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.

*As of 10/1/2014
GSA LEADERSHIP IN SUSTAINABILITY

2015

- First planted roof
- GSA Energy Plan
- First solar installation
- All building utilities computerized
- 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
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)
<table>
<thead>
<tr>
<th>Topic</th>
<th>Score</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1 &amp; 2 GHG Emission Reduction Target</td>
<td>GREEN</td>
<td>For Scope 1 &amp; 2 GHG Reduction Target of 28.6% by 2020: 43% reduction in 2014 and on track</td>
</tr>
<tr>
<td>Scope 3 GHG Emission Reduction Target</td>
<td>GREEN</td>
<td>For Scope 3 GHG Reduction Target of 14.6% by 2020: 53% reduction in 2014 and on track</td>
</tr>
<tr>
<td>Reduction in Energy Intensity</td>
<td>GREEN</td>
<td>Reduction in energy intensity in goal-subject facilities compared with 2008: 27% and on track for 30% by 2015</td>
</tr>
<tr>
<td>Use of Renewable Energy</td>
<td>GREEN</td>
<td>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)</td>
</tr>
<tr>
<td>Reduction in Potable Water Intensity</td>
<td>GREEN</td>
<td>Reduction in potable water intensity compared with 2007: 29% and on track for 26% in 2020</td>
</tr>
<tr>
<td>Reduction in Fleet Petroleum Use</td>
<td>GREEN</td>
<td>Reduction in fleet petroleum use compared to 2005: 56.3% and on track for 20% in 2015</td>
</tr>
<tr>
<td>Green Buildings</td>
<td>GREEN</td>
<td>Sustainable green buildings: 15.8% of buildings sustainable</td>
</tr>
</tbody>
</table>

**January 2015 OMB Scorecard on Sustainability/Energy**
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
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 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 Progress toward Total Buildings Meeting the Guiding Principles

- 2010: 5.2%
- 2011: 8.0%
- 2012: 10.8%
- 2013: 13.5%
- 2014: 15.8%
- 2015 Target: 15.0%
GSA LEED BUILDINGS

http://www.qbig.org/collections/14796
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.

- Introduction

Executive Order 13514 requires that all new construction, major renovation or repair/alteration of federal buildings are compliant with the Guiding Principles for MPC reporting process to help ensure compliance with the GPs. All New Construction and Full Modernization projects are required to fill out MPC forms in gBUILD yet encouraged if applicable.

Please note: Information submitted in the MPC section is subject to review(s) by the GSA ODC Subject Matter Experts (SMEs).

<table>
<thead>
<tr>
<th>Action</th>
<th>Category</th>
<th>MPC #</th>
<th>Description</th>
<th>Date</th>
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<tbody>
<tr>
<td>Open</td>
<td>Integrated Design</td>
<td>1</td>
<td>Integrated Sustainable / Green Design Plan</td>
<td>Wed Nov 06 18:18 GMT 2013</td>
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<tr>
<td>Open</td>
<td>Integrated Design</td>
<td>2</td>
<td>Commissioning Agent - Independent Agent</td>
<td>Thu Apr 04 14:06 GMT 2013</td>
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<td>Open</td>
<td>Integrated Design</td>
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<td>Commissioning Agent - Tailored to Size and Complexity</td>
<td>Wed Nov 06 23:00 GMT 2013</td>
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<td>Open</td>
<td>Energy Performance</td>
<td>4</td>
<td>Energy Efficiency - Reduce Fossil-fuels by 55% and Energy Usage by 20% or 30% (ASHRAE)</td>
<td>Thu Apr 04 14:06 GMT 2013</td>
</tr>
</tbody>
</table>

*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

Source: GSA Recovery Act Executive Summary, Q2 FY2015
SUCCESES & CHALLENGES - SUSTAINABLE DESIGN & CONSTRUCTION

SUCCESES:

- 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
### Region 3 - Mid-Atlantic Buildings

<table>
<thead>
<tr>
<th>Real Property ID</th>
<th>Building</th>
<th>Action</th>
<th>Address</th>
<th>City</th>
<th>Zip Code</th>
<th>Round</th>
<th>Record Type</th>
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</thead>
<tbody>
<tr>
<td>PA0001ER</td>
<td>Erie Federal Campus</td>
<td>LEED</td>
<td>617 STATE STREET</td>
<td>Erie</td>
<td>16501</td>
<td></td>
<td>Campus</td>
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<tr>
<td>PA0143ZZ</td>
<td>ROBT N C NIX FB USPO</td>
<td>LEED</td>
<td>990 MARKET STREET</td>
<td>PHILADELPHIA</td>
<td>19107-4228</td>
<td>Round 1</td>
<td>Individual</td>
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<tr>
<td>PA0144ZZ</td>
<td>US CUSTOMHOUSE</td>
<td>LEED</td>
<td>200 CHESTNUT STREET</td>
<td>PHILADELPHIA</td>
<td>19108-2912</td>
<td>Round 3</td>
<td>Individual</td>
</tr>
</tbody>
</table>

**Scorecard**

**Guiding Principles Scorecard**

**Partial**

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

**Guiding Principles**

- **Employ Integrated Assessment, Operations & Management**
  - **Compliance:** Not Started
    - **Reference Credits:** EA2-1 - EA2.3
- **Commissioning**
  - **Compliance:** Yes
- **Integrated 1 - Team Roster**
  - **Compliance:** Partial
- **Integrated 2 - Purchasing, Recycle, IEQ, Water and Energy**
  - **Compliance:** Not applicable

**Guiding Principles Summary**

- **GP Progress:** 17/24
SUCCESSES & CHALLENGES - SUSTAINABLE O&M

SUCCESSES:

- 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 >= 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.

GSA Green Lease Policies and Procedures: [http://www.gsa.gov/portal/content/103656](http://www.gsa.gov/portal/content/103656)
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
**SUCCESSES & CHALLENGES - GREEN LEASING**

**SUCCESSES:**
- 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**


Questions?