

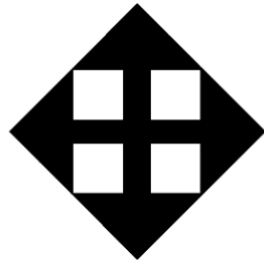


INTEGRATION OF A GREEN METRIC INTO APPRAISAL METHODOLOGY

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THE WILLIAM FALL GROUP
Real Estate Valuation and Analysis



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AGENDA

- Sustainability, real estate, and the role of a metric
- Theoretical justification for green metric premised in economic and appraisal theory
- Recommended characteristics of the green metric
- A hypothetical application of the metric



“Unusually uncertain recovery”

-Fed Chairman Ben Bernanke to Central Bank on July 21, 2010.



Questions regarding the national security and ecological risks associated with energy policies predicated upon long-term dependence upon fossil fuels.



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SUSTAINABILITY HAS MANY DEFINITIONS

- "A sustainable society is one which satisfies its needs without diminishing the prospects of future generations."
Lester R. Brown, Founder and President, Worldwatch Institute.
- "Leave the world better than you found it, take no more than you need, try not to harm life or the environment, make amends if you do." - *Paul Hawken, The Ecology of Commerce .*
- "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" -*The World Conservation Union.*
- "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."
-*Aldo Leopold, A Land Ethic, from Sand County Almanac.*
- Sustainability is the [emerging] doctrine that economic growth and development must take place, and be maintained over time, within the limits set by ecology in the broadest sense - by the interrelations of human beings and their works, the biosphere and the physical and chemical laws that govern it ... It follows that environmental protection and economic development are complementary rather than antagonistic processes." -*William D. Ruckelshaus.*
- Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs. -*Brundtland World Commission on the Environment and Development.*



SUSTAINABLE SOCIETIES AND BUILDINGS



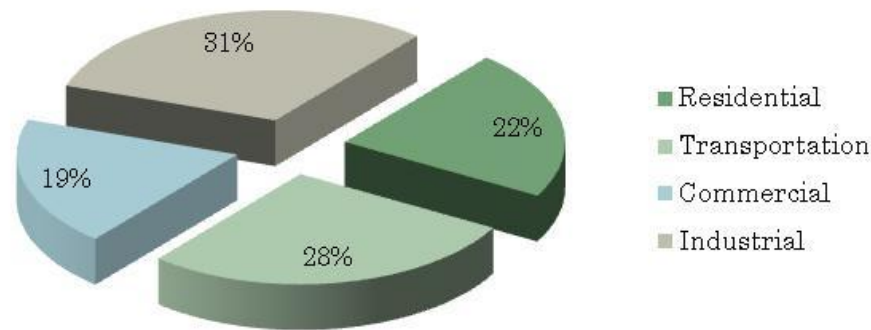
Environmental

Equity

Economic

SUSTAINABILITY AND REAL ESTATE

- Energy utilized by buildings is a tremendous drain on the earth's natural resources.
- While overall statistics vary, most all tend to be staggering in their impact.

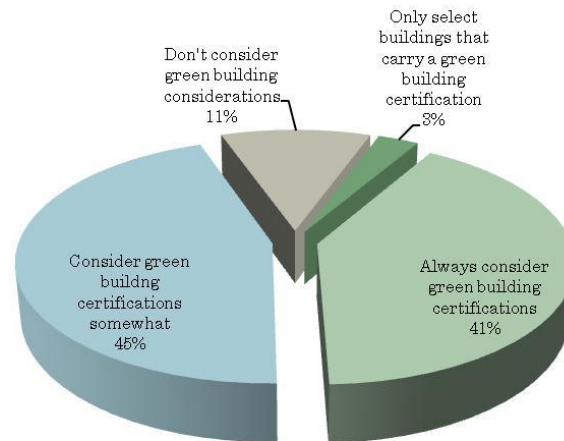


Source: Energy Information Administration, Annual Energy Review 2008



SUSTAINABILITY AND VALUE

- There is a growing body of evidence which suggests that real estate with sustainable characteristics can generate superior returns.
- More respondents are considering sustainability factors in decisions related to real estate.



Source: Jones Lang LaSalle Corenet Global 2009 Survey on Corporate Real Estate and Sustainability

SUSTAINABILITY AND METRICS

- Sustainability attributes are influencing value.

“Standards markets work more effectively if common metrics are agreed upon for key issues...[and are] a pre-requisite for the next stage of development”

(U.S. Environmental Protection Agency).



ASSUMPTIONS OF THE PROPOSED GREEN METRIC

- U.S. perspective in appraisal methodology and government policy.
- Commercial real estate is primary subject.
- Sustainable = green throughout, while technical differences are noted.
- Unlimited, uncontrolled, unmonitored emissions from fossil fuel sources is considered the non-preferred, unsustainable alternative.



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ECONOMICS AND THE ROLE OF INFORMATION

- Economics studies how society makes choices in the market regarding the allocation of limited resources among alternative uses to satisfy unlimited human wants.
- Appraisers are observers of the market.



Observe the market



Utilize
available
information



Provide opinion
of value



INFORMATION, CONTINUED...

- Information has economic value.

FA Hayak

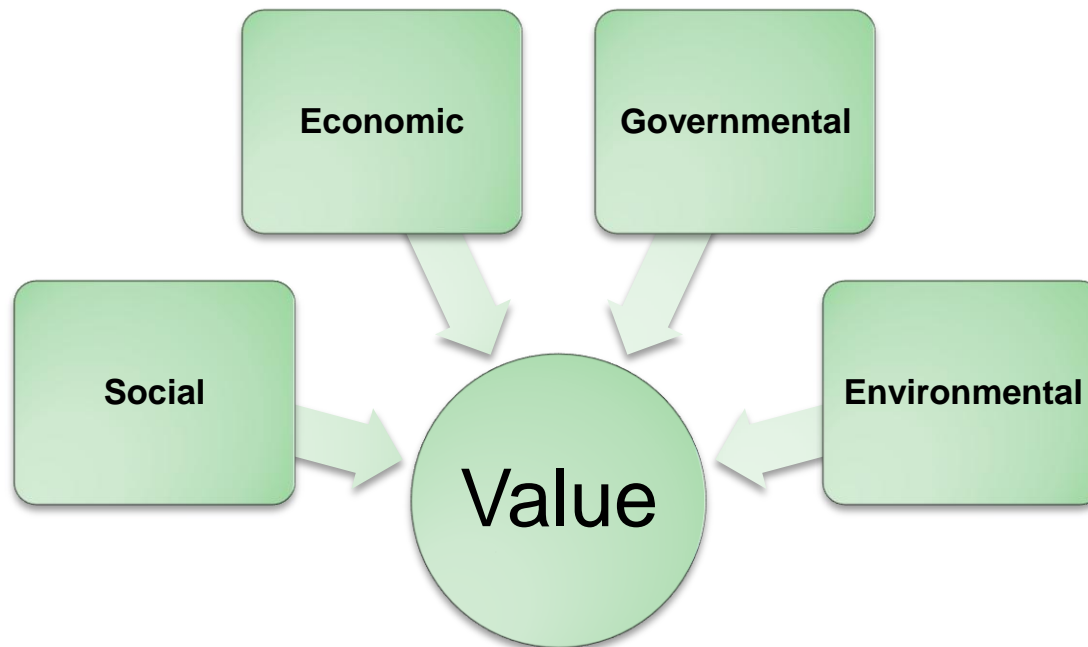


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“If we possess all the relevant information, if we can start out from a given system of preferences, and if we command complete knowledge of available means, the problem which remains is purely one of logic....” (Hayek)

APPRAISAL THEORY AND THE FOUR FORCES INFLUENCING VALUE

- How can appraisers secure the best use of our resources in the search of information, to understand that which is increasingly known by individuals and impacting the market?



A GREEN METRIC WILL:

- Per economic theory - integrate necessary information to promote more efficient allocations
- Per appraisal theory - address the four forces influencing value as they pertain to sustainability



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GREEN METRIC CHARACTERISTICS

- A. Emphasis on building performance.
- B. Focus upon the net present value of the stream of benefits generated.
- C. Integrate “additional” data.



A. EMPHASIS UPON PERFORMANCE

- Green buildings are high performance buildings.
- Actual data is best measure of actual performance.
- Effective role of commissioning process must be an inherent assumption for a value premised upon a specific performance level.



<http://www.socalofficerealestateblog.com>



B. FOCUS UPON NET PRESENT VALUE CALCULATIONS

- Because market data is limited, “NOI capitalization may indeed be a close proxy for empirical market information”.
- The Discounted Cash Flow (DCF) appears particularly relevant given the intrinsic design of the model.
- Due largely to regulatory changes requiring energy efficient measures, DCF also would allow for a reflection of the mitigated risk present in the more sustainable properties.



C. INTEGRATE “ADDITIONAL” DATA

- Basic methods won't change, more factors will simply have to be considered.
- Take lessons from valuation of green residential properties.
- Refinement of available data, and its applicability to appraisal methodology will be required over time.



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LOGISTICS OF A GREEN METRIC APPLICATION

- Appropriately capture value *for all properties* under a new economic scenario wherein sustainability considerations have achieved critical mass.
- Be scalable and adaptable to local market conditions.
- Emerge as a metric overlay for existing appraisal methods.
- Be designed with careful consideration for the intended user in mind.
- Be integrated mindful of USPAP, namely, the conduct section of the ethics rule related to advocacy.



HYPOTHETICAL METRIC APPLICATIONS IN MANUSCRIPT

**Example 1.
High-performance buildings**

**Example 2.
Damaged properties**

**Example 3.
An economy in which carbon is priced**

VALUATION OF DAMAGED PROPERTIES

- Advisory Opinion 9 provides framework for valuing contaminated properties.
- Additional tools
 - Bell Chart
 - Impaired Value Calculations (Unimpaired value-cost effects-use effects-risk effects = impaired value)
- Just as the examination of damages data are vital components of analysis for a property that is contaminated, so too, is the integration of a metric that measures aspects of sustainability for that same piece of real property.

GREEN METRIC OVERLAY AND APPLICATION

Qualitative

- Property description
- Market analysis

Quantitative

- Utilize third party data
 - Compare relative to conventional
- Examine net impacts upon approaches to value, depending upon availability of data and relative strength of approach

POSSIBLE OUTCOME ASSOCIATED WITH GREEN METRIC INTEGRATION

- Depending upon highest and best use analysis, it is possible that the net impact on value resulting from integration of a sustainability-related component could result in a different opinion of value had it not been previously considered.



INTERNATIONAL FUTURE APPLICATIONS OF THE GREEN METRIC

- A transparent benchmark through which to properly value the influence of green attributes upon market value.





Reality of Today's Market---

- *New Allocations of Risk*
- *New Procurement Policies*
- *New Allocations of Liability*
- *Higher Levels of Corporate Environmental Responsibility*
- *Fiduciary Duty*

CONCLUDING THOUGHTS

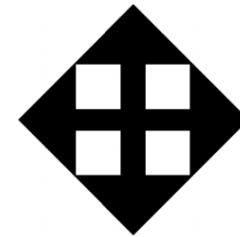
- Urgent need for a sea-change in our valuation methodology as it relates to the articulation of green attributes and their impact on value.
- Appraisers are urged to aggressively forge ahead with development and integration of a consistently applied and internationally accepted green metric.
- The green metric should be added to our existing body of knowledge with the purpose of improving the quality and quantity of available information.
- Green metric must be designed with ease of integration into international applications.



Thank you for your time...

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