

**U.S. General Services Administration (GSA)
Office of Federal High-Performance Green Buildings**

**Discussion Preparation for Green Building Advisory Committee Meeting
November 27, 2012**

Topic:

Value Proposition for Federal High-Performance Green Building

Background:

This topic is a continuation of previous Green Building Advisory Committee discussions on the value proposition or business case for Federal green building. In its [1-30-12 and 2-27-12 teleconferences](#), the Committee advised GSA to focus on making this business case as one of the top priority “levers for change” proposed in the National Research Council report to GSA, “[Achieving High-Performance Federal Facilities: Strategies and Approaches for Transformational Change.](#)”

On August 7-8, 2012, following Committee input, GSA sponsored a Meeting of Experts through the National Academies on the New Business Case for Sustainable Federal Facilities. (See Meeting Summary, Appendix I.)

Since then, GSA’s Acting Administrator Dan Tangherlini has identified development of this business case/value proposition as a priority for the Office of Federal High-Performance Green Buildings. The continuing budget debate in Washington has also increased the need for the Federal government to demonstrate return on investment (ROI) for its green building investments.

The Office is developing a Value Proposition paper aimed at high level government decision makers, focused on building the case that the Federal building portfolio presents major opportunities to increase value for the taxpayer through greater cost savings, efficiency and employee health and productivity. The Office seeks the Committee’s advice on our approach to this issue, summarized below.

Value Proposition for High-Performance Green Building Investments

High-Performance Green Buildings Yield Greater Returns than Conventional Buildings

Opportunity

A deliberate strategy to convert the Federal building stock to high-performance green buildings¹ presents a significant opportunity to increase long-term savings and value for the taxpayer while simultaneously enhancing the ability of agencies to carry out their missions.

In an era of resource constraints, it is even more important to identify investments that present the greatest return in the long run, even when they require modest upfront expenditure. The Federal government has two decades of experience with high-performance green buildings from which to draw in making and implementing these decisions.

Value

Investing to create high-performance green buildings capitalizes on four critical value streams:

1. Cost savings in operations and maintenance, through technology investments and deep retrofits as well as off-the-shelf solutions,
2. Greater organizational effectiveness, reduced health costs and hiring needs, through improved indoor environmental quality,
3. A reduced real estate footprint, through space reduction strategies and new ways of working, and
4. Increased efficiencies in procurement, through performance-based contracting and leveraging the government's purchasing power.

Recommendations to Maximize Investments

1. Invest incrementally in high-performance green buildings to improve operational effectiveness.

A focus on long-term goals can lead investments for routine expenses to lower operational costs and improved effectiveness. When doing regular upgrades and maintenance, aggressive implementation of proven sustainable strategies will lead to more efficient operation and reduced operating costs.

2. Value Federal buildings for their potential to provide high quality workspaces that enhance employee performance, contribute to the bottom line and help agencies achieve their missions.

¹ The phrase "high-performance green building" has been used in legislation for several years. The phrase was defined in the Energy Independence and Security Act of 2007 (EISA) as including the effects of buildings on people, as well as the traditional resource efficiency aspects of green buildings.

The linkage between buildings and organizational effectiveness² is not widely recognized, yet buildings significantly impact health and performance through the environments that they create. This should be a major criterion in making building investments.

3. Improve the effectiveness of an aging Federal building portfolio by requiring wise investment of limited resources that consider the full range of workplace solutions.

A dozen years of proven green building practices and workplace research are available to inform investments in the Federal portfolio for optimized return.

4. Increase use of performance-based contracting to draw upon the expertise and innovation of the private sector to achieve higher results at no higher cost.

Leveraging Federal government purchases toward sustainable products and solutions can drive the market, improving high-performance green building options for both the public and private sectors while driving down costs.

Risk

If the Federal government fails to fully invest in high performance green building, it will lose the opportunity to capitalize on these four critical value streams. Risks include:

Environmental risks – decreased ability to meet Federal mandates; increased risk to the environment; reduced ability to provide a test bed for new technologies

Health risks – increase in building related illnesses associated with poor air quality, poor thermal conditions, and moisture control; increases in number of people who come to work sick, thereby reducing their work effectiveness and also increasing potential to spread respiratory and other illnesses

Economic risks – increase in costs of dealing with health issues and absenteeism linked to indoor environmental quality; increases in expenditures on water, energy, and waste

Organizational risks – ability to achieve mission may be compromised due to illness and absenteeism, reduced ability to attract young workers who have strong environmental values; increased operating costs reduce capital available for investment in other areas

² Organizational effectiveness is the appropriate metric for the Federal government. Individual productivity is not an effective measure in a modern workplace where the primary task is “non-routine” problem solving among workers who think for a living.

Result

An integrated, portfolio-level high-performance green building strategy will:

- Maximize the value of high-performance green building investments
- Reduce the risks of an aging building portfolio
- Provide solutions that are cost effective in the short term and generate significant savings in the long term

KEY QUESTIONS FOR DISCUSSION

1. How can we most effectively present this case? Would you recommend any changes to our general approach and methodology?
2. How should we prioritize the value streams, and strategies to achieve them – e.g. , low- to no-cost vs. higher-level investment strategies?
3. Are there critical value streams missing, or should any be dropped from the paper?
4. What elements of this value proposition require the most additional research?

Appendix:
Meeting of Experts on the New Business Case for Sustainable Federal Facilities
National Academies of Science and Office of Federal High Performance Green Buildings
August 7 and 8, 2012
SUMMARY OF KEY OUTCOMES

CONTEXT:

Benefits of green buildings today are expressed largely in building terms, such as energy and water savings. Much less is known about other potential outcomes such as reduced health risks, improved work performance, and reduced vacancies in high performance green buildings. Reduced budgets for building investments create both a sense of urgency and opportunity. OGP and the Office of Federal High Performance Green Buildings can play a significant leadership role in creating a path forward that maximizes the value derived from green building investments while reducing the risks of an aging building portfolio.

KEY FINDINGS AND RECOMMENDATIONS:

1. New construction business case is solid. A green building doesn't have to cost more; has benefits in the marketplace; benefits can also be expressed in non-profit terms. Existing building retrofits are more difficult.
2. A matrix of component pieces begins to build up a value proposition, with some data (energy, water, waste) easily monetized; others very difficult (e.g., productivity) and some in the middle (e.g., absenteeism, health/sickness).
3. Creating an economic case for water, energy and waste is relatively easy and has well established methods. (Several of the experts at the meeting have created decision matrices and pathways for such purposes.)
4. Create a value proposition rather than a business case. "Business case" is more appropriate for an individual building investment decision. A Value narrative provides the framework to then apply in building-level business/investment cases.
5. Develop separate value propositions for specific buildings or building types across the portfolio that can better address context-related environmental and social issues. This approach recognizes that offices, hospitals, and laboratories as well as buildings in different climatic zones present diverse sets of needs and opportunities.
6. GSA needs to think of "value" created by buildings in a broader, systems based way. It is necessary to identify the economics of investments, and to create and measure value in non-economic terms.
7. Creating a business case around human and organizational benefits is more challenging, but potentially more significant.
8. The business case for health and productivity benefits creates measurement challenges. While it is easier to monetize reduction in health risks and associated absenteeism costs, it is more difficult to measure productivity gains. The group recommended providing a range of evidence-based benefits derived from validated research which would be updated as new evidence is available. For instance, improvements in attention and concentration associated with improved air quality are well established findings from research in the US and Europe. One of the experts in attendance has developed an investment matrix using ranges of benefits. This approach explicitly recognizes that benefits of green buildings need to be expressed in different ways, much as the Balanced Scorecard is used to assess organizational performance.