

# Facilities & Infrastructure CONNECTIONS



## INSIDE THIS ISSUE:

Office Space Standard	2
PAS 55.1:2008	2
LEED 2012 Changes	3
Issue Web Links	3
National Bridge Inventory	4

## 6

*The number of gallons of water needed to produce one gallon of gasoline from oil shale*<sup>12</sup>

*Refining petroleum products in the United States uses 1 - 2 billion gallons of water each day*<sup>12</sup>

## 18

*The percentage of energy buildings built to ASHRAE Standard 90.1-2010 will avoid consuming as compared to ASHRAE Standard 90.1-2007, according to a Department of Energy study*<sup>16</sup>

## Making Sense of Green Building Credentials

High performance building subject matter experts can solidify their credentials through any one of several certifications depending on their role in the building's lifecycle. The Green Building Certification Institute, a subsidiary of the United States Green Building Council (USGBC) that manages the Leadership in Energy and Environmental Design (LEED) building certification, offers an entry level, test-based accreditation that covers the common elements from each LEED rating system.<sup>1</sup> Green Globes, another building rating



**Figure 1:** High Performance Sustainable Building credential seals

system, offers an application-based accreditation for assessors and professionals.<sup>2</sup> The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) offers a test-based

certification that pre-dates the release of ASHRAE 189.1-2009 but still broadly covers the same emphasis areas as LEED with much greater emphasis on energy conservation and commissioning.<sup>3</sup>

(Continued on page 3)

## Avoiding Real Property Costs: DOE's Part

On June 10, 2010, the President by memorandum committed civilian agencies to saving \$3B between fiscal years 2010 and 2012 through real property initiatives.<sup>7</sup> In response to that memorandum and specific guidance from

the Office of Management and Budget (OMB), the Department submitted in late July 2010, an asset level plan that would avoid net costs of \$247M. The plan offset the Department's significant disposition costs with some unique considerations; namely,

(1) the former Office of Civilian Radioactive Waste Management no longer receives appropriations and (2) the Environmental Management program receives mission funding for its disposition activities.

(Continued on page 4)

**6.5%**

*The percentage of  
Department building area*

**LEASED**

*According to the fiscal year  
2010 FIMS data*



*"Imagine the TV show 'The Biggest Loser,' only the contestants are big buildings, and instead of competing to shed unwanted pounds, it's a race to reduce unnecessary energy consumption."*

- Maura Beard, director of strategic communications for Energy Star, describing the Environmental Protection Agency's **National Building Competition**.

EPA announced its 2011 champion from a field of 245 on November 2, 2011.

Entrants saved in the course of the competition: <sup>13</sup>

\$5.2 million &

240 million kBtu

## An Office Space Standard for the Department

Although most agree that space standards seek the smallest, yet most efficient configuration for required activities in a building, opinions abound as to how to reach this goal. Most discussion in the literature pertains to administrative spaces. Space standards typically include an area target, but is the target a floor or a ceiling? Should area targets relate to seniority, level of responsibility, the nature of assigned tasks, or a combination of all three? Must space

standards address furniture, room layout, and features? Do any employees need private space? What about shared spaces like meeting rooms, corridors, storage areas, and restrooms? How do large organizations following implementation demonstrate improvements in productivity or decreases in costs?

On October 13, 2011, the Deputy Secretary issued a memorandum <sup>17</sup> asking

that administrative spaces for federal employees any of their collocated direct support contractors strive for an average (not a floor or a ceiling) of 200 square feet of useable area per person based on the definition appearing in ANSI / BOMA Standard Z65.1-2010. This memorandum seeks to advance this conversation on space standards through a performance target. Measurement discussions will follow.

**Ivan Graff** ✎

## Specification for Asset Management Goes ISO

The British Standards Institution (BSI) Publicly Available Specification (PAS) 55-1:2008 offers a performance standard for developing asset management plans based on a four phase life cycle: acquisition, utilization, maintenance, and renewal or disposal.<sup>10</sup> Originally prepared through the Institute of Asset Management, PAS 55.1-2008 will likely become an International Standards Organization (ISO) standard within a year. Compliant plans include: (1) policy, (2) strategy, objectives, and reference to local plans, (3) management enablers

and controls, (4) implementation actions, (5) performance assessment, and (6) management review. Each section addresses roles and responsibilities. The standard views asset management systems as

enablers and controls. According to a June 2011 article in Maintenance Technology, PAS 55.1-2008 has gained widespread acceptance in both the private and public sectors.

**Ivan Graff** ✎



Figure 2: PAS 55.1 Section References

## LEED 2012 Plans Category, Credit Changes

The U. S. Green Buildings Council (USGBC) completed its second public comment period in mid-August while targeting a planned publishing date of November 2011.<sup>11</sup> Likely changes include the expansion of the credit categories from seven to ten and prerequisites from nine to fourteen. The total possible credits would stay at 110. For the most part, new credit categories redistribute credits appearing in the current 2009 version. A new category, "Integrative Process," formalizes

synergistic planning that previously counted for innovation credits. Greater emphasis on the current "Sustainable Sites" category has led to a split into a new category "Location and Transportation" which adds two points to credit "Development Density." Similarly, commissioning and measurement oriented credits from categories "Water Efficiency" and "Energy and Atmosphere" appear in a new category "Performance." USGBC has streamlined some

credits such as the formerly titled "Alternative Transportation" and "Low Emitting Materials" credits. Among the notable prerequisite changes, managing construction and demolition debris becomes a prerequisite along with the former credits for construction indoor air quality management plans and conservation while irrigating landscapes. The changes, while not substantial, should assist project teams in their organization.

Ivan Graff ✎

## Codes and Standards Corner

The **envision™** Sustainability Rating System, a project of the American Council of Engineering Companies (ACEC), American Public Works Association (APWA), and the American Society of Civil Engineers (ASCE), focuses on infrastructure, especially structures and its levels align with the DOE O 413.3B Critical Decision Process.<sup>14</sup>

## Green Credentials *(continued from page 1)*

The Association of Energy Engineers (AEE) recently began offering a similar, test-based certification that addresses LEED, Green Globes, and ASHRAE 189.1-2009 while still providing in depth coverage of commissioning.<sup>4</sup> For

building managers, the International Facilities Management Association has introduced the test-based Sustainable Facilities Professional certification which emphasizes sustainable operations in existing buildings.<sup>5</sup> Green

Advantage Environmental Certification, aimed at the installation and contractor community, offers a test that covers a broad range of commercial assemblies.<sup>6</sup> Note that DOE does not endorse any of these credentials.

Ivan Graff ✎

## International Green Construction Code

*Part of the suite of International Code Council (ICC) model codes for 2012, newly developed with support from American Institute of Architects (AIA), ASHRAE, ASTM, The Illuminating Engineering Society (IES), and USGBC, may make including sustainability considerations mandatory in jurisdictions that adopt the ICC codes.* <sup>15</sup>



## Issue Reference Web Links

1. <http://bit.ly/bSZPKc>
2. <http://bit.ly/rVWyp35>
3. <http://bit.ly/i6QBSP>
4. <http://bit.ly/otODob>
5. <http://bit.ly/euJIDS>
6. <http://bit.ly/oRjo39>
7. <http://1.usa.gov/n2qqyC>
8. <http://1.usa.gov/me2MnW>
9. <http://bit.ly/pj1o0b>
10. <http://bit.ly/qoJJEU>
11. <http://bit.ly/n4jpfG>
12. <http://1.usa.gov/2QQ6VY>
13. <http://1.usa.gov/dvQEJa>
14. <http://bit.ly/ihRBCT>
15. <http://bit.ly/5qSuqr>
16. <http://1.usa.gov/rZewDT>
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## National Bridge Inventory Has Important Data

Facility professionals, military planners and Congress rely on the Federal Highway Administration's (FHWA) National Bridge Inventory (NBI) data to make decisions.<sup>9</sup>

The NBI data identify each bridge asset by its:

- Type and construction
- Operational conditions
- Geometry and function, and
- Current inspection results

The DOE submits Structure Inventory and



**Figure 3:** Bridge inspections typically provide the data needed by the National Bridge Inventory (Courtesy of Flickr user wdsymington)

Appraisal (SI&A) data for each operational, publically accessible vehicle bridge more than 20 feet long and owned or maintained by the Department.

The FHWA uses the data to submit a required biannual report to

Congress on the status of the Nation's bridges, to publish an Annual Materials Report on New Bridge Construction and Bridge Rehabilitation in the Federal Register, and to apportion funds for the Highway Bridge Program.

**Cindy Hunt** ✈

## Avoiding Real Property Costs *(continued from page 1)*

Unfortunately, plans tallied to just \$1.7B government-wide. A May 2011 OMB memorandum authorized the creation of a Real Property Advisory Committee (RPAC) to closely examine the submitted plans.<sup>8</sup> On August 9, 2011, OMB and a representative of the RPAC met with DOE's Senior Real Property Officer to present a newly mandated target of \$375M. OMB provided some acceptable

approaches to claiming net cost avoidance. In addition to disposition, consolidation or activity reduction, DOE may cite avoided operating costs (included in the original plan) and eliminated deferred maintenance from disposed assets. On August 15, 2011, DOE presented a one page summary of how it intends to meet the mandated goal. The approach does not require beginning or

accelerating any projects. However, to provide OMB with net cost avoidance, programs and sites will need to submit non-EM net disposition and lease termination costs (disposition costs less any positive proceeds) for FY 2010 and FY 2011 dispositions and lease terminations. OECM will request this data shortly after the FY 2011 snapshot.

**Ivan Graff** ✈