

The 17th Annual International Land Policy Forum

(Thursday, 28 October 2010 Izumi Garden Gallery)

"Sustainable Real Estate Investment"

Lecture record

Scott Muldavin [Sustainable Property Performance and Financial Analysis]

I'm going to be talking about sustainable property performance and financial analysis. And I promise to keep you awake despite the title.

I want to first acknowledge and thank the many people that have helped me in my work. I have been working for about 3 years on sustainable valuation and finance and there have been many contributions by people here in Japan. Again I want to thank the Ministry of Land, Infrastructure, Transport and Tourism for the invitation to speak and participate in this Forum.

My plan for today is to first talk a little bit about the Green Building Finance Consortium. I found in my listening to many green building speakers from around the world that it's important to understand where the person is coming from in order to properly interpret their remarks.

First, the Green Building Finance Consortium started about 3 years ago, at that point in time I did not even know what sustainability meant.

I'm a real estate finance and investment professional. Three years ago I began looking for financial support for investment in sustainable property and at that time there really wasn't much, so I created this group with the mission of enabling private sector investors to evaluate sustainable property investment from a financial perspective.

So all the things that the wonderful speaker this morning spoke about—the triple bottom line and all the public benefits of sustainable value are very important to me. But my work is focused particularly on the perspective of how a private investor, when they create public value from their sustainable property investment, will actually be able to monetize the investment into value.

Just a bit about work and focus of the Green Building Finance Consortium. I look at this from the perspective of a provider of capital-- either a corporation, lender or owner. The Consortium is sponsored by the financial industry and is independent of any money from green building groups or green building product companies.

I focus on the commercial and multi-family markets not single family. I focus on methods and practices rather than the one time study of green buildings, I focus on how

the methods and practices enable one to evaluate property over time. And something that's different about my work is that I focus on the process for a specific property, not on the general business case but how do you determine value of sustainable property investment for a property.

Finally I also cover the full underwriting processes. What I mean by underwriting is if you are lender, for example, you have to originate a loan, you have to do the underwriting or the due diligence to analyze it. You have to close it. You have to conduct appraisal management. There are a whole bunch of things that an organization does in making their decision to invest.

Value is key part of underwriting, but only one part of the process. And my work actually covers all of that. Also I want to clarify the concept of value. Value is not just formal long appraisal reports.

Valuation is about being able to articulate the nature of the way value is created for the many different kinds of sustainable property investment decisions. It might be investing in a HVAC system or a new roof or might be building a brand new building with all the bells and whistles.

The roadmap for understanding sustainable property value is documented in a book I recently completed called "Value Beyond Costs Savings: How to Underwrite Sustainable Property". This book and the "Expanded Chapters" and our searchable research library and other resources are all available free from the Consortium's website.

So much of what I'm talking about today you can access after my talk in greater detail.

Next, I want to talk about why sustainable property should be more valuable and why this is important. This is essentially the business case for sustainable properties. The general business case is really the starting point for a person conducting a valuation or underwriting of a sustainable property.

You start with a hypothesis that the value should be there. But you actually have to test the hypothesis at the property level. Again I'm going to talk about market value. There are many kinds of value. Public value, enterprise value and investment values. But market value is what I'm going to focus on today.

Value beyond cost savings. This exhibit really is the essence of the work that I completed. The key theme is that energy cost --if you look at the blue box --is only a small part of the value contributor.

Unfortunately today, as evidenced in surveys and all my meetings with corporations and investors, the standard practice throughout the world for investing in sustainable property is how much property investment you can justify based solely on energy cost

savings.

So, for example, if you invested a million yen and received three hundred thousand yen a year in a energy cost savings, that would be a 3 year simple pay back or about a 30% simple rate of return. Investors today are only willing to invest if they can do it with a 2 to 3 year pay back. So if we are to meet the broader societal need for substantial energy efficiency/sustainable property investment, we must integrate value concepts beyond energycosts. And now a bit about how it works.

Regulator demand for sustainability is growing throughout the world. Municipal, provincial, and federal governments are all putting a priority on reducing energy consumption. If they are more strongly demanding sustainable properties, the private sector investors can benefit through compliance with regulatory requirements, entitlement benefits, and direct subsidies and other types of benefits.

And if you have increased space user demand-- kind of a funny word but what I mean by that are tenants or occupiers such as corporate real-estate companies and also consumers that are a buying something at a retail mall would also be a space user. There is some substantial evidence which I will talk about briefly of increased demand by space users and that can translate into higher rents and occupancies, increased absorption, and increased tenant retention.

Finally investor demand has also increased. Accordingly, if more investors want sustainable properties then the discount and capitalization rate will go down and values will go up.

So if you believe that space users, regulators, and investors have increased their demand for sustainable real estate, then the value is going up. The big question is how you actually go about quantifying the value increase for a specific property.

I'm going to just talk very briefly about the evidence of increased demand for sustainable properties. I have about 3 hours of material that I can present on the evidence, but will summarize here today. Increased regulator demand is pretty well understood so I am not going to spend much time there. Everybody knows governments have been increasingly asking property owners to be more energy efficient and sustainable. Many governments in California and other parts of America, as well as the rest of the world, now mandate significant increases in energy efficiency and energy use disclosure. They have a whole program called progressive minimum standards, which mandates increasing minimum energy efficiency standards over time.

Space user demand. As Dr. McNamara spoke about earlier; it's really the occupiers that are the key to this. If occupier or space users want real-estate to be sustainable, then the investors will follow. So let's just think about, let's imagine I'm looking at particular

office building right outside this building. And I want to understand whether there is demand for energy efficiency/sustainability, I can think about government users-- government tenants occupy 18 % of all buildings in America. and even more in places like Australia were somewhere in the neighborhood of 30% of the buildings are occupied by governments. I don't know the exact number here in Japan, but it's high. And in America, and many other parts of the world, governments now require sustainable properties. That's part of the picture.

Many private companies are making commitments to sustainable property. When I say commitments by private companies, I am referring to corporate social responsibility reports, the 800 companies that signed the Principles for Responsible Investment and all the companies that are now tracked voluntarily by the Carbon Disclosure Project and all the things we talked about earlier.

You have companies with direct ties to sustainability. Architects, engineers and many others. What happens is you start adding up all these different potential groups that are interested in sustainability and the potential for increased demand becomes significant. And the truth is for a specific property you have to go a measure and analyze and talk to your tenants and see if your building is one that can capture this demand. Demographics is another big issue. Younger people get sustainability. So if your company employs a lot of young people—for example like in advertising or the technology sector, those companies are very sensitive about the potential impact of sustainable properties on their employees.

Investor demand. The previous speaker spoke a lot about this. I want to mention one group, the Green-Print Foundation as evidence investors are increasing their demand for sustainability.

This is a group that recently formed. It has about 20 major investors worth a half a trillion dollars in a investment in it. And the sole purpose of the group is to get the carbon out of buildings. They are doing a lot of interesting things. But more important is the evidence this group provides about increasing investor demand.

Other evidence of investor demand comes from the sponsors of my Consortium. The Pension Real Estate Association, the Building Owners and Managers Association International, the Urban Land Institute, and the Mortgage Bankers Association are all supporters and have dramatically increased their sustainable property activity in the last two years.,

So anyways that's why I call the business case a hypothesis. It must be tested at the property level later. In summary, the business case is that development cost are up slightly, regulator demand, space user demand, and investor demand are all up which

increases revenues and reduces risks. Operating expenses are down, capital expenses are down. What I mean by that would be because of the durability of sustainable building, you have less capital expenses, you have tenant improvement cost, less lease commission cost because of the higher tenant retention. And finally, you have lower risk—and this is very important.

And I will talk more about why the net risks from sustainable property are actually positive which means that rather than been more risky, sustainable properties, when you actually analyze risk appropriately, are quite a bit less risky. So on balance, the general case for sustainable properties being more valuable is quite well supported.

Now I am going to talk about sustainable property performance.

Once I finish with this relatively short section, I am going to talk about the 6- step process for actually going out and calculating value at the property level and doing the test of the hypothesis I just talked about.

I wanted to talk about performance today because it was a very interesting part of my work. As someone who represents money, I don't like case studies, I don't like business cases. In fact, what I would like to know about is the failure and under performance of current sustainable property investment. So I did a year long survey of all the biggest experts and developers and owners and consultants. I called this my failure and under performance in sustainable property analysis. Unfortunately nobody would talk to me because they didn't want to be associated with failure and under performance. So I changed the title of my study to sustainable property performance.

And what I found was particularly interesting. People would answer the questions of performance in different ways. They might say that, I didn't do integrated the design properly, or my energy modeling was bad, or my contracts did not work out effectively. It was all process related things, or they would say feature related things, they would say, my roof membrane leaked, or my day lighting consultant didn't properly get the temperature right relative to the glazing and all the other things you have to think about. Or there be particular feature that didn't work—like a partiular HVAC system.

They also commented about building level performance. That the building didn't achieve the energy efficiency that they have designed it for. They didn't achieve the certification that they wanted. Occupants weren't as healthy and productive as they hoped.

But there was one thing missing. This is the essence of my work. It's market performance. I'm going to state that even if you know exactly how much health and productivity benefit a building generates, how much energy it saves, and fully understand its performance at the building level, you are still not very close to

understanding the building's financial performance or anything about value.

Until you go to the market, and ask how the market responds to a particular building's performance, you really do not know. Which means you have to talk to regulators, and investors and space users to see if the building's performance meet the thresholds required to get the benefits.

This exhibit provides a few examples of process and feature performance. Commissioning is just the process, conducted at the end of construction where you want to make sure that your building is operating as designed. The evidence shows that it's extremely financially viable thing to do. Energy savings of 13 to 16 % have been found. Cool roofs can save between 23% and 46 %, depending on where your building is located. Lighting strategies can result in savings of up to 60% of your energy from lighting.

Under floor air ventilation can reduce energy use by 15%. And throughout my book there are 150 pages that analyze many different features and all the financial evidence of benefits. However, the most important part of process and feature performance is risk mitigation. By implementing best practices related to sustainable process and features, you can dramatically reduce the risk. And I talk bit more about how important that is later on.

Building performance-- these are the 7 categories of building performance. And I just want to highlight occupant performance because it's so important in my work, I spent a lot of time thinking about how you actually analyze performance of the occupant. I actually break it out into two different types of performance--individual occupants have health and productivity satisfaction. And you have enterprise level performance. Businesses are occupying the space. And in many of these businesses sustainable real-estate contributes to the value of those enterprises through reduction in resource use, improved reputation or leadership, enhanced internal and external compliance, and reduced risk to future earnings.

While my book contains 30 pages of analysis on this topic, it is really not that complicated. The most important point is as follows. If you make the claim that tenants have a higher demand for sustainable properties you need to have a model in your mind for understanding how that works. That's really what the focus of my work is.

Concerning market performance, I talked about a missing link. You have to understand what regulators, space users, and investors want. There are four different types of market performance evidence. And most important is expert-based financial analysis. There are only about 10 of these studies that I've found throughout the world. These are studies done by people that are market and appraisal or valuation people. And they look

at a whole bunch of buildings and come up with conclusions about the effect of sustainability on regulators, users and investors. Unfortunately, statistics and modeling based analysis of value that focus on statistically based value premiums due to CASBEE or Greenstar or LEED certifications really aren't very helpful when it comes to understanding a specific individual property. And while I have so much to say on the limitations and mis-use of statistical, I am going to limit my comments here. All of my comments are available in my book and related publications.

This exhibit identifies some of the expert base financial analysis you can check out later if you like.

One of the important things to understand about the actual market performance evidence is that rents actually haven't moved that much. That doesn't mean value is not higher. Value can go up significantly for sustainable properties due to increases in space absorption, increases tenant retention, and higher occupancies-- in fact you have a lot of little things that increase value—even if rents do not rise.

Now I'm going to talk about this 6 step process for sustainable property financial analysis. An important thing to understand is that if you want to understand, how investment in sustainable property influences value or financial performance, you must, at least conceptually, understand how a discounted cash flow model, or income approach model, works. That is disappointing to a lot people who don't know about this kind of cash flow model, but I think after few minutes you will be able to understand what I'm talking about.

This exhibit presents what I call the Finlay 14. James Finlay is an appraiser at Wells Fargo bank in America who is probably the greenest appraiser I know. What appraisers do when they come up with value is that they have to make many assumptions on all these little variables you can barely read on the Exhibit. They include leasing commissions, tenant improvements, occupancy, and tenant retention.

The appraisal processes is a qualitative process. For example, based on a thorough evaluation of all the qualitative and quantitative information, an appraiser will decide the rent is going to be \$40 dollars. Their decision is not based on a statistical analysis—but a rigorous structured qualitative process. And that's important and it's actually good new for sustainability. Because real-estate professionals can handle the qualitative nature of many of the benefits of sustainable property investment.

In doing the financial analysis, you must go through the 6 steps. And I'm going to talk about each of these steps.

The first step is you have to actually select the financial model. It's kind of hard to know what kind of a data that you will need until you select the appropriate financial

model for the decision to be made. So in my book, I have provided 60 pages of analysis laying out all the different types of financial models that can be applied to make real estate decisions. Many models for sustainable valuation are the same as traditional real estate. But one thing that's different about sustainability is something I called sustainability sub-financial analysis.

A discounted cash flow analysis is basically just are looking at revenue minus expenses. It gives you net operating income. And you capitalize that to get value. However, when appraisers use the DCF model, they do many analysis on the side to come up with support for the many assumptions in the DCF model. These "sub-financial" analysis are important. And it turns out, for sustainability there's some sub-financial analyses you need to add if you want to understand the value issue.

For example, churn cost savings. Churn cost is simply the cost to move people within the space. They can be a very substantial cost for an occupier or corporation. It turns out that if you have under floor air ventilation, you can significantly reduce these churn costs and the benefit can be calculated. Health cost analysis is another example. You can actually calculate the potential health cost saving for the actual tenant in a building. Similarly analysis can be conducted of productivity benefits.

The second step is to evaluate a property's sustainability. This is always a challenge. How valuable is the CASBEE rating? How valuable is the LEED rating? What do the certifications mean? The answer is it doesn't matter what I say. What you need to do for your building is go talk to the regulators, users and investors and find out what is the threshold required to get the benefits. What certifications do they require? What is the threshold environmental performance they need in order for you to get the benefit from them?

Step 3 is where you assess all the cost and benefit of sustainability. This is where risks are analyzed. There are some things that are not good about sustainable property. Sustainable properties have significant risk due to new types of product, new types of processes, and new service providers. Development costs can be higher.

But on the other hand, sustainable property risks can be significantly lower. Integrated design can reduce development risk. You have commissioning which generates strong returns and reduces performance risk. Most importantly, significant risk benefits arise from avoidance of functional and economic obsolescence if regulators, space users, and investors in the future continue their demand for your property.

It is important to note that this is only step 3. You have to do 3 additional steps to understand financial performance.

In Step 4 you take all the costs and benefits and you organize them into categories. You

must then assess the “net” cost or benefit.

In Step 5 you must put sustainability into context. You can't understand the value of the investment unless you put it into the context of the all the other things that are important that are not sustainable. Let's look at space user's demand for an example.

If you want to understand how much value a tenant put on sustainable features, you must understand what else is important to them. This is very specific to the type of tenant and property-and changes over time based on market and economic factors. For example, as shown in the Exhibit, space users have many concerns beyond sustainability when selecting space.

You have to understand how important all the other factors are for your particular property in its particular market at particular point in time. Again they sound complicated but this is exactly what due diligence, underwriting and valuation people do every single day. Sustainability is just part of an occupants real-estate decision.

In Step 6, it is important to do a good job with RAP. RAP is Risk Analysis and Presentation. And one thing we need to do better is understand risks. I think all of us here understand those risks, having experienced the financial crisis.

But let me just give an example. I have posed this question to many sophisticated financial people. The question is what's better, a 7% return, or 15% return. People think I'm asking a trick question, but the answer is simply that it depends on the risks.

Rate of return on investment is meaningless without the risk context. If I have a big property, and it has a long term lease with Sumitomo bank. I'm feeling very good. I will probably take a 4% return for that. If it's a property that's half leased and I'm going to do a big retrofit on it, I am taking construction risk and lease up risks and other kinds of risks, I might need a 15 or 20 % return. Clearly, risk matters. So it turns out that if you actually look at the things I said earlier about how process and feature best practices mitigate risk, it can have a big influence on decisions.

A 2 or 3 year pay back or 30 to 50 % rate of return to invest in sustainability is way too high a price to pay given risks. If you intelligently present the risks in a comprehensive way you can significantly increase the value.

Finally, I'm just going to present a few reflections on trends.

Green lease will become the norm. Better understanding of value and risk is critical to increasing the flow of capital to sustainable properties. You can not develop a successful sustainable financing vehicle without identifying, pricing, and mitigating risk. That's really what I'm talking about today.

Thank you very much for your attention.