the hammersmith group
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Valuing green buildings

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Given that buildings account for one-third of all energy and water consumed in the United States, green buildings have been receiving increased interest as energy prices continue to rise. The benefits of green buildings range from quantifiable energy and water savings, to the brand benefits of thoughtful stewardship of environmental resources. However, for the real estate and financial communities,many wonder if these benefits outweigh the slightly higher initial costs over conventional buildings? Do green buildings present a competitive advantage that can translate into lease premiums, reduced risk, and increased renewal rates?

"There is a strong business case for high-performance buildings," said Brenna Walraven, Executive Managing Director of USAA Real Estate and chairman-elect of industry group Building Owners and Managers Association (BOMA). "Previously, green features were considered primarily on the basis that 'it's good for our image, it's good for marketing.' Now there is greater awareness – and better documentation – of the financial benefits of high-performance buildings."

Energy-efficient and water-efficient features can increase a building's value by lowering operating costs. Dennis Fleming, managing director of Revival Funds, noted that high-performance buildings can generate a 7-12% increase in NOI by reducing operating costs. According to Greg Kats, managing director of Good Energies,green buildings use on average 30% less energy than conventional buildings. Assuming energy costs of $2/s.f., this becomes a savings of $0.60/s.f. For a 100,000 s.f. building, this represents energy and water savings of $60,000 annually. Assuming a 20 year present value of expected energy savings at a 5% cap rate, this savings translates into roughly $750,000 of added building value for a small additional investment in first costs. As interest rates and energy prices rise, these benefits become even more pronounced and green buildings become even more valuable.

Green features are less expensive than is commonly thought. Walraven has been a driving force behind the BOMA Energy Efficiency Program (B.E.E.P.), a partnership between BOMA and Energy Star which educates building owners and developers on low and no-cost measures to improve operating efficiency. "We had to overcome the misconception that it is prohibitively expensive to increase efficiency. It's not."

The current average premium for integrating green features in new construction ranges from $3-$5/s.f., or from just 2%-7% above the cost of building to conventional code requirements. This range reflects the scope of green options,but many energy-efficient features can be achieved within conventional budgets. These cost premiums also reflect the added design and planning costs, which are likely to fall as construction, design, and engineering professionals become more familiar with green building practices.

"Energy-efficiency has helped drive value for our portfolio," said Walraven. By using Energy Star's tools and ratings that normalize building efficiency for factors such as weather, occupancy, and building characteristics, Walraven was able to identify low-cost opportunities to increase operating efficiencies for USAA Real Estate's portfolio properties. The result? Implementing the recommendations from the energy audit generated $10 million in savings on capital expenditures of $2 million.

The economic drivers for developing, buying, or leasing a green building are different for commercial and residential tenants. To date, most of the green buildings have been constructed for corporate or institutional owner-occupants, who will likely have a long occupancy and investment horizon, and so will directly benefit from the lower operating expenses over the building's life cycle. There has not been much growth yet in multi-tenant or speculative green buildings.

Lease structures can create a perceived split incentive. "Building owners ask themselves 'if the tenant pays for the operating costs, why should I pay for capital improvements so that they can benefit?'" said Greg Kats. "But if you create great spaces that are cost-competitive, the question for tenants is 'why move?'"Investing in high-performance features can become a driver of returns for building owners by increasing tenant retention and reducing the costs associated with lease churn.

For a speculative green developer like Massachusetts-based MassInnovation, incorporating green features is a competitive advantage: high-performance design passes on energy savings to both residential buyers and commercial tenants with net leases, which lowers monthly operating expenditures and increases their working capital. Lower operating costs also act as a disincentive to relocating elsewhere.

Rising energy prices will be a driver for adopting green technologies. Most buildings today are still being built the way they have been for the last 50 years, when oil, gas, and electricity were inexpensive. At the time, it didn't matter that most buildings were built without much natural light or ventilation, because heating, cooling, and electric light weren't prohibitively expensive.

It is significant that the areas where green building strategies are being embraced are also the ones that have experienced volatility in energy prices – which sensitizes consumers to the need to innovate or adapt. "People don't change until they have to," said Charles Randall, managing director of Revival Funds. "High energy prices raise awareness of how prices affect you on a daily basis. When your natural gas bill goes up 50%, you feel the pressure to get energy-efficient, quickly."

"Because energy costs aren't going down, there must be a move towards greater efficiency. Green technologies are a way to reduce exposure to rising energy prices," said Robert Ansin, CEO of sustainable development company MassInnovation. Ansin's last two projects feature New England's largest geothermal installations. "By using geothermal exchange instead of fossil fuels, we've reduced costs and have unlinked the price of heating and cooling from the rising cost of energy," said Ansin.

Ansin's mixed-use projects incorporate a number of other green and energy-efficient features. He is converting what was once the largest mill building on the planet into New England's largest (1.3 million s.f.) green development, Monarch on the Merrimack.Monarch incorporates a number of high-performance features including a green roof, low-flow toilets, waterless urinals, and faucet aerators. Monarch's private 6-acre park incorporates moisture sensors to reduce water usage, and is irrigated using water discharged from the geothermal wells – thereby reducing potable water usage and associated expenses.

Energy efficiency is a hedge against environmental, financial, and market risks. "All else being equal, we can generate at least the same returns with lower risk by investing in green buildings instead of conventional ones," said Dennis Fleming. "If the market supports a price premium, then we're that much ahead of the game."

"Green buildings simply represent a better class of asset," said Peter Liu, vice chairman of New Resource Bank, a commercial bank that finances sustainable development. "If the fundamentals of a project are solid, then high-performance features offer a competitive advantage."

Because of the reduced risks associated with high-performance features, financial institutions such as New Resource Bank and Fireman's Fund Insurance are cutting better deals for green buildings. New Resource offers a 1/8 point rate discount for green developments, and offers a higher loan-to-value ratio. Fireman's offers discounted pricing to green building owners.

Green buildings can also lower risk by reducing carrying costs during planning and construction. Many municipalities recognize the benefits of having green buildings in their communities, and have expedited the permitting and approval process for energy-efficient buildings. "In some communities, this can be the difference between a 15 month permitting process and a 2 month process," said MassInnovation's Ansin. "This is one more way in which building green can have a significant, quantifiable bottom-line effect."

Besides expedited permitting, some green features can also eliminate entire steps in the construction process. For example, New Jersey-based Hycrete has developed one of the leading integral waterproofing systems for concrete. Not only is it a green technology with life-cycle benefits, but it eliminates the need for external waterproofing, a step which reduces project time by weeks or months. "By eliminating a step in the construction process,we reduce holding costs for developers or owners and move them towards revenue generation that much faster," said David Rosenberg, CEO of Hycrete.

The biggest barriers to the broader adoption of sustainable development practices are the status quo, and the lack of a broad data. Real estate is highly formulaic, in part because repeatable processes lead to efficiency, which generate higher returns. "Until recently, there's been little incentive to change the way things have been done.There's been a history of predictability and profitability in doing it the traditional way," said Ansin. "But rising energy prices are making alternatives more attractive.

"When the developer is not the building owner, the typical incentive has been to barely meet code at the lowest cost," said Greg Kats. "In that mindset, innovations equaled risk. Now, the risk is that by continuing to do things the way they have been done, you will be stuck with an inferior product."

This outlook is reinforced by the prevailing method that buildings are valued. Traditionally, 'first costs' are the metric by which profit is measured. However, life-cycle analysis offers a more complete picture by linking capital costs and operating expenses. According to the U.S. Federal Facilities Council, first costs represent only 5%-10% of total life cycle costs, while operating expenses represent 60%-80% of the expenditures over a building's lifetime. When buildings are valued using life-cycle analysis, the long-term savings as a result of lower electricity, water, and heating and cooling costs becomes apparent. A 2003 study conducted for the California Sustainable Building Task Force shows that a 2% increase in first costs for green design will yield lifecycle savings of more than ten times the initial investment.

One of the obstacles to broader adoption of high-performance features is the difficulty for appraisers and lenders to getting comparable figures. To date, the majority of green buildings have been built for corporate or institutional owner-occupants, and very few of these buildings have been sold. "As of today, there is still no data set with a sample set that is large enough to turn heads," said Charles Randall of Revival Funds. "Anecdotal evidence is not sufficient to sway the financial community. There are always issues specific to each project that contribute to the success or failure of that project." For buildings that have outperformed the market, the question is how much of that premium was driven by green features independent of design, brand, or location.

"The defining study for the benefits of building green still remains unwritten," said Fleming. "We need a landmark study that compares the 10-15 year pro forma of the same buildings built both green and conventionally."

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