

# Green Building Roundtable: Balancing Fact and Fiction

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Panelists:

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**BACKGROUND**

A new phrase has entered the vocabulary of real estate: “green building.” Everywhere one turns, there is yet another conference, article or marketing campaign advocating for green or sustainable real estate. The Urban Land Institute (ULI) has a monthly column, CoStar now includes green ratings in its building attributes, and many other self-appointed organizations are being created to address the new market. Major private and public real estate portfolios and their managers are responding to boardroom edicts with announcements that they will only acquire green buildings. Many architects have changed their standard contract forms to



**About the Participants**

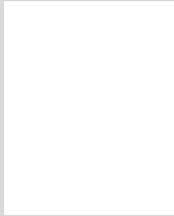
**Susanne Ethridge Cannon** is an associate professor of finance, and the Douglas and Cynthia Crocker Endowed Director of the Real Estate Center at DePaul University, Chicago, where she teaches undergraduate and M.B.A. real estate investment classes. Dr. Cannon has a B.A. in economics and a Ph.D. in finance, both from the University of Texas. She has authored papers on topics as varied as corporate governance, real estate feasibility, eminent domain, and housing markets, and has worked extensively in urban land use issues.



**Ujjval Vyas** is the principal of Alberti Group, a Chicago-based interdisciplinary consultancy specializing in emerging issues in the building industry including sustainability and high-performance buildings, building information modeling, and alternative project delivery systems. He has lectured and published extensively on legal and business risks in the sustainable building marketplace, covering large-scale policy, insurance, legal and technical issues. Dr. Vyas holds a Ph.D. from the University of Chicago and a J.D. with honors from Illinois Institute of Technology/Chicago-Kent College of Law.

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## About the Panelists



**Dr. Roger H. Bezdek, Ph.D.**, is president of Management Information Services, Inc. He has 30 years' experience in consulting and management in the environmental, energy efficiency, renewable energy, utility and regulatory areas, serving in private industry, academia and the federal government. His consulting background includes estimating the costs and

benefits of energy efficiency and renewable energy programs, energy and environmental industry forecasting, environmental impact assessments, and creation and management of federal energy efficiency and renewable energy R&D programs.



**Mark Jewell** is the founder and president of RealWinWin, Inc., and previously founder and president of EEFG, an energy-efficiency consulting firm. He has spent 20 years in commercial real estate and nearly 15 years in energy efficiency. Jewell also worked with the U.S. Environmental Protection Agency to help create and promote the Energy Star Buildings

Program for Commercial Real Estate, a voluntary pollution-prevention initiative. He is a graduate of The Wharton School at the University of Pennsylvania, where he specialized in economics and finance.



**Molly McCabe** is the founder and president of HaydenTanmer, a firm that helps corporations and entrepreneurs maximize their financial returns by investing in sustainability and energy efficiency. She has more than 20 years of experience in real estate finance, business development, strategic planning, mergers, acquisitions and divestitures. McCabe was also the founder and president of Bridger

Commercial Funding, and ran Bank of America's Real Estate Capital Markets Group. She holds an M.B.A. in finance and management from the University of San Francisco.



**James E. Woods, Ph.D., P.E.**, is the executive director of The Building Diagnostics Research Institute, Inc., in Chevy Chase, Maryland. In 1997 he retired as the William E. Jamerson Professor of Building Construction at Virginia Polytechnic Institute and State University. Woods has served as a consultant to design engineering and architectural firms,

utility companies, state energy agencies, the U.S. Department of Energy, the U.S. Environmental Protection Agency and other private and public agencies. Woods holds an M.S. in physiological sciences, and a Ph.D. in mechanical engineering from Kansas State University.



**Frederick F. Butters, FAIA**, is an attorney with the law firm of Thomas M. Keranen & Associates, P.C., Bloomfield Hills, Michigan. The firm specializes in design professional and construction-related issues. Previously he was a practicing architect whose projects include facilities for Eastman Kodak, IBM (clean room device manufacturing facilities), Domino's

Pizza headquarters, a Toyota assembly plant and various General Dynamics armor facilities throughout the world. Butters has an M.A. in architecture from Lawrence Technological University and a J.D. from Wayne State University.



**Stephen Del Percio** is a construction attorney with Zetlin & De Chiara LLP, a Manhattan-based law firm servicing the design, construction and real estate industries. Del Percio is also the publisher of greenbuildingsNYC, an online journal that explores legal issues relating to green business, with emphasis on the LEED rating system and sustainable construction. He holds a B.S. in civil engineering from Columbia and a J.D. from

William and Mary, where he also served as managing editor of the William & Mary Environmental Law and Policy Review.

incorporate green advocacy, and legislators have been implementing green regulations ranging from Connecticut's new requirement that all buildings over \$5 million pay for and attain green certification to Chicago's expedited permitting for projects proposing to commit to a green certification.

Amidst the hype, questions remain. What are the minimum requirements for meaningful green standards? What is measurable and verifiable? What is not? The green marketing phenomenon has not always been backed up by credible technical, policy or risk management information. Much of the literature depends on

references only one step removed from marketing material. Claims are commonly made that green buildings will save energy (often very substantial amounts), increase service-worker productivity and decrease absenteeism, increase valuation, lower cap rates, decrease operating expenses and even command increased rental rates. Some of the claims for green buildings are truly striking, such as the assertion that putting up a green building certified with a particular rating system will decrease the incidence of asthma, or that increased natural light and access to views will result in better student performance.

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The hyperbole of much of the green building movement emerges from its roots in environmental advocacy. As concern about the impact of climate change has migrated to corporate boardrooms, evaluating approaches to mitigation has moved to a business decision or fiduciary framework. Real estate professionals must look closely at green buildings precisely to distinguish the marketing perception of value from actual underlying cost and benefit along with their attendant market opportunities and risks.

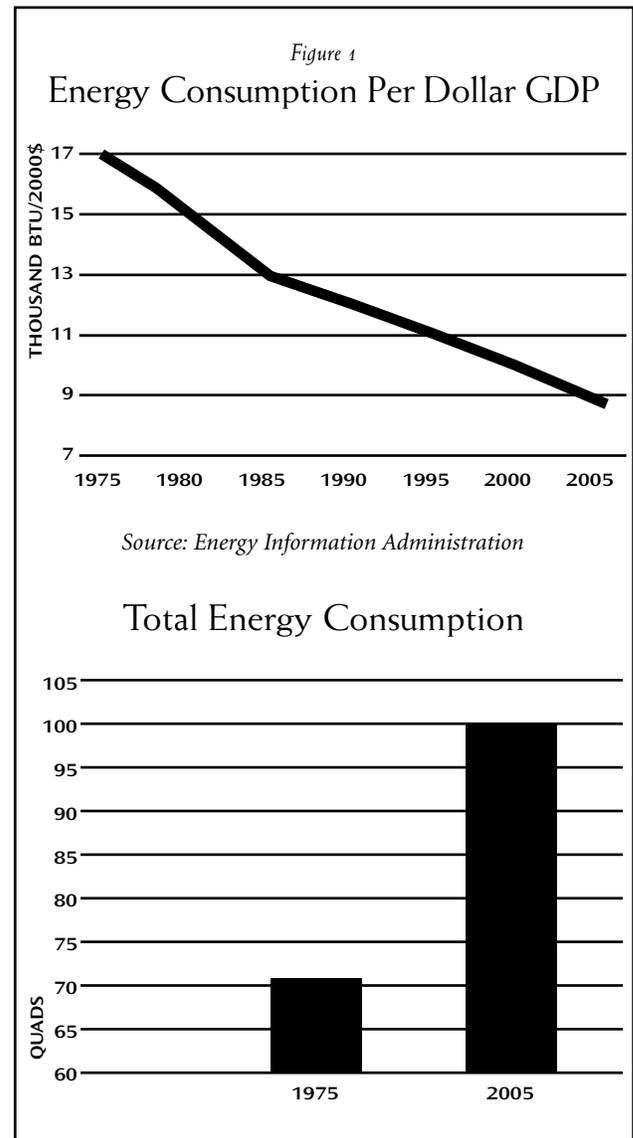
Surveying this new landscape, the Real Estate Center at DePaul University, Chicago, and Alberti Group organized a two-day conference in Chicago entitled, "Managing the Risk of Sustainable Buildings: Policy, Performance and Pitfalls." The conference brought real estate professionals together with attorneys, insurance and surety professionals, architects and engineers, and policymakers. It was the first conference of its kind because it sought to deal with the issues not from the point of view of advocates or believers, but of decision-makers seeking objective information to make risk-adjusted cost-benefit decisions. The theme of the conference speakers was not whether creating sustainable or green buildings is laudable, but how sustainability can be achieved with solutions that are also economically sound.

## DISCUSSION

**MODERATORS:** *One of the most important reasons for pursuing green buildings has been the growing problem of energy security and availability in this country. Combine this with the more recent calls for decreasing energy consumption as a result of concerns about global climate change, and it is evident that policymakers are faced with a very difficult task. The 2007 Energy Security and Independence Act is just one example of attempts to meet this challenge.*

*Given the vast scope of this problem, what are some of the bigger issues and what will be the role of renewable energy in future?*

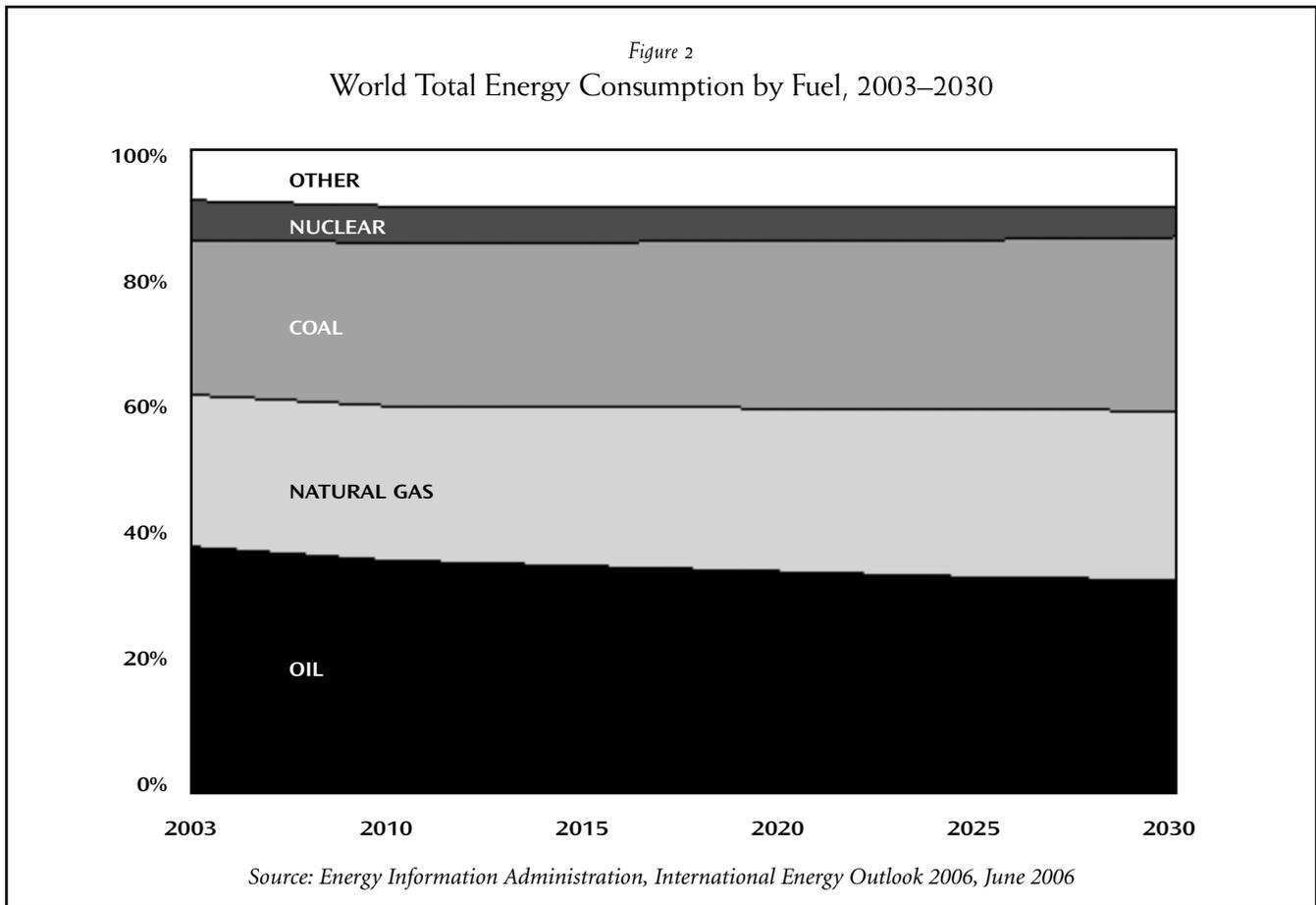
**BEZDEK:** Let me start with something that is well known to economists, the Jevons Paradox. Loosely put, this tells us that the more efficient we become in using a given resource (in Jevons' day it was coal for steam engines), the more we consume of that resource. Even though there is some debate about whether this will happen with the



current energy supply from oil, natural gas and coal, there is more than enough evidence to indicate that this has been the case for the last 30 to 40 years. As the illustration (Figure 1) shows, the efficiency of energy use has increased dramatically, but at the same time energy consumption per capita has far outstripped the efficiency of use.<sup>1</sup>

This fact brings home the importance of keeping energy efficiency and energy consumption clearly separated in our minds. Energy efficiency is a very good thing, but this does not equal a decrease in total consumption and may in fact lead to an increase in overall consumption. Since energy security and greenhouse gas concerns are linked directly to the overall energy consumed and not to

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the efficiency of the energy resource units, any policy that counts disproportionately on energy efficiency as a solution will likely prove ineffective.

Energy consumption worldwide is forecast to grow from 421 Quads to 721 Quads by 2030 (Figure 2). This massive forecast increase in energy use already takes into account significantly increased energy efficiency in all sectors. The forecast shows two further points of interest. First, it shows that renewable energy sources will make up a negligible portion of the fuel input. Second, it shows that oil, coal and natural gas will continue to be the fuels of choice for energy production for the near future. In fact, though not on this chart, photovoltaics, solar thermal and wind energy in the U.S. will account for only about one percent of the energy consumed in 2030. If this is the case—and it appears likely that it will be—concentrating only on policy decisions to subsidize these industries while demonizing oil and coal will further exacerbate U.S. energy supply, reliability and security

problems.

**MODERATORS:** *You have been involved in the economics of renewable energy for more than 30 years. What are your thoughts about the move towards using renewable energy as an important attribute of green buildings?*

**BEZDEK:** Anything we can do to decrease building energy consumption—while ensuring that basic building services and functions are preserved—may help, but I think there are three basic issues to examine. First, wind and solar technologies suffer from intermittency and lack of reliability associated with the natural processes they seek to exploit. If it's dark or cloudy or calm, these technologies will not provide the kind of power that is necessary to act as a primary supply source. This means that, as far as I can tell, some other fully redundant system must be available to deliver energy to the building. Backup generators or power sources can be very expensive and in some cases, such as diesel generators, a significant source of pollution. This situation makes it difficult for renewable

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energy systems to be a primary provider of energy for a building or complex of buildings.

Second, the payback period for the majority of renewable energy systems is still in doubt in many applications for extensive private sector use. These systems may be just around the corner from becoming economically viable, but at this time, most require substantial subsidies and tax incentives to continue their growth.

Third, it should be noted that the renewable energy and energy efficiency industry could become the basis of substantial economic opportunities for the U.S., including the creation of many “green collar jobs.” Recent work seems to indicate that this sector of the economy will be growing at a significant rate, which we can hope may further reduce the time until more renewable energy technologies become economically viable.

**MODERATORS:** *The use of energy by buildings in the U.S. has been put variously at somewhere between 30 percent and 40 percent of the total consumed. A strong motivator for the reduction of this energy consumption comes from calls for a reduction in CO<sub>2</sub> emissions to help prevent climate change. What do you see as the economic outcomes of policies that take up aggressive CO<sub>2</sub> reduction targets?*

**BEZDEK:** Attempts to reduce CO<sub>2</sub> emissions should concentrate on transportation sectors, but given the rapid growth of vehicle and air transportation in countries like China and India, it seems unlikely that the tide can be stemmed. In 2002 there were about 800 million vehicles in the world; by 2030 there will be 2 billion—or more.<sup>2</sup> A similar escalation in air traffic is expected, and annual growth rates in air transportation services in China and India are forecast to be in the range of 8–12 percent annually for the next quarter-century. Although hybrids, electric cars and other technological changes are gaining ground, they have not been adopted in sufficient numbers to stop the current growth trends in transportation liquid fuel requirements in the near future. This means that the building sector could become the major focus for regulation that aims to reduce the rate of growth of CO<sub>2</sub> emissions. Such a burden on a single sector will be difficult if not impossible to bear.

**MODERATORS:** *Let us imagine that we were able to solve the technical problems in increasing energy efficiency and decreasing energy consumption along with achieving a number of other green attributes. We would still have to face some basic real estate issues related to proper incentives for owners and tenants. When it comes to sustainable building, what are the differing incentives for owner-occupants versus income-property owners?*

**JEWELL:** First you have to agree on a definition of sustainability and/or green. Are you talking about superior energy efficiency, which has a direct impact on operating costs? Or more subtle elements, such as “green cleaning” or the presence of bike racks and showers to accommodate occupants who wish to leave their cars at home and cycle to work instead?

In the case of owner-occupants, the costs and benefits of pursuing sustainability are calibrated in both dollars and what one might call “PR points.” In other words, it’s not always as simple as investing incremental dollars to yield incrementally lower operating costs. Many owner-occupants build a “green” trophy asset so that they can telegraph the message “I am an environmental leader” to various audiences from Wall Street to Main Street. It’s unfortunate, but sometimes you see a real disconnect in decision-making—for example, when a CEO invests buckets of shareholder capital in a new, high-profile LEED\* Platinum-rated headquarters while many of the company’s other office buildings ignore even the lowest-hanging fruit, such as grossly inefficient lighting systems controlled by one light switch per floor.

On a related note, you’re seeing more and more income-property owners and managers taking the same “trophy” approach to sustainable building, particularly in high-profile markets where tenants are starting to demand green attributes as they lease new space. Often enough, tenants are unclear themselves as to what constitutes green and are rarely able to see past the trophy sticker unless it inures to their bottom line.

Before long, you come face to face with the old “stock” versus “flow” question: If you focus all of your greening resources on the flow of new buildings, what do you do with the stock of grossly inefficient ones that you already own?

\*Leadership in Energy and Environmental Design (LEED) Green Building Rating System™

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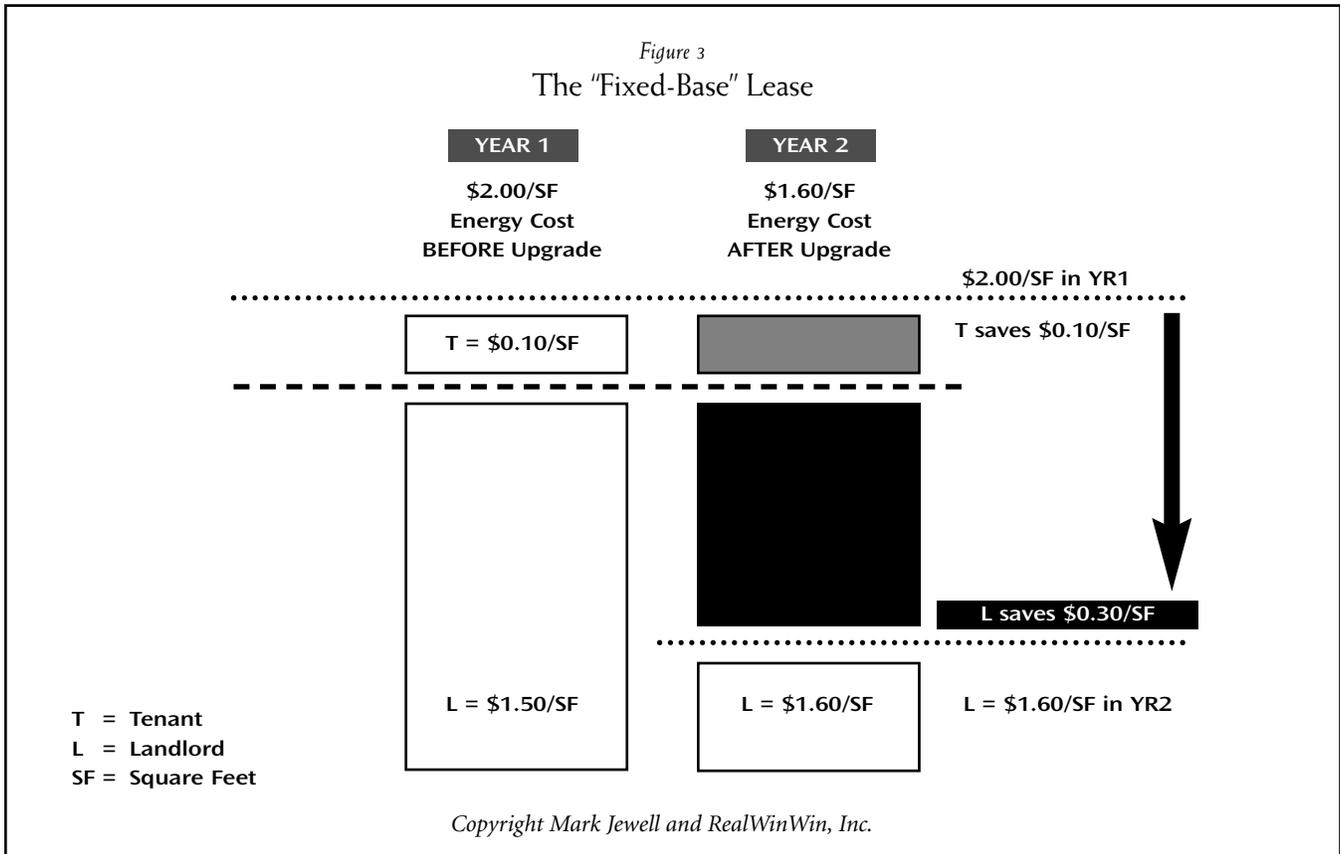
**MODERATORS:** *Who has a greater motivation to take a portfolio-wide approach to sustainability, owner-occupants or income-property owners?*

**JEWELL:** Well, that depends. One would think that income-property owners would be more highly motivated than owner-occupants when it comes to venturing beyond the trophy mentality and pursuing at least some elements of sustainability (especially the ones that influence net operating income) portfolio-wide. After all, every dime of higher rental income or lower unreimbursed operating expense per year holds the *potential* to support an extra dollar (or more) of incremental asset value, assuming a capitalization rate of 10 percent+. If green attributes do, in fact, make space easier to lease and/or less expensive to operate, landlords should be very motivated to jump on the sustainability bandwagon to make *all* of their properties more competitive, profitable and valuable—not just the green trophy buildings they currently have in development.

Before you begin to harvest that increased net operating

income and asset value, you have to determine how your existing leases would allocate the costs and benefits of doing so. And that is where so many landlords get stuck. Instead of actually benchmarking their existing buildings' energy performance (using the ENERGY STAR portfolio manager tool, for example), studying the expense-sharing provisions in their existing leases, and doing the calculations, they take the easy way out and make decisions based on myths: "Our properties are already as efficient as they can be." Or, "Our third-party property managers already have energy under control." Or, "Energy is a pass-through." Or, "It doesn't make sense to invest dollars in improving energy efficiency in mid-lease because the tenant would get all the savings."

Once you decide to base your decisions on math instead of myths, you should find plenty of motivation to apply at least some sustainability initiatives across your entire stock of existing income properties. Sure, you'll have to look at which leases are gross, net or fixed-base. And in the case of the fixed-base leases, you'll have to figure out where expected savings would be enjoyed by the tenants,



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the landlord or both (Figure 3). You'll also want to know which leases have language permitting the landlord to assess tenants for the cost of capital improvements that reduce operating expenses. In the end, though, the research and math will give you the confidence to invest time and capital in sustainability initiatives. That homework will help you answer the questions; "who should pay?" and "who would benefit?"

**MODERATORS:** *How should a landlord approach quantifying the sustainability value proposition?*

**JEWELL:** As I mentioned earlier, you have to ask, "What are the costs and benefits of increased sustainability, and how are they allocated between the parties?" And in this context, costs and benefits include not only investments made to support enhanced efficiency and the resulting savings in operating expenses (for example, lower utility bills). You also need to consider indirect effects, such as the cost of increased vacancy when a building fails to compete in a world where a certain level of efficiency becomes "market," or conversely, the benefit of improved tenant attraction and retention if that same building's innovative energy-efficient systems, operating practices and/or other green attributes are admired in the marketplace.

**MODERATORS:** *Why do you think that rating systems such as LEED and ENERGY STAR have become so popular, and what influence have they had on the commercial real estate market?*

**JEWELL:** We live in a culture where 30-second sound bites play a large role in influencing decisions, even if the underlying issues are complex—think global warming or the presidential election. Property management roles are over-tasked and understaffed. When it comes to hot button topics like "environmental," "green" and "sustainable," managers gravitate toward easy-to-understand proxies for "making the grade" or, in keeping with the hyper-competitive spirit of commercial real estate, "being better than the next guy" so that their building gets and keeps the best tenants. The ENERGY STAR label for buildings is 10 years old this year, and I would say that over the last decade it's had a profoundly positive effect on making the concept of *normalized building energy performance* accessible for a wide variety of real estate decision-makers. It really has become the "miles per gallon" sticker for buildings.

That said, in the case of ENERGY STAR, the fact that a building scores in the 75th percentile (or higher) and receives the label does *not* mean that building has no room for improvement on the efficiency front. As an example, our engineers have identified plenty of cost-effective energy-conservation measures for buildings with scores of 90 and higher. So, one downside of the ENERGY STAR label is that some managers think of it as something that they hurry up and get so that they can focus on other things. Building owners shouldn't think getting an ENERGY STAR label means, "No potential for further efficiency improvements here."

By the way, unless a building scores 75 or higher and wishes to receive the label (which requires verification by a third party), you can't be sure that the right data points were entered into the benchmarking tool. I can assure you that there are plenty of buildings out there that have erroneous scores due to overstated operating hours and other specious inputs. Just because a building claims its ENERGY STAR score is 74 doesn't mean it is.

Using a LEED rating as a proxy for efficiency presents additional challenges. As you may know, LEED grades a building on many dimensions of sustainability, only one of which is energy efficiency. In the most recent version of *LEED for Existing Buildings: Operations and Maintenance*, if a building has enough points in categories other than energy, that building could attain LEED certification with an ENERGY STAR score of only 69. LEED provides a -systematic approach to gauging some attributes of a building's sustainability. However, if your main interest is enhanced operating efficiency, you'll want to have more than a 30-second sound bite level of understanding when leasing, buying or selling commercial real estate.

**MODERATORS:** *Until now, the basic methodology for the technical and non-technical studies often cited for sustainable outcomes have been pretty casual. This will begin to change as the level of objective scrutiny increases as well as the number of unbiased scholars interested in this area. Attempts are being made to acquire and analyze some data, though there are still fundamental problems with method and with adequate data for meaningful analysis.*

*Having looked at a swath of the extant literature regarding green building valuation, what have you concluded about the nature of the current research in this arena?*

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**MCCABE:** Quite frankly, on the valuation side, it is lacking. This really shouldn't be a surprise. The demand to collect and analyze information on green buildings or sustainability more broadly has quickly moved from a low hum to a high frequency. Shareholder initiatives, consumer campaigns and new legislation are requiring investors to be quick on their feet in addressing these issues when considering future risk and opportunities. Only recently has sustainability been seen as germane in effectively managing real estate assets.

Due to this rapidly changing landscape, we're playing catch-up. Unfortunately, we don't have hard numbers on the subject because there are limited means of screening the properties (LEED, ENERGY STAR, Green Globes rating) and no comprehensive mechanism to capture the data. We really need to do the work first to define the characteristics and variables that describe a property's sustainability, and then we can substantively start the process of tracking and measuring asset, portfolio and investment performance. All of this is going to take time.

**MODERATORS:** *What kinds of data are available to draw on in trying to answer these questions?*

**MCCABE:** Much of the analysis around sustainability has focused on first costs and projected energy efficiency, an area that has its own serious problems. There is much less robust work around rental rates, vacancy, turn-over and value premiums. The easiest way to analyze value enhancement is to compare returns on comparable green buildings to conventional properties. The data set is disappointingly small. CoStar recently upgraded its database to allow for designation as a LEED or ENERGY STAR property. As of November 2007, CoStar had collected basic performance data on 307 LEED certified properties and 626 ENERGY STAR buildings as compared to more than one million conventional buildings in their database. RREEF published a paper in November 2007, "The Greening of U.S. Investment Real Estate—Market Fundamentals, Prospects and Opportunities," looking at the CoStar data in more depth. RREEF's drill-down analysis focused specifically on the office sector. They identified 232 LEED designated office buildings, 114 of which were designated Class A. This compares to 14,000 Class A properties across the CoStar universe. As a first cut, the LEED Class A buildings outperformed the broader data set both in rents

(\$39/sq.ft. vs. \$29/sq.ft.) and occupancy (7.4 percent vacancy vs. 11.6 percent). While this study shows suggestive trends, it cannot be considered statistically significant based on its small sample size and because it did not account for location, age and other appropriate adjustments. We need to study buildings that are similar and the same age, and compare those that are designated green with those that are not.

With regard to long-term financial performance and the impact on value and discount rates, again, the data are sparse. Clearly, if energy efficiencies translate into lower operating costs, then, as compared to a conventional property, a sustainable one would have higher net operating income and consequently a higher value. One can also posit that these properties have inherently lower risk of exposure to volatility in price and resource availability, which again should translate into lower capitalization and discount rates. But we don't have enough data to confirm that supposition.

**MODERATORS:** *What types of common difficulties have you seen in the data and what provisional conclusions have you drawn?*

**MCCABE:** The two most common errors are considering sustainable features as distinct and separate from the overall real estate investment decision, and drawing broad conclusions from a limited data set, or one derived from opinion, hypothetical numbers or projected numbers, rather than actual performance in place. There are unique risks and benefits that accrue to sustainable features. What is important is that the analysis incorporate a sophisticated discussion of the risk analysis inherent in investor decision-making and valuation, and provide a framework for evaluating the impact sustainable attributes will have on the bottom line.

Do sustainable design features lead to higher rents, faster absorption and lower turnover? It's difficult to say. Some anecdotal evidence and even some analysis suggest that sustainability has a positive impact on absorption and turnover. At this point, we don't know if tenants will pay more for sustainable features.

Are sustainable properties more valuable over the long term? Once again, there's not enough data to answer this question. Still, logic suggests that a higher net operating income (due to lower operating expenses) will lead

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directly to higher property values. We should also keep in mind that energy costs, which are increasingly influenced by developing markets around the world, will continue to exert pressure on overall pricing and availability. If we lower our exposure to energy price volatility and resource availability, we reduce our risk. This should mean a lower capitalization rate and/or discount rate.

**MODERATORS:** *We have little data to help resolve the question of valuation of this new type of building. If these buildings can actually increase NOI as a result of decreased operating expenses, or have a lower capitalization rate in recognition of risk reduction from energy price or supply shocks, many in the industry would see this as more than adequate reason to pursue a green strategy. However, to achieve these ends the buildings would have to perform not only at inception but over their operating lives at a higher level, particularly in terms of energy consumption. This improved performance can be achieved, but it is not yet clear at what cost or if rating system certifications can act as viable proxies for energy performance during the operations phase.*

*In very general terms, what should an owner know at the outset when thinking about building or purchasing a green building?*

**WOODS:** In today's excitement about sustainable, high-performance and green buildings, it is unclear what is meant by "building performance." Each of those descriptors alludes to some improved building performance over a baseline or reference which is seldom defined in measurable or verifiable terms. As a result, *accountability* is seldom realized for delivering or operating buildings that meet objective, measurable criteria that are of primary importance to the building owner or tenant.

One of the promised outcomes of sustainable, high-performance, green buildings is reduced energy consumption. Expectations have been raised that these buildings can reduce energy consumption by 30 percent or more compared to the existing building stock. This promise is not new: reduced energy consumption in buildings has been a goal since the energy crisis of the 1970s. When the first version of the standard on energy conservation in new buildings was published in 1975 by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE Standard 90-75), the average annual energy consumption of existing commercial buildings

exceeded 100,000 Btu/gross sq.ft. (GSF), according to the Commercial Building Energy Consumption Survey (CBECS) database maintained by the U.S. Department of Energy. Since 1982, the target for annual energy consumption of CBECS buildings has been 55,000 Btu/GSF, but the actual consumption has been statistically flat at 88,000 Btu/GSF. The fact is that the targets for decreased energy consumption have not been met for the last 25 years and are unlikely to be met in the near future. This doesn't mean that some buildings may not achieve these targets, especially if they are driven by measurable and verifiable performance metrics, only that a large-scale average reduction from the benchmark will be quite difficult. In part, this is a result of the continued increase in energy consumption pointed out by Roger Bezdek earlier. Current targets being bandied about such as "net zero energy consumption" or "carbon-neutral" by 2030 pose challenges far beyond the 55,000 Btu/GSF target which has proved unattainable. It should be kept in mind that even in highly rated green buildings, energy consumption can be far below or far above the benchmark.

It is important that green buildings first provide the functions for which they were intended by the state and the owner: health, safety, security, comfort and well-being, occupant performance, productivity, and attractive rate of return on investment. Thus, building performance should be defined as a set of measured responses of a building, as a system, to actual or anticipated physical or social forcing functions. In this regard, energy consumption is a required component to achieve these measured responses, but energy should not be wasted. This principle leads to a goal of increasing energy efficiency, which may be defined as the ratio of the *energy required* to provide for the health, safety, security and functions within the building divided by the *energy consumed* to do so. In this context, the difference between energy required and energy consumed is *energy wasted*, which is to be minimized together with the *energy required*. Accountability can then be ascertained in terms of a defined set of building performance criteria.

My experience in reviewing cases of sustainable, high-performance and green buildings, as well as those that were not so labeled, reveals that building performance assessment requires compliance with a comprehensive set of criteria. Otherwise, the focus of the assessment becomes biased toward selected limited criteria. For

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example, a goal for a low-energy consumption rate may lead to a decrease in occupant productivity if there is an increase in occupant discomfort. Functional considerations often clash with green attributes, just as one green attribute may clash with another. My own experience has indicated that there are major award-winning green buildings that do not stand up to closer scrutiny once they are fully operational. I cannot say if this is a common or systemic problem, but I can say that owners need to be particularly careful if they are actively seeking to increase the real performance of their buildings.

Achieving and maintaining a sustainable, high-performance or green building requires early and clear definitions of site-specific measurable criteria. Without such criteria, and the measurement and verification protocols to determine compliance, few buildings can deliver the outcomes with adequate accountability to create higher asset value. In fact, the more often owners hold the programming, design, construction and operation parties accountable for improvements in building performance, the greater the chances of reaching the worthwhile goals of this kind of building.

**MODERATORS:** *One of the more hidden aspects of green building remains the legal risk for the parties involved. Proper leasing language, surety bonding concerns, constitutionality of green zoning or building requirements, fiduciary duties of portfolio managers preferentially acquiring green buildings, and the developer's failure to meet the expectations of tenants or condo purchasers are just some of the issues. A specific area of concern has been the role of the architect (and engineers as well) in this process. You have talked about the realignment of the traditional architectural scope and delivery of building performance and how that poses some fundamental legal risk for both the owner and the architect, especially since the traditional affirmative duty of due diligence and unbiased counsel to the owner may be changing.*

*What do you see as the most important change in the role of the architect in green buildings?*

**BUTTERS:** Until the onset of “green architecture” as it is currently characterized, the architect would develop his or her work product in a manner best calculated to meet the owner’s needs. In theory, the architect worked to optimize the owner’s interests in the context of a particular project without taking an advocacy role for any

particular solution. However, current “green design” thinking changes that approach and places the architect in an advocacy role. In addition, the architect’s work has traditionally been separate from performance. However, as the architect begins to advocate in favor of particular design solutions—presumably on the basis that they will be justified by the performance—that separation will begin to dissolve and the architect will find himself or herself being painted as responsible for building performance.

**MODERATORS:** *What are some of the most important risks facing the owner who is hiring a design professional to produce a green building? What are the risks for the architect/design professional?*

**BUTTERS:** Of course the owner remains responsible for the financial performance of the building. If the owner begins to include promised green design performance levels in a project pro forma, or otherwise makes financial decisions predicated on the promised performance characteristics of a green building, the owner must first develop a very high degree of confidence in those promised performance characteristics, or run the risk that if the building fails to perform as promised the financials will be negatively affected. The risk for the design professional is that he or she may see increasing financial liability in circumstances where buildings fail to perform at projected levels. Unfortunately, some early evaluations suggest that performance projections are indeed overstated. As such, both the owner and the design professional may see increased exposure if the projections are not an accurate predictor of actual performance. This can have serious implications in the event of a dispute. The design professional may not actually be insured for this new role as advocate and that may mean that the owner has no recourse against the architect’s insurance if the building fails to deliver on its promises.

**MODERATORS:** *What role will the new American Institute of Architects 2007 Contract Documents play in either increasing or decreasing the risk to owners and architects?*

**BUTTERS:** The AIA 2007 standard documents begin to create affirmative obligations on the part of the design professional to consider, evaluate and propose green design options. Because the contract is one source of the standard of care in the tort sense, changing the contract will have an effect on the standard of care. Although the

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actual effect is as yet uncertain, it would appear that an increase in the nature, quality and extent of the contract duties relative to green design (something the 2007 AIA contract documents undeniably embody) will in turn have an expansive effect on the duties and the applicable standard of care attendant on the practice of the design professions—both in the green context and in general.

**MODERATORS:** *One of the most interesting developments in the promulgation of sustainable or green buildings has been the flurry of legislative and regulatory activity at all levels of government. At the national level, Congress passed the Energy Security and Independence Act of 2007, which explicitly references green building protocols and rating systems. At a federal level, the GSA, DOD, EPA and DOE, among many others, are all creating and promulgating regulations that embed green attributes into their procedures. Most of this is primarily driven by a hope that green buildings will save energy. The EPA also appears to have an interest in acquiring regulatory authority over indoor air quality. State and local governments are also actively participating in promulgating green through legislative and regulatory activity.*

*Can you help us understand some of the issues involved in the current legislative and regulatory activity taking place around the country?*

**DEL PERCIO:** As concern about the state of the natural environment continues to rate higher on the public's agenda, more state and local governments have enacted legislation to combat the significant environmental impact of building construction and operations. As of August 2007, 24 states and 90 local governments had adopted the U.S. Green Building Council's LEED green building standards, while 12 states had included the Green Building Initiative's Green Globes system in legislation. In the rush to respond to what many believe to be an imminent natural crisis, much of this legislation has been quickly passed without consideration of its broader legal ramifications.

First, some pieces of legislation have been poorly drafted, incorrectly defining significant terms. For example, Washington, D.C.'s Green Building Act of 2006 seems to misunderstand the fundamental concept of a performance bond, which led the National Association of Surety Bond Producers to refuse to issue such bonds until the Act's language was clarified. Second, an increasing

number of laws are now applicable to private construction, obligating projects over a certain size to comply with an independent, third-party rating system over which the local government exercises no control. In some ways, this type of legislation is simply undemocratic. It takes local government completely out of the decision-making process and hands control over the building code to a third-party organization over which the public exercises zero oversight. Third, pursuant to Supreme Court case law, constitutional questions exist over the ability of a local government to regulate private land use through the application of rating systems that may not, in fact, bear a substantial relationship to the public health, safety, morals or general welfare. Finally, legislating one specific building rating system into law may present antitrust law implications under both statutory and case law authority.

Enacting legislation without considering these critical legal implications is irresponsible and dangerous to the long-term prospects for the sustainable building movement at large. Every real estate industry stakeholder will agree that environmental conservation is an important goal. However, by quickly passing legislation that does not consider all potential legal ramifications, state and local governments may ultimately end up pushing the building industry away from that desirable outcome. A morass of litigation challenging regulatory schemes that are poorly drafted or essentially illegal could slow the sustainable building movement's positive momentum. Questioning the validity of these schemes should not be construed as legal pontification, but rather an important piece of the dialogue that will, hopefully, result in a more sustainable outcome.

**MODERATORS:** *Why do you think that this legislative and regulatory activity looks to rating systems to solve the problem of decreased energy consumption instead of crafting performance-based solutions?*

**DEL PERCIO:** The simplest answer may be that for most municipalities it's the path of least resistance. Many local governments that have enacted green building legislation are small and don't have the resources to craft their own green building code that might require compliance with a certain performance-based standard. Moreover, these municipalities are not positioned to invest the requisite time and money in the ongoing performance-verification process that such schemes would entail. Third-party rating systems are well-known, are part of extensive

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marketing campaigns, and have received significant press as the green movement has grown over the past few years. From a politician's perspective, deferring to third-party systems that have a certain cachet in the public's opinion may be preferable to assembling a task force that could take months to deliver recommendations on how to improve energy efficiency or upgrade aging building infrastructure. A second, more significant reason—though it is likely municipalities have yet to even address this scenario—is that performance-based regulatory schemes at the local level would involve significant legal considerations. Tying a building's actual performance

over time to compliance with a building code would dramatically change traditional construction contract and insurance policy relationships. Such a scenario refers back to my initial answer—investigating the twists that performance-based regulation would present to stakeholders could require significant time and effort that state and local governments—at least to date—do not seem interested in spending. ■

### ENDNOTES

1. Rubin & Tal, "Does Energy Efficiency Save Energy?" *CIBC World Markets, StrategEcon*, Nov. 27, 2007.
2. Dargay, Gately and Sommer, *Energy Journal*, October 2007.