

# THE INTEGRATION OF SUSTAINABILITY ISSUES INTO PROPERTY VALUATION THEORY & PRACTICE – AN INTERNATIONAL REVIEW

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## Summary

This paper gives an overview on various international research efforts undertaken to reveal the relationships between sustainability and a property's economic value as well as to integrate sustainability issues within the property valuation process. It is argued that there is consent within the literature that sustainability issues (particularly energy efficiency features) have to be taken into account when valuing property assets and that valuation practices have to be adjusted to cope with the new reality of changing value perceptions and a growing interest in sustainability among various groups of property market actors. The paper summarizes key results and recommendations from publications and research projects coming from Australia, Austria, Canada, Germany, Japan, Norway, Switzerland, the USA and the UK. The paper highlights the key role of property valuation and of the valuation profession within efforts undertaken to further advance sustainable development within property and construction markets.

**Keywords:** property valuation, value, sustainability, sustainable building

## 1 Introduction and Context

Property valuations are carried out for a number of different reasons and during any phase of the life-cycle of buildings. Valuation professionals are involved in every aspect of development from feasibility studies in the beginning of a project to the assessment of value as a basis for decisions on either modernising or demolishing a building at the end of its useful life span. Valuation professionals take the role of information managers in often highly intransparent property markets; they have therefore been called the “independent axis around which property information flows“ [1]. Even though it is often said that valuation professionals are here to reflect the market, the judgements valuers make do have an influence on the allocation of capital and investment decision making since the arguments used in negotiations between the parties in a transaction process are usually based on advice given by valuation professionals acting on both sides.

The services the valuation profession provides are critical for the functioning of property and construction markets, interconnected financial markets as well as of national economies. Poor property valuation has a domino effect and can lead to corporate crises first which can continue to negatively impact on banks and financial institutions and which can in return result in severe crisis within national economies. This could be observed in

several property crashes and banking crises during the last four decades as well as during the recent global financial crisis in 2008 where the ability of residential houses to serve as loan securities has been dramatically overestimated.

In the best case, poor property valuation leads to a misallocation of capital only; in the worst case, however, it can lead to the destruction of financial, natural and social resources. For this reason Muldavin [2] argues that in the past the failure of property investors and their professional advisors to appropriately incorporate revenue and risk considerations into sustainable investment decision has led to an underinvestment in sustainability. Today, with ever more stringent governmental regulations and growing market participants' interest in sustainability, this failure will increasingly result in sub-optimal financial results for investors and, as a consequence, in society's inability to achieve its carbon reduction and other sustainability goals.

Against this background, the critical role of the valuation profession within the transformation towards sustainable property markets as well as the need for incorporating sustainability issues into the valuation process becomes apparent. However, appropriately reflecting sustainability considerations within property value estimates is a difficult undertaking which is partially due to the complex nature of the valuation exercise. The challenge for the valuation profession lies in appropriately understanding, assessing and describing a building's environmental, social, and cultural value as well as in pricing the impact of these value categories on the building's estimated economic value. The following figure gives a brief overview on different value categories of buildings and indicates different degrees of relative importance for various groups of actors within property and construction markets.

Categories of Value	Actors								
	Owner-occupier	Investor (direct and indirect)	Developer / Constructor	Bank	Insurance company	Tenant	User / Inhabitant / Visitor	Government	Society
<b>Physical Value</b> (embodied energy and resources)			○					○	○
<b>Market Value / Exchange value</b> (most likely sale price)	●	●	●	●	●			○	○
<b>Worth / Value in Use</b> (value for an individual)	●	●	●	○		●	○		
<b>Social Value</b> (interaction, inclusion, prosperity, health, safety)	●	○	○		○	●	●	●	●
<b>Cultural Value</b> (tradition, arts, aesthetics, inspiration, lifestyle)	○	○	○			●	●	●	●
<b>Emotional Value</b> (feelings, positive experiences, wellbeing)	●	○	○			●	●	○	●
<b>Image / Sign Value</b> (social status, reputation, prestige, identity)	●	●	●			●	○		
<b>Environmental Value</b> (biodiversity, healthy ecosystems)	○	○	○	○	○	○		●	●

Fig. 1 Value categories of buildings

The relations and interdependencies between these different categories of building values are complex, interwoven and sometimes conflicting. However, tracing these relations and thus, uncovering the relationships between sustainability and a property's economic value has become an issue of intense international debate and is dealt with in a growing body of research and literature.

## 2 Literature review

The methodological and conceptual basics for an integration of sustainability considerations into the property valuation process have been developed during 2000 and 2007. Within this time frame the authors of this paper have been able to identify 29 publications with contributions coming from Australia, Austria, Canada, Germany, Japan, Norway, Switzerland, the USA and the UK. In addition to that, 7 current and ongoing research projects have been identified that investigate the topic in detail [3]. The literature review revealed that there is consent or agreement among the majority of publications on the following issues:

- Certain sustainability issues, in particular energy efficiency features do have a measurable impact on observed property prices within many markets; they are therefore to be taken into account within the valuation process. Other sustainability issues (such as environmental impact, healthiness of building materials, etc.) are likely to have an impact on property prices but the empirical database is too sparse to draw precise conclusions on the strength and magnitude of this impact.
- In the short term, sustainable buildings (in particular those with a green building label) are likely to achieve a price premium when sold in the open market; in the medium to long term, however, and along with sustainable building practices becoming the norm, conventional buildings will depreciate much faster and will have to accept price discounts when sold in the open market.
- There is no straightforward or automated formula to account for sustainability issues in the property valuation process; rather the extent of reflecting sustainability in value estimates strongly depends on regional and local market conditions.
- In order to be able to account for sustainability within valuations at all, it is necessary to refocus on the technical and functional qualities of the building under investigation.
- Existing property valuation methods are capable of accounting for sustainability issues; no new valuation methods are needed but new ways of gathering, processing and presenting property related information are required.
- The integration of sustainability into the valuation process is also an issue of increasing valuation transparency: clients need to understand the valuer's thought process.

Furthermore, the literature review showed that there is disagreement and/or need for discussion on the following topics:

- The role of the valuer: it is unclear whether or not there exists a moral responsibility or informational duty to inform the client on the benefits of sustainable buildings and the likely implications this could have on the value stability and value development of the building under investigation, even if sustainability considerations are not yet fully reflected in today's market prices. While some publications argue in favour of this informational duty, others state that the role of the valuer is to solely reflect the market, and nothing else.
- The practical implementation: three different suggestions to account for sustainability issues in the valuation process can be found within the literature. These are: (1) direct adjustment of single valuation input parameters such as gross or net rents, risk premiums within the determination of discount and capitalisation rates, maintenance costs and other capital expenditures, lease terms and lease provisions, growth rates, etc.; (2) Lump-sum adjustments on the preliminary valuation result; and (3) Calculation of a sustainability-correction factor to adjust the preliminary valuation result.

### 3 Recommendations

In order to cope with the need and pressure of reflecting sustainability issues in the valuation process, the following recommendations for practicing valuers as well as for professional organisations can be distilled from the reviewed literature:

Practicing valuers should

- extend the scope and informational content of valuation reports to include: (1) sensitivity analyses and Monte-Carlo-Simulations in order to show both possible impacts of changing market conditions on estimated property values as well as valuation uncertainties associated with a limited informational database available; (2) risk documentation and presentation in order to show sustainability related chances and risks of the property under investigation and to improve the informational basis of decisions makers; and (3) a separate chapter on sustainability in order to explain both the basic relationships between sustainability and value as well as the adjustments made to specific valuation input parameters to reflect the sustainability characteristics of the property under investigation;
- undertake efforts to improve the description of building characteristics within the valuation report since this information may be highly valuable for particular groups of actors and within specific decision making contexts;
- prepare to use methods and tools for sustainability performance assessment of buildings or, at least, to use and process the information and results contained within energy performance certificates or other sustainability certification schemes; and
- use explicit Discounted-Cash-Flow (DCF) methodologies to derive an estimate of property value since the DCF method is the most transparent valuation approach.

Professional organisations and valuation standard setters should

- develop sustainability education modules for their members,
- publish and update practical guidelines and recommendations on how to formally treat sustainability issues within valuation reports,
- adjust existing valuation standards, and
- undertake efforts to improve the empirical databases available; i.e. to extend the informational content of property transactions databases to include sustainability related performance information along with financial performance metrics.

### 4 References

- [1] Motta, T.A. and Endsley, W.E., 2003, *The Future of the Valuation Profession: Diagnostic Tools and Prescriptive Practices for Real Estate Markets*, Paper presented at the World Valuation Congress in Cambridge, England, July 2003
- [2] Muldavin, S., 2010, *Value Beyond Cost Savings – How to Underwrite Sustainable Properties*, Green Building Finance Consortium
- [3] Lorenz, D. and Lützkendorf, T., 2010, *Sustainability & Property Valuation: An International Literature Review*, Karlsruhe Institute of Technology, Research Report