

Promoting Efficiency through Transparency in the Building Sector

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It seems like a no-brainer that a building that has undergone an energy efficient retrofit should be more valuable. Compared to a conventional, less efficient building, a green or efficient building should sell for more because, over the course of its useful life, the building should cost the owner less to operate and provide other benefits such as reduced O&M costs and a hedge against fluctuating energy prices, right?

While this argument works in theory, many building owners, as well as the lenders and appraisers that would help them finance a retrofit, remain unconvinced. Thousands of buildings have undergone retrofits, but the evidence of energy savings has not been tabulated in a way that will influence lenders and appraisers to finance efficiency retrofits. This is a major barrier in the retrofit industry in the U.S. as well as abroad, but two emerging developments – the codification of post-retrofit performance data and the advent of policies that require transparency on building energy consumption – are starting to make inroads toward addressing it.

Post-Retrofit Performance Data

There's a chicken-and-egg problem with regard to financing green buildings. It's tough to find lenders willing to cover the additional costs associated with certifying a green building and purchasing efficient equipment. One of the main reasons is that the lending and appraising communities lack robust data on the benefits of green building, such as reduced operating expenses and improved occupancy rates. However, without a strong pool of buildings that can be used to develop a reliable database of building activity in the wake of a retrofit, however, lenders and appraisers will continue under the assumption that green improvements add no measurable value to a building.

Today, building engineers use predictive modeling techniques to design green and energy efficiency improvements for buildings. When we hear that, through a retrofit, a building was able to "reduce energy consumption by 24%," this typically means the engineers compared a model of current energy consumption in the building with one based on upgrades to equipment and the building shell. In the minds of lenders and appraisers, the problem is that this claim is based only on a model that involves many assumptions about the way the building will perform that may differ from the building's actual performance.

In the minds of skeptical building owners and financiers, the true test lies in examining actual utility bills in the wake of a retrofit to evaluate the extent to which buildings meet their predictive models' promise. That may sound simple, but it's one of the major barriers to green building financing today. There should be thousands of cases of successful retrofits to pull from, as energy performance contracting has been around for decades and retrofits are nothing new. However, those projects' utility bills are in the hands of hundreds of individual building owners, and key stakeholders in the lending and appraisal communities lack the resources to gather the information and integrate the findings into new financial instruments.

So what's being done about it? Many in the industry agree that this is a challenge, but there has been less progress to date than one might expect. CoStar has published several reports arguing that green buildings outperform conventional buildings in areas such as sale value, rent, and occupancy, but the results were not robust enough to convince the appraisal and lending communities to integrate the results into their work. The Deutsche Bank Americas Foundation, a philanthropic arm of Deutsche Bank, is in the process of compiling a data set on energy consumption in several hundred apartment buildings in New York City, and the results of this research will provide insight into one slice of the market at least. Other groups, from non-profits to trade associations to government agencies, are helping to push these efforts forward.

Looking at before-and-after stories for retrofits allows for a concrete examination of the savings afforded by retrofits. The results will not only facilitate financing for future retrofits but also efficient green buildings in general, as they will bolster the green building value proposition that so many real estate service providers are already starting to see, albeit anecdotally.

Commercial Building Benchmarking Laws

While private sector lending institutions may have their hands tied when it comes to promoting retrofits through special financing instruments for green and efficient buildings, perhaps commercial building benchmarking laws will lend a helping hand. Governments at a variety of scales ranging from small cities to entire countries are starting to establish these laws (also known as mandatory disclosure or energy disclosure laws) to mandate that building owners report the energy consumption of their buildings.

In the absence of commercial building benchmarking laws, prospective building owners or tenants are on the wrong end of a bad case of information asymmetry. The simple lack of available information on energy consumption guarantees that energy will remain a low priority to potential buyers. Moreover, even if a buyer requests to see the utility bills, owners tend to be reluctant to provide them, especially if the building isn't very efficient. As a result, prospective building owners and tenants have been more likely to make note of the type of marble used in the building's foyer than how many kilowatt-hours it uses when comparing spaces to buy or rent.

Commercial benchmarking laws, however, put energy concerns on the map for prospective buyers and increase transparency in the buying process. Where these laws are in place, potential building owners and tenants get a snapshot look at actual energy consumption in the building at the onset of the real estate deal. Behind these laws is the notion that, if prospective owners or tenants have access to information on the building they're considering, they'll factor differences in energy costs alongside other characteristics such as location and interior quality.

In the U.S., the State of California took an early lead with commercial building benchmarking laws in 2007 with Assembly Bill 1103. This law requires utilities to maintain customers' energy use data and make it easily accessible to all parties in a real estate transaction. The law only applies to whole-building transactions, though, so renters may have more difficulty accessing the information than prospective buyers.

Washington, DC followed with a similar law in 2008. Like the California law, it requires certain types of buildings to be benchmarked annually. Although the requirement currently only applies to District-owned buildings over 10,000 sf, private buildings over 200,000 sf will need to be benchmarked as well starting at the end of 2010, and, over time, the majority of private and public non-residential buildings will be phased in. The law goes one step beyond California's in that the building energy information will be available to the general public, not just to the transaction stakeholders.

Today, commercial benchmarking laws are in effect in various forms in other cities and states as well, including the State of Washington, New York City, and Austin, Texas. These programs use the widely recognized ENERGY STAR Portfolio Manager tool as the benchmarking system of choice. Beyond the U.S., a new law in Australia is about to come into effect that will require commercial benchmarking on a national scale when it implements its Mandatory Disclosure program in November 2010. And in the UK, the CRC Energy Efficiency Scheme requires the country's largest emitters to report their energy consumption at all end-points, including buildings.

In addition to providing transparency on energy consumption to potential buyers, commercial benchmarking laws will help address other barriers. For example, it provides a solution to the perennial "split-incentive" barrier in which building owners have no incentive to improve the efficiency of a building they own when utility costs are passed through to tenants. If current tenants can compare the energy profile of their building to another, they may be more likely to relocate unless the building owner improves their building's energy efficiency. Buildings with better energy performance, therefore, will likely

experience higher occupancy rates and rents.

The result is a market-based policy mechanism that will incentivize increasingly high standards of efficiency. Many commercial buildings have slipped below their original code-compliant energy standards and, with this modicum of exposure, they will likely be the first to sign up for efficiency retrofits. In the meantime, building owners around the world have a chance to retrofit their buildings now so that, when commercial benchmarking laws hit in their city, state, or country, they're ahead of the curve. In the long term, the acceptable levels of efficiency will rise, driving the retrofit market and improving the efficiency of the commercial building stock as a whole.

Looking Ahead

Through documentation of post-retrofit energy savings and an increasingly rigorous policy landscape on building energy use, we will start to see many of the barriers facing retrofits today start to drop. Although the efforts to overcome them are in their nascent stages or only present in specific geographical locations, the undeniable trend in the building sector is toward increasing interest in energy efficiency through retrofits and, over time, a growing number of building owners and lending institutions will look to retrofits as a low-risk, high-reward way to reduce operating costs