## **Considerations for Integrating Sustainable Attributes** into Property Valuation

Khaira Amalia Fachrudin<sup>1</sup>, Elisabet Siahaan<sup>1</sup> and Hilma Tamiami Fachrudin<sup>2</sup>

<sup>1</sup> Faculty of Economic and Business, Universitas Sumatera Utara, Jl. TM Hanafiah Kampus USU Medan 20155, Indonesia

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Abstract:

Sustainable property is a property that takes into account the environmental sustainability. In Indonesia, there has not been a lot of sustainable properties; however, its awareness keeps growing. The value of sustainable property may differ from conventional property because of their different attributes. This study aims to integrate sustainable attributes into property valuation. This is useful for development of appraisal profession in Indonesia. Depth interviews were conducted on Green Building Council Indonesia, sustainable building managers, and appraisals. The results of this integration can be used by the appraiser or valuer to recognize the impact of each attribute on the property value and valuation approach to be undertaken.

### 1 INTRODUCTION

Sustainable development is development that can meet needs of present generations without harming the needs of future generations. Sustainable property or sustainable building is constructed with a higher urban planning, functional, creative, and technical quality. Sustainable property is a property that is built by paying attention to the productive harmony between humans and nature and fulfilling economic, social and other requirements from the present generation to the future generation. Nalewaik and Venters (2008) suggest that sustainable property is usually realized in green buildings with eco-friendly design.

The green property or green building aspects used for the Greenship Valuation of Green building Council Indonesia (GBCI) are appropriate site development, energy efficient and conservation, water conservation, material and cycle resources, indoor and health comfort, and building environment management. Since this property emphasizes the appropriate site development aspect which is in line with the concept of highest and best use, it should have higher value.

Investment is the placement of funds at this time hoping to generate profits in the future (Fachrudin and Fachrudin, 2016a). Investment in sustainable can increase the value of property and

provide financial benefits (Fachrudin and Fachrudin, Owner of green building will have their savings from the lifecycle building and the cost of its maintenance (Fachrudin and Fachrudin, 2016b). In a financial standpoint, the economic dimension is very important; thus, the focus is on long-term economic success of long-term property performance (Frank, 2010).

The appraisers need to be aware that buildings built in accordance with buildings that meet certain green building standards may be more valuable than buildings without green standards (Guidry, 2004). If market participants favor sustainable property, this should be reflected in market value (Lorenz and Lützkendorf, 2008).

Market valuation needs to estimate market data. The appraisers must pay attention to the sustainable property features if they affect the competitive position of the asset. The appraiser have a role to reflect this benefit so that the valuation report does not indicate a misleading price (Lorenz and Lützkendorf, 2006).

Warren and Myers (2012) states that there needs to be a consistent development of ranking tools to help appraisers be able to evaluate buildings in the same basic way. The appraisers do not contribute to speculating on value but to speculating about what is possible or impossible for certain assets in the future. The appraisers need to be aware

<sup>&</sup>lt;sup>2</sup>Faculty of Engineering, Universitas Sumatera Utara, Jl. Almamater Kampus USU Medan 20155, Indonesia

of various change factors while conducting their valuation and consider all the risk factors associated with the asset, including building sustainability in order to evaluate risk factors.

Warren and Myers (2012) also states that the consideration for a sustainable property valuation is that the discount rates will be adjusted to sustainable building risk reduction, lower vacancy rates, lower depreciation rates, and lower terminal yield. However, to increase their rental rates, they say there is no hope.

There are three approaches in property valuation: market approach, cost approach, and income approach. Market approach is an approach that uses sales data of property that are comparable or almost comparable to the object of valuation, based on a comparison process. Cost approach determines the value of the property by assesing the cost of the land and the cost of replacing the new development (something built) on it with comparable utility or adapting the old property with the same usage without considering the costs due to development delays and overtime costs. For old property, cost approach takes into consideration physical depreciation, functional obsolescence, and other external obsolescence. Income approach considers the revenues and costs associated with the valued property and estimate the value through the capitalization process.

In Indonesia, there are currently 20 buildings certified by Green Building Council Indonesia (GBCI). However, property valuers in Indonesia have never received a task to appraise that buildings. Other properties that apply some green concept but not yet certified by GBCI also exist in Indonesia. There was a case that one of the properties is valued too low by the valuer. This case was not urgent, however, integrating sustainability attributes into property valuation practice and theory are very important since in the future, green property will increase in number as people's awareness of environmental sustainability and economic value of green property. This is a challenge for valuation professionals to make this profession is always prosperous.

Fachrudin and Fachrudin (2017b) said that sustainable building is more flexible and adaptable so that it can reduce the risk of obsolescence. Operational costs of water and electricity will be efficient so as to reduce business interruption risks. This building is also preferred by the market so that the rental price may be high. Lorenz and Lützkendorf, 2011) said that in the cost approach, it is necessary to pay attention on the technical and functional quality of the building being investigated to describe and evaluate its sustainability performance.

Many things must be considered in integrating sustainability attributes into valuation.

The objectives of this study is to integrate the sustainable attributes into property valuation and considerations that must be taken in each valuation approach as well as to to know how the implementation guide is needed for the valuer profession in Indonesia. It is important so that in due time the valuer is ready to properly conduct a sustainable valuation of the property.

#### 2 METHOD

This study uses a descriptive qualitative research method. Sampling technique is purposive sampling. The sample used is those who understand or implement sustainable property. Depth interview with GBCI are conducted to get an understanding about green building attributes. Depth interviews and visits to three companies that implement sustainability property are conducted to see the attributes applied and how they manage cash flow and operating costs. Furthermore, the depth interview are conducted with 10 Indonesian appraisers who have already understood the concept of sustainable property.

#### 3 RESULTS AND DISCUSSIONS

Sustainability attributes are obtained from GBCI. This is the basis for determining the score for building certification. Depth interviews and visits to three companies as well as interviews with appraisals formulate impact sustainable property on property value in each valuation approach. The integration of sustainability attributes and their impact to the property value and valuation approach is summarized in the following table:

Table 1: Integration of sustainability attributes and their impact to the property value and valuation approach

Sustainability	Impact on Property	Valuation
Attributes	Value	Approach
Appropriate site	Properties on	Market
development,	location and	approach
consists of basic	facilities that are	
green area, good	good and in	
location,	accordance with the	
availability of	principle of highest	
community	and best use will	
accessibility,	have a high value.	Income
availability of		approach

Sustainability	Impact on Property	Valuation
Attributes	Value	Approach
public	Income producing	
transportation, bicycle paths,	properties will be favored by tenant.	
landscaping,	The risk of this	
favorable	property is also	
climate, and	low; thus, it affects	
rainwater	the discount rate.	
management	This may result in	
	higher net	
	operating income,	
	reduced vacancy,	
	and more stable	
	cash flow.	
Energy efficiency	This energy	Income
and conservation,	This energy efficiency will	approach
consists of	produce lower	арргоасп
electricity	operating cost and	
meters,	the result is higher	
measurement of	net operating	
energy	income.	
efficiency, the		
presence of		
natural lighting,		
ventilation, and		
the presence of		
renewable energy		
Water	Water efficiency	Income
conservation,	will produce lower	approach
consists of water	operating cost and	ирргоцен
meters, water	the result is higher	ECH
calculations,	net operating	
water recycling	income.	
systems		
availability of		
alternative water		
sources, and		
rainwater		
harvesting		
Material resource	The use of	Cost
and cycle,	environmentally	approach
consists of	friendly materials is	approuch
fundamental	healthier and can be	
refrigerant,	appreciated by	
building and	tenants; thus, it is	
material reuse,	increasing	Income
environmentally	revenues.	approach
processed		
product, certified	The use of reuse	
wood, prefab	and regional	
material, and regional material.	materials can save transportation	
regional material.	costs; thus, the cost	
	is lower.	

Ī	Sustainability	Impact on Property	Valuation
L	Attributes	Value	Approach
	Indor health and	A comfortable and	Income
	comfort, consists	healthy atmosphere	approach
	of outdoor air	is highly favored by	
	introduction,	tenant; thus, it can	
	CO2 monitoring,	increase the rental	
	environmental	value and age of	
	tobacco smoke	the building can be	
	control, chemical	longer. These two	
	pollutants, visual	things ultimately	
	comfort, outside	increase the value	
	view, thermal	of the property.	
	comfort, and	1 1 3	
	acoustic level		
ŀ	Building	A good building	Income
	environmental	environment	approach
	management,	management will	прричин
	consists of basic	produce a good	
	and advanced	environment: thus.	
	waste	the tenants favor	
	management,	and extend the life	
ł	pollution	of the building and	
	management,	it increases the	
	proper	rental value.	
	commissioning,	Tentar value.	
ı	submission of		
4	green building		
	data, fit up		
	agreements, and		
1	occupant		
	satisfaction	7	
ı		IDLIC AT	
H	surveys.		
Ĩ			

The result of the depth interview with the valuers indicates that sustainable property offers sustainable attributes only as a facility and most have not dared to give a rental price or a higher selling price than conventional property. The results of the depth interview suggest inputs for each valuation approach described below.

Market approach can be conducted, but the comparison data is very limited, and it is difficult to find comparative data which is really identic with the property being valued. If there seems to be identical, it is necessary to have a discussion with the owner of the comparison data.

Cost approach can be conducted if the sustainable property is considered at the stage of under construction. Valuers need to know the type of materials used and its cost.

In cost approach, it needs to do a cost benefit analysis. To meet the green specification, it is necessary to add additional costs and benefits to be obtained. This analysis includes incentive considerations that reduce initial costs, as well as

depreciation estimation whether there is a difference of depreciation using green components with the conversation component. In addition, it needs to note the functional and economical declines which may be affected by this green feature as well as building endurance.

Income approach may be conducted but the appraisers need to develop reasonable and acceptable assumptions for the market in preparing its cash flow projection. The appraisers must conduct an interview with the client to know the operational cost.

The appraisers also need to specify the valuation aspects that can be done, namely the inspection stage as one of the stages in the valuation process, appraisers must understand the physical concepts of sustainable property building such as the materials used, the building technical design, the concept of spatial function arrangement, etc. At the data collection stage, data processing, and the preparation of working papers, appraisers must be able to calculate the additional value due to the application of the sustainable property in the market.

The concept of sustainable property valuation is still relatively new and will experience many developments. Therefore, what needs to be made later is the deployment guide in applying valuation as a reference rather than as technical standards and the Indonesia Valuation Standards. This guide is expected to include the sources that can be referred to.

# 4 CONCLUSIONS AND SUGGESTION

Sustainable property can increase revenue as well as cost and risk so that in the income approach it will increase the value of the property. Market approach can be conducted, but the limitation is the difficulty of finding similar comparable data. In cost approach, the valuer must understand the type and price of the materials used.

Appraisers need to update their knowledge on sustainable property. Gradually, the appraisal association should conduct research and make the deployment guide in applying sustainable property valuation.

The challenge is application and further development of methods to gather, process, and present information related to property. Appraisers also need to ensure clients to understands the risks and opportunities related to the sustainability of the subject property.

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