

Green Buildings in Green Cities: Integrating Energy Efficiency into the Real Estate Industry

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BEPAnews Editor's Note: The full DRAFT study provides a section of particular interest to our readers that was based on interviews with various players in the CRE green building market. BEPAnews has extracted that portion of the study for this interim report. That portion of the report is reproduced below.

Incorporating Energy Efficiency into Commercial Buildings—Motivations and Barriers

Type of Institution	Number of Institutions	Number of people
Bank	5	15
Broker/Property Management	4	4
Consultant (design, economic and real estate)	3	3
Consultant (energy)	6	7
Consultant (finance)	4	4
Developer/Owner/ Operator	6	6
Private Investor	3	3
Finance (other)	2	2
Energy Services	1	2
Legal	1	2
Nonprofit	3	6
Public official/ Utility/ Regulator	4	4
Trade Organization	3	3
Total	45	61

The interviews give a rich picture of how energy efficiency and other sustainability investments are considered by building owners, lenders, investors, and service providers. Responses also uncovered barriers to the adoption of energy efficient investments.

Motivations for Energy Efficient Buildings: Motivations for making energy efficient investments (or more general sustainability goals) ranged from global responsibility in the face of global warming to individual revenue and cost assessments. Factors such as marketability in the short and long term also played a role.

The right thing to do: Some developers saw their product as playing a key role in addressing issues of global warming, and would make investment energy efficient even if the returns would not justify the investment on financial grounds alone. A description of the Empire State Building retrofit process identifies the “desire to prove or disprove the cost-effectiveness of energy efficiency retrofits” and “a desire to reduce greenhouse gas emissions and operating costs” as two major motivations (Jones Lang Lasalle et al 2010).

Marketability: Most of the developers of new buildings whom we interviewed were well capitalized companies building in major markets. These builders often included energy efficiency and even LEED design in their building plans for reasons of marketability. This was important both in the short term and from a longer perspective. An immediate benefit was to be able to “attract the best talent” to a building (as put by a nonprofit consultant to the Clinton Climate Initiative in Chicago), or capture a larger market share of tenants (as identified by an energy finance consultant). A green upgrade could make a rehab project competitive in a higher class of buildings. If holding investments, with possible sale in the future, perhaps five, ten, or twenty years down the line, several developers perceived building to state-of-the-art energy efficiency and sustainability as critical to maintaining future competitiveness of the product. Furthermore, LEED or Energy Star status had become part of the “brand” of several developers.

Cost Effectiveness: This is an important consideration but not always straightforward. In addition, it interacts with other factors such as expected payback period. Lenders may be more responsive to features that will pay back their cost within the loan period (usually one to three years). Several respondents described a hierarchy of energy investments, from the “low hanging fruit” of lighting, which “almost always works,” to the process of retro-commissioning (fine tuning energy operations in the building), to automating energy controls, to water conservation, to larger capital investments for new chillers or heating equipment, or for other heavy equipment or major building components. A full program design may include all of these approaches, but the owner may choose to do only the most cost effective and least intrusive first, ultimately abandoning the more costly or disruptive pieces of the plan.

Cash Flow: Lenders have few tools for evaluating many of the positive aspects of green or energy efficient buildings (as described in the barriers section that follows), but they if the improvement can be demonstrated to affect cash flow, then this can motivate lending to a green real estate project.

Government Regulations and Incentives: Where government requires energy efficient new construction or efficiency upgrades on sale, building owners make the investment. Incentives also influence the quantity and type of investment. Even the requirement to disclose energy use on sale may influence owners to make investments in energy efficiency. A large property management company interviewed noted that earlier, owners acted because of government requirements, leading to a clustering of energy efficient or sustainable buildings in California, Seattle, Washington DC and New York City. One respondent noted the irony that far more solar energy equipment is installed in New Jersey, which has tough standards, than in Arizona, which has no specific renewable requirements and no incentives, but many more days of sunshine. A consultant referred to local governments as the “heroes,” taking the most aggressive action in requiring energy efficient construction and operations.

Utility company pricing structure: Pricing level and variations by use may affect investment in operations to improve energy efficiency as well as in capital improvements. One engineer from a financial institution noted that building owners in places where utilities used escalating fee schedules on energy usage were more likely to want to know and manage energy cost details.

Precipitating event: An ESCO respondent noted that their clients are often brought to them by a precipitating event. A commercial building owner may come to the ESCO because of an initiating need, such as a burst pipe or tenant complaints. Fixing the issue may lead to a more comprehensive project than the customer initially envisioned. A financial consultant gave the example of a major retail project where the precipitating event was the need for a new roof. Even large institutions may have a precipitating driver. For example, a college or private corporation may have signed an agreement to go carbon neutral, but more often these institutions consider a large retrofit because they are already involved in some building infrastructure project and decide to add energy efficiency to it.

A culture of sustainability: Green investment may be self-perpetuating. One investment firm in purchasing real estate first looks broadly for regions where land use patterns are “sustainable,” and then invests in buildings, making sustainability improvements if needed, but with a preference for sustainability already in place. Sustainability of the location and metropolitan area further supports the marketability of the project and the company “brand.”

Barriers: Barriers to adoption of energy efficient technologies and other sustainability measures include, for developers, complexity of the decisions, information gaps, regulatory barriers, problems with costs, paybacks, and allocation of benefits, financing options, and other agency problems. On the management side, ownership complexities add to agency problems. For lenders, silos, a traditional due diligence process that ignores energy efficiency and sustainability, measurement issues, and multiple loans on a property generate further issues.

Complexity: For a large mixed-product real estate portfolio, balancing strategies and assessments of costs and benefits over several different product types, across multiple locations and jurisdictions can be daunting. One such firm has resorted to several layers of consultants, at one end addressing the companywide (worldwide) carbon footprint, at the other end addressing the specifics of energy management in individual buildings. Complexity of ownership structure is another factor. A major brokerage/management firm found that the building portfolio of a single

real estate fund may have multiple owners (depending on when acquired and timing of investors) and multiple payback periods, complicating goals and how investments must be evaluated. Complexity may also bedevil older buildings. One nonprofit working on the Chicago Merchandise Mart upgrade pointed to building age, size, and a history of incremental upgrades that left the building with a hodge-podge of equipment, some needing replacement, some fully functional. The retrofit focused on quick fixes (lighting, systems automation) along with some operations changes, rather than on larger equipment investments and building rehabilitation.

Information and understanding: Without expertise in the area, it is hard for the developer or owner to sift between effective and ineffective energy efficiency measures. “A lot of what is out there is junk,” said one manager of energy efficient office and apartment properties, referring to energy efficiency products on the market. Poor training of operators can turn an efficient capital investment into an inefficient operation. Furthermore, one consultant emphasized that energy costs are hard to see and to predict and are not high on the list of what is looked at when a commercial building is evaluated. Information can be an issue from the point of view of providers of energy efficiency services. One engineering company providing web-based software mentioned the steep learning curve required when first working with commercial real estate clients. Information gaps resurface as capital is sought for the investment. A consultant commented that commercial real estate lending has no standard set of tools for due diligence, and that adding energy efficiency (or more broadly sustainability) “is just one more piece to try to fit into something already not standard.”

Regulatory barriers: Although local government may be the driver of new investments, it may also be an impediment. One builder pointed to issues related to site layout requirements that prevented optimal placement of buildings for solar use, as well as issues arising over the use of solar tiles on roofs.

Costs and payback periods: Costs may at the same time be too low and too high. Energy costs for some types of buildings are a small part of the total expense to the tenant, and thus receive much less attention than other aspects of the rental space or the company operation. On the other hand, capital costs for some types of energy efficiency may be much higher than other alternatives. The investor in low end properties to be turned around within a few years reported that new (more energy efficient) equipment was five times the cost of repairing old equipment, and therefore not in the interest of the fund. Other builders reported that if the tenant or buyer was more interested in cosmetic features than energy efficiency, this is where the investment would focus. One consultant mentioned the certification cost of the LEED process could be a barrier even before financing was considered. The payback period for some new technologies, such as solar, can be long compared to the expected holding period of the property or typical commercial mortgage terms. Several respondents commented that solar cannot pay for itself without subsidies in the form of incentives. One pointed out that costs decline when solar was standard throughout the project rather than optional, but that this would raise costs for all tenants, although not by as much as the cost for solar just for a single tenant. One nonprofit mentioned more generally that commercial buildings, with expectations of a one to three year payback period, were much harder to work with than the public sector, which was willing to evaluate costs and returns on a 15 year time horizon.

Who pays, who benefits—lease structure: For commercial properties in particular, and tenant based properties more broadly, the building owner may be the investor in energy improvements, responsible for costs, but depending on the lease structure, it may be the tenant who reaps the benefits of the savings. Much of downtown office space is in full service leases, because of the higher costs of trying to allocate costs by tenant category, and because of the generally homogeneous style of tenants. Most retail properties, some suburban office space, and a portion of downtown space is in multi-tenant buildings with triple-net leases, meaning the tenant, not the landlord, pays utility costs. This may be either through direct metering of each unit or through pass through of costs based on square footage. The latter is perhaps the least effective from the point of view of encouraging energy efficient operations. The owner simply passes through the costs, and thus has less incentive for designing energy efficient space, while the tenant shares in the overall costs of usage, and thus has less incentive to conserve energy, as the savings are then diffused across all tenants.

Financing: There is no clear path to financing energy improvements. Within the traditional lending community, functions are siloed, so that the group that might underwrite green technology is separate from the commercial lending group. The owner may have to look beyond the usual lending community to finance the energy saving investments. One company gave the example of using a combination of self-financing, third party front end financing, and bonds sold to European investors to cover the financing needs of the energy retrofit. Another reported that among traditional lenders, the appraisers are not willing to give full weight to energy efficiency and green features. An appraiser from a lending institution was making early efforts to gather the information needed to move from case-by-case ad-hoc decisions to a more integrated consideration of green factors, including energy efficiency. Some found specialty lenders such as ESCOs an alternative way of financing, but others continued to seek but not find financing from traditional lenders, preferring to have more control over the savings from the investment. For any type of funding, the payback period was also at issue. Lenders, reluctant to lend at all in the 2010 financial climate, were seeking a one to three year lending term, while borrowers for larger investments were hoping for longer term, of up to seven years. Financing constraints will influence not only whether the investment happens but how the job is done, according to an ESCO respondent. Work will be staged to meet the available capital, generally ordered towards the greatest payback first. Smaller owners have a harder time qualifying for all kinds of financing, and may have less access to contractors such as ESCOs. The ESCO business model involves up-front costs to the firm such as free assessments, many of which bring in no income—as a result, they may focus on large projects of 100,000 square feet or more, and are less likely to service small projects.

Multiple layers of lending: Several respondents mentioned that there is a cost to trying to integrate multiple sources of funding. With a combination of rebates, PACE, working capital and other funds, one respondent asks “Where are the security, title, rights, responsibilities when there is a problem?” This is one of the elements making traditional lenders reluctant to take on loans for a building with PACE funding.

Whose in charge? Consultants and nonprofits pointed out that energy is not a profit center, so there may be no leadership from the top. Because there is no one department in charge of energy usage levels, it is hard to identify who should make decisions regarding energy efficiency

investments. Nonprofits found this to be particularly a problem for commercial buildings. In addition, this may dilute motivation—building owners may like the idea of a “green” campus, but may not have the time to follow through on the concept, as there is no individual for whom energy use is a first priority. Large property management firms saw other impediments related to the allocation of responsibility. A single portfolio may have multiple firms managing the properties. One service provider described a 155 building portfolio with 45 different management firms involved. This type of management works against developing a comprehensive energy management program across the portfolio.

Ownership Structure and Lending: The type of owner will influence the lender’s willingness to finance energy investments. An ESCO respondent noted that the LLC structure of real estate ownership can make it difficult for the owner to provide the value basis the bank will require to secure the loan. If each property in an investment firm’s portfolio is held in an LLC structure, this can further weaken their basis for borrowing. With REITs, because properties are valued by comparables, energy savings will not be incorporated into the evaluation when a loan is being considered. Investment grade owners with strong credit ratings are more likely to get loans than other types of owners, regardless of the energy efficiency aspects of the project.

Table 2. Table 2: Factors Expected to Influence Rate of Adoption of Energy Efficiency and Green Design

Expected Results			
Factors	Positive (incentive)	Negative (barrier)	Indeterminant
Market conditions	High rents	Vacancy	
Building characteristics	High rent Large floorplate or height Year built	Triple-net leases	Vacancy
Metro area economy	Large city High income/output High energy costs		High unemployment/ employment volatility
Metro area urban form	Density Mixed use		sprawl
Metro area sustainability	Transit use		Pollutant levels