water for irrigation and landscaping
A **brise-soleil** system (sun shade structure) that absorbs natural light while blocking soar hear

Education Needs/Limited Research



Source: whitehouse.gov

Examples

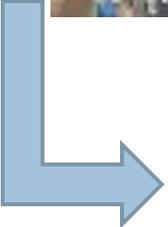
- Energy aspects of construction/design are more heavily researched than materials
 - Ventilation/lighting
 - Water conservation
- **Because of this, decision makers are systematically misinformed**
- Department of Energy research on lighting, thermodynamics, and building envelope performance is often slow to be utilized in practice

Lack of Clear Federal Policy



Examples:

- Federal and OMB guidelines require life cycle costing techniques
 - The Department of Defense still does not incorporate life cycle costing into any decisions
- Interagency task forces seeking to implement LEED certifications are often forced to make compromises
- GSA requiring LEED Gold standard in all new construction under 10,000 Sq. ft is a step in the right direction



Installation of a **roof garden** and **retro-commissioning of mechanical systems** in the Boston federal Reserve Building have led to a LEED certification.

Conclusions



- The Federal Government is comprised of agencies with varying commitment to sustainable facilities
 - ▣ National initiatives are typically nonbinding, and subject to interpretation by individual departments
- Life cycle costing and other policy tools are helping sustainable practices take hold
- Standardizing policies around the independent LEED system will create transparency and standardization of processes
- The Federal Government has the opportunity to greatly impact the environment by implementing sustainable policies in facilities across the board



Questions?