INTERAGENCY SUSTAINABILITY WORKING GROUP

Past Accomplishments, Current Priorities, and New Opportunities

February 2009

CONTENTS

Introduction

The Interagency Sustainability Working Group (ISWG) is the coordinating body for sustainability of the built environment in the federal sector. The ISWG was formed by Presidential Executive Order in 2001.[1] It is one of seven workgroups that report directly to the Executive Order 13423 Steering Committee.[2]

Building and operating federal facilities in a sustainable manner has numerous benefits. Sustainable federal facilities provide:

- optimized life-cycle cost-effectiveness, saving taxpayer dollars;
- safe and healthy workplaces for federal employees through enhanced indoor environmental quality;
- reduced environmental impact through reduced energy, water, and materials use; and
- demonstrable demand for such facilities, which helps move the overall market toward higher performance buildings.

These benefits have been documented in the ISWG publication "The Business Case for Sustainable Design in Federal Facilities."[3]

The ISWG's mission is to lead the federal government's implementation and integration of sustainable building laws, regulations, presidential directives, and other federal policies. Approximately 60 active members participate in the ISWG, including at least one representative from every major federal department and agency[4], and the ISWG email list serve now has over 300 individuals. ISWG meetings provide a venue for educational programs on relevant subjects, allowing members to discuss issues and exchange information related to each agency's accomplishments. This interagency coordination allows best practices to disseminate throughout the federal government. The ISWG also provides opportunities for agencies to participate with the private sector in technical activities such as standard setting, tool and resource development, and market capacity building.

A clear application of this mission can be found with the passage of the American Recovery and Reinvestment Act. The ISWG provides a venue to assist agencies in meeting the requirements

---

[1] Executive Order 13123 – *Greening the Government through Efficient Energy Management* established the Interagency Sustainability Working Group as a subgroup of the Federal Interagency Energy Management Task Force.

[2] These workgroups are enumerated in the Instructions for Implementing Executive Order 13423 – *Strengthening Federal Environmental, Energy, and Transportation Management*, issued January 2007.

[3] This and other documentation can be found at http://www.eere.energy.gov/femp/sustainable/sustainable_federalfacilities.html

[4] Participating agencies include the Department of Agriculture, Department of Commerce, Department of Defense (including all services), Department of Education, Department of Energy, Department of Health & Human Services, Department of Homeland Security, Department of Housing and Urban Development, Department of Interior, Department of Justice, Department of Labor, Department of State, Department of Transportation, Department of Treasury, Environmental Protection Agency, General Services Administration, Internal Revenue Service, National Aeronautics and Space Administration, Office of Management & Budget, Office of the Architect of the Capitol, Office of the Federal Environmental Executive, Postal Service, Smithsonian Institution, Tennessee Valley Authority, and Veterans Affairs.

set forth in this law, especially with regard to incorporating sustainability into projects. The ISWG and the federal agencies have been leaders in transforming the green building market, and this law presents great opportunity to enhance that role.

The ISWG's mission is also in line with Executive Order 13423, which charged the ISWG to:

- serve as a forum for information exchange and promote agency implementation of goals for high performance and sustainable building;
- develop policy and reporting guidance that fosters the widespread adoption of sustainable design and operations in the federal sector; and
- develop technical guidance and tools to support implementation of agency sustainability policies for federally owned, operated, and leased buildings.

To accomplish these objectives, the ISWG, which is chaired by the Department of Energy's Federal Energy Management Program (FEMP), meets bimonthly and forms subcommittees as necessary.[5] The group works closely with the Office of Management and Budget (OMB) and the Office of the Federal Environmental Executive (OFEE), who provide oversight on Executive Branch Management Scorecards and implementation of Executive Order 13423 (see Figure 1).

The ISWG also coordinates closely with the General Services Administration's (GSA) Office of Federal High Performance Green Buildings[6] in establishing guidance and priorities, while

Figure 1 – Organization of Federal Sustainability

[5] Matthew Gray is the current Chairman of the ISWG, and can be reached at: Matthew.Gray@ee.doe.gov, (202) 586-0067.

[6] Section 436 of the Energy Independence and Security Act of 2007 establishes this office within GSA, and requires that it coordinate with DOE's Office of Commercial High Performance Green Buildings.

communicating as well with the other E.O. 13423 Working Groups and relevant government programs, such as EPA's Green Building Programs. Finally, by working with agency-level sustainability managers and technical experts from government and the private sector, the ISWG works to meet the needs of building and energy managers, agency headquarters staff, and policy makers alike. Examples of non-governmental stakeholders include the U. S. Green Building Council (USGBC), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the Sustainable Buildings Industry Council. Public-private partnerships are also integral to the ISWG and federal sustainability, such as the Labs for the 21st Century (Labs21) program.

Highlights of ISWG accomplishments include:

- coordinating and consolidating agency policies and best practices for implementing sustainable design and construction practices;
- developing and implementing the Memorandum of Understanding on Federal Leadership in High Performance and Sustainable Buildings (2006);
- providing recommendations and assisting in the issuance of the High Performance and Sustainable Building Guidance (2008);
- developing the High Performance and Sustainable Building Technical Guidance and other tools and resources; and
- fostering significant progress towards a sustainable federal government.

In recognition of its accomplishments, the ISWG received a 2007 White House Closing the Circle Award for Leadership in Environmental Stewardship.

Accomplishment Highlights

Coordinating Agency Policies and Best Practices

The ISWG public web site[7] provides tools and resources to assist agencies with meeting the requirements in EO 13423 and other legislative mandates. The site includes links to federal agency sustainability web sites, existing building assessment tools, and agency sustainable building implementation plans. Additional content such as access to electronic publications, working group meeting minutes and presentations are also posted to the site.

Through the Federal Energy Management Program, the ISWG provides periodic free trainings and technical tours for federal employees. Examples of past trainings include a technical workshop on the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Existing Building rating system and Energy Star's Portfolio Manager.

Finally, the development of the Whole Building Design Guide[8] (WBDG) was led by federal agencies and supported by the ISWG. The WBDG continues to be a leader in market

[7] http://www.eere.energy.gov/femp/sustainable/sustainable_workinggroup.html

[8] http://www.wbdg.org

transformation in sustainability, with over 50,000 downloads per day. Technical guidance on numerous design and construction issues related to sustainability can be found on the site.

Memorandum of Understanding on Federal Leadership in High Performance and Sustainable Buildings (2006)

To obtain voluntary commitments from federal agencies to implement sustainable building design practices in their buildings and facilities, the ISWG began drafting an Interagency Memorandum of Understanding (MOU) in 2003. The resulting MOU on Federal Leadership in High-Performance and Sustainable Buildings has provided common strategies for sustainable planning, designing, building, operating, and maintaining of buildings throughout the federal government. As shown in Figure 2, the MOU includes five "*Guiding Principles*" that link directly to the triple bottom line of sustainable design and development and set standard federal goals on how to:

1. Use Integrated Design,[9]
2. Optimize Energy Performance,
3. Protect and Conserve Water,
4. Enhance Indoor Environmental Quality, and
5. Reduce Environmental Impact of Materials.

These efforts of the ISWG culminated in a White House Summit on Federal Sustainable Buildings on January 24 and 25, 2006, where 21 departments and agencies voluntarily signed the MOU. The MOU commits signatory agencies to incorporate and adopt, as appropriate and practical, the five *Guiding Principles* into existing agency policy and guidance within 180 days of signature. The signing of the MOU marks the first interagency effort supporting sustainable design practices in federal facilities. As such, it represents a historic step in creating a sustainable federal government and serves as a lynchpin for the sustainable building provisions in EO 13423.

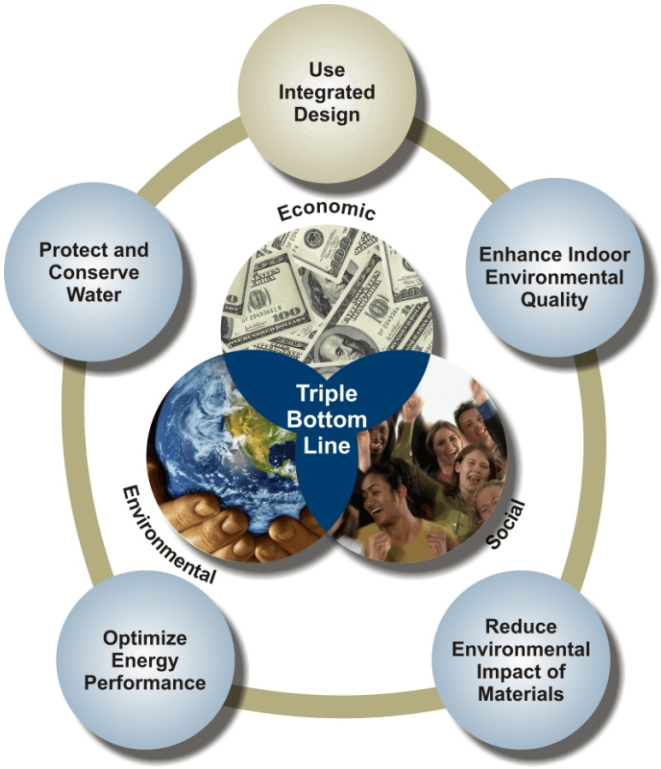

Figure 2 – The Guiding Principles and the Triple Bottom Line

[9] In the *Guiding Principles* for Sustainable Existing Buildings, the principle is titled "Employ Integrated Assessment, Operation, and Management Principles."

High Performance and Sustainable Building Guidance (2008)

Section 2(f) of EO 13423 directs all agencies to comply with the *Guiding Principles* for major renovation and new construction projects. The EO also requires that 15 percent of each agency's federal capital asset building inventory incorporate the *Guiding Principles* by 2015. Most agencies will not only need to address their new construction, but also much of their existing building stock to meet this 15 percent goal. To clarify this requirement for federal agencies, the ISWG developed a new set of *Guiding Principles* for existing buildings, an update to the *Guiding Principles* for new construction and major renovation, and guidance on how to calculate and report progress towards the sustainability goal. This effort led to sustainable building guidance issued in December 2008 by OMB, in consultation with OFEE.

High Performance and Sustainable Building Technical Guidance

The Technical Guidance Task Group of the ISWG, made up of ISWG members from across the federal government, posted its initial guidance on the Whole Building Design Guide web site in June 2006.[10] This technical guidance has been instrumental in assisting federal agencies implement EO 13423 and the *Guiding Principles* by providing practical advice for designing, operating, commissioning, and monitoring sustainable new and existing buildings in the federal sector. This technical guidance will continue to be updated by the ISWG with any new developments in sustainability and to respond to new regulations and legislation.

In collaboration with OFEE, the ISWG completed a Model Program Implementation Plan for the MOU on Federal Leadership in High-Performance and Sustainable Buildings. Sustainable Building Implementation Plans are now required by EO 13423, and continue to become more refined as each agency's sustainability program progresses.

The ISWG also supports other important forms of technical guidance, such as FEMP's High Performance Federal Buildings Database[11], which as of December 2008, contained 46 case studies showcasing sustainable building projects in the federal government. FEMP, with the support of the ISWG, has developed numerous other technical resources.[12]

Federal Progress in Sustainability

There has been significant progress in federal sustainability since the start of the ISWG. One measure of that progress is the number of buildings certified under the USGBC's Leadership in Energy and Environmental Design (LEED®) rating system. As of the end of 2008, there were 123 certified federal LEED® buildings, totaling about 14 million square feet, and located in 19 different federal agencies. Of this total, five buildings gained LEED® for Existing Buildings certification and four gained LEED® for Commercial Interiors certification, indicating that the vast majority of certified buildings to date have been for newly constructed buildings. Year after year, the number of federal LEED® certified buildings, and their associated square footage, continues to increase, while the amount of federal construction remains relatively steady (see

[10] http://www.wbdg.org/references/sustainable_eo.php

[11] http://femp.buildinggreen.com/

[12] http://www1.eere.energy.gov/femp/sustainable/sustainable_resources.html

Figure 3). Moreover, federal LEED buildings represent over 5 percent of all LEED certified buildings, whereas federal buildings in total make up about 1.5 percent of all buildings in the U.S. All of this indicates that the federal government is helping lead the way by investing in its buildings in a smarter, more environmentally friendly manner, and not simply riding a wave of increased new construction.

Since 2006, there have been about 950 federal LEED® registered projects as well, with about 570 coming in 2008 alone. While some of these registered projects may not eventually earn certification, the sheer volume indicates that the incorporation of green features into federal new construction is becoming more business-as-usual. There are also approximately 200 federal buildings that have an Energy Star rating, which verifies that these buildings are in the top quartile nationwide in terms of energy efficiency for their particular building type.

These statistics make it clear that federal sustainability is on the rise. Much of this progress is due to champions at the facility level, as well as to policies that agencies have put into place. For example, there are currently 13 agency or department level policies that require some level of LEED® certification for new construction, representing the vast majority of federal buildings. Beyond these numbers however, progress has occurred throughout federal government in many different areas, including each of the ISWG priorities highlighted in the next section.

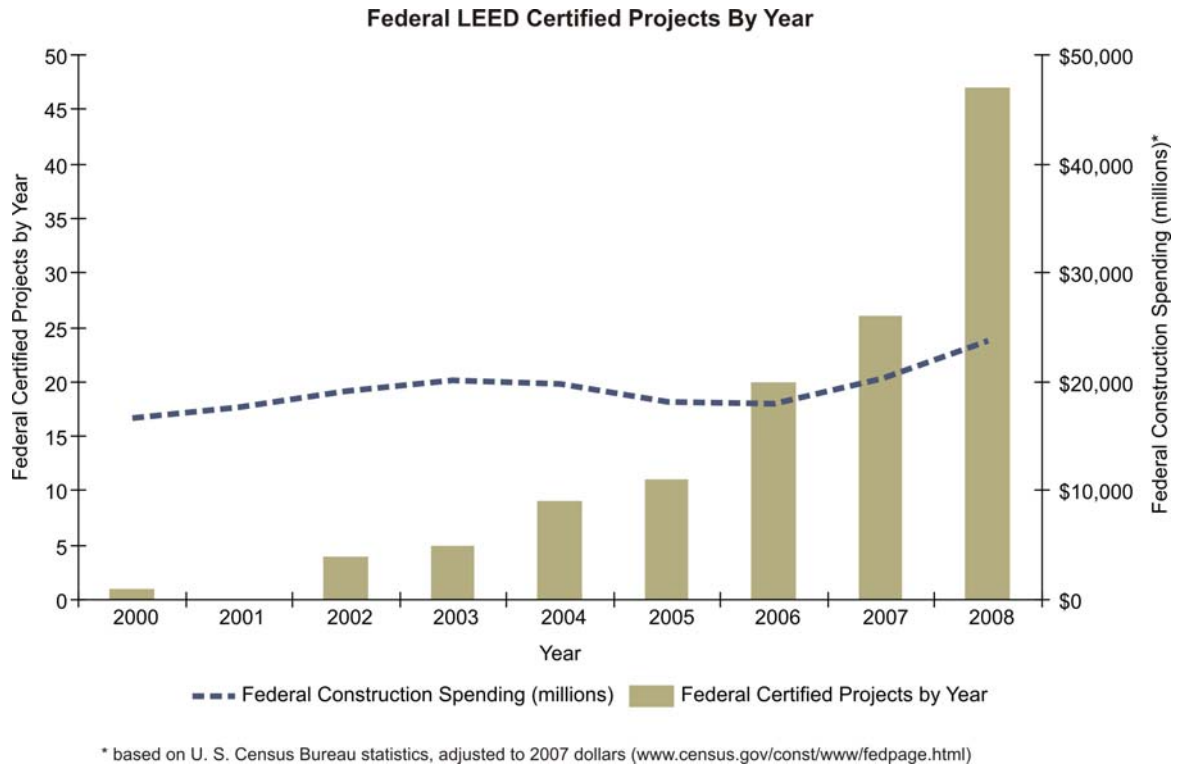

Figure 3 – Federal LEED Certified Projects by Year compared to Total Federal Construction Spending

ISWG Priorities Going Forward

While the ISWG has been instrumental in establishing the framework for federal sustainability, much work still needs to be done to scale up sustainable initiatives across the government and make design and operation of sustainable buildings a standard part of government practice. To facilitate this transition, the ISWG has identified the following priorities for 2009 and going forward:

1. Make Sustainability the Standard Practice;
2. Transform the Existing Built Environment by Integrating Sustainability into Campus and Portfolio Management;
3. Measure and Verify Building Performance; and
4. Institutionalize Greenhouse Gas Management and Abatement.

1. Make Sustainability the Standard Practice

It is the policy of the United States, as directed by Executive Order 13423, that Federal agencies support their respective missions in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. While there has been considerable innovation in design and technology, the implementation of sustainable technologies faces cost obstacles because of continued application of traditional cost analysis methods that give preference to less than sustainable solutions.

In recent years, studies by GSA[13], Davis Langdon[14,15], and others suggest that the actual construction cost impacts of building green (as defined by the LEED® Rating System) may be negligible, and costs are as likely to vary by building function as by "green-ness", yet these green buildings yield better performance.[16] A key component of this low cost impact is integration of sustainability principles throughout the design and construction process. This integration needs to be expanded throughout the decision-making processes of government. While conventional budgets can be applied in innovative ways for "greener" results, they are not always sufficient, depending on building type/function, location, and size. Our standard operating practices must be

---

[13] "[T]he range of estimated construction cost impacts for the Certified and Silver rated scenarios falls below the 5% estimating accuracy that would normally be expected of early conceptual estimates. In addition, the construction cost impacts for all of the rated scenarios, including Gold, fall below the 10% design contingency that is carried in most GSA project budgets at the concept phase." For more information see the "2004 GSA LEED® Cost Study" (p. 8 at http://www.wbdg.org/ccb/GSAMAN/gsaleed.pdf), and Davis Langdon's "The Cost of Green Revisited" (http://www.davislangdon.com/USA/Research/ResearchFinder/2007-The-Cost-of-Green-Revisited/).

[14] Matthiessen, LF. 2004. Examining the Cost of Green. Greenbuild 2004 International Conference and Expo Proceedings, Portland, Oregon. http://www.davislangdon.com/upload/images/publications/USA/The%20full%20report.pdf

[15] Matthiessen, LF and P Morris. 2004. Costing Green: A Comprehensive Cost Database and Budgeting Methodology. Davis Langdon, Santa Monica, California. http://www.davislangdon.com/upload/images/publications/USA/2004%20Costing%20Green%20Comprehensive%20Cost%20Database.pdf

[16] Fowler, KM and Rauch, EM 2008. Assessing Green Building Performance: A Post Occupancy Evaluation of 12 GSA Buildings. Pacific Northwest National Laboratory. Richland, Washington. PNNL-17393. URL: http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/oaspublications_R2-mQC1_0Z5RDZ-i34K-pR.pdf

re-examined and changed if we are to regularly make the optimal investment decisions to meet the goals of EO 13423.

The need to make appropriate investment decisions has been brought to the fore by passage of the American Recovery and Reinvestment Act. This law allocates billions of dollars to multiple agencies for the rapid greening of federal buildings, thereby creating green jobs, saving taxpayer money, improving employee health, enhancing our energy security, and significantly reducing greenhouse gas emissions. This presents a great opportunity for many agencies to pursue a large backlog of projects, but also a significant challenge to implement these projects not only quickly, but in the most sustainable way possible. To meet the President's objectives and existing federal goals, the process for implementing projects must place sustainability as a primary consideration.

To address the budgeting, financing, and management issues related to sustainability, the ISWG has identified some recommended steps:

- Support agencies in meeting the requirements set forth in the American Recovery and Reinvestment Act, especially with regard to incorporating sustainability into projects.
- Apply budgeting and life cycle costing methods that support sustainability improvements through retrofits and major improvements to older facilities.
- Take advantage of green building incentives to the greatest extent practical. One example is the energy efficient commercial buildings tax deduction in the Emergency Economic Stabilization Act of 2008, which includes an assignable deduction for public buildings.
- Recognize that capital budgets may have to increase to lower overall government expenditures. While sustainable buildings have lower life-cycle cost to own and operate, improvements to bring existing federal buildings to a base level of sustainability require capital expenditure. These capital investments often fall victim to budget reductions that do not recognize the long-term cost increases associated with the short-term budget cuts.
- Align sustainability goals with budget examination. This may require additional changes to the OMB management process. To more closely align with the CPIC process, it may be advantageous to expand the OMB Circular A-11, Form 300 (and modified Form 300s) to indicate whether or not the proposed building meets the *Guiding Principles*.
- Along with making a minimum level of sustainability the standard practice throughout the government, support innovation and communicate its results. Examples include utilization of the *Global Reporting Initiative*[17] and designing to the *Living Building Challenge*[18].
- Reduce the budgeting and planning gap between design & delivery and operations & maintenance.

In general, federal- and agency-level policies and procedures need to be examined to make sustainability the standard practice. Each time sustainability becomes the default case instead of the exception in a decision-making process, the federal government moves closer to realization of the goals of EO 13423 and legislative requirements related to federal sustainability.

---

[17] The Global Reporting Initiative established the Sustainability Reporting Framework to provides guidance for organizations to comprehensively disclose their sustainability performance. Visit: www.globalreporting.org/

[18] The Living Building Challenge, developed by the Cascadia Region Green Building Council, attempts to raise the bar and define a closer measure of sustainability in the built environment, using a benchmark of what is currently possible to serve as role models for others to follow. Visit: www.cascadiagbc.org/lbc

2. Transform the Existing Built Environment by Integrating Sustainability into Campus and Portfolio Management

The federal community is committed to integrating sustainability into its retrofits, operations and maintenance activities, and to having 15 percent of each agency's portfolio meet the Guiding Principles by 2015. In energy alone, the opportunities are tremendous, as the federal government spent $6.5 billion[19] for energy used in federal facilities in 2006. Great opportunities also exist for improving air quality and environmental health, increasing employee productivity, reducing water consumption, and creating a more sustainable supply chain in the federal government.

While understanding the focus that needs to be on existing buildings, it is also necessary to move beyond building-by-building approaches to programs that reach the entire federal building stock. Campus and portfolio programs encourage uniform policies and practices across a set of buildings, either at a given location (campus) or of a given building class (portfolio). This approach offers a useful construct for exceeding present guidance by utilizing "systems" thinking, where plans are centered on shared sustainable actions that are linked together and managed in a coordinated manner. This allows for greater energy, environmental, and social benefits than could be achieved with an approach that focuses on contributions from individual buildings. To accomplish this coordination, agencies are increasingly integrating sustainability into real property asset management and environmental management systems.

Agency Asset Management Programs integrate the planning, construction, deferred maintenance, and sustainability of constructed assets into the capital planning and budget decision making process, in accordance with Executive Order 13327, Federal Real Property Asset Management. Potential for mutually beneficial integration of asset management and sustainable buildings goals primarily occurs in two main areas of agency capital asset programs: the Capital Planning Investment Control (CPIC) process and the reporting requirements of the Federal Real Property Profile (FRPP).

The FRPP is the inventory system that contains data on all federal real property assets within and outside the United States, including improvements on federal land. To track sustainability achievements, the Federal Real Property Council, which oversees the FRPP, added a sustainability data field to record which buildings have met the Guiding Principles. This will provide a central location for tracking progress toward sustainable buildings goals and prevent duplicative reporting.

Executive Order 13423 directs agencies to use Environmental Management Systems (EMS's) as a tool to pursue environmental policy and goals, including those for sustainable design and high performance buildings. EMS's are a set of processes and practices that enable an organization or facility to reduce its environmental impacts and increase its operating efficiency. The inclusion of sustainable practices in the EMS's can support and enhance the process of bringing existing buildings into compliance with the *Guiding Principles*.

In order to assist in comprehensively and sustainably transforming the existing building stock, The ISWG plans to work in the following areas:

---

[19] See the FEMP Annual Report, 2006: http://www1.eere.energy.gov/femp/pdfs/annrep06.pdf

- Explore development of a web-based sustainable building assessment tool (or checklist) for use by federal agencies that takes advantage of common needs across the agencies. This tool could allow agencies to track the progress of individual buildings as well as portfolios of buildings in meeting the *Guiding Principles*. The tool could provide standard compliance criteria for meeting each guiding principle, including sample documents and policies that illustrate compliance.
- Continue to support federal sustainability goals with guidance and tools that enable agencies to maximize their limited resources to most effectively incorporate sustainability across their building portfolios. Successfully implemented sustainability guidance assists agencies in meeting almost all of the Executive Order goals. Additional guidance may be necessary on calculating each agency's sustainability percentage and reporting buildings to the FRPP.
- Emphasize training and/or succession plans for facilities management staff that cultivate the core competences necessary to effectively operate increasingly complex building systems.[20]
- Identify and exchange best practices on reporting sustainability in the FRPP.
- Establish and exchange best practices for incorporating sustainability into EMS.
- Eliminate barriers to incorporating sustainable design into historic buildings, medical facilities, and other challenging building types.

3. Measure and Verify Building Performance

Put simply, earning LEED certification and sustainably transforming our existing built environment is not enough. Although there has been a dramatic increase in the number of buildings being designed to sustainable design principles, there has been very little assessment of whether these buildings are meeting the design expectations and are in fact performing better than conventional buildings. There have also been questions regarding which design features and/or strategies are offering the best performance for the investment. Performance measurement of sustainably designed buildings is needed to inform building operations and future building designs. A whole building performance measurement data collection and analysis protocol was developed to provide a consistent, easy-to-use method for federal agencies to assess building performance.[21] The metrics include water, energy, maintenance and operations, waste generation, occupant satisfaction, and occupant transportation, each of which relate to the triple bottom line of sustainability introduced previously. So far, this protocol has been used to assess more than a dozen sustainably designed federal buildings, and additional assessments are underway for the Army, the Department of Energy, and an additional set of GSA buildings. The initial studies have shown that the protocol offers a valid assessment method, and for the buildings studied, most perform better than industry standards. There is a need for a greater data set for the analysis to be considered statistically valid.

As discussed, one of the challenges with integrating sustainable design practices in to the federal government is addressing the first cost funding challenges. Measured data on the whole building

---

[20] Core Competencies for Federal Facilities Asset Management Through 2020: Transformational Strategies, National Research Council, 2008.

[21] Fowler, K.M., A.E. Solana, and K. Spees. 2005. Building Cost and Performance Metrics: Data Collection Protocol. PNNL-SA-15217. Pacific Northwest National Laboratory, Richland, Washington. URL: http://www1.eere.energy.gov/femp/pdfs/pnnl15217.pdf

performance of sustainably designed buildings is needed to provide life cycle impact information to building managers, sustainable design professionals, and the financial personnel responsible for submitting or accepting budgets for design projects. Other key audiences that will benefit from this information include technical personnel responsible for designing new buildings and agency management responsible for approving design concepts and budgets.

In order to assist in comprehensively assessing the whole building performance of sustainably designed buildings, the ISWG can oversee the following efforts:

- Compile performance measurement data from multiple agency assessments to examine trends of larger data set of sustainably designed buildings.
- Explore development of a "dashboard" for whole building performance that provides a clear assessment of performance for a building, campus, or portfolio of buildings.
- Support development of a publicly available database to manage whole building performance measurement data for analysis using the protocol methodology.
- Communicate the findings of the performance measurement studies to key stakeholder groups, in order to inform the budgeting and planning cycles, as well as design and operations professionals.

4. Institutionalize Greenhouse Gas Management and Abatement

The two principal causes of greenhouse gas (GHG) emissions from the federal government are energy consumption for and by buildings, and transportation/fuel consumption. The federal government operates about 500,000 buildings, equaling over 3 billion square feet, and 630,000 vehicles worldwide, making it the largest single U.S. energy consumer (1.5 percent of US total energy) and greenhouse gas emitter (6 percent of CO_2 emissions). The President has been clear that mitigating climate change and enhancing the nation's energy security is a top priority and that the federal government's leadership by example is key in this regard. Moreover, any federal GHG requirements, and their subsequent implementation, can be vitally important in informing national U.S. Climate legislation, along with policies on integrated electric grid management, electric vehicle use, and integration of renewable energy. If the federal government is required to reduce emissions in advance of the rest of the nation, the lessons learned in the intervening time period may prove invaluable.

To meet current requirements related to federal energy management, and any future goals on greenhouse gases, the ISWG can play a key role in implementation. One key piece of legislation is the Energy Independence and Security Act (EISA), Section 433, which states that new construction must reduce fossil fuel-based energy consumption by 55 percent in 2010, and increasing gradually to 100 percent reduction in 2030. The previous requirement for new construction in the Energy Policy Act of 2005 calls for 30 percent reductions beyond the energy standard, ASHRAE 90.1-2004. EISA not only links new construction goals to energy consumed from fossil fuels, thereby tying requirements more closely to GHGs emitted, but also now compares consumption to the similar building type found in the Commercial Buildings Energy Consumption Survey (CBECS).

Any GHG goal for reducing the government's carbon footprint will require a comprehensive protocol for baselining and measuring agency GHG emissions. Unlike current measurements, such as measuring the energy intensity of buildings, which are focused on one aspect of agency

operations, GHG measurement provides a common metric that can integrate the entirety of an organization's activities. This metric is not only more comprehensive in nature, but also more directly links to mitigating climate change.

At a minimum, GHG accounting includes direct (e.g. fuel consumption on-site and in vehicles) and indirect (e.g. purchased energy) effects; however, the potential exists for a more complete understanding of the federal GHG impact by accounting for additional activities, such as employee and contractor travel and the supply chain of purchased products and outsourced activities. Numerous measurement protocols currently exist, including the *GHG Protocol: A Corporate Accounting and Reporting Standard*, developed by the World Resources Institute and World Business Council for Sustainable Development, which is probably the most widely-used globally. Other key protocols include a series developed by the International Organization for Standardization (ISO), the DOE/EIA 1605b program, and the EPA Climate Leader's program.

While measuring GHG emissions more comprehensively is a clear need, it all goes for naught unless those emissions are significantly reduced. An organizational structure in the federal government around GHGs is necessary to develop comprehensive guidance, as well as the tools and resources necessary to aid the agencies in calculating and reducing emissions. The ISWG, or a subcommittee with full agency representation, can act as a key part of that structure.

Depending on the framework established for reducing federal GHG emissions, the ISWG can work in the following areas:

- Develop guidance and tools for implementing EISA Section 433 on new construction, and track compliance.
- Provide recommendations for establishing a single GHG measurement protocol for use across the government that is applicable for capturing the diverse array of activities that comprise the U.S. government, and pilot the protocol at multiple federal agencies.
- Establish guidance for developing agency-level GHG management plans that aligns with any federal requirements and roadmap for federal-wide GHG reductions.
- Provide GHG management tools, resources, and training to federal agencies as necessary, such as training on completing agency- and site-wide emissions inventories, reporting agency-level GHG emissions, and developing and implementing GHG management plans.

Conclusion

Over the past eight years, the ISWG has played a key role in developing, harmonizing, and implementing policies that have fostered significant progress in creating a sustainable federal government. This role has been crucial in establishing the framework for federal sustainability, but much work remains to scale up sustainable initiatives across the government and incorporate sustainability as standard practice. As can be seen in the four ISWG priorities going forward, it is clear that some good work must continue progressing, while other new priorities must begin to take center stage. The wide world of federal sustainability continues to evolve rapidly, so the ISWG will remain flexible in helping agencies meet new requirements and by incorporating the full scope of sustainability into agency projects.