



In Need of Hard Evidence: The Financial Implications of Sustainable Design

Dr. David Lorenz MRICS



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Property Advisors – Chartered Surveyors

Lorenz Property Advisors – Chartered Surveyors

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Universität Karlsruhe (TH), Department of Economics and Business Engineering
Chair of Sustainable Management of Housing and Real Estate



Increased Building Worth & Market Value



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***“Green is good
for asset value.”***

Source: RICS, 2005

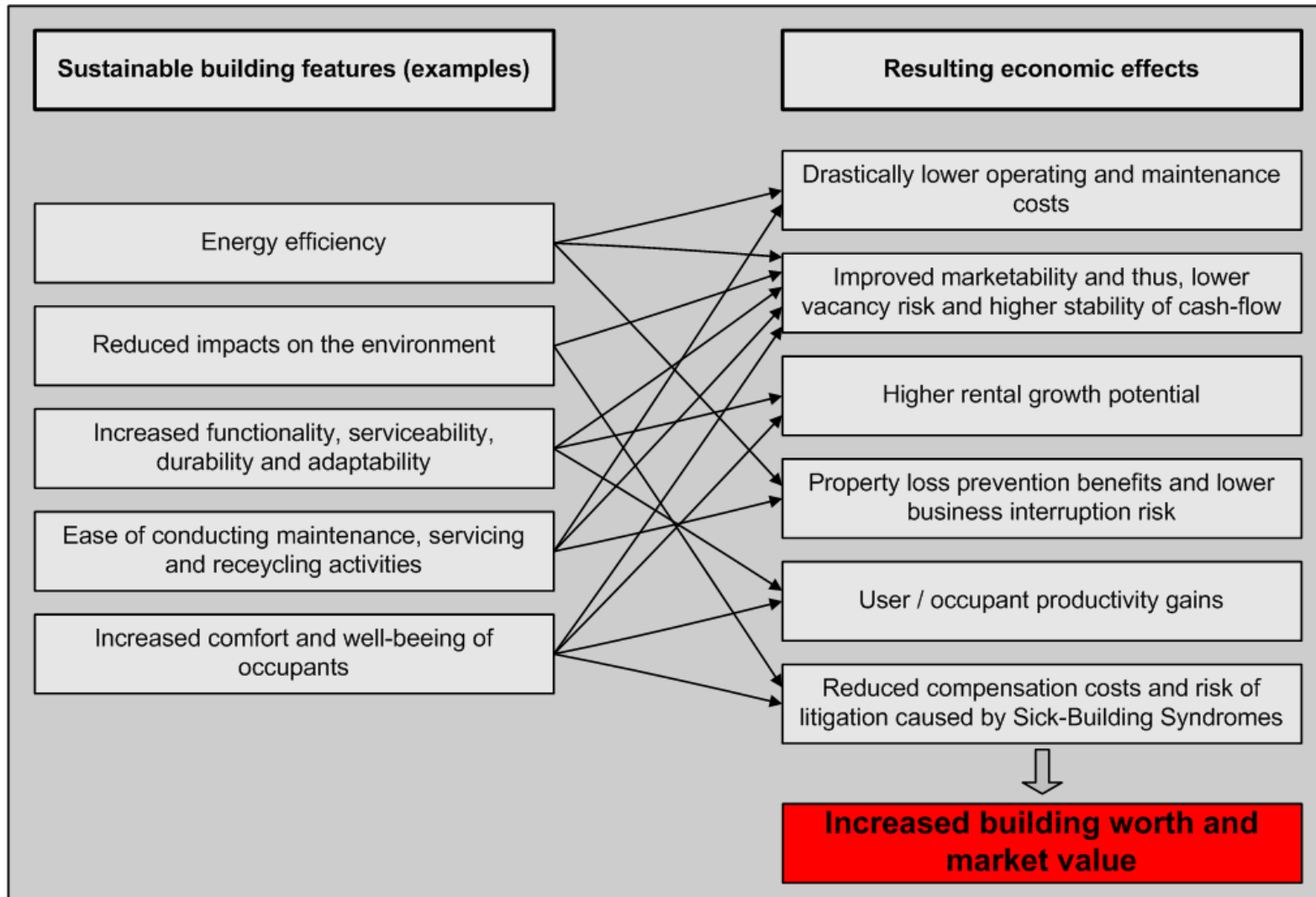


Sustainable Design & Resulting Economic Effects



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Quantifying the Benefits – Case Study of two prototype buildings



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	Base Case / Average Building	High Performance / Sustainable Building
Total cost	€ 2.400.000	€ 2.440.000
Additional cost for energy efficiency	NA	€ 40.000 (=1,66% of total cost)
Financing cost p.a. (5% interest rate)	€ 120.000	€ 122.000
Additional financing cost due to energy efficiency measures	NA	€ 2.000
Annual energy cost	€ 11.800	€ 7.490
Annual savings in energy cost	NA	€ 4.310
Reduction in energy cost	NA	36,7 %
Net gain from energy efficiency investment (savings ./ financing cost)	NA	€ 2.310
Return on investment for energy efficiency measures	NA	10,78 %

Case Study data adopted from: Kibert, 2008

Quantifying the Benefits – Case Study drawing on cost data of 33 green projects and financial benefits data from over 100 buildings in the US



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Direct Financial Benefits in Office Buildings (per ft²)

Category	20-year Net Present Value	
Energy Savings	US\$ 5,80	
Emissions Savings	US\$ 1,20	Assumptions: 20 year term, 5 % real interest rate, consistently conservative assumptions
Water Savings	US\$ 0,50	
Operations and Maintenance Savings	US\$ 8,50	
Productivity and Health Benefits	US\$ 36,90 to 55,30	
Total 20-year Net Benefit	US\$ 52,90 to 71,30	

Based on: Kats et al., 2003

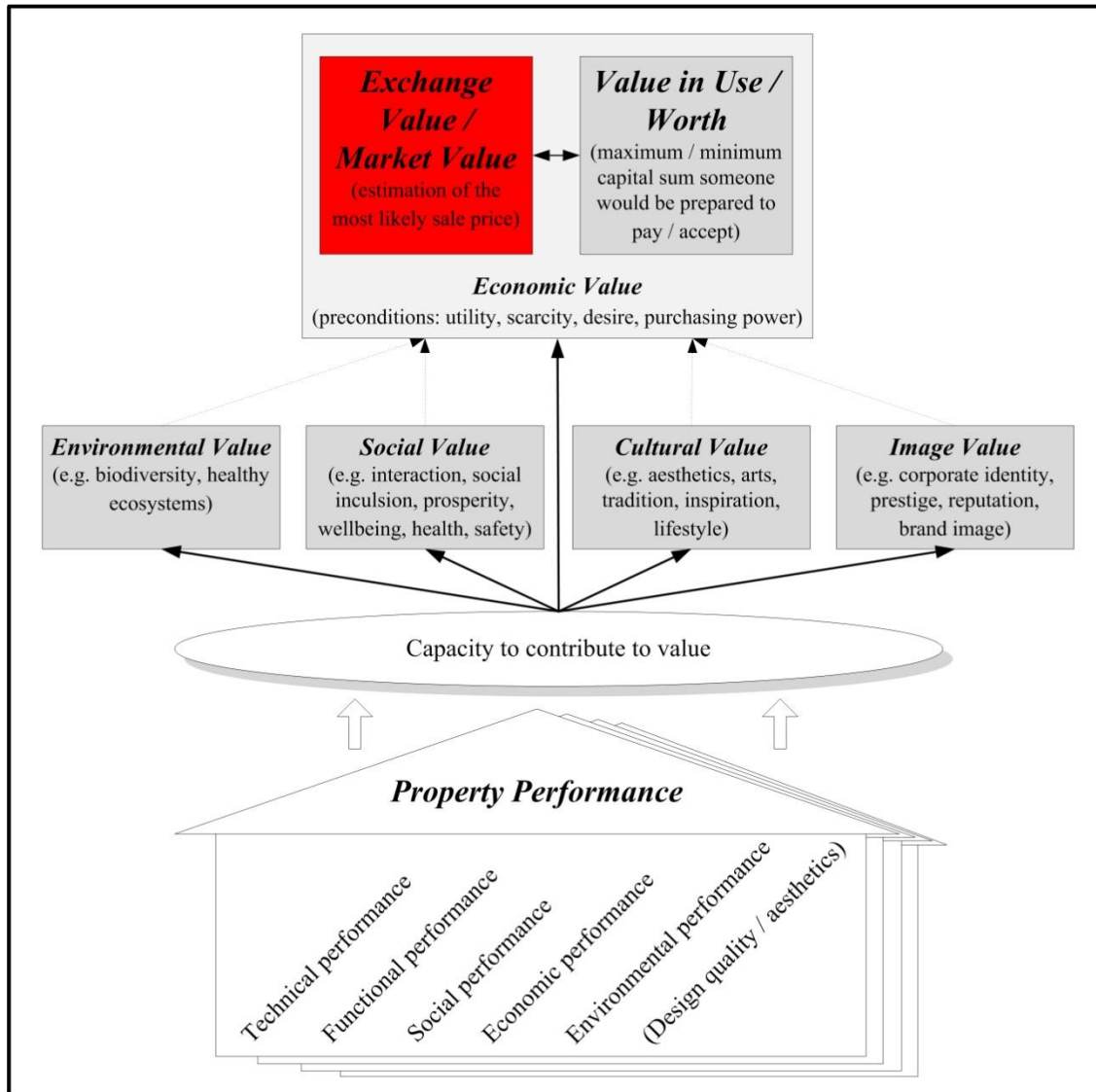
Study findings: Minimal increases in upfront costs of about 2% to support sustainable design would, on average, result in life cycle savings of 20% of total construction costs. For example, an initial upfront investment of up to \$100.000 to incorporate sustainable building features into a \$5 million project would result in a saving of \$1 million in today's dollars.

“From a life cycle savings standpoint, savings resulting from investment in sustainable design and construction dramatically exceed any additional upfront costs.”

Different aspects of property value – Superior building performance adds value in many ways



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It's all about Value:

“The value of goods is always the necessary consequence of human knowledge that the maintenance of life, of well-being, or of some ever so insignificant part of them, depends upon control of a good or a quantity of goods. [...]”

The value of goods arises from their relationship to our needs, and is not inherent in the goods themselves. With changes in this relationship, value arises and disappears.”

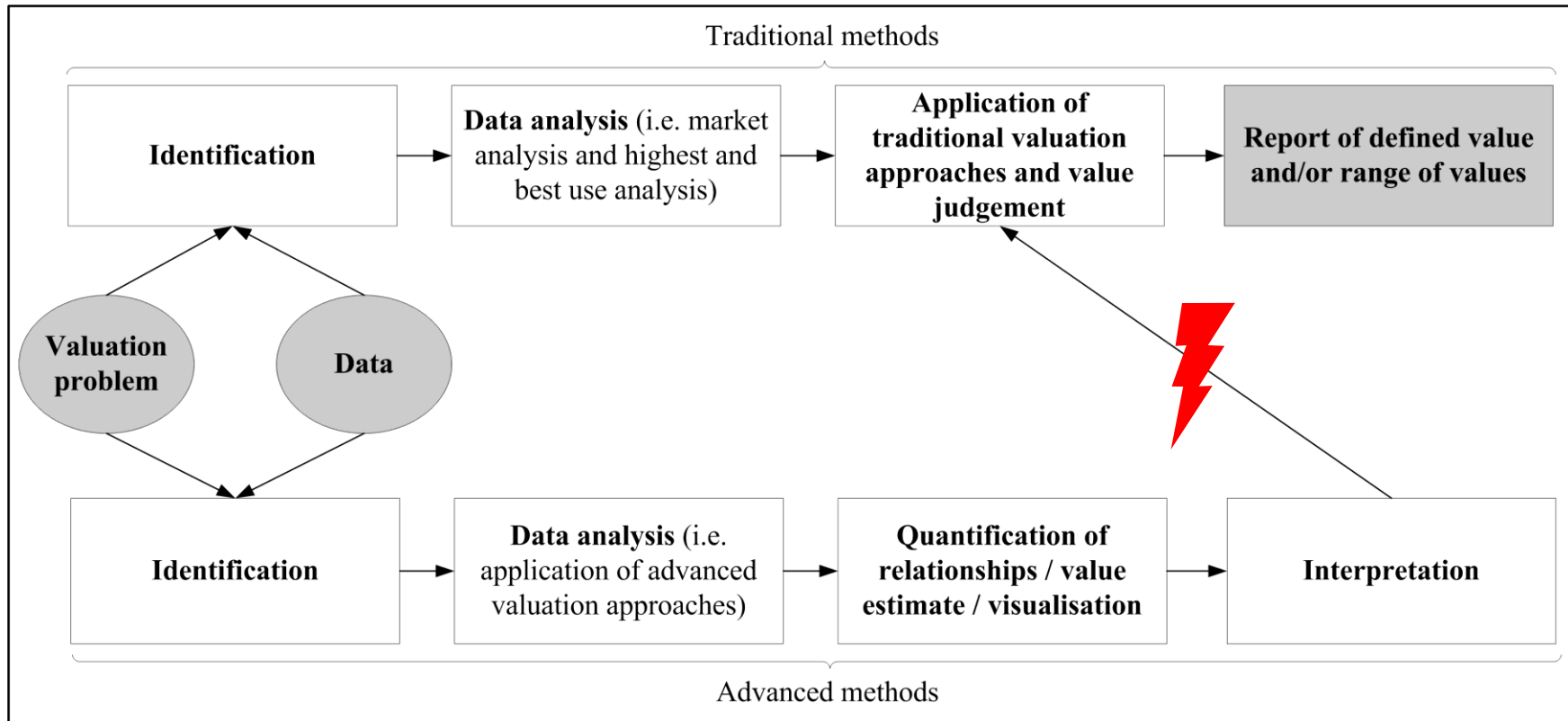
Carl Menger, 1871, *Principles of Economics*



The Property Valuation Process



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Lack of empirical validation requires valuers explicitly explaining their **expert opinion** on both the benefits of sustainable design and on why and how these benefits impact on property values!

Researchers' biggest problem: Quality of building descriptions in transaction databases



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	Type	Brief Explanation	Examples	
1	Characteristics based description	Statement on the availability, number, age or size of particular building features or components	Floor area, central heating, green roof, number of rooms, flexible walls, suspended ceiling, etc.	
2	Experience based description	Subjective and mainly qualitative judgement mainly based on implicit assumptions	Building quality is considered 'good' because of sound structural condition, favourable layout, equipment, etc.	
3	Attribute based description	Judgement or classification based on quantifiable technical and/or physical building characteristics	Heat and sound insulation class, degree of efficiency of heating system, share of renewable materials, etc.	
4	Performance based description	Measurement of direct impacts that result from the building's technical and physical characteristics	Primary energy demand, CO ₂ -emissions, life-cycle-costs, annual maintenance costs, etc.	



It will take years to accumulate the informational data basis necessary to empirically underpin a valuer's decision to provide a 'valuation bonus' for a sustainable building or a 'valuation reduction' for a conventional/unsustainable one.



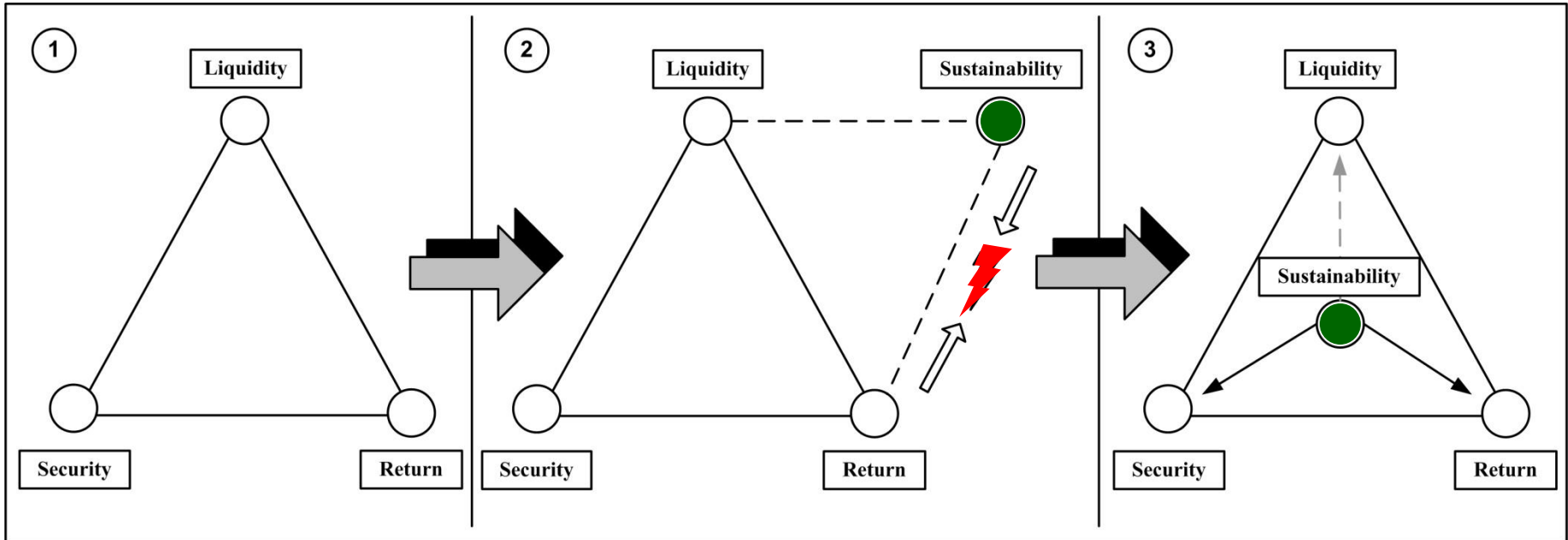
1. The perception of property as a commodity is changing to emphasize sustainability-related building characteristics and performance aspects as important determinants of a property's worth and market value
2. Property Valuation reports should be extended to include statements on why and how sustainability issues impact on value estimates
3. The description of property assets in transaction databases & indexes must be improved by using clear criteria and performance indicators as well as reliable assessment methods and tools → Only this will allow empirical validation
4. But it is clear that taking sustainability issues into account can truly result in real win-win situations for all stakeholders in the property sector
5. Numerous case studies from around the world have shown that implementing the principles of sustainable development within property-related decision making is a highly profitable exercise
6. Unsustainable property investment and management practices will result in losses with regard to asset value and financial performance

Outlook – Changing Investment Paradigm



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Not Return or Sustainability but
Return and Security through Sustainability!