

# Incorporating GBFIs into Commercial Property Valuation

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## Abstract

The widespread international acceptance of green buildings has led to rapid awareness of green building features and initiatives (GBFIs) in the South African property and construction industry, however among valuers it seems the awareness is still in its infancy. It is essential to be able to establish the effects of these GBFIs on the market value of commercial property.

**Purpose of this Paper** - To investigate to what level South African valuers engage with GBFIs, when a commercial valuation is conducted.

**Methodology** - Three research methods were implemented in order to gather data; semi-structured interviews were conducted with valuers of varying degrees of experience in Cape Town, on-line surveys were completed by a sample of South African valuers, and a valuation simulation was conducted to determine the quantitative impact of GBFIs.

**Findings** - The findings present evidence that even though South African valuers have limited knowledge of green buildings, they recognise the importance of incorporating the GBFIs in the valuation process. Energy efficiency was highlighted as the most important GBFI to take into account in South Africa, due to the volatility associated with increasing energy costs. The inclusion of GBFIs in valuations in practice was seen to be hindered by the lack of sufficient transactional data in the market. Furthermore, valuers experienced difficulty in quantifying and justifying the impact of GBFIs on the value of commercial green property.

**Value of the paper** - This paper serves to highlight the current challenges faced by South African valuers with regards to incorporating GBFIs in their valuations. This paper also shows how accounting for GBFIs could potentially increase the value of a commercial building.

**Keywords** - Green Buildings, Green Building Features and Initiatives (GBFIs), Green Building Valuation

**Paper type** - Research paper

## 1. Introduction

### 1.1 Background

Green building is a new discipline in the South African property industry (Frost and Sullivan, 2010), judging by the five recently constructed buildings that have been certified as “green” (GBCSA, 2012) The Green Building Council of South Africa (GBCSA) was established in 2007, making it one of the youngest green building councils compared to those in Europe, North America and Australia (Buch, 2009). It could be argued that due to the fact that the GBCSA is a relatively new entity, South African commercial property valuers have yet to fully incorporate green building features and initiatives (GBFIs) in their valuation models in a clinical and robust way, however, Warren *et al.* (2009) suggests this is a global phenomena.

The two main valuation techniques that are used by South African commercial property valuers, as recommended by the International Property Databank (IPD), are the Income Capitalisation and Discounted Cash Flow methods (IPD, 2010). These methods require input variables that are sensitive to changing market conditions, such as capitalisation and discount rates (Peto *et al.*, 1996). Valuers are currently unsure how to account for the implementation of GBFIs in their valuation models (Madew, 2006; Warren *et al.*, 2009), as currently there is limited evidence on the financial performance of green buildings with the

economic rationale for developing green buildings being based on almost entirely anecdotal evidence (Eichholtz *et al.*, 2009). Globally this has meant that valuers are unable to clearly indicate whether GBFIs affect market value, not necessarily because a link between the two does not exist, but rather because the ability of valuers to assess these features in commercial property, and identify the value of these features, is inherently difficult (Warren *et al.*, 2009).

The aim of this paper is to establish, from the preceptions of South African commercial property valuers, which GBFIs they consider to be the most significant value adding attributes of commercial green buildings and to establish how South African commercial property valuers account for GBFIs within the valuation process.

## **1.2 Green Buildings**

The history and trend towards green building has rapidly grown in status in response to the mounting concerns about climate change and environmental degradation. The most notable change has occurred within the corporate environment as companies become more aware of the need for increased environmental concern and green building (CB Richard Ellis, 2009).

Despite the infancy of the market, South Africa's green building movement is gaining momentum and green buildings have become a key focus area especially within the commercial sector, following the substantial increase in electricity prices, and the launch of the Green Star SA Rating tool (Milne, 2012). Fuerst and McAllister (2011) identify that, internationally, green certified buildings tend to be newer, single tenanted or owner-occupied buildings and are mostly in the office sector. This trend is prevalent in South Africa where of the nineteen buildings certified as Green Star to date, seventeen are office buildings, twelve are owner occupied and only three are rated 'As Built' (GBCSA, 2012).

## **1.3 Drivers and Barriers to the adoption of Green Buildings**

Within South Africa, the support of green buildings has been strong, and building valuation and certification systems have been seen to be driving the growth of green building market. Furthermore, the establishment of the green building rating tools have allowed for common criterion and standards of measurements for green buildings to be developed. This has further driven and supported the development of GBFIs in South Africa (Frost & Sullivan, 2010).

Mansfield (2009) argues that major economic benefits resulting from green buildings include improved building performance and durability as a result of a reduction in the maintenance and operational costs required during the buildings life cycle. Evidence of this in certain markets has been shown in research conducted by the RICS (2005), proving that green buildings are leasing at above average rates; moreover green buildings are able to attract tenants faster and have lower tenant turnover rates compared to that of conventional buildings.

Despite the awareness of these advantages and the growing emphasis placed on green, buildings with GBFIs remain relatively limited (CB Richard Ellis, 2009). The property industry has been hesitant to implement GBFIs, which has been especially evident from the private sector (Myers *et al.*, 2008a). Despite the significant role of the property industry, market players, such as valuers, are the slowest in responding to challenges imposed by green buildings (Lorenz, 2006). Warren-Myers (2012) identified a missing factor to Cadman's 'vicious circle of blame' whereby investors, occupiers, constructors and developers all blame each other for the lack of motivation to invest in green buildings, namely the role of valuers as advisors to the different stakeholders.

Mansfield (2009) argues that green buildings provide financial advantages. One of the foremost barriers to the adoption of green buildings is the perception that they are disproportionate with regards to initial capital expenditure (CB Richard Ellis, 2009). However, international cost-value studies contesting this view have been undertaken by Bartlett and Howard (2000), Frej (2003), Zhou and Lowe (2003), Pivo and McNamara (2005), Reed and Wilkinson (2005) and, Matthiessen and Morris (2007), who have provided substantial research indicating that there is in fact no substantial variance in average costs of initial construction costs of green buildings when compared with conventional buildings. Nicolay (2007) debates that although there may be additional costs associated with green buildings, these may be recovered through operational savings, reduced maintenance costs and reduced energy costs resulting from the incorporation GBFIs within the building's design.

Milne (2012) argues that green buildings in South Africa are still an emerging concept, and valuers are assigned the problematic task of navigating the effects of GBFIs on value. Additionally it is the initial cost of design and construction that is most often given the greatest attention, and little attention is given to the possible cost and energy savings, which would occur over the entire lifecycle of the building (Frost & Sullivan, 2010). Through integrating green issues into property valuation theory and practice, it is argued that there will be greater success in achieving more green developments (Lorenz, 2006). Until valuers begin to account for GBFIs in the values of property, investment within green buildings will not expand (Pearse, 2005). Ellison and Sayce (2006) support this argument by stating that without the development and understanding of GBFIs to assess the effect on values and performance, the property sector will continue to struggle to successfully engage with increase in green building development.

#### **1.4 Green Building Features and Initiatives (GBFIs)**

Mansfield (2009) contends that a commonly accepted group of features and initiatives need to be acknowledged in order for valuation professionals to be able to correctly assess the possible impact on market value. Muldavin (2010) and Runde and Thoyre (2010) concur that buildings need to be defined as "green", and this could be done by incorporating the following three criteria: (1) A commonly recognised group of features founded on the principle of green; (2) independently verifiable features; and (3) modelled performance that is verifiable by actual results.

The selection of the four categories of GBFIs, which were chosen because they carried the most weight in the calculation of a Green Star rating by the GBCSA, is supported by Heerwagen (2000), Boyd (2005), Ellison *et al.* (2007) and Muldavin (2010). These are namely: (1) energy efficiency, (2) indoor environmental quality (IEQ), (3) water and waste management and (4) materials. Boyd (2005) and Ellison *et al.* (2007) suggest that the list should not be exhaustive, and should instead be able to change and adapt over time with the evolving green trends.

#### **1.5 Incorporating GBFIs into Valuations Methods**

The incorporation of GBFIs into traditional valuation methods, such as the income capitalisation and discounted cashflow methods has yet to be done explicitly (Boyd, 2005; Jefferies, 2010). Babawale (2011) suggests that the incorporation of GBFIs into valuation methods could be done in the following two ways: (1) valuing properties that are built with GBFIs, whilst using a traditional valuation method, making adjustments for value using the various indicators of greening; (2) assess buildings on the basis of their GBFIs with relation to the building's contribution to the triple bottom line.

However, Babawale (2011) states that quantifying the effects of GBFIs is still not reflected in the models that are in use, but feels that change is imminent in the valuation profession, change which will embrace new valuation techniques, methods and indicators of greening, which can be used to better assess the value of such property. Robinson (2005) mentions

that traditional models are in fact applicable to value green buildings, where Lorenz (2006) is of the opinion that the use of traditional methods will result in conflicting value assessments.

## **2. Research Method**

The following three research methods were used to acquire data: (1) interviews with a sample of valuers in Cape Town [ $n_1=9$ ], (2) online survey of a sample of valuers in South Africa [ $n_2=27$ ], and (3) a valuation simulation on a commercial building in Cape Town to determine how GBFIs impact the input variables, and therefore the final value when using both the income capitalisation and discounted cashflow valuation methods. The interviewees comprised of valuers with experience ranging from five to twenty-seven years, and in order to maintain anonymity are allocated a research code of VAL[number of years of experience]. For example, the valuer with five years' experience is referred to as VAL5. One of the interviewees is a non-practising valuer that now works as a developer and is referred to as VALDEV. Valuers who participated in the survey are employed in a variety of organisations, from South Africa's largest property investment companies, property management companies, private valuers, parastatals to local government. OWN1 is used to refer to the owner of the building used for the valuation simulation.

## **3. Findings**

### **3.1 Motivating Factors**

Motivators for the implementation of GBFIs are a mixture of property investors, building tenants, building owners, and government (Madew, 2006). Both the interviews and the online survey yielded similar results. There is a view that all the above mentioned parties have an equal role to play with regards to the implementation of GBFIs, as all these parties can benefit, predominantly from a financial point of view from the successful implementation of GBFIs. Valuers are considered to be objective property professionals and therefore do not play a role as motivators for the implementation of GBFIs.

### **3.2 Green Certification**

Approximately three-quarters of the valuers that participated in the online survey said that green certified buildings would yield greater values compared to buildings that had not acquired a green rating, citing the improved marketability as the likely reason. Improved marketability may result in higher tenant retention, which may reduce the risk factor of the building and thus have a positive impact on the valuation variables, such as the capitalisation and discount rates (Muldavin, 2010).

The type of tenant plays a role with regards to the importance of green certification. Blue chip tenants are ideal as (1) they are more likely to be attracted to the lure of a green certified building as GBFIs could potentially add value to the image of the company, and (2) blue chip tenants tend to sign longer leases, and therefore the incorporation of GBFIs would make financial sense from a life cycle costing perspective. Tenants with relatively short leases are less likely to be attracted by green certification, as they will have to incur the costs of GBFIs without gaining many of the future long-term benefits.

VAL5, VAL6, VAL11, VAL21, and VAL23 are all of the opinion that the market acceptance for green building has grown in South Africa. It was further noted by VAL23 that even though the building industry in South Africa has plateaued due to the global economic slowdown there has been an increase, albeit a slow one in the number of green certified buildings in South Africa.

### **3.3 The Impact of GBFIs on Value**

There are varying degrees of opinion by valuers with regards to how GBFIs impact value and to what degree GBFIs are incorporated into the final valuation calculation. VAL21 has incorporated GBFIs in their valuations by adjusting the capitalisation and discount rates; however VAL21 is aware that the market might not necessarily agree with these types of

adjustments. When valuing a green building, VAL23 allocated savings on operating costs, specifically electricity. As with VAL21, VAL23 also adjusted the capitalisation rate, as the reduction in operating costs reduced the risk of the building for investors. VAL23 also noted the green certification improved the grade of the building from A grade to A+. Some of the valuers (VAL5 and VAL27) that participated in the study had not valued green certified buildings, however, they agreed that theoretically adjustment similar to those made by VAL21 and VAL23 could be justified.

VAL5 and VAL25 believe that GBFIs would increase the market value. VAL25 made an educated guess by stating that GBFIs could have the potential of a 10-20% sales premium. However VAL27 stated that this premium would occur gradually, as it will require time for complete market acceptance. Over 80% of the online survey respondents were of the opinion that a green building, which has not necessarily acquired green certification, would garner a higher market value than a conventional building.

### **3.4 The Impact of GBFIs on Valuation Variables**

GBFIs are deemed to affect a variety of valuation variables. VAL25 insists that the two most important variables are net income and the capitalisation rate. In theory, a green building will have a positive impact on both of these variables, as cost savings will increase the net income. Costs savings for the tenant will also result in a lower vacancy rate and therefore a lower risk profile with regards to the building, thus decreasing the capitalisation rate. VAL27 stated that as time passes there will be a greater desire for GBFIs, which will lead to an increase in the demand for green space, which will therefore result in continuity in rental and rental growth, which may increase prices. This will eventually result in a reduction in the risk profile of a given building, thus resulting in application of lower capitalisation and discount rates.

The online survey results revealed that the top three valuation variables affected by the implementation of GBFIs would be: (1) lower operating costs in comparison to conventional buildings, (2) lower yield because risk premium is lower, and (3) higher rent due to a green premium.

### **3.5 The Impact of GBFIs on Owners and Tenants**

There is mixed opinion amongst valuers whether tenants would be prepared to pay a green premium. Much of this conjecture is attributed to a lack of knowledge regarding GBFIs by both owners and tenants. The impact of GBFIs on operating costs is vitally important to tenants. VAL20 stated that if GBFIs manage to slow down operating costs escalations compared to industry escalations then tenants would be prepared to pay a rental premium. VAL11 suggested that the economic cycle would play a role in determining whether owners and tenants would embrace GBFIs. During an economic downturn there would be less enthusiasm by both parties to commit capital expenditure on GBFIs, as their main focus would be to minimise short-term spending. However, during an economic boom both owners and tenants would be more inclined to engage with the idea of implementing GBFIs by investing upfront capital in order to accrue a long term financial gain.

### **3.6 Problems Associated with Green Valuation**

The two problems associated with valuing green building that were cited by valuers was the lack of transactional data and the lack of knowledge (experience) with regards to accurately accounting for GBFIs in valuation models. Due to the fact that green buildings are still in their infancy in South Africa there is minimal, if any robust transactional data that valuers can rely on for future valuations. Valuers expressed their concern with how to accurately incorporate GBFIs in their valuation models. There is currently no set method of accounting for GBFIs when valuing, so valuers are forced to intuitively apply what they think may be the most realistic adjustments.

### 3.7 Valuation Simulation

The purpose of the valuation simulation was to supplement the interviews and online surveys with an actual example of how GBFIs impact the valuation variables, and to what degree a change in the valuation variables will impact the final value. A subject commercial building in the Cape Town CDB was used in the simulation to determine effects of GBFIs on value. The building was purchased by a prominent listed property fund in 2009 for R20million. R8million was spent on retro-fitting the building, 25% of this capital expenditure was used to implement GBFIs. In its refurbished (green) state the building was valued at R37million, as of 2011.

The GBFIs that were implemented primarily focused on water and energy savings. The GBFIs included the use of natural lighting to reduce the demand for electricity, waterless urinals, dual flush toilets, and rain water reticulation. The building was saving on energy costs due to the implementation of low energy fittings and air-conditioning systems. The open-plan layout of offices by the tenant also results in a more efficient energy use with regards to the air-conditioning system.

The building was *re-valued* as if the GBFIs had not been implemented by making adjustments for the following input variables: (1) net rental, (2) discount rate, (3) capitalisation rate, (4) exit capitalisation rate, and (5) net rental escalation. Both the Income Capitalisation and Discounted Cash Flow methods were used in order to get value for the building in its conventional (non-green) state. Table 1 illustrates the percentage difference in value when all of the above input variables revert to conventional market values. An increase of 17.3% in value in the building occurs once GBFIs have been implemented, using both valuation methods.

**Table 1: Valuation Simulation 1 – All input variables revert to conventional market values**

<b>Valuation</b>	<b>Conventional</b>	<b>Green</b>	<b>Change in value</b>
<b>Income Capitalisation Value</b>	R 30 267 680	R 35 507 120	↑17.31%
<b>DCF Value</b>	R 29 629 074	R 34 762 339	↑17.33%
<b><u>Valuation Variables</u></b>			
<b>Net Property Rental Values/m2</b>	<b>R112.38/m<sup>2</sup></b>	<b>R127.38/m<sup>2</sup></b>	<b>↑13.35%</b>
<b>Discount rates</b>	<b>15.50%</b>	<b>13.50%</b>	<b>↓2.00%</b>
<b>Applied Capitalisation Rates</b>	<b>10.35%</b>	<b>10.00%</b>	<b>↓0.35%</b>
<b>Exit Yield</b>	<b>10.80%</b>	<b>10.00%</b>	<b>↓0.80%</b>
<b>Net Rental Escalation</b>	<b>5%</b>	<b>3%</b>	<b>↓2.00%</b>
<b>Vacancy</b>	0%	0%	-

Further analysis was conducted by keeping all the input variables equal except for the net rental amount. A notional rental premium of approximately 13.35% yielded an increase in the value of building in range of 11.1% to 13.34%, depending on the valuation method. Table 2 illustrates how the implementation of GBFIs can influence the net rental, and how sensitive the final building value is to a change in this individual valuation variable.

**Table 2: Valuation Simulation 2 – Only Net Rental revert to conventional market values**

<u>Valuation</u>	<b>Conventional</b>	<b>Green</b>	<b>Change in value</b>
<b>Income Capitalisation Value</b>	R 31 327 049	R 35 507 120	↑13.34%
<b>DCF Value</b>	R 31 289 048	R 34 762 339	↑11.10%
<u>Valuation Variables</u>			
<b>Net Property Rental Values/m2</b>	<b>R 112.38/m<sup>2</sup></b>	<b>R 127.38/m<sup>2</sup></b>	<b>↑13.35%</b>
<b>Discount rates</b>	13.50%	13.50%	0.00%
<b>Applied Capitalisation Rates</b>	10.00%	10.00%	0.00%
<b>Exit Yield</b>	10.00%	10.00%	0.00%
<b>Net Rental Escalation</b>	3%	3%	0.00%
<b>Vacancy</b>	0%	0%	0.00%

#### 4. Conclusions

The literature and the findings of both the interviews and surveys suggest that although the market for green buildings in South Africa is still in its infancy, it is growing at an exponential rate as is evidenced by the increase in Green Star rated buildings since 2009. Although few South African valuers had valued a green building, the importance of taking GBFIs into account within valuations was recognised. However, despite the acknowledged importance of accounting for GBFIs, incorporating them into valuations at present was perceived to be unwarranted due to the infancy of the green building market, current economic climate and lack of market evidence.

The findings from the interviews, the online survey and the valuation simulation validated the imperative need for valuers to take into account GBFIs when conducting valuations. As GBFIs become increasingly more prominent in the commercial property sector so valuers will need to learn how to effectively account for GBFIs in order to demonstrate to their clients the value add compared to conventional buildings.

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**Acknowledgements:**

The authors wish to thank the Green Building Council of South Africa, Growthpoint Properties, and the Victoria & Alfred Waterfront for their assistance in allowing this paper to be presented at the ERES 20<sup>th</sup> Annual Conference 2013.

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