




GSA Sustainable Buildings Program

Public Buildings Service | U.S. General Services Administration

Interagency Sustainability Working Group Presentation | July 16, 2015





Sustainability performance is an integral aspect of GSA's real estate operations

GSA PORTFOLIO

8,721 total assets*

- 376.9 million sq. ft.

1,574 owned assets*

- 183.4 million owned sq. ft.

7,147 leased assets*

- 193.4 million leased sq. ft.



GSA LEADERSHIP IN SUSTAINABILITY

- First planted roof
- GSA Energy Plan
- First solar installation
- All building utilities computerized
- First renewable energy purchased
- Green cleaning mandate
- Sustainable Design program
- First solar hot water installation
- First green lease provisions
- Advanced metering
- Recovery Act high performance green building investments
- Smart Buildings Program
- Green Proving Ground program
- Sustainable Operations & Maintenance program
- First net-zero historic building
- Remote building energy audits
- Off-site renewable energy procurements
- Key sustainable products initiative

2015

FEDERAL MANDATES SET THE PACE: EO 13693

40%*

GHG scope 1 and 2 over 2008 baseline, by 2025

2.5% annual reduction

Energy Use Intensity over 2015 baseline, by 2025

36%

Water Use Intensity over 2007 baseline, by 2025

30%

Renewable Energy, by 2025

Net Zero

- New construction designs starting 2020 to achieve net zero by 2030 (net zero energy, net zero water/waste where feasible)
- Percentage of existing buildings, as determined by agency (net zero energy, net zero water/waste where feasible)



Scope 1&2 GHG Emission Reduction Target

For Scope 1&2 GHG Reduction Target of 28.6% by 2020:
43% reduction in 2014 and on track



Score: **GREEN**



Scope 3 GHG Emission Reduction Target

For Scope 3 GHG Reduction Target of 14.6% by 2020:
53% reduction in 2014 and on track



Score: **GREEN**



Reduction in Energy Intensity

Reduction in energy intensity in goal-subject facilities compared with 2003:
27% and on track for 30% by 2015



Score: **GREEN**



Use of Renewable Energy

Use of renewable energy as a percent of facility electricity use:
Total of 32.5% from renewable electricity sources including at least 3.75% from new sources
(thermal, mechanical, or electric)



Score: **GREEN**



Reduction in Potable Water Intensity

Reduction in potable water intensity compared with 2007:
29% and on track for 26% in 2020



Score: **GREEN**



Reduction in Fleet Petroleum Use

Reduction in fleet petroleum use compared to 2005:
56.3% and on track for 20% in 2015



Score: **GREEN**



Green Buildings

Sustainable green buildings:
15.8% of buildings sustainable



Score: **GREEN**



SAVINGS AND EFFICIENCIES

Avoided costs (FY14):

\$70.5 million for energy, if energy intensity was at 2003 levels

\$8.6 million for water, if water intensity was at 2007 levels

Revenues (FY14):

Through negotiated recycling sales contracts, over \$550,000 of recycling revenue distributed to Federal tenant agencies and GSA's Child Care Tuition Assistance Program



FEDERAL SUSTAINABLE BUILDINGS

❏ Federal Benchmark:

- ❏ Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings

❏ Focus on five topic areas:

- Employ integrated design principles (new construction)/Employ integrated assessment, operation, and management principles (existing buildings)
- Optimize energy performance
- Protect and conserve water
- Enhance indoor environmental quality
- Reduce environmental impact of materials

FEDERAL SUSTAINABLE BUILDINGS

❑ EO 13514 Requirements:

❑ Guiding Principles

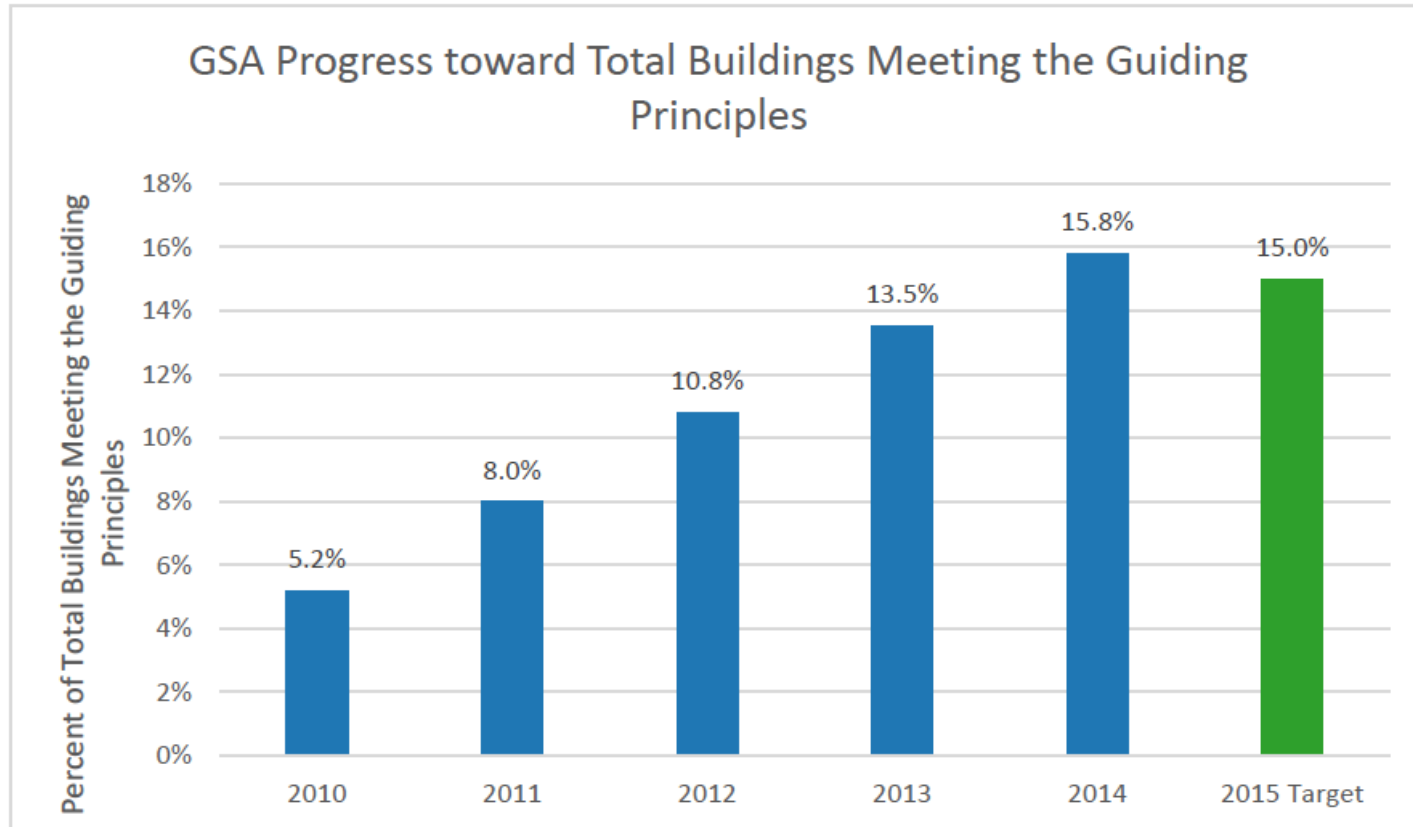
- ❑ All new construction, major renovation, or repair and alteration of federal buildings to comply
- ❑ At least 15 percent of existing buildings (above 5,000 gross square feet) and building leases (above 5,000 more 5 gross square feet) to comply by FY 2015
- ❑ Make annual progress toward 100-percent conformance.

❑ EO 13693 Updates:

❑ Guiding Principles

- ❑ CEQ to issue revisions to the Guiding Principles, which will include consideration of climate change resilience and employee and visitor wellness

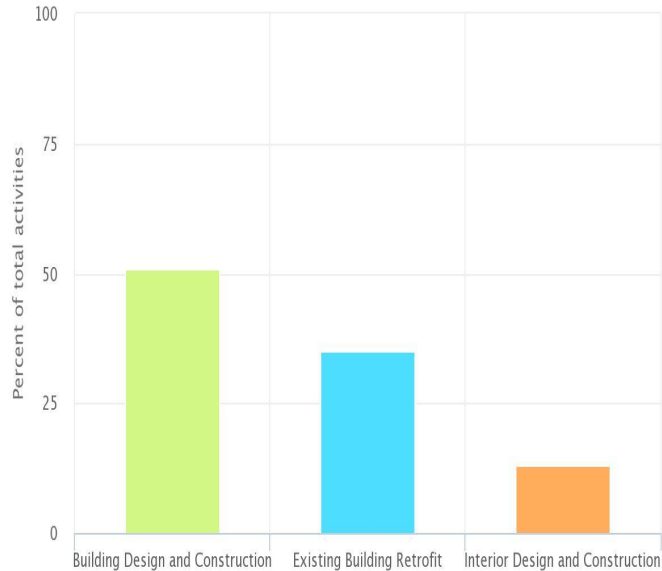
SUSTAINABLE BUILDINGS (Owned & Leased Inventory)



GSA LEED BUILDINGS

Project certifications at buildings

in GSA LEED projects

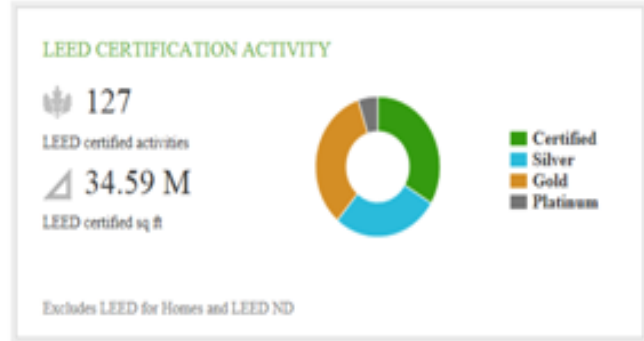


www.gsa.gov

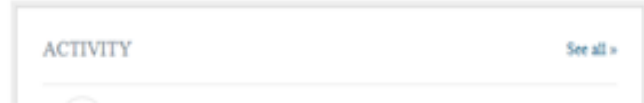
GSA utilizes a sustainable design philosophy, encouraging decisions at each phase of the design process that will reduce negative impacts on the environment and the health of the occupants, without compromising the bottom line.

TAGS

- GSA
- FEDERAL GOVERNMENT
- LEED



CUMULATIVE ACTIVITY COUNT BY YEAR

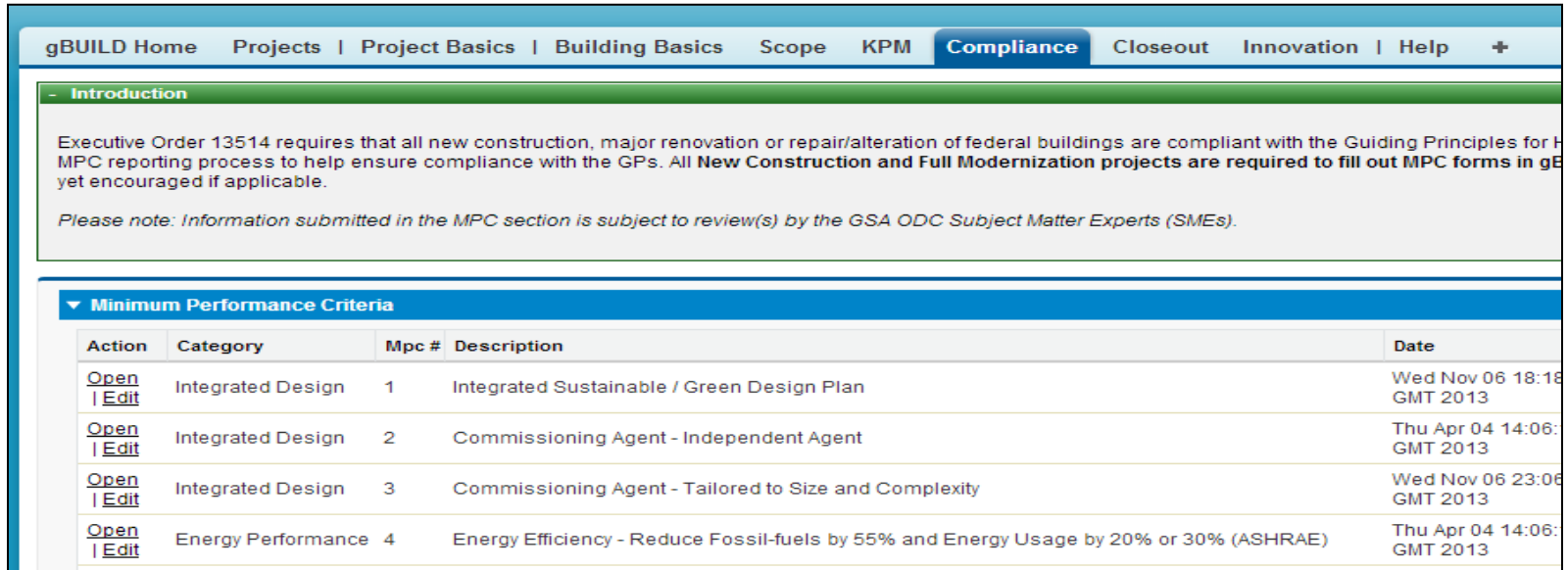


OWNED INVENTORY - SUSTAINABLE DESIGN & CONSTRUCTION

- [PBS Facilities Standards \(P100\)](#)
 - Guiding Principles for New Construction and Major Renovations
 - LEED Gold (v. 2009)
- Integrated design & peer reviews
- GSA's gBUILD project tracking tool
 - Collect and review high performance green building project information, including scope details and performance projections
 - Verify conformance with the Guiding Principles
- "On Green" performance measure

OWNED INVENTORY - SUSTAINABLE DESIGN & CONSTRUCTION

To track conformance with the Guiding Principles and PBS' "On Green" performance measure, project teams report Minimum Performance Criteria (MPC)* information in gBUILD



The screenshot shows the gBUILD web application interface. The top navigation bar includes links for Home, Projects, Project Basics, Building Basics, Scope, KPM, Compliance (highlighted), Closeout, Innovation, and Help. Below the navigation bar is a green header for the "Introduction" section. The main content area contains text explaining Executive Order 13514 requirements and a note about review by GSA ODC Subject Matter Experts. Below this is a blue header for the "Minimum Performance Criteria" section, which contains a table with four rows of criteria.

Action	Category	Mpc #	Description	Date
Open Edit	Integrated Design	1	Integrated Sustainable / Green Design Plan	Wed Nov 06 18:18:18 GMT 2013
Open Edit	Integrated Design	2	Commissioning Agent - Independent Agent	Thu Apr 04 14:06:18 GMT 2013
Open Edit	Integrated Design	3	Commissioning Agent - Tailored to Size and Complexity	Wed Nov 06 23:06:18 GMT 2013
Open Edit	Energy Performance	4	Energy Efficiency - Reduce Fossil-fuels by 55% and Energy Usage by 20% or 30% (ASHRAE)	Thu Apr 04 14:06:18 GMT 2013

*GSA's Minimum Performance Criteria (MPC) checklist tracks legal and agency mandates associated with building performance.



OWNED INVENTORY - RECOVERY ACT INVESTMENT OUTCOMES

- Recovery-funded investments are showing better energy performance than expected
 - In FY2014, the 334 buildings with completed projects used 16% less energy compared to their baseline 2008 performance
- 91 projects with on-site renewable energy
- 74 buildings earned LEED certifications
- Overall, Recovery projects buildings are expected to:
 - Use 45% less energy per square foot than the national average for commercial buildings
 - Reduce water consumption by 120 million gallons annually across 120 projects
 - Reduce GHG emissions by 365,000 metric tons of carbon dioxide equivalent

SUCSESSES & CHALLENGES - SUSTAINABLE DESIGN & CONSTRUCTION

SUCSESSES:

- ❑ Recovery project buildings yielding increased levels of environmental performance
- ❑ Project-delivery best practices
- ❑ First net-zero historic building
- ❑ Meeting internal 'On Green' performance measure

CHALLENGES:

- ❑ Balancing green building requirements with client agency mission goals
- ❑ Implementation of EISA Sec. 438, Storm Water Management, as there is much confusion and varied definition of what is "technically feasible"

OWNED INVENTORY - SUSTAINABLE OPERATIONS AND MAINTENANCE

- Standardized methodology to implement the Guiding Principles for Sustainable Existing Buildings
- Leverages LEED EB+OM Volume Program for Operations and Maintenance framework
- Tracking tool to document conformance
 - Two paths: Guiding Principles or LEED EB
- Training:
 - Web-based training modules
 - DOE FEMP training customized to GSA's approach

GSA Sustainable Operations & Maintenance Tool

Region 3- Mid-Atlantic Buildings [Add Building](#)

Text: LEED EB Participation Participating

Please click on a column heading to sort the building list below. Buildings with less than 5,000 GSF do not have LEED or GP scorecards, as they are not included in those programs.

Real Property ID	Building	Action	Address	City	Zip Code	Round	Record Type
PA0000ER	Erie Federal Campus	LEED GP	617 STATE STREET	Erie	16501	GP Tracking	Campus
PA0143ZZ	ROBT N C NIX FB USPO	LEED GP	900 MARKET STREET	PHILADELPHIA	19107-4228	Round 1	Individual
PA0144ZZ	US CUSTOMHOUSE	LEED GP	200 CHESTNUT STREET	PHILADELPHIA	19106-2912	Round 3	Individual

[Scorecard](#)
[Guiding Principles Scorecard](#)
[Details](#)
[Gap Assessment Scorecard](#)
[Key Metrics Report](#)

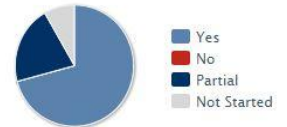
Guiding Principle Compliance

Partial

GP Progress

17 /24

Guiding Principles Summary



Documentation Period: 10/1/2011 - 9/30/2014

Guiding Principles

Guiding Principle	Compliance	Reference Credits
<input type="checkbox"/> Employ Integrated Assessment, Operations & Management	Compliance	EAc2.1 - EAc2.3
Commissioning	Not Started	BIF2
Integrated 1 - Team Roster	Yes	MRp1 MRp2 EQc1.1 WEp1 & WEc2 EAp1
Integrated 2 - Purchasing, Recycle, IEQ, Water and Energy	Partial	

SUCSESSES & CHALLENGES - SUSTAINABLE O&M

SUCSESSES:

- ❑ 17.9% of the owned inventory above 5,000 sq. ft. in conformance with GPs in FY14
- ❑ Sustainable O&M as best practice
- ❑ Educate GSA asset managers and field office personnel on sustainability requirements
- ❑ Enhanced performance likely resulted in mechanical cost savings

CHALLENGES:

- ❑ Documentation effort required of building managers and operations contractors
- ❑ Tenant engagement
- ❑ Costs associated with:
 - ❑ Ventilation testing
 - ❑ Retro-commissioning
 - ❑ Lighting and controls retrofits
 - ❑ Water fixtures retrofits

LEASED INVENTORY - MANY PATHS to GREEN LEASING

- ❑ Build-to-suit leases \geq 10,000 SF must achieve a LEED Silver NC certification
- ❑ Leases in existing buildings may pursue LEED CI at the tenant agency's request
- ❑ Leases signed in buildings with a third-party green building certification
- ❑ Leases that include a specified list of mandatory green paragraphs in a lease procurement
 - ❑ Requirements related to energy efficiency, systems commissioning, water conservation, and indoor air quality.

LEASED INVENTORY - TRACKING OF GREEN LEASE PROVISIONS

- Currently manually tracking the inclusion of green lease provisions
- Relying on contractors for auditing of leasing for green lease compliance
- Working towards fully automated tracking through GSA's tool that tracks and manages the government's real property assets (GREX)


Tracking in GREX

Conformance with Energy Star requirement for leases

If necessary, you may estimate Energy Star [financial impacts](#) or search for Energy Star [buildings](#).

Does this building have an energy star certification within the last 12 months?

Yes
 No


Specify EPA Star Label Certification Date

Energy Star Equivalent Building Yes
 No

Exempt from Energy Star Yes
 No

Has this building provided evidence of Cost Efficient Energy and Efficiency Upgrades?

Yes
 No

Deficiencies

Please note the specific Energy Star deficiencies for this Offeror. This will populate the Review Offer Evaluation screen, as well as the deficiency letter.

Energy Star Label Check Completed/Submitted (No further revision required)

Upload Documentation

Please provide the requested documentation through the fields below. Click *Browse* to select a document to upload. If the document has been previously uploaded, click the link to the left of the upload box.

Energy Star Compliance Evidence

Evidence of Cost Efficient Energy and Efficiency Upgrades

SUCSESSES & CHALLENGES - GREEN LEASING

SUCSESSES:

- ❑ 16.1% of the leased portfolio above 5,000 sq. ft. GP compliant as of 1st quarter FY15
- ❑ Recurring national and regional trainings have successfully developed a skilled green leasing workforce

CHALLENGES:

- ❑ GPs were written for federally owned buildings, where the government is the sole building occupant
- ❑ Application of federal green leasing requirements in small, remote locations, with small lessors, and for unique property types
- ❑ Current tracking and auditing must be done manually

LOOKING AHEAD

- Developing implementation strategy for achieving 2025 goals set out in EO 13693
- Assessing performance of buildings meeting the Guiding Principles
 - Developing follow on to 2011 “Reassessing Green Building Performance: A Post-Occupancy Evaluation of 22 GSA Buildings” report* and GSA’s “Green Building Performance” White Paper**

* http://www.pnl.gov/main/publications/external/technical_reports/PNNL-19369.pdf

** http://www.gsa.gov/graphics/pbs/Green_Building_Performance.pdf



Questions?