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MALACHITE LLC  
NATIONAL INSTITUTE OF BUILDING SCIENCES  
REPRESENTATIVE HEARING ON:  
DATA NEEDS TO ACHIEVE HIGH-PERFORMANCE BUILDINGS  
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This testimony examines finance sector data needs to achieve high performance buildings.

I am Leanne Tobias, founder and Managing Principal of [Malachite LLC](http://www.malachitellc.com), [www.malachitellc.com](http://www.malachitellc.com), a real estate advisory firm headquartered in the Washington, DC area. Our company specializes in green and energy efficient commercial real estate, including finance, investment, retrofit and development support. During our careers, Malachite LLC team members have developed, retrofitted or operated more than 5 million square feet of green or energy-efficient space, have advised the owners and operators of over 2 billion square feet of public and private commercial real estate on energy-efficiency strategies, and have sourced, negotiated or managed over \$76 billion in commercial real estate financings.

My credentials include over 20 years of national commercial real estate experience. I have served as a senior investment and portfolio manager for two national commercial real estate funds and have advised the U.S. government on the energy retrofit of its national portfolio under the Energy Independence and Security Act. I am also the author of [\*Retrofitting Office Buildings to be Green and Energy-Efficient\*](#), an authoritative text on green and energy-efficient building retrofits in the U.S. and around the world. In more than two decades in the commercial real estate industry, I have negotiated or participated in over \$1 billion in acquisitions and sales and directed the leasing and operation of over 6 million square feet of diverse commercial property throughout the United States, including conventional, green and energy-efficient buildings.

What Malachite has observed in the 2009-2011 market is that although green and energy-efficient buildings produce superior financial performance, financial institutions have been reluctant to finance retrofits due to a lack of data on the financial performance of energy conservation measures (ECMs).

I'd like to review these developments and suggest solutions.

Energy-Efficient Buildings Realize Superior Economic Performance. Some of the most recent evidence includes the following:

- An October 2010 study by the University of California at Berkeley and the University of Maastricht found that Energy Star labeled office buildings posted a 2.1% rental rate premium, 6.6% higher effective rents, and 13.1% higher sales prices than paired comparable properties. A March 2009 study by the same team found that a \$1 operating cost savings due to energy-efficiency improvements was associated with an \$18 increase in commercial building valuation.
- A global study released in early 2011 by CoreNet Global and Jones Lang LaSalle found that 50% of corporate real estate executives were willing to pay a rental premium for sustainable real estate, up from 37% in 2009. An additional 23% said they would pay more in rent if it were offset by lower energy costs. As this suggests, tenant interest in energy efficiency increases as the economy stabilizes.

Financial Institutions Are Reluctant to Finance Energy-Efficiency Upgrades. Despite this positive performance data, financial institutions remain reluctant to finance energy efficiency upgrades. Since May 2010, the Federal Housing Finance Agency or FHFA, the regulator of Fannie Mae and Freddie Mac, has refused to let these entities participate in property-assessed clean energy (PACE) lending programs, citing default risk concerns. The FHFA decision is in litigation, but has effectively shut down residential PACE programs and has had a chilling effect on commercial PACE initiatives.

Similarly, all members of a panel of national real estate lenders addressing an Urban Land Institute finance forum in June 2010 stated that existing data was insufficient, especially at a precarious point in the market cycle, to allow financial institutions to develop underwriting standards for building energy efficiency. The real estate lenders stated that bankers did not have a good grasp on building retrofit technologies, and that it was unclear to lenders that bundles of energy conservation measures would produce returns sufficient to warrant associated lending risk. Concomitant contractions in the refinancing and mezzanine lending markets for commercial real estate have also reduced the availability of capital for energy retrofits.

Over the past two years, Malachite's interactions with property owners have indicated that most retrofits are being financed with retained earnings or unsecured commercial loans dependent on the borrower's credit. As this suggests, capital for building energy retrofits is limited to the most credit-worthy commercial real estate owners.

Energy-Efficiency Payback Data is Promising, But Incomplete. In my judgment, additional, large-scale research on the returns and paybacks associated with building energy conservation is needed to help financial institutions develop loan underwriting standards. As described in my written statement, data on the financial returns associated with building energy efficiency have been positive, but have been largely confined to case studies and small data sets.

What Data Are Needed Going Forward? As of 2011, we need to correct this data gap to develop nationally meaningful information on the costs, energy savings, payback periods and returns associated with building energy efficiency approaches. These metrics should incorporate:

- Diverse real estate product types, locations and energy conservation measures.
- Meaningful ranges of property vintage
- Financial metrics, including first costs, energy savings in dollar and consumption terms, and associated payback periods and financial returns.
- As a general rule, data bases and studies on high performance buildings should collect financial performance data in standardized terms meaningful to finance professionals, alongside technical data on energy consumption

changes. The intent should be to produce standardized metrics that are useful to the finance sector, as well as to the engineering, design and construction communities. NIBS's newly-formed Finance Insurance and Real Estate Consultative Council should be helpful in guiding the development of these metrics and standardized data collection protocols.

I'd also suggest that existing data sets be utilized to the extent practicable to develop meaningful national statistics at least cost. Data sets that might be examined for this purpose include the growing number of private data bases dedicated to energy benchmarking. The Building Owners and Managers Association (BOMA) also has begun to collect building data as part of its BOMA Energy Efficiency Program. As well, federal energy retrofit data is expected to be available in the next 2-3 years as U.S. government agencies begin to implement the Energy Independence and Security Act of 2007.

The national CoStar database of U.S. commercial properties can continue to be evaluated to compare the financial performance of LEED and Energy Star properties to conventional comparables. As more LEED and Energy Star retrofits are performed, more reliable data will be generated on the impact of these upgrades on property financial performance.

Finally, detailed financial performance data on specific high performance development and retrofit projects should also be beneficial to finance, insurance and real estate executives who seek additional understanding of the financial returns associated with high performance buildings.