



GovEnergy

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The Pursuit of Federal Sustainability

High Performance Sustainable Buildings: Guiding Principles for Existing Buildings

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The Pursuit of Federal Sustainability

High Performance Sustainable Buildings:

Objectives:

- Gain a high – level understanding of the High Performance Sustainable Buildings (HPSB) Guiding Principles (GP) for Existing Buildings.
- Learn the basic steps to use EPA'S Portfolio Manager & the HPSB Checklist to document compliance.



HPSB Guiding Principles for Existing Buildings

- I. Employ Integrated Design Principles
- II. Optimize Energy Performance
- III. Protect and Conserve Water
- IV. Enhance Indoor Environmental Quality
- V. Reduce Environmental Impact of Materials



Background

- **January 24-25, 2006:** White House signing of the "**Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (MOU).**" The MOU outlines five guiding principles in the design, construction, operation, and maintenance of high performance and sustainable buildings.

- **January 24, 2007:** Executive Order 13423 "Strengthening Federal Environmental, Energy and Transportation Management". The new Executive Order (EO) consolidates and strengthens a number of prior EOs by establishing new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performance and accountability.
 - In the area of sustainable design and high performance buildings, EO 13423 makes mandatory the five Guiding Principles of the MOU for all new construction and major renovations and sets an aggressive goal for applying these practices to our existing capital assets over the next decade.

- **December 1, 2008:** New guidance issued for High Performance and Sustainable Buildings for both new and Existing buildings.

Background

- **October 5, 2009:** [EO 13514 Federal Leadership in Environmental, Energy, and Economic Performance](#) sets sustainability goals for Federal agencies and focuses on making improvements in their environmental, energy and economic performance.



The new executive order also requires agencies to meet sustainability targets, including:

- Achieve 30% reduction in vehicle fleet petroleum use by 2020
- Achieve 26% reduction in potable & 20% reduction in industrial, landscaping, & agricultural water consumption by 2020
- Comply with new EPA stormwater management guidance
- Achieve 50% recycling & waste diversion by 2015
- Requires that 95% of all applicable procurement contracts will meet sustainability requirements
- Requires 15% of buildings meet the *Guiding Principles for High Performance and Sustainable Buildings* by 2015
- Design all new Federal buildings which begin the planning process by 2020 to achieve zero-net energy by 2030
- Pursue cost-effective & innovative strategies, such as highly reflective & vegetated roofs

Executive Order 13514 requires agencies to maintain EO 13423 goals and meet additional sustainability targets

Section (g)

(iii) ensuring that at least 15% of the agency's existing buildings (above 5000 gross square feet) and building leases (above 5000 gross square feet) meet the Guiding Principles by fiscal year 2015 and that the agency makes annual progress toward 100 percent agency conformance.



FY 2008 Federal Real Property Report

August 2009

<u>FY 2008 Real Property Assets</u>		15% *
Total Federal Building Assets:	407,062	61,059
Total Area of Building Assets:	3.29 billion square feet	493,500,000 sq.ft
Total Federal Structures:	488,861	
Total Federal Buildings and Structures:	895,923	

* Includes all buildings. EO 13514 (g) ensuring that at least 15% of the agency's existing buildings (above 5000 gross square feet) and building leases (above 5000 gross square feet) meet the Guiding Principles by fiscal year 2015 and that the agency makes annual progress toward 100 percent agency conformance.



FY 2008 Federal Real Property Report

Department of Energy has 3,006 buildings that equals or exceeds 5,000 GSF.

Agency	Number of Buildings	Total Building Square Footage
--------	---------------------	-------------------------------

Army	251,966	943,982,068
Interior	163,789	122,987,288
Air Force	136,883	598,814,805
Navy	118,906	486,720,884
Transportation	58,637	27,263,882
Agriculture	57,523	57,558,472
Homeland Security	26,436	47,178,709
Energy	18,202	130,611,778
State	15,322	69,716,158
Corps of Engineers	9,410	15,764,737
Veterans Affairs	8,938	154,388,241
General Services Administration	8,915	398,017,856
National Aeronautics and Space Administration	4,719	44,152,752
Justice	4,195	70,694,594
Labor	3,595	24,087,958
Health and Human Services	3,178	35,115,583

Historical Compliance

Existing buildings can be considered compliant with the HPSB Guiding Principles if:

An agency can demonstrate that a building is compliant with each of the five *Guiding Principles for Sustainable Existing Buildings*, or

A documented commitment to third-party existing building certification was made (e.g., registering a project) **prior** to October 1, 2008 **AND** the building is third-party certified to meet the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization.

The Guiding Principles for Existing Buildings, LEED® EB:O&M & Green Globes™

- Are the Guiding Principles the same as LEED® or Green Globes™ ?
 - No. The Guiding Principles are a distinct set of requirements
- Can LEED® or Green Globes™ be used to meet the Guiding Principles?
 - Yes. However the Guiding Principles must be met. A crosswalk between the Guiding Principles and LEED is available.
- Do Existing Buildings (non major renovation) need to meet LEED® or Green Globes™?
 - No. Existing Buildings need to meet the Guiding Principles.
- Is an EPA ENERGY STAR Energy Performance Rating a requirement?
 - It is one of two options available for an Agency that has identified a building to meet the Guiding Principle for “Energy Optimization”. Portfolio Manager is a web based interactive program that can benchmark energy and water usage and provide an “energy performance rating” that can be used to meet the Guiding Principles or LEED. The program includes the HPSB Checklist for federal facilities.

GUIDING PRINCIPLES - Highlights

**All Guiding Principles are required to be met.
5 Categories: 27 Guiding Principles - equally weighted**

Energy requirement – ENERGY STAR Portfolio Manager Energy Performance Rating of 75 or document 20% energy usage reduction

Water requirement – 20% indoor potable water reduction & 50% outdoor water reduction

**ASHRAE Standard 55-2004 and ASHRAE Standard 62.1-2007
Specific building & site – wide environmental requirements—
flexible format for site-wide & laboratory applications**

Internal assessment and approval. Potential IG Audit. Can track progress and upload compliance documents onto EPA's Portfolio Manager website

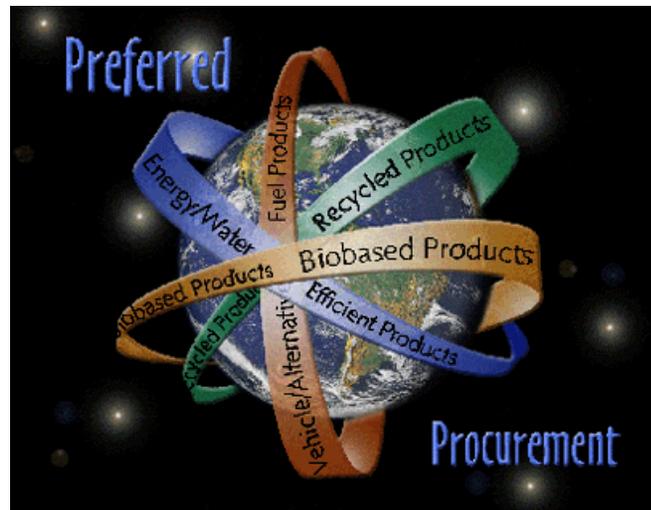
Guiding Principles for Existing Buildings

<p>GP I. Employ Integrated Assessment, Operation and Management Principles</p>	<p>GP III. Protect and Conserve Water</p>
<ul style="list-style-type: none"> ➤ Integrated Assessment, Operation and Management ➤ Commissioning 	<ul style="list-style-type: none"> ➤ Indoor Water ➤ Outdoor Water ➤ Measurement of Water Use ➤ Process Water - ➤ Water Efficient Products
<p>GP II. Optimize Energy Performance</p>	<p>GP IV. Enhance Indoor Environmental Quality</p>
<ul style="list-style-type: none"> ➤ Energy Efficiency ➤ On-Site Renewable Energy ➤ Measurement and Verification ➤ Benchmarking 	<ul style="list-style-type: none"> ➤ Ventilation and Thermal Comfort ➤ Moisture Control ➤ Daylighting and Lighting Controls ➤ Low-Emitting ➤ Integrated Pest Management ➤ Environmental Tobacco Smoke Control
<p>GP V. Reduce Environmental Impact of Materials</p>	
<ul style="list-style-type: none"> ➤ Biobased Content ➤ Environmentally Preferable Products ➤ Waste and Materials Management 	<ul style="list-style-type: none"> ➤ Ozone depleting Compounds ➤ Recycled Content

Pursuit of the Guiding Principles

Approximately 50% of the Guiding Principles include:

- Building and/or site-wide policies, plans, purchasing procurement procedures or specifications.



Pre-Planning to Determine Appropriate Buildings {Targeting Strategies}

Determine your target population

- 15% goal leaves latitude to skip the difficult cases
- Prioritize a small subset of buildings
- Identify your covered buildings for energy and water evaluations
- Identify metered buildings
- Is there an ESCO agreement in place? If so, what buildings are impacted?



Locate site plans, policies and related documents:

- Building blueprints and/or site plans
- Past and current energy/water bills
- Sustainability plans or policies
- Purchasing procedures/specifications
- Waste/recycling service provider contracts and bills
- Operation and maintenance manuals

HOW DO I TRACK, DOCUMENT AND REPORT?



The Federal High Performance Sustainable Buildings Checklist (Guiding Principles Checklist)

NEW!

EPA's Portfolio Manager

Version for Federal Existing Buildings

Federal High Performance Sustainable Buildings Checklist
The purpose of this checklist is to assist Federal agencies with assessing their existing building stock against the Guiding Principles for Sustainable Existing Buildings, and for reporting on the sustainability data element of the Federal Real Property Profile (FRPP). Click [here](#) for instructions on completing the checklist.

Agency: Department of Energy (DOE) Department/Region: Federal Campus: Building Name: Test Site 1 Federal Real Property ID: 01 Checklist Manager: <input type="text"/> save Sustainability Path: Guiding Principles edit	Guiding Principle Completion  <ul style="list-style-type: none"> ■ Yes 69% ■ No 0% ■ In Process 19% ■ Not Assessed 12% Guiding Principle Completion: 69% Yes
---	---

Last edit date: 08/09/2010
[Upload & View Compliance Documents on File](#) [Generate Report](#)

✔ Indicates that "YES" has been selected for all guiding principles within a section.

Employ Integrated Design ✔

Optimize Energy Performance

Protect and Conserve Water

Enhance Indoor Environmental Quality

Reduce Environmental Impact of Materials ✔

Employ Integrated Assessment, Operation, and Management Principles [Exit](#) [Save](#)

Guiding Principle	Action Required	Compliance Verification Documents on File	Responsible Team Member	Notes / Comments
Integrated Assessment, Operation, and Management				
Integrated 1	Use an integrated team to develop and implement policy regarding sustainable operations and maintenance. <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> In Process <input type="radio"/> Not Assessed References and Resources	<input type="checkbox"/> Team roster or equivalent <input checked="" type="checkbox"/> Completed "Responsible Team Member" fields <input type="checkbox"/> Other : <input type="text" value="enter document name"/>	Enter Name : <input type="text" value="James Sandia"/>	View Note/Comment
Integrated 2	Establish operational performance goals for energy.	<input checked="" type="checkbox"/> EMS Manual that incorporates	Enter Name :	Enter Note/

What is Portfolio Manager?

- An interactive management tool that allows users to **track, assess and benchmark energy and water consumption** for *all* facility types across entire building portfolios
- For certain “ratable” spaces, it is a **standardized metric** for comparing whole building energy performance to other buildings of similar type
- To access the Guiding Principles Checklist, buildings must be designated as federal within Portfolio Manager

The Federal Guiding Principles Checklist is embedded within Portfolio Manager

ACCEPTABLE DOCUMENTATION OF SUSTAINABILITY

Portfolio Manager provides a “Federal Existing HPSB Checklist” matching the criteria in the 12/01/2008 EO 13423 guidance indicating percentage of guiding principles achieved.

- Provides capability to share data among team and with HQ.
- Provides “read only” access to others
- Provides basis for tracking results
- Provides a basis for a response during an audit

From My Portfolio Page, select Federal Sustainability Report

Resulting report lists all properties designated as federal, GP completion and checklist completion

Federal Sustainability Portfolio Report

Results 1 - 4 of 4

The Federal HPSB Guiding Principles Checklist

PORTFOLIO MANAGER
ENERGY STAR
Home > My Portfolio > Test Site 1 > Sustainability Checklist

Federal High Performance Sustainable Buildings Checklist

The purpose of this checklist is to assist Federal agencies with assessing their existing building stock against the Guiding Principles for Sustainable Existing Buildings, and for reporting on the sustainability data element of the Federal Real Property Profile (FRPP). Click [here](#) for instructions on completing the checklist.

Agency:	Department of Energy (DOE)
Department/Region:	
Federal Campus:	
Building Name:	Test Site 1
Federal Real Property ID:	01
Checklist Manager:	Joe Sandia edit
Sustainability Path:	Guiding Principles edit

Guiding Principle Completion



■ Yes 100%
■ No 0%
■ In Process 0%
■ Not Assessed 0%

Guiding Principle Completion: 100% Yes

[Generate Report](#)

Last edit date: 06/14/2010 [Upload & View Compliance Documents on File](#)

✓ Indicates that "YES" has been selected for all guiding principles within a section.

Employ Integrated Design ✓Optimize Energy Performance ✓Protect and Conserve Water ✓Enhance Indoor Environmental Quality ✓Reduce Environmental Impact of Materials ✓

Reduce Environmental Impact of Materials

[Exit](#) [Save](#)

Guiding Principle	Action Required	Compliance Verification Documents on File	Responsible Team Member	Notes / Comments
Recycled Content				
Recycle 1	Per section 6002 of RCRA, for EPA-designated products, meet or exceed EPA's recycled content recommendations for building modifications, maintenance, and cleaning. For other products, use materials with recycled content such that the sum of postconsumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost or weight) of the total value of the materials in the project. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitation relevant to construction, operation, maintenance of or use in the building. EPA's recycled content products designations and recycled content recommendations are available on EPA's Comprehensive Procurement Guideline web site at www.epa.gov/cpg .	<input checked="" type="checkbox"/> Purchasing policy <input type="checkbox"/> Construction specifications <input type="checkbox"/> Affirmative procurement reports <input type="checkbox"/> Other: <input type="text" value="enter document name"/>	Enter Name : <input type="text"/>	Enter Note/Comment

Yes No In Process Not Assessed

[References and Resources](#)

Pre-populated building Info

Pie chart of GPs status (%)

Upload compliance documents

Compliance verification documents

Enter notes and Comments

Guiding Principle

Log-in to Portfolio Manager to Access the Guiding Principles Checklist

The screenshot shows the Energy Star homepage. At the top, there's a navigation bar with 'ENERGY STAR' and 'U.S. ENVIRONMENTAL PROTECTION AGENCY'. Below that, there are several main sections: 'PRODUCTS', 'HOME IMPROVEMENT', 'BUILDINGS & PLANTS', and 'NEW HOMES'. The 'BUILDINGS & PLANTS' link is circled in red. Other visible links include '1040 Tax Credits for Energy Efficiency', 'Heat Smartly with ENERGY STAR @ home', 'Recursos en Español', 'ENERGY STAR Podcast', 'ENERGY STAR in Affordable Housing', and 'Recycling with ENERGY STAR'. There's also a 'GO TO PARTNER RESOURCES' button and a 'Login' section with fields for 'Username:' and 'Password:'.

www.energystar.gov

The screenshot shows the Energy Star Portfolio Manager Overview page. At the top, there's a navigation bar with 'ENERGY STAR' and 'U.S. Environmental Protection Agency'. Below that, there are several main sections: 'Buildings & Plants', 'Portfolio Manager Overview', and 'How can Portfolio Manager help me?'. The 'Portfolio Manager Overview' section is circled in red. Other visible links include 'Manage Energy and Water Consumption for all Buildings', 'Rate Building Energy Performance', 'Estimate Your Carbon Footprint', 'Set Investment Priorities', 'Verify and Track Progress of Improvement Projects', 'Gain EPA Recognition', and 'Related Tools'. There's also a 'Portfolio Manager Login' section with fields for 'Username:' and 'Password:'.

www.energystar.gov/benchmark

Accessing the Federal HPSB Checklist “Your Portfolio” of Buildings

ENERGY STAR PORTFOLIO MANAGER

ACCOUNT INFORMATION CONTACTS FAQ FREQUENTLY ASKED QUESTIONS CONTACT US HELP LOGOUT

Home > My Portfolio

Portfolio Averages

Baseline Rating: N/A Facilities Included: 0	Current Rating: 56 Facilities Included: 1
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): N/A Facilities Included: 0	
Averages are weighted by Total Floor Space. View Report More about Choosing Your Baseline - Adjusted Energy Use	

[Add a Property](#)
[Import Facility Data Using Templates](#)

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GROUP: All Facilities [Create Group](#) | [View All](#) VIEW: Summary: Facilities [Create View](#) | [Edit View](#) | [View All](#)

[Download](#) in Excel Search Facility Name:

Results 1 - 2 of 2 All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Facility Name	Current Rating (1-100)	Change from Baseline: Adjusted Energy Use (%)	Total Floor Space (Sq. Ft.)	Energy Use Alerts	Current Energy Period Ending Date	Eligibility for the ENERGY STAR	Last Modified
Sample Facility	56	N/A	15,000	Data > 120 days old	12/31/2009	Not Eligible: Rating must be 75 or above (ENERGY STAR Eligibility Rules)	03/22/2010
Test Site 1	N/A	N/A	0			N/A	

[Download](#) in Excel Search Facility Name:

Results 1 - 2 of 2 All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Your building portfolio. It could be 1 or more buildings.

Accessing the Guiding Principles Checklist by Designating Buildings as Federal

Add individual federal properties to Portfolio Manager

The screenshot shows the Energy Star Portfolio Manager dashboard. On the left, there is a 'Portfolio Averages' table. On the right, there are several navigation links. A red arrow points to the 'Add a Property' link.

Portfolio Averages	
Baseline Rating: 88 Facilities Included: 1	Current Rating: 89 Facilities Included: 2
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): -16.9% Facilities Included: 1	
Averages are weighted by Total Floor Space. More about Baselines More about Change from Baseline: Adjusted Energy Use	

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[Apply for the ENERGY STAR](#)

Add a Property

The screenshot shows the 'Add a Property' form. A red arrow points to the 'Property Type' section. The form asks 'What kind of property would you like to add?' and provides five radio button options. A red arrow points to the 'CONTINUE' button at the bottom right.

Add a Property

Property Type

What kind of property would you like to add?

- A single facility for which my organization owns or manages 90% or more of the floor area.
- A portion of a single facility for which my organization owns or manages less than 90% of the floor area.
- A hospital composed of a single facility or collection of facilities.
- A municipal wastewater treatment plant or water treatment and distribution utility
- A campus or other collection of multiple facilities at the same geographic location. [What is this?](#)

Continue

CANCEL CONTINUE

Select property type

Continue

Designate Building as a Federal Facility

Home > My Portfolio > Add General Facility Information

Add General Facility Information

Use the form below to provide general information concerning your facility.

REQUIRED

*Type of Facility:

- A single facility for which my organization owns or manages 90% or more of the floor area.
- A portion of a single facility for which my organization owns or manages less than 90% of the floor area.
- A hospital composed of a single facility or collection of facilities.
- A municipal wastewater treatment plant or water treatment and distribution utility

*Is this facility owned, operated or leased by the Federal government?:

- No
- Yes

*Agency:

Department/Region:

Federal Campus:

*Federal Real Property ID:

*Country:

*Facility Name:

*Address:

*City:

Add General Facility Information
Is this a federal facility? If Yes
Fill out required info and Save

Click on High Performance Sustainable Buildings Checklist

The screenshot shows the 'Facility Performance' section of the Portfolio Manager interface. It includes a table with columns for '12 Month Ending', 'Current Rating (1-100)', 'Current Energy (Period Ending Date)', 'Current Data Center Source (PUE)', 'Current Source (1 Energy (kBtu))', and 'Current Total Source Energy use (kBtu)'. Below the table, there is a 'High Performance Sustainable Buildings Checklist' section with a 'Checklist' button. The checklist includes items like 'Checklist Administration', 'Checklist Performance Improvements', and 'Checklist High Performance Buildings'. A red arrow points from the text box to the 'Checklist' button.

12 Month Ending	Current Rating (1-100)	Current Energy (Period Ending Date)	Current Data Center Source (PUE)	Current Source (1 Energy (kBtu))	Current Total Source Energy use (kBtu)
May 2010	94	08/31/2010	1.00	0	12,875,286.0

Portfolio Manager Federal Building Import Template

- Agency may enter buildings manually or through a multi-property import template available to assist you in providing large sets of general Federal Facility data.
 - Contact your Agency first to indentify procedures to import facility data from a federal real property database into Portfolio Manager.
 - FRPID is a required field in Portfolio Manager
 - Takes time to prepare; plan accordingly
 - EPA contact: Katy Hatcher Hatcher.Caterina@epamail.epa.gov

Portfolio Manager: Process Overview

Register a new account

Add a federal property

Add a space

Add a utility meter

Update data

The screenshot shows the 'Federal High Performance Sustainable Buildings Checklist' in the Portfolio Manager system. The interface includes a header with the Energy Star logo and 'PORTFOLIO MANAGER' text. Below the header, there is a breadcrumb trail: 'Home > My Portfolio > Test Site 1 > Sustainability Checklist'. The main content area is titled 'Federal High Performance Sustainable Buildings Checklist' and includes a brief description of the checklist's purpose. A form section contains the following information: Agency: Department of Energy (DOE); Department/Region: Department of Energy (DOE); Federal Campus: Department of Energy (DOE); Building Name: Test Site 1; Federal Real Property ID: 01; Checklist Manager: Joe Sandia; Sustainability Path: Guiding Principles. To the right of the form is a 'Guiding Principle Completion' section with a green pie chart showing 100% completion. Below the form, there is a 'Last edit date: 06/14/2010' and a 'Generate Report' button. The checklist is organized into sections, with 'Reduce Environmental Impact of Materials' expanded to show a table of guiding principles. The table has columns for 'Guiding Principle', 'Action Required', 'Compliance Verification Documents on File', 'Responsible Team Member', and 'Notes / Comments'. The 'Recycled Content' section is currently selected, showing details for 'Recycle 1' and a list of checkboxes for compliance verification, including 'Purchasing policy', 'Construction specifications', 'Affirmative procurement reports', and 'Other'. The 'Recycled Content' section also includes a text input field for 'Enter Name' and a 'Generate Report' button.

After the first two steps, users can access the Guiding Principles Checklist

Using the Guiding Principles Checklist

Federal Sustainability Portfolio Report

From My Portfolio Page, select Federal Sustainability Report

PORTFOLIO MANAGER
[Home](#) > My Portfolio

Portfolio Averages	
Baseline Rating: 95 Facilities Included: 1	Current Rating: 82 Facilities Included: 2
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): -28.6% Facilities Included: 2	
Averages are weighted by Total Floor Space. More about Baselines More about Change from Baseline: Adjusted Energy Use	

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Resulting report lists federal properties, the sustainability path and GP % completion

Federal Sustainability Portfolio Report

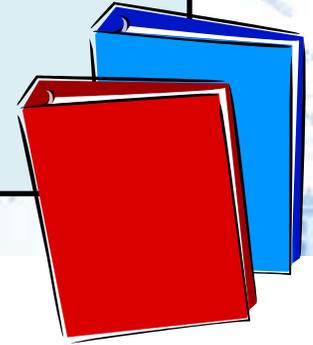
VIEW: [Create View](#) | [Edit View](#) | [View All](#)

Search Facility Name:
 All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Results 1 - 4 of 4

Facility	Sustainability Path	Date Certification Achieved	Date Certification Anticipated	Checklist Completion Percentage			
				Yes	No	In Process	Not Assessed
My Building	Guiding Principles for Sustainable Existing Building			0%	0%	0%	100%
My Test 001	Guiding Principles for Sustainable Existing Building			8%	0%	0%	92%
Test Site 1	Guiding Principles for Sustainable Existing Building			81%	0%	0%	19%

HPSB Checklist/Portfolio Manager Data Management



- **Establish**
 - Roles and responsibilities
 - Procedure to collect and document Guiding Principles as they are achieved
 - Archiving process
- **Identify**
 - Applicable processes, including project specific processes and procedures such as who shall enter & update utility data in Portfolio Manager and maintain data quality assurance.

Data Management Validation



- HPSB Checklist is a “Living” document throughout the designated time period
 - Team collaboration is important
 - Provide an opportunity to review data collected.
 - Ensure accuracy, reliability and performance
 - Use the HPSB Checklist to review adherence to the EO

When all Guiding Principles have been reviewed, issues resolved and 100% of the documentation completed, the HPSB completion date can be entered into the Federal Sustainability Checklist Report within Portfolio Manager

Guiding Principles for Existing Buildings

Contact Information



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