Federal Participation in LEED

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INTRODUCTION

The federal government has been an active participant in the development and use of USGBC's Leadership in Energy & Environmental Design Green Building Rating System (LEED). This paper presents a review of this participation and some expectations for ongoing partnership.

CERTIFIED FEDERAL BUILDINGS

US federal agencies have certified 16 federal buildings under LEED: three buildings using the LEED-NC v1 certification system and 13 certified under LEED-NC v2 (as of October 15, 2004). Table 1 lists federal buildings that have been certified, the sponsoring agency, and the certification level achieved.

Table 1 Federal buildings certified under LEED-NC through October 15, 2004

Federal Agency	Project	Certification Level
Department of Defense –Air Force	Physical Fitness Center, Barksdale Air Force Base,	Bronze v1
Department of Defense –Navy	Bachelor Enlisted Quarters, Great Lakes Training Center	Certified v1
Environmental Protection Agency	New England Regional Laboratory	Gold v1
Department of Commerce – National Weather Service	West Coast and Alaska Tsunami Warning Center	Certified v2
Department of Commerce – National Weather Service	Weather Forecast Office, Maine	Silver v2
Department of Defense – Pentagon	Metro Entrance Facility	Certified v2
Department of Defense – Pentagon	Pentagon Athletic Center	Certified v2
Department of Energy	Argonne National Laboratory, Central Supply Facility	Silver v2
Department of Energy	Bonneville Power Administration, Ampere Annex	Silver v2
Department of Energy	Oak Ridge National Laboratory, East Campus Modernization	Certified v2
Department of Interior – National Park Service	South Rim Maintenance & Warehouse Facility	Certified v2
Department of Transportation – Federal Aviation Administration	Seattle Terminal Radar Approach Control	Gold v2
Environmental Protection Agency	EPA Science and Technology Center	Gold v2
General Services Administration	Social Security Administration Child Care Center, Baltimore	Certified v2
General Services Administration	Social Security Administration Annex Building Renovation, Baltimore	Certified v2
General Services Administration	US Federal Courthouse, Youngstown, OH	Certified v2

The federal government was an early adopter of LEED-NC, as shown by the three v1 projects certified. Only 19 projects overall were certified using the LEED-NC v1 certification system. Federal projects have continued to adopt LEED at a high rate – the percentage of LEED-certified federal projects (16 of 149 total projects, or roughly 11%) is almost an order of magnitude higher than the percentage of federal buildings in the US building stock (1%-2%).

REGISTERED FEDERAL BUILDINGS

In addition to the federal building projects that have already been certified, a significant number of projects have committed to using LEED in the future. Table 2 shows federal projects listed in the USGBC LEED registration database as of October 15, 2004, sorted by agency.

Table 2 Federal buildings registered for LEED participation, by agency

Agency	Number of Registered Buildings
Department of Commerce	1
Department of Defense	3
Department of Defense – Air Force	8
Department of Defense – Navy	14
Department of Energy	12
Department of Health and Human Services	1
Department of Homeland Security	1
Department of Interior	2
General Services Administration	21
NASA	4
Total	67

This is a significant commitment by federal agencies to sustainable construction practices. Furthermore, the figures above may under-represent the total number of federal projects, as the registration of projects sometimes makes it difficult to identify a federal agency as the ultimate building tenant. Given the numbers for which we can be sure of federal involvement, the percentage of federal registered buildings to the total number of registered projects (67 of 1633, or ~4%) is roughly double the prevalence of federal buildings in the US stock. This high registration rate demonstrates that the pace of sustainable construction in the federal sector will continue to remain high in the near future. As discussed in the next section, policies are now being put into place to continue that sustainable construction pace beyond those buildings currently built or under construction.

FEDERAL AGENCY POLICIES

The number of LEED-certified and LEED-registered federal buildings is substantial, but how has this been achieved? Early sustainable construction projects in the federal sector benefited from champions to push a new way of construction through the bureaucratic process. Newer federal building projects are taking place in a changing policy environment. Federal agencies have developed a wide range of sustainable construction policies to disseminate sustainable construction practices throughout their construction programs. Eight federal agencies have made a policy commitment to sustainable building

practices using the LEED rating system. Agencies have committed to using LEED in different ways, ranging from informal use of LEED elements as a general guide or checklist to specific requirements that new buildings achieve a defined LEED rating level:

(1) use of LEED criteria on an *ad hoc* basis but with no stated LEED policy;

(2) use of LEED ratings as a "desired goal" for new construction;

(3) use of LEED as a goal, with the intent to require compliance in the future; and

(4) agency-wide requirements that new construction projects comply with LEED (with either third-party or self-certification.)

These agency policies are summarized in Table 3.

Table 3 Agency policies using LEED

Type of Policy	Agency	LEED Goal	Goal Notes
1) *Ad hoc*	Department of Interior	None	"Incorporating" LEED criteria, no goal
	Department of State	None	LEED elements written into RFPs & design guides
2) Desired goal	Department of Commerce – National Weather Service	Silver	"Shall strive for minimum of LEED Silver"
	NASA	Silver	Silver is baseline goal, Gold recommended where cost-effective
3) Future requirement	Department of Defense - Air Force	Certified	Required by FY '09, self-certified
	Environmental Protection Agency	Silver	Required by 2005
4) Current requirement	Department of Defense – Navy	Certified	Required now
	General Services Administration	Certified	Required now, Silver recommended

An example of the first policy type is the Department of State, which is writing selected LEED criteria into its RFPs and design guidelines for overseas construction (e.g., embassies and consulates). Even absent a whole-building or systems approach to sustainability, this *ad hoc* method can provide some level of attention to sustainable design features. The drawback is that, by focusing only on individual components, such projects may not achieve the synergies possible when a sustainable design concept is adopted early in the design process and applied to the project as a whole. For example, a component-based design criterion might specify a high-efficiency chiller for building cooling but fail to account for the significant benefits from energy-efficient building envelope, lighting, and HVAC distribution system features which could significantly reduce the size of the chiller needed.

Another example of the limited, selective use of LEED is the Department of Interior. While LEED is referenced in the Department's 2001 Energy Conservation Action Report, the policy guidance is not specific, saying only that Interior "will incorporate [LEED] as a self-assessing system." An example of this policy in practice is the National Park

Service, which recommends use of the LEED checklist during design. The incorporation of the LEED checklist encourages Park Service designers and contractors to use a holistic integrated design approach. It also may spur consideration of specific design objectives that would otherwise have gone unconsidered. Using LEED as a framework around which to establish design objectives is a good step forward toward sustainable design and construction of Park Service buildings. The result has been a LEED Certified rating for one Park Service building already.

The second type of LEED application recognizes the benefits of a system-level approach and uses USGBC's Green Building Rating System to provide a comprehensive framework for sustainable design, but the choice to adopt LEED as a design metric is made at the facility or sub-agency level. Examples include the National Weather Service within the Department of Commerce and the DOE National Laboratories. Both entities have built and are continuing to build LEED-certified buildings, but not in response to an agency-wide policy recommending or requiring LEED. (The National Weather Service does have a policy for all of its buildings, but the Department of Commerce as a whole does not.)

NASA has taken the step of providing a general goal for sustainable design throughout the agency, but as a suggested target rather than a requirement that all construction projects meet this goal – at least for the time being. To some extent, this may represent a first step on a path to eventual adoption of a LEED requirement. This "test and see" approach allows the agency's technical and management personnel to become familiar with the technical and procedural requirements of LEED compliance, and more comfortable with the incremental benefits and costs involved. A number of agencies that now fully embrace LEED for new construction have followed this route in the past. NASA recommends a relatively high level of performance for all new buildings (LEED Silver), and also has a goal of LEED Gold whenever this is cost-effective. NASA's experience with the projects currently registered in the LEED registration database will likely help determine agency goals going forward.

Beyond this second tier of LEED applications (i.e., recommended but not required), a few agencies such as the Air Force have announced their intent to meet LEED standards at a specific date in the future. (The Air Force will begin in FY 2009 to require the LEED Certified level for all construction, though a subset of "showcase facilities" are required to reach these goals now.) A delayed effective date may have the advantage of allowing agency staff and contractors sufficient lead time to prepare for the smooth and cost-effective application of LEED, for projects just now entering the planning pipeline. The EPA has taken a similar approach, although its LEED target level is one step higher and its effective date sooner (LEED Silver beginning in 2005). EPA has also shown that the anticipation of future policy implementation can inspire voluntary improvements even in the near term: that agency has already certified two new laboratories for LEED Gold.

The last group of agencies are currently requiring LEED compliance at various levels, for all new construction. Examples include GSA and the Navy, both of which currently require LEED compliance for new facility construction. The Navy requires that its

construction projects achieve the level of LEED Certified. GSA also requires LEED Certified, but takes the additional step of recommending LEED Silver as a design goal.

GSA has had success in meeting its goal and is now considering raising the GSA requirement to Silver. This would replace the current policy of requiring LEED Certified while recommending LEED Silver for new GSA buildings.

Beyond the direct impact on federal construction practices, federal agency policies have also had an indirect impact on the broader sustainable construction market. Federal, state, and local public agencies consider each other's experience with sustainable construction practices and policies. Numerous public/institutional entities have adopted LEED as a sustainability metric. Sustainable construction practices therefore become more pervasive throughout the country.

ONGOING PARTNERSHIP

In addition to the use of LEED-NC as a certification metric for construction projects and as a policy metric for agency construction goals, federal agencies have worked with USGBC to participate in the ongoing development of the Green Building Rating System. As mentioned above, federal agencies were active participants in the early stages of LEED-NC. In addition to adopting the LEED-NC metric, various federal actors have been involved in the development of other LEED products, including LEED for Existing Buildings, LEED for Multiple Buildings, LEED for Commercial Interiors, and LEED for Laboratories. All of these enhancements to the USGBC portfolio of building ratings allow more federal construction projects to benefit from the use of USGBC's sustainability metrics, and for the USGBC to benefit from the unbiased technical expertise of the agency representatives. Table 4 shows a list of LEED committees and agency participants.

Table 4 Federal participation in LEED committees, by agency

LEED Committee	Federal Participation
Technical Advisory Groups	
Energy & Atmosphere	DOE, EPA
Sustainable Sites	EPA, GSA
Materials & Resources	HUD
Water Efficiency	EPA
LEED Committees	
LEED for Commercial Interiors	GSA
LEED for Existing Buildings	DOD, DOI, GSA
LEED for Homes	DOD, DOE, HUD
LEED for Laboratories	DOE
LEED for Multiple Buildings	CDC, DOD
Technical Scientific Advisory Committee	DOE

CONCLUSION

Looking ahead, specific areas of collaboration between USGBC and various federal agencies may include:

- Data analysis of the performance of LEED-certified buildings. There is strong interest in confirming the benefits of LEED-certified buildings. Federal agencies will work with USGBC to collect data on the measured performance of LEED-certified buildings, evaluate the effectiveness of the LEED point system on achieving sustainable performance, and recommend areas in which LEED can be strengthened.

- Further streamlining of LEED documentation requirements to reduce certification costs. The cost of LEED certification is a significant issue for federal agencies, as it is often seen as a cost burden with no concomitant benefit. To the degree that documentation and certification costs for LEED compliance can be reduced, the burden of cost-justification in participating in LEED certification will be lessened.

- Strengthening the linkage between design, procurement, and construction, so that the sustainable designs that federal designers develop are carried through into the construction and operation of the building. Clear identification of specific sustainable construction products is one means of developing this link. Developing consistent procurement policies that make sustainable construction materials or practices the "default case" is another avenue to be pursued.

USGBC's LEED system has been widely adopted by federal agencies – through certification of completed construction projects, in registration of planned construction projects, and in dissemination of sustainable construction practices through agency policies. In addition, federal actors have played a role in the ongoing development of USGBC rating products and will continue to do so in future. The partnership between USGBC and federal agencies is strong, and the adoption of sustainable building practices is better for it.