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Title: A New Lease on Sustainable Building
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Rising energy costs, coupled with the growing volume of data on the financial paybacks associated with high-performance buildings, make a strong business case for owner-occupants to invest in sustainable design and construction. It's more difficult to justify for commercial developer-landlords, who must structure a lease agreement that will be both profitable for investors and attractive to tenants. It's particularly challenging to make the numbers work for a sustainable multi-tenant laboratory building, which typically runs 24/7 at high operating expenses. One way to make such a project feasible is through use of a triple-net lease, in which the tenants pay their share of the operating expenses, maintenance costs and property management fees against a gross rental fee, the developer ends up with a fixed net income from the net rent, while affording the tenant the passed-through financial advantages of the high-performance building. It's a win-win. But here's the catch: How does the developer demonstrate that each tenant is actually paying its fair share of the expenses? Most developers estimate. But there is a better way - through an innovative utility sub-metering strategy supported by measurement and verification. The 670 Albany Street at BioSquare, a pilot project for LEED Core & Shell Program, was designed with this strategy in mind.

A multi-tenant laboratory development, 670 Albany Street at BioSquare, provides core-and-shell lab facilities for eight to 10 tenants in a 176,000-gross-square-foot building of eight stories plus a mechanical penthouse. Design and construction of the $53 million LEED Core & Shell project was completed in 24 months, and the building opened in fall 2005. As of December 2007, the building was occupied by five different user groups from Boston University and Boston Medical Center with a leasing rate of 90 percent. The owner is 670 Albany Street 2004 LLC, while Jones Lang LaSalle is the development manager, leasing agent and property manager.

Enhancing Marketability

Given that utilities are becoming an increasingly large proportion of operating expenses, and there's no end in sight to this upward spiral, the owner's strategy in pursuing LEED certification was to enhance the project's marketability to tenants through triple-net lease agreements offering lower pass-through operating expenses than competing lab product in the marketplace. The owner and designers determined that operating expenses could be accurately calculated and apportioned using an innovative utility sub-metering strategy supported by measurement and verification - so that each tenant was paying for actual utility usage, not an estimated share of the totals - providing the economic incentive for tenants to drive conservation through their organizations.

This strategy requires metering the load of each utility for the building as a whole, and sub-metering of the loads at the points where the associated risers branch off into each tenant's space. For each utility, the load is metered where it enters the building in order to determine a total amount, and branch meters are used for each tenant; individual tenants pay for their actual usage of utilities - electricity, autoclave or process steam - in their own spaces. In public areas, which are considered rentable space, utilities - including exterior lighting, interior lighting and elevator operation - are also passed to tenants through the triple-net lease. These costs, however, are infinitesimal compared to the actual demand from the tenant.

Calculating Tenant Shares of HVAC

The most significant engineering challenge was accurate measurement, apportionment and recovery of the cost of electricity, and district steam to run the HVAC's central plant system. The project engineers devised an innovative solution: airflow meters installed in the distribution branches at each tenant's space measure their actual usage in cubic feet per minute (CFM), and associated costs are calculated and apportioned per CFM of use.

The measurement of airflow is not yet standard. In fact, the ability to identify, measure and verify what each space is using for HVAC is unusual in the market today. Most building owners pass through utility costs using estimates based on the leased area in square feet. Measurement of electricity, gas and steam use, per se, is fairly straightforward. But it's a challenge for most owners to apportion the cost of HVAC use, which is such a large component in lab buildings, particularly because they're single-pass systems comprising several different utilities.

The strategy also required the addition of approximately 20 percent more control points on the automated building management system than might

have been required on a typical building, which incurred additional expense for the technology. There were also consulting expenses associated with designing the system and writing the measurement and verification plan. However, most of these additional capital costs were offset through utility company rebates.

The building is eligible for a LEED point for Measurement & Verification under Category 4, Energy & Atmosphere. As of December 2007, the owners were in the midst of conducting the first verification analysis, which will be used to verify the energy savings projected using design-phase energy modeling. While computer technology has made it possible to perform energy modeling studies, these remain somewhat suspect in the minds of many designers and owners, who wonder to what extent they represent "real life." It will be exciting to compare real data with the model projections.

The Bottom Line

The project has been successful in that it is completed, and the building is almost fully leased. Frankly, however, it is still too early to determine whether the building has gained the marketing advantage envisioned by the owners when the decision was made to implement this method of reducing pass-though utility costs to tenants. There are so many other factors involved - including the economy and regional market conditions - that it's still premature to say whether this approach has given the owners "a new lease" on sustainable building. Certainly, the systems that were put in place do not represent a hurdle that cannot be scaled from the standpoint of capital cost. Many designers and developers remain convinced that LEED certification is the wave of the future, especially as energy costs continue to rise. And it is the economic benefits that will drive this through the real estate industry.