



THE AMERICAN INSTITUTE OF ARCHITECTS

STATEMENT OF
HARRY GORDON, FAIA

“GSA's Economic Recovery Role: Job Creation, Repair, and Energy Efficiency in Federal Buildings and Accountability”

House Committee on Transportation and Infrastructure
Subcommittee on Economic Development, Public Buildings, and
Emergency Management

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February 11, 2009
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Introduction

Chairwoman Norton, Ranking Member Diaz-Balart, and members of the subcommittee — good afternoon. I am Harry Gordon, FAIA, Chairman, Senior Vice President and Chief Operating Officer of Burt Hill, appearing on behalf of the American Institute of Architects (AIA).

On behalf of our 86,000 members and the 281,000 Americans who work for architecture firms nationwide, I would like to thank you for the opportunity to appear today to share our views on the job creating potential that greening federal buildings brings.

I speak before you at a critical juncture in our nation's history. The twin crises of a collapsing economy and the threat of climate change present us a challenge that we need to face; but also an opportunity to take bold steps that will strengthen our country and its people for years to come.

I do not have to explain to you the impact that this economic crisis is having on millions of hard-working Americans. The design and construction industries have been particularly hard-hit, losing 111,000 jobs this January alone and nearly 750,000 in the past year.¹ The AIA's Architecture Billing Index, which tracks design work at U.S. architecture firms and serves as a leading indicator of construction activity 9 to 12 months down the road, has remained at historically low levels for more than a year.

At the same time, the challenges we face on the energy and climate fronts are no less severe. According to the Department of Energy's Energy Information Administration, buildings and their construction are responsible for nearly half of all greenhouse gas emissions produced in the U.S. every year. DOE's Building Energy Data Book reveals that the building sector accounts for 39 percent of total U.S. energy consumption, more than both the transportation and industry sectors.² The same study found that buildings are responsible for 71 percent of US electricity consumption and that Buildings in the United States alone account for 9.8 percent of carbon dioxide emissions worldwide.³

In fact, according to the Department of Energy, U.S. buildings account for nearly the same amount of carbon emissions as all sectors of the economies of Japan, France, and the United Kingdom *combined*.⁴

Buildings Energy Data Book: 3.1 Carbon Emissions *September 2006*

Year	Buildings				U.S.		Buildings % of Total U.S.	Buildings % of Total Global
	Site	Electricity	Total	Growth Rate	Total	Growth Rate		
	Fossil			2004-Year		2004-Year		
1980	172.0	255.2	427.1	-	1281.7	-	33%	8.5%
1990	153.7	317.2	470.9	-	1359.7	-	35%	8.1%
2000	167.4	426.2	593.5	-	1581.3	-	38%	9.1%
2004	164.7 (2)	443.4	(2) 608.1	-	1610.2	-	38%	9.8% (3)
2010	168.0	502.5	670.5	1.6%	1737.1	1.3%	39%	8.6%
2015	174.8	535.3	710.1	1.4%	1833.4	1.2%	39%	7.7%
2020	179.6	577.2	756.8	1.4%	1942.9	1.2%	39%	7.5%
2025	182.5	627.0	809.5	1.4%	2070.6	1.2%	39%	7.4%
2030	186.0	686.2	872.2	1.4%	2214.6	1.2%	39%	7.3%

Note(s): 1) Excludes emissions of buildings-related energy consumption in the industrial sector. Emissions assume complete combustion from energy consumption and exclude energy production activities such as gas flaring, coal mining, and cement production. 2) Emissions differ from EIA, AEO 2006, Feb. 2006 by less than 0.1%. 3) U.S. buildings emissions approximately equal the combined carbon emissions of Japan, France, and the United Kingdom.

Source(s): EIA, Emissions of Greenhouse Gases in the U.S. 1985-1990, Sept. 1993, Appendix B, Tables B1-B5, p. 73-74 for 1990; EIA, Emissions of Greenhouse Gases in the U.S. 2003, Dec. 2004, Tables 7-11, p. 29-31 for 1990 and 2000; EIA, Assumptions to the AEO 2006, Mar. 2006, Table 2, p. 9 for carbon coefficients; EIA, AEO 2006, Feb. 2006, Table A2, p. 134-136 for 2004-2030 energy consumption and Table A18, p. 160 for 2004-2030 emissions; EIA, International Energy Outlook 2006, June 2006, Table A10, p. 93 for 2003-2030 global emissions; and EIA, International Energy Annual 2004, July 2006, Table H1, www.eia.doe.gov for 1980-2000 global emission.

Department of Energy

Therefore, if we in the United States want to be serious about energy efficiency and energy reductions, buildings *must* become a significant part of the discussion. To reduce energy consumption in the building sector, the AIA believes that architects must advocate for the sustainable use of our Earth’s resources through their work for clients. To support this principle, in December 2005, the AIA adopted an official Institute position stating that all new buildings and major renovations to existing buildings be designed to meet an immediate 50 percent reduction in fossil fuel-generated energy (compared to a 2003 baseline) and that at five year intervals, that reduction target be increased by at least 10 percent until new and renovated buildings achieve carbon neutrality in 2030. Architects across the country have embraced this principle and are currently utilizing design practices that integrate built and natural systems that enhance both the design quality and environmental performance of the built environment.

But in order to truly revolutionize the way our nation designs buildings, the public sector, especially the federal government, must also play a role.

Recognizing that greening federal buildings provide benefits both for job creation and energy efficiency, President Obama has called for the economic recovery plan to include funds to help retrofit 75 percent of federal buildings to make them energy efficient. The House of Representatives included \$7.7 billion for the GSA's Federal Buildings fund in H.R. 1, the American Recovery and Reinvestment Act (ARRA), of which at least \$6 billion of so go to making federal buildings high performing. The Senate Appropriations Committee followed suit, including a total of \$9.048 billion for the Federal Buildings Fund, of which at least \$6 billion was to go to high-performing federal buildings.

As you know, however, the Nelson-Collins compromise amendment to the Senate version of ARRA dramatically cuts these funds, reducing the amount for the Federal Buildings Fund to \$5.548 billion and funds for high-performing federal buildings to \$2.5 billion.

The AIA, along with its partners in the design and construction industry, believe that this decision, made behind closed doors without public consultation or review, is short-sighted and contrary to the stated goals of the ARRA, including the primary goal: job creation. And nearly 30 design and construction industry and environmental groups, representing hundreds of thousands of American workers, agree. These groups came together and sent a letter to Congress supporting infrastructure investments in our nation's federal buildings. This letter is attached to my testimony.

I would like to spend some time discussing why we believe that a significant investment in green federal buildings as a part of economic recovery legislation is not only warranted, but vital for the continued economic and environmental health of the nation.

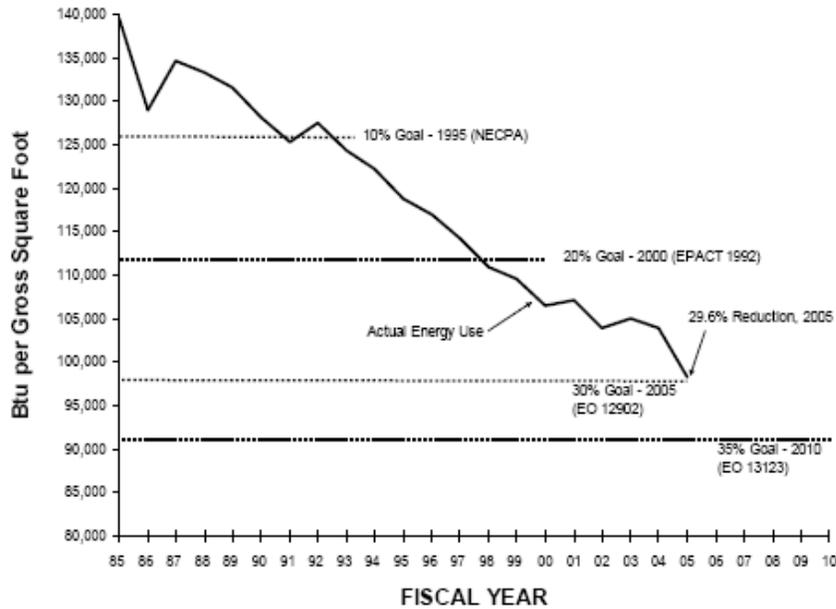
The Need for Green Federal Buildings

The General Services Administration is the largest landlord in the nation, with more than 352 million square feet of space in 8,600 buildings in more than 2,200 communities across the country. Requiring significant energy reduction targets in new and renovated federal buildings has demonstrated that the federal government is leading by example. It helps spur the development of new materials, construction techniques, and technologies to make buildings more energy efficient. And it has shown that significant energy reductions are both practical and cost-effective.

Congress has made major strides in this area in recent years. The 2005 Energy Policy Act (P.L. 109-190) calls for federal agencies to reduce their annual energy consumption by two percent each year from FY2006 to FY2015 and to design buildings to be 30 percent below ASHRAE 90.1 or the International Energy Conservation Code if life-cycle cost-effective, among other provisions. The Energy Independence and Security Act of 2007 (P.L. 110-140) accelerated those requirements and adds a new requirement that all new and significantly renovated federal buildings meet a series of fossil fuel reductions, starting with a 55 percent reduction over a 2003 baseline by 2010, leading up to a 100 percent reduction, or carbon-neutrality, by the year 2030. The bill also created an Office of High-Performing Federal Buildings in GSA.

Some have argued that the federal government is not able, or willing, to meet aggressive energy efficiency goals. The record shows this not to be the case. Energy reduction requirements like these have shown a record of success, as demonstrated by DOE's annuals report to Congress on Energy Management and Conservation programs. DOE found that in 2005, federal agencies responding to President Clinton's 1999 Executive Order had reduced their consumption levels by 29.6 percent, narrowly missing the goal established by President Clinton's Executive Order by only .4 (point 4) percent [see graph below]. This makes it clear that when they are required to do so, federal agencies have the ability to meet reduced energy consumption targets.

**Overall Government Progress Toward the Energy Efficiency Goals
for Standard Buildings, FY 1985 through FY 2005**
(Certain types of renewable energy purchases are treated as energy reductions)



U.S. Department of Energy

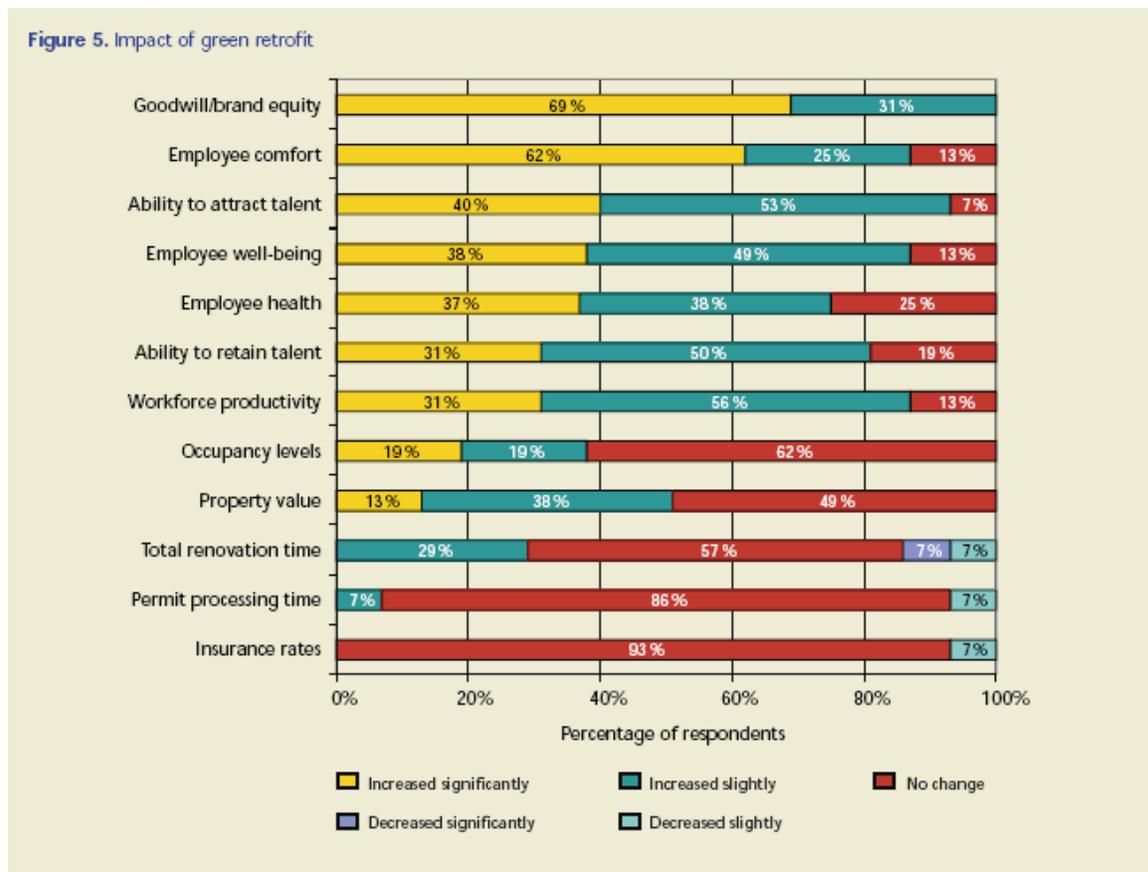
In addition, there are those who say that the federal government’s efforts to design and construct high performance buildings are out of step with the private sector.

Again, the facts speak otherwise. A 2007 survey of corporate real estate professionals by the trade magazine *Building Design & Construction* with CoreNet Global found that eight in 10 respondents had incorporated sustainable design in their construction and renovation projects, 32 percent had done so “extensively,” and only three percent had no plans to incorporate green elements into future projects.⁵ There are some very simple reasons for this: the private sector knows that green buildings are better for their employees, better for their clients, better for business and better for the environment.

An April 2008 study by the CoStar Group found that buildings that were certified as meeting the Leadership in Energy and Environmental Design (LEED) sustainable ratings system see rent premiums of \$11.24 per square foot over their conventional building

competitors, and have a 3.8 percent higher occupancy rate. Some LEED-certified buildings in the study also sold for an average of \$171 more per square foot than their conventional competitors.⁶ This shows that the value of a building increases – and increases dramatically – when the owner goes green.

The private sector has seen additional benefits as well. A 2008 study by Deloitte and Charles Lockwood surveyed a number of organizations that had undergone at least one retrofit that was LEED-certified. Ninety-three percent of respondents reported a greater ability to attract talent, 81 percent reported greater employee retention, 87 percent reported an improvement in productivity, 75 percent saw an improvement in employee health, and 73 percent reported that they had achieved cost reductions as a result of implementing green measures (see chart, below).⁷



Deloitte/Charles Lockwood, The Dollars and Sense of Green Retrofits

The environmental benefits of high performance buildings are well documented. Recent studies have shown that green buildings offer many more benefits, particularly to worker health and productivity.

A study by Herman-Miller showed up to a seven percent increase in worker productivity following a move to a green, daylit facility.⁸ In addition, a Lawrence Berkeley National Laboratory study found that U.S. businesses could save as much as \$58 billion in lost sick time and an additional \$200 billion in worker performance if improvements were made to indoor air quality.⁹

It is clear that designing and retrofitting office buildings to be energy efficient and sustainable has a premium that goes far beyond the environment. It is good for business and it is good for the economy.

The Costs and Benefits of Building Green

The primary concern that my fellow architects and I hear from clients about building “green” is cost. It is true that some energy efficient building systems do cost slightly more than their traditional counterparts. However once the building is in operation, the savings in energy expenditures alone often far outweigh the initial costs of installing “green” systems.

According to a 2003 study by Capital E, an initial upfront investment of up to \$100,000 to incorporate green building features into a \$5 million project would result in a savings of at least \$1 million over the life of the building, assumed conservatively to be 20 years.¹⁰ Other sources, most importantly the noted cost consultant Davis Langdon, have found through their research that the cost of sustainability is statistically insignificant to a project’s total cost.¹¹

The economic value of energy reductions from federal buildings can be seen by looking at previous energy reduction mandates in federal buildings. Because of federal legislation and President Clinton's 1999 Executive Order, federal agencies consumed nearly 30 percent less energy per square foot in 2005 compared to 1985. As a result of this improved energy efficiency, the federal government spent approximately \$2.2 billion less on energy costs in standard federal buildings in 2005 than they did in 1985. While there are clearly other factors aside from federal energy management activities that go into this reduced spending, improved energy efficiency and energy reduction clearly played a large role.

Lastly, it is important to note that designing and retrofitting commercial buildings to be energy efficient does work. The DOE Office of Energy Efficiency and Renewable Energy has identified several case studies of commercial buildings that have undergone energy efficiency construction or retrofits. They find that actual energy cost savings – not predicted or theoretical, but actual – to be as high as 67 percent. For private owners, that is money right back into their pocket. For federal buildings, that is saving taxpayer's money.¹²

The Job Potential of Green

Last but not least, investing in the design, construction and renovation of federal buildings will create thousands of jobs in the design and construction industry at a time when this sector has all but collapsed.

A study conducted by the Center for Regional Analysis at George Mason University states that each \$1 million in construction spending supports 28.5 full-time jobs. This means that the \$7.7 billion that the House appropriated for the Federal Buildings Fund could create as many as 180,000 jobs. I would point out that these are private-sector jobs, across a wide range of sectors, from architects and engineers to sheet metal and insulation installers and electricians, plumbers, masons and carpenters. And because GSA has indicated that it has nearly 500 projects that are ready to go and can be obligated in 90 to 180 days, these are jobs that will be created immediately.

It also means that the Senate compromise, by cutting this amount by \$2 billion, essentially takes 57,000 job opportunities out of ARRA. That is the last thing we should do at this moment.

America is Ready

Finally, the American public believes something needs to be done to reduce energy usage and prevent climate change. In a 2007 poll by the Tarrance Group and Lake Research Partners, 74 percent of those polled agreed that “the government should take the lead in promoting real estate development that conserves our natural resources.” In addition, 71 percent of voters agreed that “the government should immediately put into effect new energy policies that drastically reduce greenhouse gas emissions.” The American public supports conserving our precious resources, and believes that it is in the best interests of our nation and the world to reduce our reliance on fossil fuel produced energy and move towards a sustainable future. Reducing energy use in federal buildings would be a major step towards that goal.

Conclusion

Investing in greening federal buildings will create jobs, reduce energy costs, improve worker productivity, increase the value of the GSA’s portfolio and ultimately save taxpayers money. Just as important, at a time when the United States is struggling to address the effects of climate change, studies show that improving energy efficiency in buildings is truly the “low-hanging fruit” that, as a 2007 McKinsey and Company shows, actually generates positive economic returns over their life-cycle.¹³ For these reasons, the AIA and its partners in the design and construction industry strongly urge Congress to include the House-passed funding levels for the GSA Federal Buildings Fund and for high-performing federal buildings in the final version of H.R. 1 that it sends to President Obama.

I welcome any questions from the subcommittee. Thank you, Chairwoman Norton and Ranking Member Diaz-Balart, for the opportunity to testify before your Subcommittee today.

¹ <http://www.bls.gov/news.release/empsit.nr0.htm> (BLS) and <http://newsletters.agc.org/clwir/2009/02/06/construction-job-loss-figures-underscore-urgency-of-stimulus-agc-economist-says/> (AGC)

² <http://buildingsdatabook.eere.energy.gov/docs/1.1.3.pdf>

³ <http://buildingsdatabook.eere.energy.gov/docs/3.1.1.pdf>

⁴ <http://buildingsdatabook.eere.energy.gov/docs/3.1.1.pdf>

⁵ Deloitte, “The Dollars and Sense of Green Retrofits,” 2008

⁶ Ibid.

⁷ Ibid.

⁸ Judith Heerwagen, “Do Green Buildings Enhance the Well Being of Workers?” Environmental Design and Construction Magazine. July/August 2000. Available at <http://www.edcmag.com/CDA/ArticleInformation/coverstory/BNPCoverStoryItem/0,4118,19794,00.html>

⁹ Fisk, William, “Health and Productivity Gains from Better Indoor Environments and Their Implications for the U.S. Department of Energy,” 2000

¹⁰ Capital-E, “The Costs and Financial Benefits of Green Buildings,” 2003

¹¹ Matthiessen, Lisa and Morris, Peter. “Costing Green: A Comprehensive Cost Database and Budgeting Methodology,” 2004; Davis Langdon; and Matthiessen, Lisa and Morris, Peter, “The Cost of Green Revisited,” 2007, Davis Langdon

¹² http://www.eere.energy.gov/buildings/highperformance/research_case_studies.html

¹³ “Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?”, McKinsey & Company, 2007