

This is a guidance document with sample specification language intended to be inserted into project specifications on this subject as appropriate to the agency's environmental goals. Certain provisions, where indicated, are required for U.S. federal agency projects. Sample specification language is numbered to clearly distinguish it from advisory or discussion material. Each sample is preceded by identification of the typical location in a specification section where it would appear using the SectionFormat™ of the Construction Specifications Institute; the six digit section number cited is per CSI Masterformat™ 2004 and the five digit section number cited parenthetically is per CSI Masterformat™ 1995.

.....

SECTION 00 10 00 (SECTION 00100) - SOLICITATION (RFP)

I. **Keywords:**

green building
high performance building
performance-based contract
sustainability
sustainable building
sustainable development

II. **Sustainable Building Goals:**

SPECIFIER NOTE:

On January 24-25, 2006, more than 150 Federal facility managers and decision makers came together at the first-ever ["White House Summit on Federal Sustainable Buildings"](#) to witness the signing of the ["Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding" \(MOU\)](#). The MOU was the flagship Federal effort to define guiding principles of green building and provide leadership in the design, construction, operation, and maintenance of high performance and sustainable buildings.

To build from this and other accomplishments and to pave the way for future success, President Bush signed Executive Order 13423 "Strengthening Federal Environmental, Energy and Transportation Management" on January 24, 2007. In the area of sustainable design and high performance buildings, the EO 13423 makes mandatory the five Guiding Principles of the MOU for all new construction and major renovations and for 15 % of existing Federal capital asset building inventory by 2015.

New guidance on High Performance Federal Buildings was issued December 5, 2008. It includes revised Guiding Principles for new construction, new Guiding Principles for existing buildings, clarification of reporting guidelines for entering information on the sustainability data element (#25) in the Federal Real Property Profile, and an explanation of how to calculate the percentage of buildings and square footage that are compliant with the Guiding Principles for agencies' scorecard input.

To ensure accuracy and consistency in reporting across agencies and to leverage existing resources dedicated to agency real property management, data on compliance with E.O. 13423, sec. 2(f), is to be reported to the Federal Real Property Profile (FRPP) database managed by the Federal Real Property Council (FRPC). All Executive agencies are already required to report annual inventory and performance data at the individual asset level on all real property assets: including land, buildings, and structures.

The Federal Real Property Council was established under EO 13327, Federal Real Property Asset Managed, issued February 4, 2004. The FRPC annual guidance and FRPP reporting instructions can be found at: http://www.whitehouse.gov/omb/financial/fia_asset.html
The reporting of data for the "sustainability" data element is required for FY 2009 and beyond.

The five Guiding Principles for new construction address:

- I. [Employ integrated design;](#)
- II. [Optimize energy performance;](#)
- III. [Protect and conserve water;](#)
- IV. [Enhance indoor environmental quality; and](#)
- V. [Reduce environmental impact of materials.](#)

The five Guiding Principles for existing construction address the same topics as appropriate to existing structures:

- I. Employ integrated assessment, operation, and management;
- II. Optimize energy performance;
- III. Protect and conserve water;
- IV. Enhance indoor environmental quality; and,
- V. Reduce environmental impact of materials.

Executive Order 13514; *Federal Leadership in Environmental, Energy, and Economic Performance*; was signed by President Obama on October 5, 2009. It expands upon the environmental performance requirements of EO 13423. <http://www.ofee.gov/execorders.asp>

The following goals and sample solicitation language are intended to assist agencies in meeting the commitments outlined in the MOU.

Support implementation of federal policy and programs for sustainable building, in accordance with EO13423, EO13514, and Guiding Principles for Federal Leadership in High Performance and Sustainable Building as per the Memorandum of Understanding updated December 2008, as follows:

- Employing integrated design;
 - ASTM E2348, Standard Guide for Framework for a Consensus-based Environmental Decision making Process
 - ASTM E2432 Standard Guide for General Principles of Sustainability Relative to Buildings
- Optimizing energy performance;
 - Energy Efficiency: EO 13423, EO 13514, and Energy Policy Act of 2005; 10 CFR 435 - Energy Performance Standards for New Buildings; and, FAR Part 23, 48 CFR 23 - building equipment and lighting
 - Energy Star
 - Federal Energy Management Program (FEMP)
- Protecting and conserving water;
 - Water stewardship: EPA WaterSense, and FEMP Best Management Practices for Water Conservation
- Enhancing indoor environmental quality;
 - Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction
- [Reducing the environmental impact of materials.](#)
 - Recycled Content Products: EPA Comprehensive Procurement guidelines
 - Biobased Content Products: USDA Biopreferred
 - Electronics stewardship: Federal Electronics Challenge; Electronic Product Environmental Assessment Tool (EPEAT)
 - Environmental Management System protocols: ISO 14001 or equivalent

Support implementation of procedures for tracking and reporting Agency progress in achieving federal initiatives in accordance with EO13423, EO13514, and Guiding Principles for Federal Leadership in High Performance and Sustainable Building as per the Memorandum of Understanding updated December 2008, as follows:

- Federal Real Property Profile (FRPP) database
- High Performance Building database

III. Sustainability Consultant Qualifications:

SPECIFIER NOTE:

Sustainable design is an evolving field. As of the date of this draft solicitation, there is no single, standard degree, licensure or certification for sustainable design. Although, there are practitioner certifications for specific green building rating programs; such certification typically does not indicate a level of expertise with the concepts of sustainability – only with the rules and procedures associated with the program.

The best way to assess qualifications related to sustainability is to review examples of experience on other projects.

Where specific green building rating programs are used, it is also helpful to consider whether or not consultants have (or will obtain) certification in the use of such programs and/or whether or not consultants have completed projects in the program successfully.

This can be demonstrated utilizing the SF330.

Sustainability consulting services shall be provided by an **[individual or]** organization with:

- minimum **[5] [3] [xxxx]** years experience on projects of similar size and scope;
- minimum **[5] [3] [xxxx]** years experience with sustainable design objectives similar to those of this project;
- **[familiarity with Environmental Management Systems (EMSs) such as ISO 14001];**
- familiarity with **[USGBC-LEED] [GBI-Green Globes] [ICC-700 National Green Building Standard] [Sustainable Sites Initiative] [xxxx]** green building rating program;
- successful history of completed projects with **[USGBC-LEED] [GBI-Green Globes] [ICC-700 National Green Building Standard] [Sustainable Sites Initiative] [xxxx]** green building rating program.

Indicate sustainability consulting experience as appropriate on the SF330. **[Do not submit additional materials.]**

IV. Integrated Design Process:

SPECIFIER NOTE:

The ASTM E 2348, Standard Guide for Framework for a Consensus-based Environmental Decision Making Process, is an iterative process appropriate in two contexts: (1) when a specific project is proposed; and (2) when there are or may be public interest related to health, environmental, cultural, social or economic issues. The process involves stakeholders actively in the decision-making. Stakeholders may include building occupants and others who live with the consequences of the decisions. Such process not only increases the successful implementation of decisions, but also can promote greater trust in government, industry and other institutions.

Integrated Design. Use a collaborative, integrated planning and design process consistent with ASTM E 2348, Standard Guide for Framework for a Consensus-based Environmental Decision making Process that

- Initiates and maintains an integrated project team in all stages of a project's planning and delivery;
- Integrates the use of OMB's A-11, Section 7, Exhibit 300: *Capital Asset Plan and Business Case Summary*
- Establishes performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals; and, ensures incorporation of these goals throughout the design and lifecycle of the building; and
- Considers all stages of the building's lifecycle, including deconstruction.

V. Performance-Based Contracting:

SPECIFIER NOTE:

The goals of a performance-based management contract are to encourage and reward excellence, continual improvement and cost-effective, "best practices" that are meaningful, appropriate, and consistent with Owner requirements.

There is not a standard template or outline for a Performance Work Statement (PWS). The Federal Acquisition Regulation only requires that Agencies--

- Describe requirements in terms of results rather than process.
- Use measurable performance standards and quality assurance surveillance plans.
- Provide for reductions of fees or price.
- Include performance incentives where appropriate.

For additional information, refer to OMB-Office of Federal Procurement Policy; Performance-Based Service Acquisition http://www.whitehouse.gov/omb/procurement/index_pbsa.html

Also, the Federal Energy Management Program (FEMP) provides guidance for Super Energy Savings Performance Contracts (Super ESPCs)

<http://www1.eere.energy.gov/femp/financing/mechanisms.html>

The project budget will need to provide for minimum and maximum costs such that the following incentives may be authorized.

- A. **Performance Objective:** As indicated under Sustainable Building Goals.
- B. **Performance Standard:** Standards utilized are as indicated under Sustainable Building Requirements and as follows:
1. ASTM E2432 [**environmental,**] [**social,**] [**and, economic**] principles of sustainability relative to building
 2. [**USGBC-LEED**] [**GBI-Green Globes**] [**ICC-700 National Green Building Standard**] [**xxxx**] green building rating program.
 3. Energy Star.
- C. **Acceptable Quality Level:** Minimum requirements are as indicated under Sustainable Building Requirements and as follows:
1. ASTM E2432: Provide documentation that work is consistent with the [**environmental,**] [**social,**] [**and, economic**] principles of sustainability relative to building as identified in ASTM E2432.
 2. Green Building Rating Program:

SPECIFIER NOTE:

Green building programs may support the environmental component of ASTM E2432. Select one of the following:

- a. US Green Building Council (USGBC) - LEED™ rating system: Provide [**final structure in compliance**] [**work consistent**] with USGBC-LEED™ v3, level [**certified**] [**silver**] [**xxxx**] requirements.
 - b. Green Globes – US. Provide [**final structure in compliance**] [**work consistent**] with Green Globes –US level [**Two Globes**] [**Three Globes**] [**xxxx**] requirements.
 - c. ICC-700-2008 National Green Building Standard: Provide [**final structure in compliance**] [**work consistent**] with ICC-700 [**Bronze**] [**Silver**] [**Gold**] [**Emerald**] requirements.
 - d. [**xxxx**].
 3. Energy Star: Energy Star rating of [**30**] [**20**] [**xxxx**] percent compared to the baseline building.
 4. Green Landscaping Program:
 - a. Sustainable Sites Initiative - Guidelines and Performance Benchmarks 2009: Provide final landscaping [**in compliance with**] [**work consistent with**] with USGBC-LEED™ v3, level [**one star**] [**two star**] [**three star**] [**four star**] requirements.
- D. **Monitoring Method:** The documented performance levels achieved against the Sustainable Building Requirements will be the primary but not necessarily the

sole criteria for determining the Contractor's compliance and incentives earned. The Contracting Officer may also consider any significant event, such as extreme weather or acts of god, and/or other relevant information which is deemed to have had an impact (positive or negative) on the Contractor's performance.

- E. **Incentive:** Contractor may earn an additional **[10] [20] [xxxx]** percent fee over the approved **[design] [design-build] [xxxx]** fee to a maximum of **[xxxx]** dollars for final projects that exceed the Acceptable Quality Level by:

SPECIFIER NOTE:

Where green building rating program(s) are used, provide incentives for achieving a certification level higher than that required.

Additionally, or where green building rating program(s) are not used, provide incentives for exceeding the sustainable building requirements by 10 percent or more in specific aspects (such as energy) or in any combination for more than half of the performance requirements.

Also, consider that the integrated design team may come up with a creative approach or technology that is not specifically cited in the Solicitation. This should be recognized as well.

Following are examples.

1. minimum **[one] [xxxx]** level of recognition for green building programs; or
2. minimum **[10] [xxxx]** percent improvement for **[50] [xxxx]** percent or more of the performance requirements cited under Sustainable Building Requirements; or
3. significant excellence and creativity in sustainable features other than those cited under Sustainable Building Requirements. **[Subject to approval and acceptance by Owner.]**

VI. Submittal Requirements:

SPECIFIER NOTE:

Following are examples; edit as appropriate to project size, location, and complexity.

With Response to Solicitation, Contractor shall submit the following:

- Proposed fee. The proposed fee, if accepted will provide the basis for calculating earned incentives, if any.
- SF330, demonstrating sustainability consulting experience.
- Summary of proposed design intent indicating compliance with Sustainable Building Requirements and consistent with **[ASTM E2432] [and] [USGBC-LEED v3] [GBI-Green Globes] [ICC-700 National Green Building Standard] [xxxx]**.

VII. Sustainable Building Requirements:

SPECIFIER NOTE:

Sustainability encompasses environmental, economic, and social impacts. Sustainable Building encompasses these impacts not only in terms of the building itself (direct impacts) but also in terms of how the building may affect others (indirect impacts). The indirect impacts tend to be more significant, and also more difficult to quantify. ASTM E2432 provides a good overview of these impacts and describes the process of implementing the environmental, economic, and social principles of sustainability into real-world building applications

Sustainability is an ideal. The real-world implementation of sustainable building relies upon balancing the environmental, economic, and social impacts. It also relies upon a commitment to continual improvement in efforts to achieve the ideal. In striving for sustainability, decisions and their implementation should be continually monitored, assessed, and adjusted, as necessary, in a process that incorporates continual improvement.

Appropriate Sustainable Building Requirements will depend on the size, complexity, and potential direct and indirect impacts of the proposed building.

Small projects may want to cite performance requirements for specific product categories such as interior finishes, lighting, or landscaping. Most projects, however, will want to provide greater latitude in the design/build response. Therefore, it is more typical to cite performance requirements for the building as a whole.

Whole Building Performance:

SPECIFIER NOTE:

The following whole building performance-based requirements are consistent with the Guiding Principles for Federal Leadership in High Performance and Sustainable Building and with ASTM E2432, Standard Guide for General Principles of Sustainability Relative to Buildings.

A. Environmental Impacts:

1. **Ecosystems & Biodiversity:** Provide a building that protects or enhances local, regional, and global ecosystems.

Minimum Requirements:

- a. **Energy Efficiency.**

SPECIFIER NOTE:

Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation where applicable.

- For new construction, reduce the energy cost budget by minimum 30 percent compared to the baseline building performance rating per American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE) and the Illuminating Engineering Society of North America (IESNA) Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential.
- For major renovations, reduce the energy cost budget by minimum 20 percent below pre-renovations 2003 baseline.
- Per the Energy Independence and Security Act (EISA) Section 523, meet at least 30% of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.

- b. **Ozone Depleting Compounds.** Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account life cycle impacts.
- c. **Outdoor Water.** Employ design and construction strategies that reduce storm water runoff and polluted site water runoff.

2. **Natural Resources:** Provide a building that preserves or enhances the quality of resources and does not adversely alter the balance between renewable resources and their rate of consumption for building-related purposes.

Minimum Requirements:

- a. **Indoor Water.** Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the Energy Policy Act of 1992 fixture performance requirements. For EPA-designated products, use products meeting or exceeding EPA's WaterSense specifications.
- b. **Outdoor Water.** Use water efficient landscape and irrigation strategies, including water reuse and recycling, to reduce

outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities). Per EISA Section 438, to the maximum extent technically feasible, maintain or restore the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow using site planning, design, construction, and maintenance strategies.

c. **Recycled Content.**

- For EPA-designated products, use products meeting or exceeding EPA's recycled content recommendations. The EPA Comprehensive Procurement Guidelines (CPG) are part of EPA's continuing effort to promote the use of materials recovered from solid waste. The EPA CPG is authorized by Congress under Section 6002 of the Resource Conservation and Recovery Act (RCRA). EPA's recycled content product designations and recycled content recommendations are available on EPA's Comprehensive Procurement Guideline web site at <www.epa.gov/cpg>.

SPECIFIER NOTE:

EO 13423, EO 13514, and the MOU promote the use of environmentally preferable products such as recycled content products, biobased content products, and low-VOC emitting products. It should be recognized that in some applications, these attributes are mutually exclusive; therefore, it may not be possible to satisfy all of the sustainability goals in a single product. In accordance with ASTM E2432, balance (of the environmental, economic, and social principles of sustainability) and continual improvement (in pursuit of sustainability) is fundamental to a successful project. The principles outlined in ASTM E2432 can inform the decision making process to help identify the best product selections for a particular project.

- For other products, use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project.

d. **Biobased Content.**

- For USDA-designated products, use products meeting or exceeding USDA's biobased content recommendations. For current designations under the Federal Biobased Products Preferred Procurement Program (FB4P). USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred web site at <www.usda.gov/biopreferred>.

SPECIFIER NOTE:

EO 13423, EO 13514, and the MOU promote the use of environmentally preferable products such as recycled content products, biobased content products, and low-VOC emitting products. It should be recognized that in some applications, these attributes are mutually exclusive; therefore, it may not be possible to satisfy all of the sustainability goals in a single product. In accordance with ASTM E2432, balance (of the environmental, economic, and social principles of sustainability) and continual improvement (in pursuit of sustainability) is fundamental to a successful project. The principles outlined in ASTM E2432 can inform the decision making process to help identify the best product selections for a particular project.

- For other products, use biobased products made from rapidly renewable resources, and certified sustainable wood products.

- e. **Construction Waste.** Recycle or salvage at least 50 percent construction, demolition and land clearing waste, excluding soil, where markets or on-site recycling opportunities exist.

B. Economic Impacts

SPECIFIER NOTE:

Buildings have both direct and indirect economic impacts. Direct economic impacts are those directly attributable to the building. Indirect impacts are those that affect others who are not directly associated with the building and/or that affect society as a whole.

- 1. **Direct Costs:** Provide a building that is effective and efficient in all phases of its life cycle.

Minimum Requirements:

- a. **First Costs:** Estimated design-build costs are [xxxx - xxxx] dollars.
- b. **Operating Costs:** Estimated annual operations costs are as follows:
 - energy: [xxxx] dollars.
 - water: [xxxx] dollars
 - maintenance: [xxxx] dollars

Provide commissioning and measurement & verification to optimize operating efficiencies and ensure a facility consistent with estimated first costs and operating costs.

- **Commissioning.** Employ total building commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met. This should include a designated commissioning authority, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.
- **Measurement and Verification.** Per the Energy Policy Act of 2005 (EPA Act) Section 103, install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434, include equivalent meters for natural gas and steam, where natural gas and steam are used.. Compare actual performance data from the first year of operation with the energy design target. After one year of occupancy, measure all new major installations using the Energy Star® Benchmarking Tool for building and space types covered by Energy Star®. Enter data and lessons learned from sustainable buildings into the High Performance Buildings Database.

(www.eere.energy.gov/femp/highperformance/index.cfm)

- c. **End Use Costs:** Apply DfE (Design for the Environment) approaches to improve risk management and to reduce potential regulatory and liability costs.

Identify hazardous materials that may require special procedures during building operation, including waste management.

Materials may include but are not limited to the following:

- Mercury in lighting fixture.
- Refrigerant in HVAC systems
- CCA

Identify materials that may reduce potential regulatory and liability costs. Materials may include but are not limited to the following:

- Recycled content materials
- Biobased materials

2. **Indirect Costs:** Provide a building that is effective and efficient with respect to both upstream and downstream impacts.

Minimum Requirements:

- a. **Social costs/benefits:** Promote healthy and productive facilities for humans.

- Implement good Indoor Air Quality practices. Refer to Social Impacts.
- Provide for in-situ remediation as appropriate. **[Utilize phytoremediation techniques to the greatest extent possible.]**
- Provide facility consistent with structural requirements for satisfactory Integrated Pest Management (IPM) protocols.

- b. **Environmental costs/benefits:** Promote healthy functioning ecosystems that provide environmental benefits to society.

- Identify primary ecosystems and ecosystem functions associated with the project site. Indicate how project design conserves and/or restores the ecosystems and ecosystem functions.
- Identify watershed(s) associated with the project site. Indicate how project may impact watershed(s). Indicate how project may impact local and regional stormwater management.
- Identify prime agricultural land associated with the project site. Indicate change in available prime agricultural land before and after project.

C. **Social Impacts:**

SPECIFIER NOTE:

Buildings impact society. Social structures vary in complexity and hierarchies of inclusion. Sustainable buildings support societal goals at the levels appropriate to their interaction. In order to advance sustainability, it is necessary to identify, without imposing interpretive cultural prejudice, the potential health, safety, and welfare impacts, and to contribute to a positive quality of life for current and future generations.

For example, building with products from sustainably managed forests helps to ensure the continued viability of the logging culture and economy in those communities. This approach not only helps to maintain the forests as functioning ecosystems, but also helps to maintain the welfare of the communities that depend upon the forests for their livelihood.

The Indoor Health and Productivity Project aims to develop a fuller understanding of the relationship between physical attributes of the workplace (e.g. thermal, lighting, ventilation, and For example, building with products from sustainably managed forests helps to ensure the continued viability of the logging culture and economy in those communities. This approach not only helps to maintain the forests as functioning ecosystems, but also helps to maintain the welfare of the communities that depend upon the forests for their livelihood.

air quality) in non-residential and non-industrial buildings and the health and productivity of occupants. Refer to <http://gaia.lbl.gov/IHP/>

1. **Health, Safety, and Welfare:** Provide a building that protects and enhances the health, safety, and welfare of building occupants, neighbors and the public throughout the building's life.

Minimum Requirements:

- a. **Ventilation and Thermal Comfort.** Meet ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human

Occupancy, including continuous humidity control within established ranges per climate zone, and ASHRAE Standard 62-2007, Ventilation for Acceptable Indoor Air Quality.

SPECIFIER NOTE:

EPA's Indoor Environments Division provides guides for moisture control in its Mold Resources. Additional information and design guidance is provided on the Whole Building Design Guide; refer to: http://www.wbdg.org/resources/moisturedynamics.php?r=promote_health

- b. **Moisture Control.** Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage and mold contamination. Consistent with EPA Moisture Control Guidance. **[Refer to the EPA Indoor Air Quality - Mold Resources at <http://www.epa.gov/mold/moldresources.html>]**
 - c. **Daylighting.** Achieve a minimum of daylight factor of 2 percent (excluding all direct sunlight penetration) in 75 percent of all space occupied for critical visual tasks. Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.
 - d. **Low-Emitting Materials.** Specify materials and products with low pollutant emissions, including adhesives, sealants, paints, carpet systems, and furnishings. **[Do not specify products that contain materials listed on the EPA's National Partnership for Environmental Priorities (NPEP) Priority Chemicals List; refer to <http://www.epa.gov/waste/partnerships/npep/index.htm>]**
 - e. **Protect Indoor Air Quality during Construction.** Follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction, 2007. After construction and prior to occupancy, conduct a minimum 72-hour flush-out with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent. After occupancy, continue flush-out as necessary to minimize exposure to contaminants from new building materials.
2. **Cultural Capital:** Provide a building that is consistent with the cultural and historic context of the site and that displays an aesthetic appropriate to the dignity of the federal government and the type of facility required.
 3. **Quality of Life impacts:**
 - a. Comply with applicable accessibility requirements.
 - b. Provide connection to public transportation system[s]. Avoid negative impacts on existing traffic patterns.
 - c. Control light pollution associated with the project.
 - d. Control noise pollution associated with the project.
 - e. Utilize local labor and services to greatest extent possible.

Building Product Category Performance:

SPECIFIER NOTE:

Whole Building Performance allows the Contractor to achieve the desired performance levels through any combination of products and systems. In contrast, Building Product Category Performance criteria specifies what the Contractor must achieve for each type of product and system. This approach provides a more detailed approach to establishing requirements and reporting formats.

If both the Whole Building and the Building Product Category performance criteria are used in the Solicitation, exercise caution. While the performance criteria are usually redundant, in some cases they may be conflicting. For example, it may be possible under a Whole Building approach to achieve high efficiencies with HVAC equipment that utilizes a specific refrigerant, thereby reducing associated greenhouse gases. However, if there is also a Product Category limitation on that specific refrigerant (in order to reduce greenhouse gases), then perhaps a less efficient system will be incorporated resulting in an overall increase in associated greenhouse gas emissions.

The following building product category-based framework consistent with the Guiding Principles for Federal Leadership in High Performance and Sustainable Building and with ASTM E2432, Standard Guide for General Principles of Sustainability Relative to Buildings. This framework may be used to specify minimum product category requirements as well as to report and document project impacts.

Indicate minimum performance requirements as appropriate to project size, location, and complexity. For example, under Section 01 10 00 (01100) indicate desired level of green building rating certification and under Section 01 74 19 (01351) indicate minimum tons or percentage of total waste to be diverted.

Edit to suit project.

Minimum Reporting Requirements Relative to Sustainability

Following are sustainable building requirements for products and systems utilized on this project. While each product and system will have environmental, economic, and social impacts, only representative impacts are listed. The representative impacts are minimum reporting requirements for this project

Specification Section			Environmental Impacts		Economic Impacts		Social Impacts	
building elements	CSI 2004	CSI 1995	direct	indirect	direct	indirect	direct	indirect
Division 1								
summary	01 10 00	01100	green building rating certification		total cost for green features and consulting services		EPA National Performance Track	
continual improvement of environmental quality	01 43 50	01435	environmental performance summary per building rating program & consistent with Agency EMS	documentation of contractor's Environmental Management System (EMS)	Energy Star performance rating			
IAQ management	01 57 19.11	01352			total cost		estimated \$ value of worker productivity based on IAQ impact of 3%	
noise management	01 57 19.12	01353			total cost			dB maximum level and duration

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

environmental management	01 57 19.13	01354	compliance with NPDES	relationship to adjacent & connected: wildlife corridors, natural waterways, and watersheds	total cost		coordination with Agency EMS protocols	
construction waste management	01 74 19	01351	tons of waste diverted from landfill for use in situ	total tons of waste; tons of waste diverted from landfill	total cost		tons of waste and/or summary of items diverted from landfill for reuse by NGO	estimate dioxins, NOx, VOx, & Sox released by burning equivalent total tons of waste; tons of waste diverted from landfill
operation & maintenance	01 78 23	01830	# & type take-back (green lease) programs		estimated annual cost for labor; estimated annual cost for utilities			
environmental demonstration & training	01 79 11	01821			total cost		attendance record; coordination with Agency EMS protocols	
sustainable design requirements	01 81 13	01111	green building rating certification		total cost for green features and consulting services		EPA National Performance Track	

Whole Building Design Guide
 Federal Green Construction Guide for Specifiers

green power contract	01 81 30	13600	% Δ CO2 emissions with & without green power contract; estimated annual CO2 savings due to green power contract based on average 1.341 lbs of CO2 produced per kWh of electricity generated		estimated Δ annual utility cost with & without green power contract; estimated annual green power contract cost; estimated total green power contract cost	% total energy requirements obtained from green power contract; % total energy requirements obtained from grid		
commissioning	01 91 00	01810	% Δ CO2 emissions before & after commissioning; estimated annual CO2 based on average 1.341 lbs of CO2 produced per kWh of electricity used		total cost; estimated % Δ energy efficiency before & after commissioning			
Division 02								
Division 03								
concrete	03 30 00	03300		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 04								
masonry	04 20 00	04200		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 05								

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

metals	05 05 00	05050		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
structural metal framing	05 10 00	05100		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 06								
rough carpentry	06 10 00	06100	% non-CCA treated wood	% wood from certified sustainably managed forests; % alternative species	total cost installed		% non-urea formaldehyde treated wood	% wood from USA forests
finish carpentry	06 20 00	06200		% wood from certified sustainably managed forests; % alternative species	total cost installed		% non-urea formaldehyde treated wood	% wood from USA forests
plastic fabrications	06 60 00	06600		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
alternative agricultural products	06 90 00	06700		% biobased content	total cost installed			% biobased from USA agriculture
Division 07								
damproofing & waterproofing	07 10 00	07100		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

thermal protection	07 20 00	07200	R-value for walls and roof	% recycled content; % biobased content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
steep slope roofing	07 30 00	07300	% Energy Star or FEMP-designated products	% recycled content	total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)			% mfr in USA; % mfr within 500 mile radius of project site
vegetated roof covering	07 33 63	02930	estimated R-value		total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)	estimated stormwater retention rate; primary type(s) of ecosystem functions (i.e. biofiltration, pollinator support, habitat, etc.)	types of uses, estimated # daily users	estimated carbon sinking in metric tons; Δ water quality for green roof and public water supply in BOD, TSS and fecal coliform
membrane roofing	07 50 00	07500	% Energy Star or FEMP-designated products	% recycled content	total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)			% mfr in USA; % mfr within 500 mile radius of project site
joint sealants	07 92 00	07900					% low VOC interior sealants	% mfr in USA; % mfr within 500 mile radius of project site
Division 08								

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

windows	08 50 00	08500	% Energy Star or FEMP-designated products		total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 09								
tile	09 30 00	09300		% recycled content	cost per s.f. installed; total cost installed		% low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
acoustical ceiling tiles	09 51 00	09510		% recycled content	cost per s.f. installed; total cost installed	verification of mfr take-back/reclamation program		% mfr in USA; % mfr within 500 mile radius of project site
resilient flooring	09 65 00	09650		% recycled content;% biobased content	cost per s.f. installed; total cost installed		% low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
linoleum	09 65 16.13	09654		% biobased content	cost per s.f. installed; total cost installed		% low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
carpet	09 68 00	09680		% recycled content	cost per s.f. installed; total cost installed	verification of mfr take-back/reclamation program	% CRI Green Label; % low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
wall coverings	09 72 00	09720		% recycled content;% biobased content	cost per s.f. installed; total cost installed		% low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
paint	09 90 00	09900		% recycled content	cost per s.f. installed; total cost installed		% low VOC; % Green Seal labeled	% mfr in USA; % mfr within 500 mile radius of project site
Division 10								

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

plastic toilet compartments	10 21 13.19	10170		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
bat houses	10 81 16.13	02872	# houses; estimated # bats accommodated	relationship to adjacent & connected: wildlife corridors, natural waterways, and watersheds	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
integrated pest management (IPM)	10 81 50	10295			total cost		estimated \$ value of worker productivity based on IAQ impact of 3%	estimated grams or liters (solid or liquid) of conventional pesticides avoided annually
Division 11								
loading dock equipment	11 13 00	11160		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
office equipment	11 28 00	11680	% Energy Star or FEMP-designated products		total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
residential equipment	11 30 00	11450	% Energy Star or FEMP-designated products		total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 12								
artwork	12 10 00	12100		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

floor mats	12 48 13	12482		% recycled content	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
systems furniture	12 59 00	12700		% recycled content; %biobased content; % wood from certified sustainably managed forests; % alternative species	total cost installed	verification of mfr take-back/reclamation program	% low VOC adhesives	% mfr in USA; % mfr within 500 mile radius of project site
Division 13								
Division 14								
elevators	14 20 00	14200	Motor Master assessment	% biobased hydraulic fluids	total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
Division 15-30								
plumbing fixtures & equipment	22 40 00	15400	% reduction in water use from baseline (Energy Policy Act 1992); % FEMP-designated products		total cost installed			% mfr in USA; % mfr within 500 mile radius of project site

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

HVAC	23 70 00	15700	compliance with EPA's Significant New Alternative Policy (SNAP) listing for refrigerants; indicate type(s) and quantity of refrigerants; estimate annual Δ CO ₂ based on average 1.341 lbs of CO ₂ produced per kWh of electricity used		total cost installed; indicate EER (Energy Efficiency Rating) for equipment	% total energy requirements obtained from grid	verification of building utility meters to track and continuously optimize performance	% mfr in USA; % mfr within 500 mile radius of project site
lighting	26 50 00	16500	% Energy Star or FEMP-designated products	% low-mercury lamps	total cost installed; % occupancy sensor and/or dimming controls			% mfr in USA; % mfr within 500 mile radius of project site
Division 31-40								
stormwater management by compost	31 25 73	02635	% Δ estimated soil productivity before & after compost (assume 12 month application)	% biobased content	total cost installed	estimated stormwater retention rate		% mfr in USA; % mfr within 500 mile radius of project site
soil treatment	31 31 00	02360	gallons termiticide avoided	relationship to adjacent & connected: water table, natural waterways and watersheds	total cost installed			

Whole Building Design Guide
Federal Green Construction Guide for Specifiers

bases, ballasts & pavement	32 10 00	02700		% recycled content	total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)			% mfr in USA; % mfr within 500 mile radius of project site
porous paving	32 12 43	02795	minimum permeability rate	% recycled content	total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)	estimated stormwater retention rate		% mfr in USA; % mfr within 500 mile radius of project site
constructed wetlands	32 71 00	02670		estimated gallons water diverted from public treatment system annually	total cost installed			estimated carbon sinking in metric tons; Δ water quality for wetlands and public water supply in BOD, TSS and fecal coliform
planting irrigation	32 84 00	02810	% reduction in water use from baseline (Energy Policy Act 1992)		total cost installed			% mfr in USA; % mfr within 500 mile radius of project site
planting	32 90 00	02900	% reduction in water use from baseline (Energy Policy Act 1992)	s.f. native landscaping; primary type(s) of ecosystems on site; primary type(s) of connection to wildlife corridors	total cost installed; albedo average as per ASTM E1918 (field test) and/or ASTM E903 (lab test)	estimated stormwater retention rate; primary type(s) of ecosystem functions (i.e. biofiltration, pollinator support, habitat, etc.)	types of uses, estimated # daily users	estimated carbon sinking in metric tons

Whole Building Design Guide
 Federal Green Construction Guide for Specifiers

rainwater harvesting	33 16 20	11201	% reduction in water use from baseline (Energy Policy Act 1992)		estimated annual rain water collection in gallons; % estimate rain water used in lieu of public supply	estimated stormwater retention rate		% mfr in USA; % mfr within 500 mile radius of project site; Δ water quality for rain water harvested and public water supply in BOD, TSS and fecal coliform
Division 41-49								
water reuse	44 40 10	11202	% reduction in water use from baseline (Energy Policy Act 1992)	estimated gallons water diverted from public treatment system annually	total cost installed			Δ water quality for reclaimed water and potable water supply in BOD, TSS and fecal coliform
renewable energy systems	48 14 00; 48 15 00	13600	% Δ CO2 emissions with & without renewable energy systems; estimated annual CO2 savings due to renewable energy systems based on average 1.341 lbs of CO2 produced per kWh of electricity generated		total cost installed; estimated annual energy generation in Btus; % estimate renewable energy used in lieu of public supply	% total energy requirements obtained from renewable energy systems; % total energy requirements obtained from grid		% mfr in USA; % mfr within 500 mile radius of project site

END OF SOLICITATION