KEVIN KAMPSCHROER

ACTING DIRECTOR

OFFICE OF FEDERAL HIGH-PERFORMANCE GREEN BUILDINGS

PUBLIC BUILDINGS SERVICE

GENERAL SERVICES ADMINISTRATION

BEFORE THE

SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND EMERGENCY MANAGEMENT

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

U.S. HOUSE OF REPRESENTATIVES

JULY 16, 2009

Good afternoon, Madam Chair, Ranking Member Diaz-Balart and members of this Subcommittee. My name is Kevin Kampschroer; I am the Acting Director of the Office of Federal High-Performance Green Buildings in the US General Services Administration (GSA). Thank you for inviting me today to discuss the benefits of green buildings on costs, the environment and jobs.

GSA, through its Public Buildings Service (PBS), is one of the largest and most diversified public real estate organizations in the world. Our inventory consists of more than 8,600 owned and leased assets with nearly 354 million square feet of rentable space across all 50 states, 6 territories and the District of Columbia. Our portfolio is composed primarily of office buildings and courthouses, land ports of entry, and warehouses. GSA's goal is to manage these assets responsibly while delivering and maintaining superior workplaces at best value to our client agencies and the American taxpayer. And we collaborate with other Federal agencies not only as our clients, but also as partners in developing, implementing and evaluating federal green building programs, for example, through such programs as ENERGY STAR, which is jointly run by the US Environmental Protection Agency and US Department of Energy.

Cost and Value

High-performing green buildings provide the best value for the taxpayer and for the public through both life cycle cost benefits and positive effects on human health and performance. A recent study[1] of GSA's 12 earliest green federal buildings shows energy use is down 26% and occupant satisfaction up 27%, compared to commercial office benchmark data. More importantly, the top third of studied buildings, which use an integrated design approach, deliver significantly better results with 45% less energy consumption, 53% lower maintenance costs, and 39% less water use.

A recent report by CoStar, a major real estate transaction information collection company, shows that green buildings, in general, also have lower vacancy rates. According to the 2008 McGraw-Hill Construction SmartMarket Report: Key Trends in the European and U.S. Construction Marketplace, operating costs for green buildings are on average 8 to 9% lower, building values are 7.5% higher, buildings have a 3.5% greater occupancy ratio, and green buildings provide a 6.6% total return on investment.

With the above mentioned long-term operating cost benefits, the life cycle cost of green buildings is lower than the life cycle costs of those that are not. Even the initial capital costs are not necessarily higher, and when they are, only marginally so. A 2007 study by Davis

[1] "Assessing Green Building Performance", K.M. Fowler et al., US General Services Administration 2008, based on: KM Fowler and EM Rauch: Assessing Green Building Performance: A post-occupancy evaluation of 12 GSA Buildings, PNNL-17393, Pacific Northwest National Laboratory, Richland, WA, 2008. The full report and white paper summary can be found at www.gsa.gov/appliedresearch under Research Publications.

Langdon[2] shows that green building aspects tend to have a lesser impact on costs than other building decisions, such as which kind of finishes and amenities the building might provide.

Environmental Benefits

Sustainable design is not just about cost. Good sustainable design offers economic, environmental and societal benefits. A planted or "green" roof, for example, can have significant economic benefits, by lowering the roof temperature and thereby reducing the amount of cooling tonnage needed, and even lowering costs for neighboring buildings. A planted roof can reduce the environmental impact of a building, by reducing pollution from the building's power usage, as well as reducing the city's heat island effect. Another environmental benefit of planted roofs is reduced storm water runoff. In cities like Washington DC, which has a combined storm water and sewer system, this reduces water pollution, both locally and downstream in Chesapeake Bay. Finally, societal benefits include physically and aesthetically pleasing effects for building occupants and neighbors, and jobs for workers to install and maintain planted roofs.

The careful use of materials can reduce energy consumption during the manufacturing process and protect the health of occupants. Careful construction techniques can reduce the amount of construction waste that reaches landfills by 95% or more. Re-use of existing structures can reduce resource consumption while preserving our country's heritage. Careful siting can make buildings perform better from both environmental and human perspectives: proximity to transportation reduces pollution and improves occupants' quality of life. The key is holistic, integrated consideration of all the factors that influence building, including consideration of the decision of whether to build at all.

There has been a lot of focus on sustainable design. For example, the Energy Policy Act of 2005 requires buildings to be designed to be 30 percent better than the current energy code. Design is important; without it we cannot achieve the country's energy goals. We need, however, to have at least as much emphasis on actual building performance. California is contemplating standard building performance labeling as a prerequisite for every real estate transaction, and beginning in 2010 GSA will require new building leases over 10,000 square feet[3] to have an Energy Star rating, earned in the most recent year of operation. The value of and Energy Star rating is that is an on-going performance measure.

We also need to expand our measures. Today we typically concentrate on energy use in the building. Buildings exist in context, though; they are parts of neighborhoods, communities and cities. They are also tools for businesses and organizations. One of the key policy

---

[2] Lisa Fay Mathiesson, Peter Morris, "The Cost of Green Revisited" Davis Langdon, July 2007, http://www.davislangdon.com/upload/images/publications/USA/The%20Cost%20of%20Green%20Revisited.pdf

[3] Except in cases where the tenant stays in the same building, or where the market does not provide a building that meets the agency's functional needs, ot if the lease is in a historic building. These exceptions are in the Energy Independence and Security Act of 2007, sec. 435.

changes of the Energy Independence and Security Act of 2007 was to clearly articulate that a high-performance green building must not just perform well mechanically, but must perform to improve the health and enhance the performance of the occupants.

A key broad measure of environmental impact is greenhouse gas, or GHG, emissions. Once you measure the collective effects of greenhouse gas production by an organization--with buildings as components--you can make more informed decisions and trade-offs. We need to look at the way we buy materials for the building, travel to and from the building, the way we use the building, and how the building is operating. When we look at both what the building is doing, and what is happening inside the building, we can make even better improvements than looking at the building alone. We have found, for example, that when we involve the tenants in building retrofit projects, we discover changes in their operations that can increase energy savings by as much as 50%, and also lower the tenants' cost of operations. In some cases this can actually lower the cost of renovation as well.

The Federal Government can, through its example, influence and accelerate the adoption of sustainable building practices across the country. And we can help do that through publicizing the quantitative results. GSA received $4.5 billion to modernize existing Federal buildings and begin converting GSA assets to High Performance Green Buildings as defined by EISA. The increased transparency of Recovery Act transactions, and reporting on results, are key to that influence.

Creation of Green Jobs

The jobs created across the design, engineering, manufacturing, construction and operations industries will bolster the "green economy." These jobs will provide practical experience in high-performance technologies, green construction and building operations.

GSA has identified over 50 different trades and professions that will participate in the accomplishment of GSA building projects. While it may seem that some aspects of construction are unaffected by new technologies, we find that virtually all are changed in some way by the application of the principles of sustainable buildings and delivery. For example, in demolition work, we take particular care to ensure that materials are reused, and recycled, and we have avoided 95% of the traditional construction waste on several of our projects. Even such work as sheet metal work — installing air ducts in buildings — is affected, because we are requiring better work quality to reduce energy losses through leaks.

Several areas are dramatically changed. Our use of integrated photovoltaic solar power systems (PV) increases manufacturing of this technology and reduces reliance on fossil fuels. Installation of PV requires special skills that are a part of the green economy. Lighting systems and controls have improved dramatically over the past 10 years. We will be replacing old lighting systems with new ones, which are based on a much better understanding of the needs of people in modern working conditions, capture more daylight,

and provide better working conditions, but use less energy. Ten years ago, we might have installed a lighting system that used 1.5 or 2 watts per square foot, but today it should be less than half that amount. We are using light-emitting diodes for lighting in certain locations; this is also an emerging technology. We are accelerating its adoption with the Recovery Act funding. Finally, building controls and advanced or "smart" meters are a key component of every project we are undertaking, consistent with EPACT 05. Smart meters provide far more sophisticated data. By using these data, connecting smart meters with building automation systems and creating operating models for the building, the resulting control system and procedures not only reduce energy through the use of smart meter data, but also provide us the means to track usage and make sure that energy savings persist.

GSA's use of Recovery Act funds to implement emerging technologies leads to the creation of green jobs in building operations. GSA has discovered that most building operators in the government and private sector complain that they are unable to find enough well-trained people to run high-performance buildings and keep them running in a high-performance mode. Buildings that are tuned up, commissioned and operating well can easily slip into poorer performance without proper maintenance. The aggregate result is a significant degradation of performance and an unnecessary increase in energy consumption. GSA is already in conversations with the Building Owners and Managers Association, with the International Facility Managers Association and others about the apparent shortage of sufficiently-trained building operators. We believe that GSA's Recovery Act projects can potentially provide jobs along this emerging career pathway.

Conclusion

The funds Congress has provided us through the American Recovery and Reinvestment Act are a sound investment in several respects. First, the timely obligation of these recovery funds will stimulate job growth in the green construction and real estate sectors. Second, the money will help us reduce energy consumption and improve the environmental performance of our inventory. Third, the funds, in large part, will be invested in the existing infrastructure, which will help reduce our backlog of repair and alteration needs, thus increasing the assets' value, prolonging their useful life, and ultimately further conserving our country's resources. Finally, these funds will be invested in government-owned assets for the long-term requirements of our federal customers.

Thank you again for this opportunity. All of us at GSA are excited by the contribution you have allowed us to make, and I am available to address any questions you may have.