**UNIVERSITY OF CAPE TOWN**

**DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT**

# An investigation into the mechanisms that are steering large property owning organisations to implement green building features.

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# ABSTRACT

Corporate social and environmental responsibility (CSR/CER) are terms that are often used to brand a company in a positive light. This does not necessarily mean that every organisation implements social and environmental initiatives with the same degree of vigour and commitment. South African property owning organisations are becoming increasingly aware that being socially and environmentally responsible can encompass the design and operation of their buildings. It is for this reason that these types of organisations are searching for ways to implement green building initiatives in their property portfolios. The implementation of environmentally friendly/green initiatives is viewed as Socially Responsible Property Investments (SRPI).

Green building initiatives are slowly being adopted by some property owning organisations in South Africa, especially after the formal establishment of the Green Building Council of South Africa (GBCSA) in 2007. Implementation of green building initiatives have been met with multiple barriers by property owning organisations, such as lack of education by the professional team with regards to cost of green features and the processes involved in gaining green certification.

Three prominent property owning organisations in Cape Town, two corporate and the other an academic institution were chosen as suitable case studies and analysed. Multiple respondents were interviewed for each case study and asked questions regarding their social and environmental initiatives and to what degree, if at all, they are attempting to implement green building features in their buildings. These questions were used to compare the organisation's actions to the content of its CSR policy.

It was found that the adoption of green building initiatives was based on the type of property owning organisation, be it corporate or non-corporate. The property owning type has resulted in differing motives for implementation of green initiatives; however there are some common motives regardless of the company type, such as the financial feasibility of implementing said initiatives. The final results of this research revealed that although there is a small gap between a property owning company's CSR policy to that of its stated social and environmental initiatives, the gap between the CSR policy and its green building initiatives is still relatively large.

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# CHAPTER 1: INTRODUCTION

## 1.1 Socially Responsible Investing (SRI)

### *1.1.1 Background*

Socially Responsible Investment (SRI) originated in the early 20th century as a result of churches streamlining their investments with regards to certain ethical standards. Corporate Social Responsibility (CSR) originated from the industrial revolution where factory owners invested in amenities for workers' families as a recruitment and retention strategy (Juholin, 2004).

Socially Responsible Property Investment (SRPI) is derived from SRI. SRPI is the investment of capital to achieve an acceptable return from a property investment, while applying pre-determined guidelines that support or promote social, environmental and economic (SEE) issues (Plimmer, 2009). SRPI incorporates Corporate Social Responsibility (CSR) and Corporate Environmental Responsibility (CER). The essential difference between CSR and SRI is that CSR is focused on how the company conducts itself, while SRI is focused on the manner in which investors apply their capital (Plimmer, 2009). Pivo (2005) states that there is a link between SRPI and green buildings as they are more secure real estate investments.



### *1.1.2 Theoretical Framework*

There are a number of theories with regards to CSR depending on the perspective of the agent involved in its implementation (McWilliams *et al.*, 2006). There is no single definition for CSR and therefore theory on the subject continues to evolve. In 1970 CSR was viewed as a self-serving initiative by managers that reduced shareholders' wealth. By 2004 CSR theory had evolved to include the role of the CEO with regards to the implementation of strategic CSR, which may result in a competitive advantage for the firm, thus proving that researchers have yet to find a generic definition for CSR.

Dahlsrud (2008) conducted research that specifically examined different CSR definitions, which found that the Commission of the European Communities (2001) definition was most commonly used because it incorporates voluntary, stakeholder, social, economic, and environmental factors.

CSR definition:
*A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.*
(Commission of the European Communities, 2001:6)

Due to the fact that CSR is becoming increasingly prominent within a corporate context this research will attempt to establish whether CSR policies are properly implemented. This will be done by examining the relationship between CSR/CER and Socially Responsible Property Investing (SRPI), and whether SRPI leads to the emergence of green buildings.



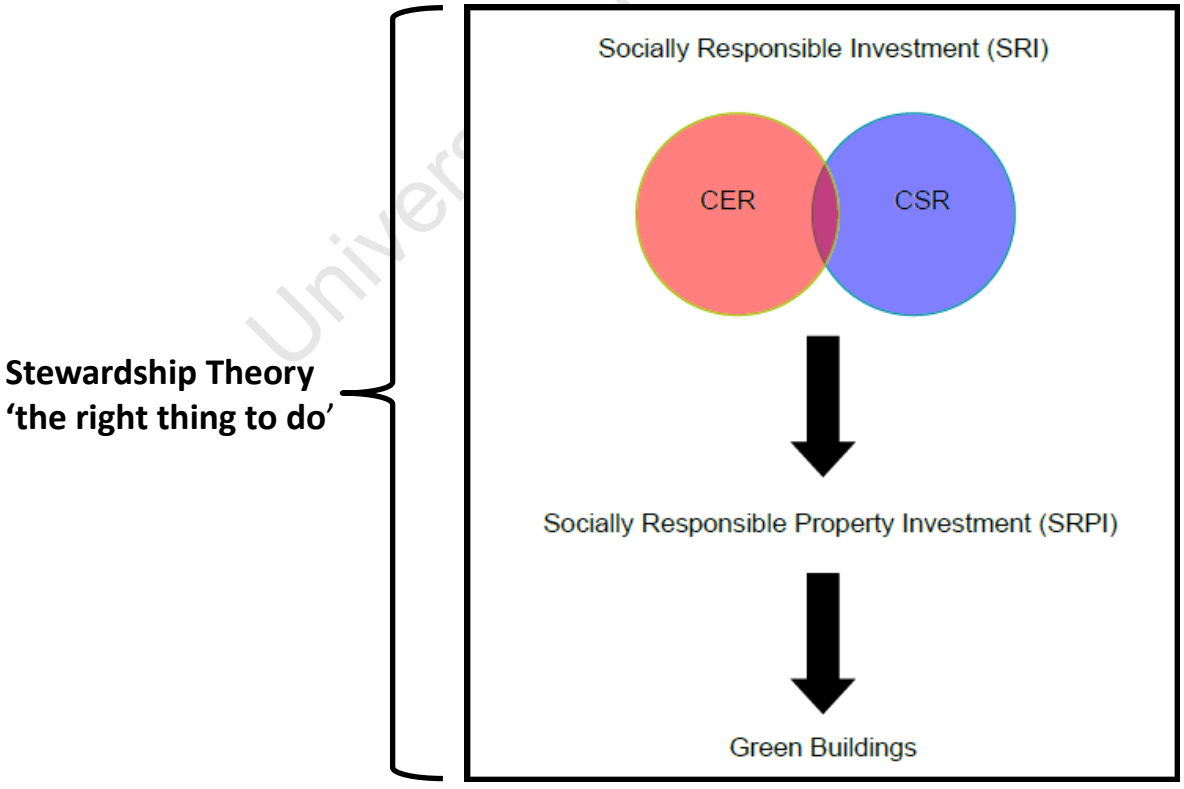



**Figure 1.1: The relationship between CSR/CER and SRPI, which leads to green buildings**

Figure 1.1 shows that Socially Responsible Investment comprises elements of both Corporate Environmental Responsibility (CER) and Corporate Social Responsibility (CSR), which if implemented lead to Socially Responsible Property Investment (SRPI), which results in the implementation of green building principles. The underlying theory that is encapsulated in SRI, CER, CSR, and SRPI is that of Stewardship Theory, which is based on the notion of 'the right thing to do'.

### *1.1.3 Stewardship Theory*

Stewardship Theory is an organisational theory that is best suited to the notions of responsibility that pertain to SRI, CER, CSR and SRPI. The underlying philosophy of Stewardship Theory is that of ethical behaviour with regards to how individuals conduct themselves and how they interact with others and the environment (Carroll, 1991). The underlying ethical reason for the implementation of green building features and initiatives is that it is the 'the right thing to do' with regards to how environmentally conscious property owning organisations choose to manage their portfolios.

## 1.2 Environmental Impact of the Built Environment

In order for economies to function efficiently, populations need access to essential resources such as electricity (energy) and water (Watson, 2009). Over the last twenty years the issues surrounding sustainability and sustainable development have become more prevalent (RICS, 2009). The need for green buildings came from the strain being put on the environment, as climate change is becoming globally recognised. The property sector is the single greatest source of energy demand and there are several studies that have estimated the overall energy usage of the building sector is 30% to 40%, and some estimates claim the usage to exceed 50% in urban areas (Nelson, 2008). Gardiner and Associates (2010) states that in the United States of America buildings are responsible for approximately 39% of carbon dioxide emissions, 72% of electricity consumption, 13% of water consumption and 66% of non-solid waste production.

Significant improvements in energy efficiency and emissions reductions are easier to obtain in the property sector than other sectors (Nelson, 2008). The property sector could potentially contribute the following improvements by the year 2020: 33% reduction in energy and 30% reduction in Green House Gas (GHG) emissions. This is potentially double the reduction in energy and emissions that other sectors could potentially achieve collectively (Nelson, 2008).

According to the Green Building Council Australia (GBCA) (2008a), climate change is probably the most important issue facing mankind. Buildings contribute to approximately 40% of GHG emissions; therefore they should be at the forefront of the fight against global warming (GBCA, 2008a). Buildings offer the best opportunity to reduce greenhouse gas emissions while maintaining economic growth and it is estimated that by 2020 emissions can be reduced to 29% of current levels at no extra cost (GBCA, 2008b).

The vast majority of GHG emissions stem from the developed world, with USA and Canada (24%) and Western Europe (26%) contributing 50% of GHG emissions. The other half of GHG emissions are mostly from China (19%) and Eastern Europe (9%), while the rest of Asia (10%) and the rest of the World (12%) make up the remaining 22% (Nelson, 2008).

The above GHG emissions data stated by Nelson (2008) illustrates the need for energy and water conservation to be addressed in first world and developing economies, because, as the global population continues to grow (in the next 20 years 97% of population growth will occur in developing countries), so will demand for limited resources. Therefore sustainable building measures are required in order to tackle the demand for these limited resources (Nelson, 2008). According to the RICS (2009), the following aspects of sustainability could potentially affect the value of a property:

- Climate Change - The impact of water, wind and temperature.
- Resource Depletion - The impact of demand for energy resources in conjunction with the reduced supplies in fossil fuels, and its relationship with energy consumption by buildings.
- Health and Social Attributes - The impact of occupancy levels and productivity levels of tenants renting space in commercial buildings.

## 1.3 SRI and Green Buildings

The built environment contributes significantly to carbon dioxide ($CO_2$) emissions (Brown, 2009). Most commercial property owners understand the need to be aware of the environment, but they also want to know that they will accrue some kind of financial benefit if they implement measures that reduce the environmental impact of their buildings (Brown, 2009).

Commercial buildings and financial institutions are often involved with each other in some form or another, be it on behalf of the owner, tenant, investors, lenders or insurers (Gardiner and Associates, 2010). Green offices are of particular importance because conventional buildings have a broad impact on the environment as they have the highest energy consumption levels of all commercial buildings (Gardiner and Associates, 2010).

Commercial real estate leaders view environmental sustainability as an emerging business priority, but are still in the early stages of identifying sustainable building strategies, costs, benefits and metrics (Jones Lang LaSalle, 2008). Commercial property investors are starting to recognise that green buildings and sustainability go hand-in-hand, which results in lower vacancy rates, higher rentals, and longer leases (Sayce *et al*., 2010). These, in turn, result in a building yielding a higher net profit, and therefore this increases its value. Investor and tenant decisions are increasingly being made aware by a range of sustainability-related measurements (RICS, 2009).



## 1.4 Green Building Councils

In 1993 the first green building council was established in the United States of America as a non-profit organisation with the intention of promoting sustainability in building design, development and operation (www.usgbc.org, 2010).

In November 1999 the World Green Building Council (World GBC) was founded in California with eight countries in attendance. By 2002 the World GBC was formally established, with a defined role of formalising international communications, to help industry leaders access emerging markets and provide a global voice for green building initiatives (www.worldgbc.org, 2010).

The Australian Green Building Council was established in 2002 and is equally supported by government and the property industry (www.gbcaus.org, 2010). The UK Green Building Council was also established in 2007 mainly as an answer to the British government's 'Sustainable Buildings Task Group' which reported that there was no organisation that provided clear direction for this area of expertise (www.ukgbc.org, 2010). The Green Building Council of South Africa, which was established in 2007, has been modelled on the Australian Green Building Council due to similarities in the two countries climates (www.gbcsa.org.za, 2010). Large property owning companies within South Africa are attempting to comply with green building requirements even though there is currently no legislation that necessitates this type of behaviour.

The different green building councils have formulated a variety of rating tools that are specifically designed for the different regions. The purpose of these rating tools is to define a minimum set of requirements with which buildings must comply in order to achieve green certification.

As mentioned above there are numerous Green Building Councils in the world. There have been differing levels of enthusiasm in different countries with regards to engaging in green building initiatives. Countries in North America, Europe and Australasia have shown intent to address green building issues. South Africa has yet to demonstrate similar levels of commitment to green building issues. Large South African property owning organisations are slowly becoming aware of the environmental impact of their buildings, but this awareness has yet to result in prominent action that addresses their environmental impact.



## 1.5 Problem Statement

Despite the growth in global awareness of the impact of buildings on the environment the response from large South African property owning organisations, in terms of socially responsible property investment has been poor.

## 1.6 Aims and Objectives

### *1.6.1 Aims*

The aim of the research is to determine the driving forces behind socially responsible property investments by large South African property owning organisations, with specific focus on corporate social responsibility, corporate environmental responsibility and socially responsible property investing and the link to the recent emergence of green certified buildings.

### *1.6.2 Objectives*

The main objective of the research is to determine what drives socially responsible property investing and to determine how corporate social responsibility policies in the South African property market are drafted to allow for the implementation of green building initiatives. The overall objective of the research will be to determine how large South African property owning organisations respond to socially responsible property investments, with specific focus on corporate social and environmental responsibility and green building initiatives.
The following objectives will be addressed in detail in this research document:

- Evaluate the extent of the green building initiatives by large South African property owning organisations.
- Indicate how large South African property owning organisations incorporate socially responsible property investments, CSR and CER.
- Determine the motives and benefits of socially responsible property investments that may be accrued by large South African property owning organisations.

## 1.7 Research Questions

The following questions will be investigated:

1. Is environmental awareness a key issue for large South African property owning organisations?
2. How do large South African property owning organisations partake in socially responsible property investing?
3. What motivates large South African property owning organisations to engage in socially responsible property investing?

## 1.8 Research Propositions

1. Environmental awareness is a key issue for large South African property owning organisations specifically to gain superior market share.
2. Large South African property owning organisations engage in socially responsible property investment through green building initiatives.
3. Financial return and maintaining a reputable corporate image are key motivating factors with regards to socially responsible property investment.

## 1.9 Research Propositions Re-phrased

The research propositions can be re-phrased in a negative form. The reason for this is there is no consistent support of either positive (as seen in section 1.8) or negative forms of the propositions. Another reason why the negative form can be adopted is that in the pilot case studies there was less support that cases do things for altruistic reasons. The re-phrased research propositions are listed below:

1. Companies are environmentally aware because it is the ‘right thing to do’, not because it gives them superior market share.
2. Companies engage in green building initiatives because it is a vehicle for SRI, which is the ‘right thing’ to be doing and not for any other reason.

3. South African property owning organisations are motivated to engage in SRPI through green building initiatives because they believe it is the 'right thing to do' and not for financial return and maintaining a reputable corporate image.

## 1.10 Research Method

Past research projects in the subjects of SRI and SRPI research has adopted case studies as were seen in GBCA (2008a), Palmeri (2009) and Rapson *et al.* (2007). These case studies have focused on property companies as the unit of analysis and conduct an analysis based on a set of underlying research propositions.

The case study method is used in this research as case studies allow for a rich exploration of the unit of analysis. The success of case study analysis in similar research, such as GBCA (2008a) justifies why it is well suited for this type of research. The unit of analysis is the corporate social/environmental policies of property owning companies that are attempting to implement green initiatives into their property portfolios. The case studies draw on a broad range of sources. Interviews with senior managers in commercial property firms, analysis of building performance indicators such as operating costs and notional rentals of a green certified building in South Africa, as well as how green buildings are perceived by architects and engineers that work as consultants to commercial property owning companies.



## 1.11 Scope and Limitations of the Research

Due to the nature of the research, certain limitations were imposed on the level and depth of the research conducted. This is due to a number of factors, which are listed below:

- Availability of primary information – Some property owners may not feel comfortable or be permitted to reveal information about their properties.
- Access to detailed documents, e.g. minutes of meetings.
- Access to supporting professionals e.g. architects and engineers of commercial property owning companies.

- The sample size of large property owning organisations may not be large enough to draw significant results.
- Technical aspects of the sample buildings will not be the main component of this research report.

## 1.12 Assumptions

A number of assumptions are made prior to the research and analysis stages of the research report. The reason for this is so that over-generalisations will be reduced, and thus will not result in unnecessary explanations of basic terms or obvious facts. The following assumptions will be made for this research report:

- Large South African property owning organisations engage in some form of socially responsible investments.
- Large property owning organisations have a basic awareness that their buildings have an environmental impact.

## 1.13 Thesis Outline

The research report will be broken down into a number of components that will aid the logical flow of the document; they are as follows:

- **Introduction**
  This chapter gives a brief outline of the subject matter regarding the context of the study. It will also describe the main problem statement and associated underlying research propositions, as well as short description of the proposed methodology to be used. Finally the scope and limitations and any assumptions will also be mentioned.

- **Literature Review**
  This chapter gives an in-depth investigation of the readings that are relevant to the research topic. This will be done by extracting the main components of the literature that are pertinent to understanding the history of similar research and identifying any trends that may occur from the different sources.

- **Research Method**

  This chapter describes the method of empirical research (case study analysis) that will be undertaken so that meaningful analysis may be conducted. Finally it will justify the chosen research method.

- **Analysis of the Data**

  This chapter organises the data gathered from the case studies analysis, so that a comparison can be drawn between the different property owning organisations.

- **Conclusions**

  This chapter includes the interpretation of the data that is presented in the analysis stage. It will also re-visit the main problem statement and its associated research propositions and discusses whether they can be rejected or not.

- **References**

  This section lists all the sources that are referred to throughout this document.

- **Appendices**

  This section contains the case study templates and the raw data obtained for analysis from property owners, architects and engineers.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

This chapter examines the underlying issues that are pertinent to socially responsible investments, CER, CSR, SRPI, and the establishment of green buildings and how sustainability affects the financial performance of a commercial building. It also discusses green building rating systems.

Figure 2.1 gives a diagrammatical representation of the structure of the literature review. The main components of Figure 2.1 encompass the main issues of the research questions and propositions, namely issues pertaining to environmental awareness, motivating factors, and financial return of large property owning organisations. Part A of Figure 2.1 addresses the issues that are linked to environmental awareness and socially responsible property investments that are highlighted in the research questions and propositions, while Part B addresses issues that are linked to motivating factors (for both socially responsible investments and green building) and improved financial return and corporate image.

The link that the literature makes to the research questions and propositions validate the suitability of the questions and propositions and thus allowing for meaningful empirical research to be conducted.

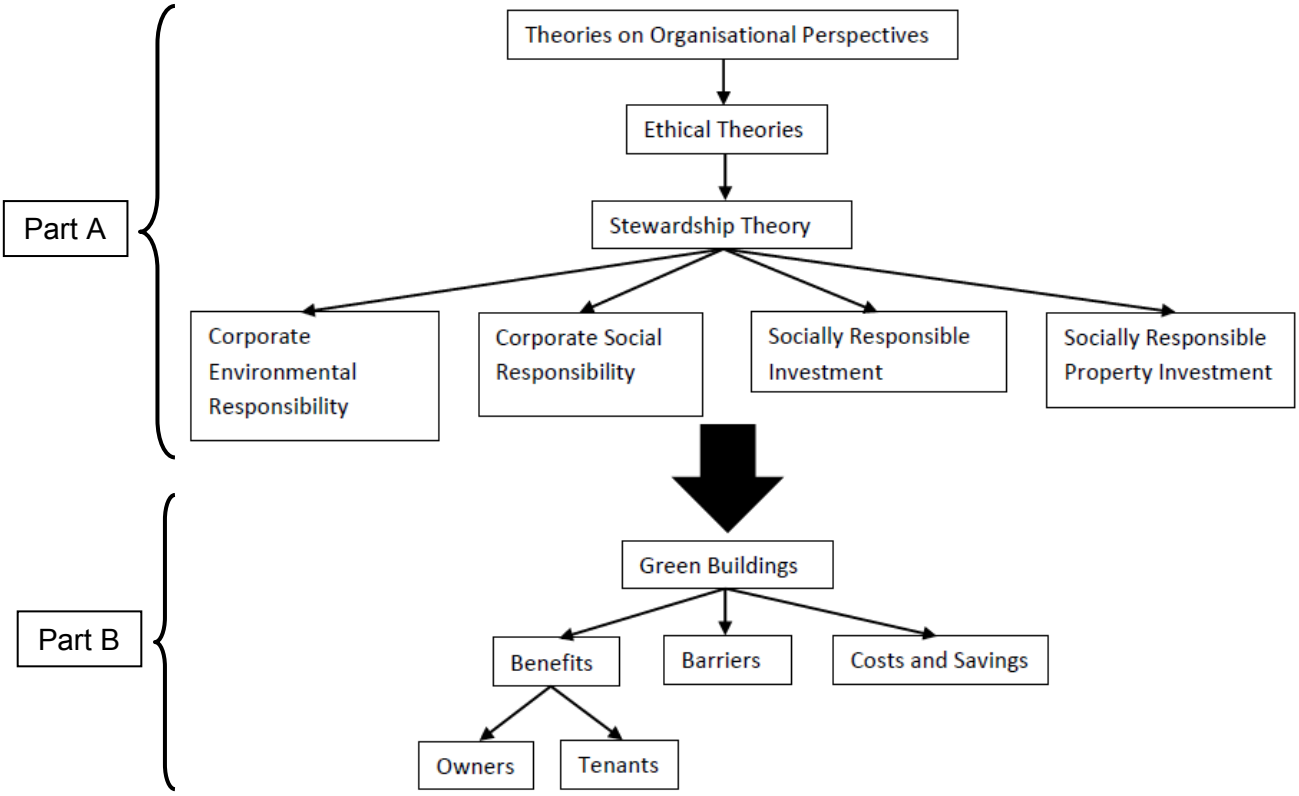



**Figure 2.1: Literature Review Structure**

## 2.2 Theories on Organisational Perspectives

Due to the fact that CSR has no one specific definition there are numerous theories that have been derived in order to more accurately encompass certain types of CSR and how organisations engage with society. These differing definitions of CSR are structured around a number of theoretical perspectives. The main theoretical perspectives that have been researched since 1970 are: agency theory, stakeholder theory, theory of the firm, resource-based view of the firm, and stewardship theory (McWilliams, 2006). Garriga and Melé (2004) broke CSR into instrumental, political, integrative and ethical theories. Table 2.1 lists in chronological order the varying definitions of CSR from 1970 to 2004.

**Table 2.1: Evolving theories on CSR**

| Author(s) | Nature of Theoretical Perspective(s) | Key argument/result |
|---|---|---|
| Friedman (1970) | Agency theory | CSR is indicative of self-serving behaviour on the part of managers, thus reducing shareholder wealth. |
| Freeman (1984) | Stakeholder theory | Managers should tailor their policies to satisfy numerous constituents, not just shareholders. These stakeholders include workers, customers, suppliers and community organisations. |
| Donaldson and Davis (1991) | Stewardship theory | There is a moral imperative for managers to 'do the right thing', without regard to how such decisions affect firm performance. |
| Donaldson and Preston (1995) | Stakeholder theory | Stressed the moral and ethical dimensions of stakeholder theory, as well as the business case for engaging in CSR. |
| Jones (1995) | Stakeholder theory | Firms involved in repeated transactions with stakeholders on the basis of trust and co-operation have an incentive to be honest and ethical, since such behaviour is beneficial to the firm. |
| Hart (1995) | Resource-based view of the firm | For certain companies, environmental social responsibility can constitute a resource or capability that leads to a sustained competitive advantage. |
| Jennings and Zandbergen (1995) | Institutional theory | Institutions play an important role in shaping the consensus within a firm regarding the establishment of an 'ecologically sustainable' organisation. |
| Baron (2001) | Theory of the firm | The use of CSR to attract socially responsible consumers is referred to as strategic CSR, in the sense that firms provide a public good in conjunction with their marketing/business strategy. |
| Feddersen and Gilligan (2001) | Theory of the firm | Activists and NGOs can play an important role in reducing information asymmetry with respect to CSR on the part of the consumer. |

| | | |
|---|---|---|
| McWilliams and Siegel (2001) | Theory of the firm | Presents a supply/demand perspective on CSR, which implies that the firm's ideal level of CSR can be determined by cost-benefit analysis. |
| McWilliams *et al.* (2002) | Resource-based view of the firm | CSR strategies, when supported by political strategies, can be used to create sustainable competitive advantage. |
| Garriga and Melé (2004) | Instrumental theory | Philanthropic activities that are deemed acceptable, but also have a positive effect on the firm's profits. |
| Garriga and Melé (2004) | Political theory | The firm has a role to play in society. The firm has an obligation towards the community it engages with. |
| Garriga and Melé (2004) | Integrative theory | The integration of the firm's operations with demands of society, thus establishing a dialogue with both internal and external stakeholders. |
| Garriga and Melé (2004) | Ethical theory (Stewardship theory) | Focuses on how the firm can make positive contribution to society by 'doing the right thing'. This is based on the principles of stewardship theory. |
| Waldman *et al.* (2004) | Theory of the firm/strategic leadership theory | Certain aspects of CEO leadership can affect the propensity of firms to engage in CSR. Companies run by intellectually stimulating CEOs do more strategic CSR than comparable firms. |

Source: McWilliams *et al.* (2006) and Garriga and Melé (2004)

Instrumental theories are implemented within corporations as a form of wealth creation, and the firm's social actions are only a means to increase profits. Many managers view wealth creation as a form of corporate responsibility. Instrumental theory states that an adequate level of investment in philanthropy and social activities is also acceptable for the sake of profits. 'Enlightened value maximisation' is a concept that specifies long-term value maximisation or value seeking as the firms objective, while ensuring that stakeholders remain satisfied with their returns. Examples of 'enlightened value maximisation' are corporate sponsored charity golf days, literacy campaigns, and sponsorship/implementation of environmental initiatives, i.e. green buildings (Garriga and Melé, 2004).

Political theory focuses on the power of the corporation in society and the responsible use of this power in the political arena. Political theory states that business is a social institution and must use its power responsibly. Society demands responsibility from businesses and if businesses refuse to use its social power then these businesses will lose their position in society because more responsible firms will take their positions. The above implies that an implicit social contract between business and society exists, which therefore implies some indirect obligations of business towards society. This theory concludes by saying that most authors on CSR converge to the same points, which is the corporation's responsibility towards the local community and the environment (Garriga and Melé, 2004).

Integrative theories focus on how the corporation highlights the satisfaction of social demands, stating that business depends on society for its existence, continuity and growth. This theory highlights the role of how corporate management should integrate social demands with business operations in accordance with social values. Corporations are seeking corporate responses to social demands by establishing dialogue with both internal and external stakeholders. This type of dialogue enhances the company's sensitivity to its environment (Garriga and Melé, 2004).

Ethical theories are based on the ethical responsibilities of corporations to society. This is closely linked to Stewardship Theory, which focuses on the 'right thing to do', regardless of how it may affect the corporation's performance. This theory uses human rights as a basis for CSR. In recent years human-rights-based-approaches for corporate responsibility have been proposed by the United Nations in the form of its Global Compact initiative, which includes nine principles in the areas of human rights, labour and the environment; and since the year 2000 many companies have adopted it. The ethical theory holds the common good of society as the referential value of CSR. This approach maintains that businesses, as with any other social group or individual in society, have to contribute to the common good because they are part of society (refer to Stewardship Theory in the following section). Ethical theories state that businesses should neither be harmful to, or a parasite on society, but rather should be positive contributors to the well-being of society (Garriga and Melé, 2004).

## 2.3 Stewardship Theory

Stewardship theory is based on the foundation of ethical responsibility. Ethical responsibilities are defined as conduct that society determines to be acceptable within the context of morality without having any specific laws attached to their regulation or perceived breach. Ethical responsibilities encompass the expectations of customers, employees, stakeholders and the community with regards to shared moral values (Carroll, 1991). Organisational structures define the level of stewardship initiatives that are implemented within a corporation. This is due to the fact that there are no formal rules with regards to Stewardship Theory (Podrug, 2008).

Stewardship is based on the premise that individuals act in the best interests of the group as opposed to their individual needs, putting higher priority on the needs of the group when there is a conflict between their own needs and that of the group. This is because there is a perception that there is greater utility in co-operative behaviour (Davis *et al.,* 1997). Stewardship Theory is based on the assumption that managers act as stewards for the corporation, i.e. managers are constantly looking out for the corporation's best interests. This results in managers and shareholders forming a partnership to form strategies that will improve organisational performance (Cornforth, 2004).

The principles of Stewardship Theory encompass the idea of being part of something that is larger than the individual. Stewardship Theory is defined within a corporate context of "we are in this together" and is consistent with intrinsic values that are shared by managers and employees who have a shared vision for the organisation. The psychology of Stewardship Theory highlights the commitment of the individual to the organisation, which in turn results in the integration of the individual and organisation's goals and values. Therefore Stewardship Theory and collectivism are seen to be closely aligned (Yonghui, 2009).

Non-financial motives are viewed as the foundation of Stewardship Theory. These include the need for recognition and acknowledgement of good performance by employees, and respect for authority and work ethic (Muth and Donaldson, 1998). Stewardship Theory has evolved to a point where individuals are committed to both the fiduciary and non-fiduciary components of the firm, while maintaining an acceptable level of morality and ethics. An example of Stewardship Theory within a

corporate context is when leaders that take personal responsibility for the organisations' actions and use organisational power for the greater good of the shareholders. Stewardship Theory encompasses a balance of working towards communal welfare, while marinating focus on shareholder's interests. One of the core foundations of Stewardship Theory is that of personal responsibility. It is argued that Stewardship Theory can only exist if there is personal accountability for organisational actions (Hernandez, 2007). Another underlying component of Stewardship Theory is the impact of organisations on future generations. Organisations that embrace Stewardship Theory in their decisions need to evaluate the trade-offs of potential future benefits and current burdens. Stewardship Theory that is applied to commercial entities balances the combination of maintaining financial standards and objectives with the company's stockholders, while ensuring an acceptable non-financial relationship with the company's external stakeholders (Hernandez, 2008).

## 2.4 Socially Responsible Investment (SRI)

Socially Responsible Investment (SRI) is an investment strategy that does not solely take economic benefits into account, but also considers social and environmental aspects (Lorenz and Lutzkendorf, 2008). Pivo (2005) defines SRI as investing that considers the social and environmental impact of investments within the context of thorough financial analysis. Nelson (2008) found that high net-worth individuals (HNWIs) control more than 70% of the SRI assets in the USA and 94% of the SRI assets in Europe. This is further substantiated by the fact that 12% of HNWIs allocate a part of their portfolio to green investing (Nelson, 2008). SRI and Responsible Property Investing (RPI) focus on the triple bottom-line sustainability, which in turn focuses on the 3 Ps: People (social aspect), Planet (environmental impact) and Profit (financial return). The SRI market amounts to nearly $4 trillion in global assets, $2.7 trillion in the United States, €1 trillion in Europe, $504 billion in Canada and $53 billion[1] in Australia (Nelson, 2008; Newell, 2009). RPI is also gaining momentum as

[1] Average South African Rand Exchange Rates for 2008
1 USD = 7.74 ZAR
1 CAN = 7.70 ZAR
1 EUR = 12.09 ZAR

many pension funds in Australia and Europe include sustainability criteria in their investment strategies (Nelson, 2008).

SRI has started to attract an increasing number of top corporations, financial institutions and private investment firms. This is due to increasing awareness of social and environmental issues and how they affect the property industry. This has further lead to an initiative known as Socially Responsible Property Investment (SRPI) (Lorenz and Lutzkendorf, 2008).

## 2.5 Corporate Environmental Responsibility (CER)

According to Jamison *et al.* (2005) Corporate Environmental Responsibility is a continuously evolving movement due largely to rapid changes in global markets in the last 50 years. The main driving forces behind CER are consumer activism, shareholder and investor pressure, and competitive advantage.

Consumer activism focuses on environmental and human rights violations, which in the past few decades have resulted in consumers and employees preferring companies that 'do the right thing'. Consumers are more inclined to 'punish' a company they perceive as being environmentally negligent and 'reward' those companies that are perceived to be environmentally responsible. Shareholders and investors are becoming increasingly aware of environmental risk and how this pertains to financial risk. Investors do not want to finance environmentally risky projects that may lead to expensive clean-up costs and reputational damage. Corporations are recognising the potential that CER offers with regards to competitive advantage. Previously neglected issues such as the environment and human rights are now at the forefront of many business strategies in order to retain consumers and create some form of market differentiation (Jamison *et al.,* 2005).

## 2.6 Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) relates to the commitment by corporate organisations to conduct themselves ethically and seek to improve social conditions, not only for their own investors, but also for society. Companies that implement CSR

policies are committing themselves to triple bottom-line sustainability (RICS, 2009). According to the RICS (2009) the Dow Jones World Sustainability Index and the FTSE4Good have been established to provide investors with a quantifiable means to measure the costs and returns of investing in companies with good CSR. For inclusion on the FTSE4Good Index, companies must meet requirements with regards to environmental sustainability, developing positive relationships with stakeholders, upholding and supporting universal human rights, ensuring good supply chain labour standards, and countering bribery (Newell, 2009). Being listed on the above mentioned index gives certain companies exposure to a group of distinct growing investors, which may in turn provide incentives for tenants to adopt more sustainable business practices (Nelson, 2008).

The FTSE4Good Index comprises approximately 700 listed companies (including 46 property firms) with a market capitalisation of approximately $14 billion[2] (Newell, 2009). The Dow Jones World Sustainability Index comprises leading companies in terms of global sustainability and contains approximately 300 listed companies (including 13 property firms) with a market capitalisation of approximately $12 billion (Newell, 2009). The Global 100 Index selects the top 100 companies amongst 1800 listed corporations (Corporate Knights, 2010). The Carbon Disclosure Report (CDP) in terms of corporate, social and environmental factors assesses companies based on their risk strategies, with particular focus on how climate change and green house gas emissions can affect their business risks (Newell, 2009).

Eichholtz *et al*. (2009b) state that tenants rent space in green buildings in order to publicly illustrate that they are implementing CSR, which may result in creating an image of sustainability and environmental awareness. This could potentially give them a competitive advantage over their competitors renting space in conventional buildings and therefore possibly lead to an increase in the company's cashflow. There is also increasing pressure from investors of large prominent firms to implement CSR, which will result in a higher chance of these firms leasing green space (Eichholtz *et al*., 2009b).

[2] Average South African Rand Exchange Rate for 2009
1 USD = 7.78 ZAR

According to Lorenz and Lutzkendorf (2008), CSR is defined as a transparent business practice that is founded on ethical values, respect for employees, communities and the environment. Its main purpose is to deliver sustainable value to society as a whole, as well as to shareholders. It was found that there are no disadvantages with regards to the implementation of CSR and SRI. In fact it was found that there were positive financial impacts associated with these initiatives (Lorenz and Lutzkendorf, 2008).

Sceptics of CSR believe that companies are not sincere, and that CSR is used as a mask for ulterior motives (Coors and Winegarden, 2005). Companies should not allow CSR to divert from their main goal of maximising shareholder wealth or use it as an excuse for poor financial performance. There is further criticism that companies implement CSR as a self-serving mechanism that often contains hollow promises. Critics also state that CSR will only exist to the extent that consumers are willing to pay for it (Smith, 2007).

In September 2009 the *King Code of Governance for South Africa* (King III Report) was released. The King III report primarily focuses on governance, sustainability and corporate citizenship (IoDSA, 2009). It also emphasises equal performance from a social, economic and environmental perspective (SAICA, 2009). The King III Report states that a board of a given company should act as a responsible corporate citizen, with specific emphasis on the triple bottom line approach. SAICA (2009) states that businesses are becoming increasingly aware of how their business strategies have an impact on society and the environment. The King III report states that corporate citizenship encapsulates the following key criteria that relate to CSR: human capital, societal capital, safety and health (SAICA, 2009).

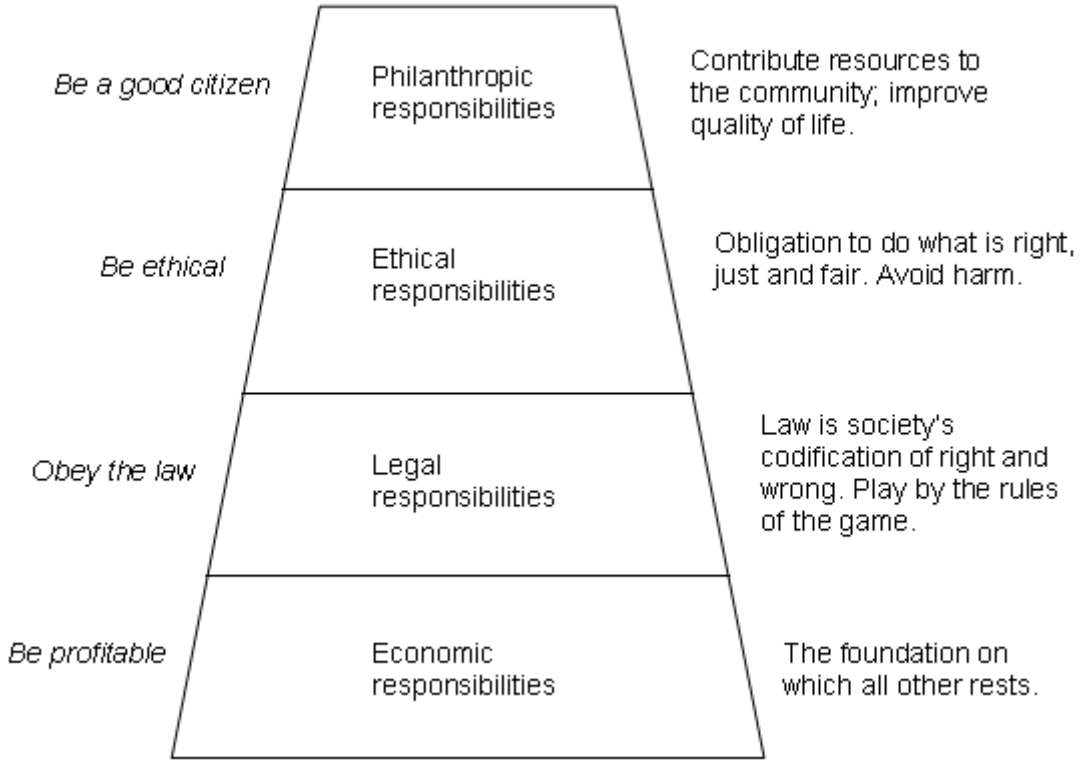


### *2.6.1 CSR as a Competitive Advantage*

Smith (2007) states that within the business world a good corporate image can enhance a business during good times and protect it during a crisis. In other words one of the prolonged advantages of CSR is that it can ensure sustainable economic advantage, and should therefore be a long-term strategic objective of any organisation (Smith, 2007). Yam and Ismail (2009) highlight the importance of image and reputation in the property industry as this allows the company to occupy a unique position in the mind of the customer. Holmes (2002) states that property related CSR

primarily focuses on environmental sustainability, as well as elements of social and ethical responsibility. It is argued (Frankental, 2001) that CSR is used to generate a better corporate image and reputation, with the associated expectation of increased profits.

Carroll (1979) states that businesses should fulfil the four pillars of responsibility: (1) Economic responsibility - a firm's prime objective should be the production of goods and services at a reasonable profit; (2) Legal responsibility - businesses are expected to operate within the existing legal framework to achieve their objectives, while meeting their economic responsibilities; (3) Ethical responsibility - as not all ethical behaviour is regulated by a country's legal framework, businesses have an implicit social contract with society; and (4) Philanthropic responsibility - a business should have an active but voluntary involvement in initiatives that promote human welfare and goodwill. Figure 2.2 illustrates the hierarchy of the four pillars of responsibility mentioned above.




Source: Visser (2006: 34)

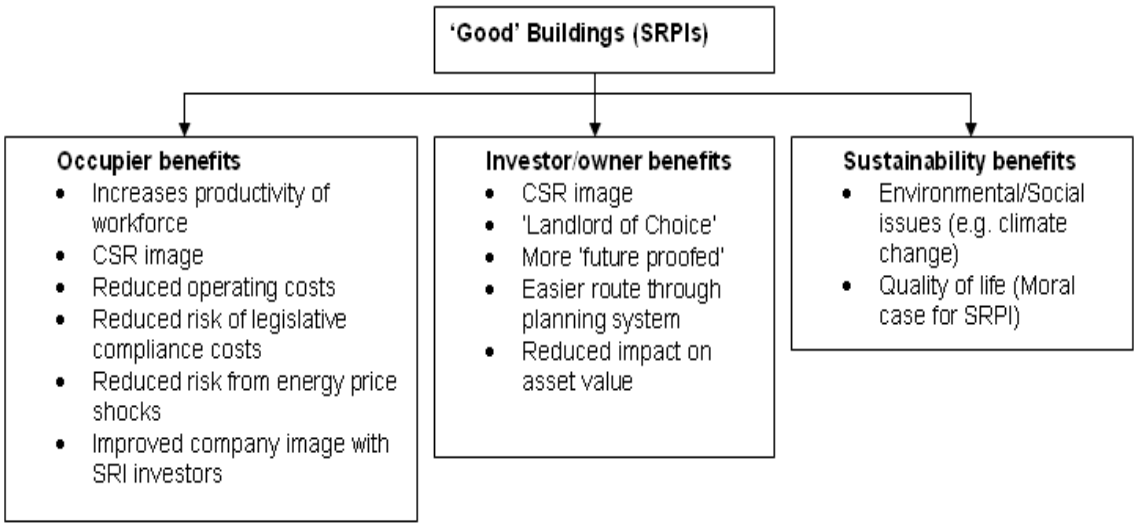
**Figure 2.2: Carroll's Pyramid of Corporate Social Responsibility**

Smith (2007) state that CSR produces a sustainable competitive advantage that can be attributed to a positive organisational reputation. The four E's of marketing strategy, namely: the ease for the consumer to be green; empowering the consumer with solutions; enlisting the support of the consumer; and the establishing credibility with the general public can contribute to the socially perceived image of a company.

## 2.7 Socially Responsible Property Investment (SRPI)

Socially Responsible Property Investment (SRPI) focuses on maximising financial performance and minimising risk (Lorenz and Lutzkendorf, 2008). According to Pivo (2005), SRPI has a strategy that incorporates sound business practice and societal improvements, shareholder advocacy, and investing in communities that are often neglected by traditional financial services. Pivo (2005) state that SRPI leads to the support and investment in green buildings as it is a more secure real estate investment because it can reduce the policy and physical risks to global warming. Newell (2009) states that SRPI has resulted in the establishment of Green Building Councils in 25 countries, which has resulted in increased awareness of SRPI issues by both property owners and tenants.

Rapson *et al*. (2007) state that SRPI results in benefits for both the property occupiers and owners, while positively contributing to the environment, society and quality of life. This is illustrated in Figure 2.3.




Source: Rapson *et al.* (2007: 346)

**Figure 2.3: Benefits of SRPI**

## 2.8 Green Buildings

Green building is a relatively new field of research in the built environment. It is for this reason that there are a varying number of definitions that have been developed. Some researchers use the terms ‘green’ and ‘sustainable’ interchangeably. The two terms are preferred in different regions, the former in Europe and the latter in North America and Australasia. Only the term ‘green’ is used in this document to avoid confusion, as the term ‘sustainable’ can be interpreted to have a far wider meaning within the built environment.

The oldest and most commonly used definition of sustainable development, which can be applied to green buildings, is: ‘Development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland, 1987:11).

According to the GBCA (2008a) green buildings are defined as buildings that reduce or eliminate the negative impact on the environment during the building’s design, construction and operation. The GBCA (2008a) also states that the following strategies should be addressed on behalf of the building’s occupants: energy efficiency, reduction in green house gas emission, water conservation, waste avoidance, reuse/recycling, pollution prevention, enhanced biodiversity, reduction in natural resource consumption, healthier working environments, and flexible/adaptive working spaces.

The RICS (2009) and Nelson (2008) define green buildings from a Valuer’s viewpoint as those buildings that minimise the impact on the environment through all the phases of the building lifecycle, while simultaneously focusing on the health of the occupiers, and retaining its value over a longer period of time compared to conventional (non-green) buildings.

According to Shalley (2008) the definition of green buildings depends on the perspective of the different market players. Architects tend to define green buildings in terms of the building’s design and materials, while developers and investors tend to focus on the building’s systems and operations.

According to Kats (2003) green buildings lead to improved occupancy health, comfort and productivity because they focus on the efficient use of energy, water, materials and land in comparison to conventional buildings. Simply Green (2009a) states that the main objective of a green building is to minimise the impact on the environment.

## 2.9 Benefits of Green Buildings

Property professionals are increasingly becoming aware of the type of benefits that accrue from green buildings. These benefits range from financial (owner specific) to occupier benefits, which include *inter alia* improved indoor environmental quality (IEQ) and increased productivity of employees of companies renting space in commercial buildings (GBCA, 2008a).

### *2.9.1 Financial Benefits*

According to Nelson (2008), green buildings are attracting "next wave" investors intent on achieving above market returns by being early to identify and capitalise on the next big investment trend. This is substantiated by the United Nations who estimated that $150 billion of new money was generated in 2007 with regards to sustainable energy, a 60% increase from 2006. Within the five year period of 2008-2013 the UN expects sustainable energy investment to reach $450 billion and by the year 2020 it is predicted that it will reach $600 billion (Nelson, 2008).

Sayce *et al*. (2010) states that there is evidence of a link between sustainability, rental amounts, yields and ultimately, value. Bowman and Willis (2008) state that there is a correlation between green features and a building's value, predominantly in the Canadian, US and Australian markets. Bowman and Willis (2008) also state that Green Star rated buildings were likely to provide better returns to investors over the medium to long term, rather than the short term. According to the RICS (2009) conventional or non-green buildings may be viewed as less attractive properties by investors and will therefore experience a stagnation or decrease in value over time. It should be noted that green building initiatives would only be seriously considered if they provide favourable returns for commercial property investors as well as improve the public image of the property owner and/or its tenants, thereby decreasing the risk of future vacancies within the property (Myers *et al*., 2007). Eichholtz *et al*. (2009a)

conducted research in the USA commercial property market and showed that green buildings significantly outperformed conventional buildings in terms of rent, building grading, and market value.

Miller *et al*. (2007) and Sayce *et al*. (2010) state that green certified buildings in North America perform better with regards to occupancy rates, rental amounts and market values in comparison to non-green buildings. This was further substantiated by Sayce *et al*. (2010) who stated that there was a rental premium of 3-6% for sustainable building's. Miller *et al*. (2007) state that a true test of sustainability will be the building's ability to perform over an extended period of time and the buildings ability to offer adaptability and flexibility to its occupiers, which will lead to occupier satisfaction and thus result in a financial benefit for investors. Lorenz and Lutzkendorf (2008) have found that some banks are starting to offer preferential lending conditions to investors that have green certified buildings in their portfolios. This compliments the fact that commercial property investors (who traditionally rely on financial performance information) are starting to include sustainability issues in their due diligence reports in order to increase returns on their property portfolios (Lorenz and Lutzkendorf, 2008). It was found by the GBCA (2008b) that commercial property investors believe that Green Star rated buildings would outperform conventional buildings in the medium to long term.

Myers *et al*. (2007) state that support for green buildings will come from investors as they begin to recognise and experience increased financial gains, as well as increased demand for office space from tenants that want to be located in green certified buildings. It should be noted that commercial property investors place more emphasis on the return on investment of a given building than the actual rating achieved under a green rating system (GBCA, 2008b). Myers *et al*. (2007) also argue that there is a possible correlation between sustainability and rental amounts, i.e. the 'greener' the building the higher the per square meter rate. This argument is further supported by the GBCA (2008b) who stated that green buildings added the following financial benefits: operating costs decreased from 8-9%, building values increased by 7.5%, return on investment (ROI) increased by 6.6%, occupancy ratio increased by 3.5%, and rent ratio increased by 3%. The aforementioned percentages are further supported by two-thirds of respondents saying that they were prepared to pay more for a Green Star rated building, according to a survey conducted by the Green Building Council of Australia (GBCA, 2008b). The GBCA (2008b) state that the majority of its respondents were prepared to invest in a Green Star building despite,

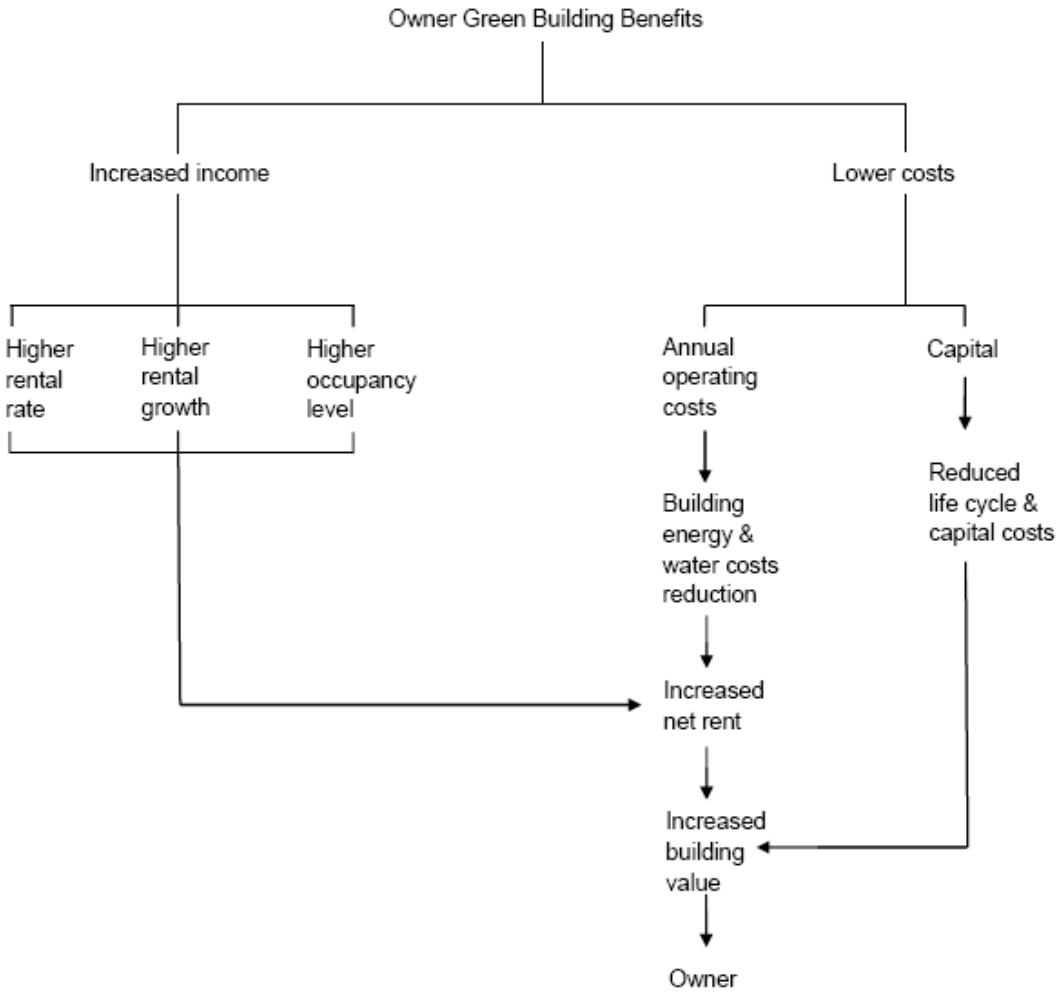
the possibility of incurring a short-term loss, as long as the building outperformed the market in the long-term. Nelson (2008) agrees with the GBCA by stating that green buildings command higher rentals and occupancy rates, and achieve superior market performance in other building related indicators.

According to the GBCA (2008a) long-term benefits of green buildings include *inter alia* reduced vacancy periods, increased tenant renewals, shorter tenant turnover period and reduced capital outlay to pay for any building obsolescence. The GBCA (2008a) state that energy efficiency is a key factor in cost reduction for buildings, and this can be seen as a benefit to both building owners and tenants, as in some cases the energy costs are passed onto the tenant. This argument is to be supported by Fullbrook *et al.* (2006) who state as energy and water costs increase; green buildings will become more attractive to investors and tenants. Gardiner and Associates (2010) argue that reducing energy costs is vitally important especially during the current global recession. Lorenz and Lutzkendorf (2008) also cite energy efficiency as a key component of green buildings. However they state that green buildings result in increased profits and improved corporate image of tenants. The aforementioned benefits enjoyed by tenants, namely increased net operating income, decreased operating expenses and decreased associated property risk will be passed onto the building owners as both direct and indirect financial gains (Lorenz and Lutzkendorf, 2008).

The GBCA (2008a) also cites churn as an important issue with regards to commercial buildings. Churn is the frequency of which buildings occupants are moved either externally or internally. Green buildings can reduce churn due to increased occupant comfort and satisfaction, and by implementing systems that reduce the cost of accommodating churn (GBCA, 2008a).

Figure 2.4 illustrates how green building measures result in financial benefits for the property owner. It emphasises the two main components contributing to an increase in net operating income, namely increased income and lower costs. The three underlying attributes of increased income are higher rental rates, higher rental growth, and higher occupancy levels. The reason for the above mentioned increases is that green features are found to increase demand for space. Green buildings result in higher occupancy levels as they attract tenants more easily due to lower energy and water costs, which results in savings for the tenant (GBCA, 2008a).

Figure 2.4 displays lower costs in terms of annual operating costs, which is predominantly made up energy and water costs. This results in an increase in net rental. Another component of lower costs is a decrease in capital costs as green building features result in a reduction in life cycle costing. A combination of increased net rental and lower life cycle costing results in an increase in the buildings value, which will create a long-term benefit for the owner (GBCA, 2008a).



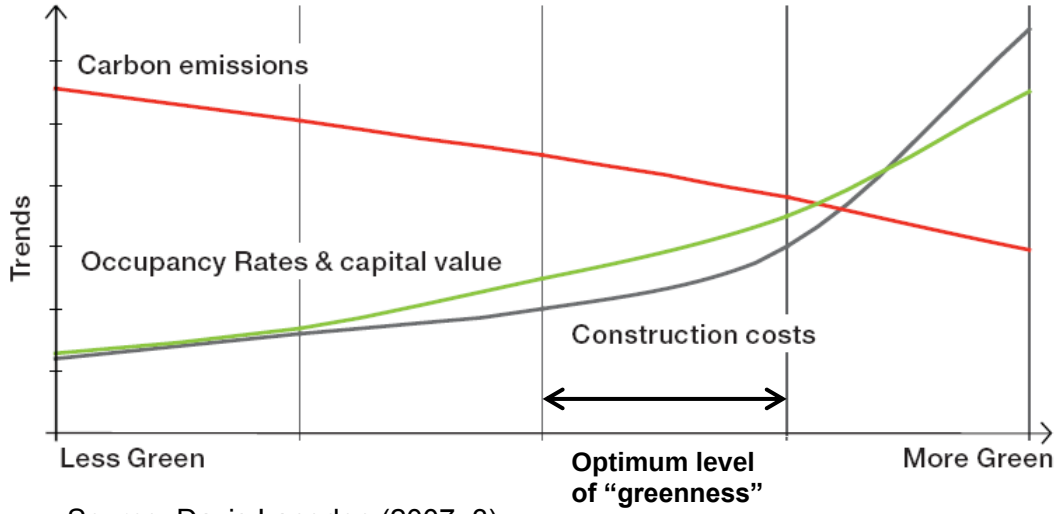

Source: GBCA (2008a: 37)

**Figure 2.4: Green building benefits flowing to the Owner**

Eichholtz *et al*. (2009a) state that the need for energy efficiency as opposed to just 'sustainability' is the key component that is critical to occupancy demand. According to Kats (2003) green buildings provide financial benefits as a result of energy and water savings, reduced waste, improved indoor environmental quality, increased employee comfort leading to increased productivity, decreased employee health

problems (less absenteeism) and lower operation/maintenance costs. Kats (2003) states that energy is a pivotal issue with regards to sustainability and on average green buildings use 30% less energy than conventional buildings. Miller *et al*. (2007) also identify energy efficiency as a key issue with regards to green buildings. According to the GBCA (2008b) green certified buildings attract and retain good quality tenants, which results in less risk associated with the building and therefore positively affecting the value of the building.

Davis Langdon (2007) states that the 'greener' a building, the higher the construction costs. Figure 2.5 shows that there is an optimum level of 'greenness' where occupancy rates and capital value are greater than construction costs. However as the building becomes more green so construction costs start to outweigh occupancy rates and capital value. Figure 2.5 also shows the 'greener' the building the lower the carbon emissions. The optimum level of "greenness" is shown in the third segment of the graph as this is the range (most profitable) where the difference between occupancy rates and capital value in comparison to construction costs is the greatest.




Source: Davis Langdon (2007: 3)

**Figure 2.5: Costs and benefits of green buildings**

According to the RICS (2009) the key green building components that contribute to an investor's perception of a given property are: the increase in operational costs; rental growth and net income; the ability of the building to keep tenant demand high whilst minimising vacancies; the failure to meet changing environmental demands, which may result in faster obsolescence; and the ability of the building to provide some external benefits, such as sustaining a corporate reputation.

It is difficult to accurately measure the financial benefit of improved indoor environmental quality (IEQ); however investors and occupiers are adamant that improved IEQ does result in a financial benefit. This is due to the fact that a majority of the white-collar work force spends a substantial part of their day in an office environment (Kats, 2003). The main components of IEQ of importance to commercial tenants, that contribute to financial benefit: are a high number of workplaces that are near windows; line-of-sight and earshot contact with immediate colleagues (while still minimising interruptions); place for uninterrupted work; and good quality and controllable natural light (Leaman and Bordass, 2007). Only in recent years have commercial building tenants started to recognise the benefits of improved air quality, more natural lighting, and easier to modify spaces, which results in lower absenteeism (Miller *et al*., 2007). According to Palmeri (2009) a survey conducted by the University of San Diego and CBRE found that tenants of green buildings reported on average 2.88 fewer sick days and an increase in the staff productivity. The same survey also showed that green buildings had 3.5% lower vacancy rates and 13% higher rentals than conventional buildings (Palmeri, 2009). If the IEQ is good then there is a reduced risk of high mould particles in the air thus reducing the possibility of business interruptions and any additional unbudgeted costs being incurred by the building (Gardiner and Associates, 2010). Mould is further substantiated by Gardiner and Associates (2010) as a risk because clean-up of mould and other IEQ problems are generally uninsurable. Miller *et al*. (2007) state that productivity benefits for tenants of commercial buildings are estimated to be as much as ten times the energy savings if green building measures are implemented correctly. Eichholtz *et al* (2009b) agree with Miller *et al*. (2007) with regards to tenant productivity, but state that tenants will save money through lower occupier costs; however this is dependent on the nature of the lease. Risk avoidance is another potentially long-term financial benefit of leasing green space as there is a trend of tighter controls and regulations with regards to emissions and energy use. If tenants are proactive in adhering to environmental regulations, this could potentially be a long-term cost saving initiative (Eichholtz *et al*., 2009b).

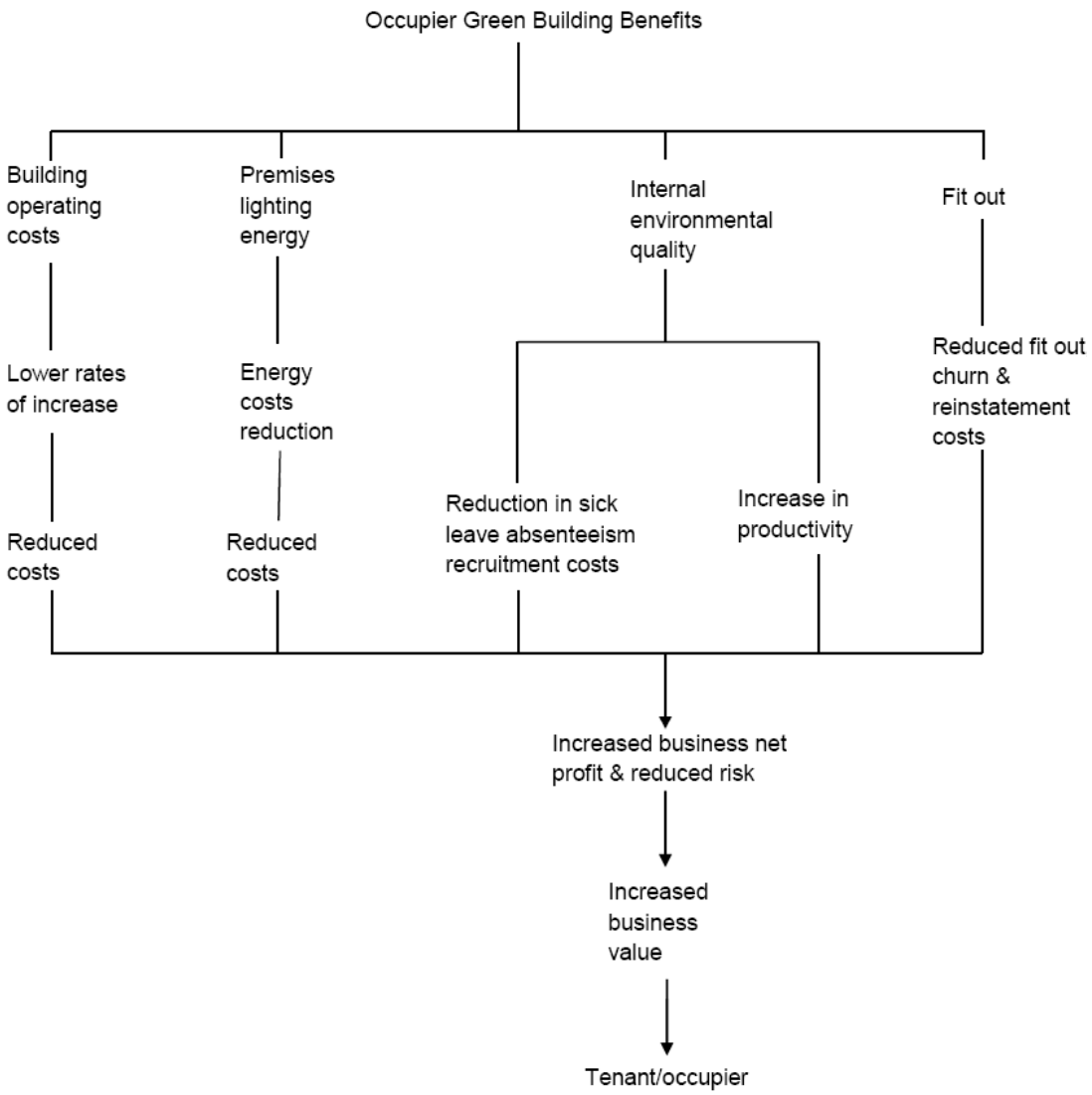
Sayce *et al*. (2010) state that there might be a possibility of tenants not paying more for green buildings, but rather paying less for conventional equivalent buildings. Myers *et al*. (2007) agree with Sayce *et al*. (2010), stating that in the current economic climate tenants were not inclined to pay more for buildings with green features. Green properties are likely to be less risky than conventional buildings and will therefore be easier to sell or let. It should be noted that investors will only place

green properties in their portfolio if they feel that these buildings will yield a superior financial benefit to non-green buildings, as most investors' priority is profit and rather than non-financial benefits (Sayce *et al*., 2010). Tenants are also motivated by both financial and non-financial benefits and it has been found that 85% of a company's value can be tied up in sustainability related issues, and that companies that emphasise sustainability can outperform their non-green competitors by up to 15% (Simply Green, 2009b).

Figure 2.6 illustrates how green building measures result in benefits for building occupiers. The flowchart cites building operating costs, premises lighting energy, internal environmental quality, and fit out as the four main building components that are linked to green building benefits (GBCA, 2008a).

Green building features affect building operating costs by decreasing rates of increase and reducing costs. The same is applicable for premises lighting energy with regards to costs. Internal environmental quality comprises of a reduction in sick leave absenteeism and recruitment costs. Green building initiatives result in a reduction in fit out churn and reinstatement costs. The above mentioned benefits result in increased business net profit and reduced risk, which results in an increase in business value, thus showing how green building benefits flow to the occupier (GBCA, 2008a).

The above factors all result in increased profit and reduced rick for the business and increased business value. This will result in a mutually beneficial relationship between the building owner and occupier. Owner-occupiers are potential market makers for green buildings as they act as a catalyst to demonstrate the benefits that are shown in Figure 2.6. This could result in influencing developers and investment institutions as providers of commercial buildings (Fullbrook *et al.*, 2006).




Source: GBCA (2008a: 51)

**Figure 2.6: Green building benefits flowing to the Occupier**



### *2.9.2 Impact of Green Building Initiatives on Property Owners*

According to the GBCA (2008b) there are a growing number of commercial property owners that are developing internal green building capabilities. This means that there is at least one person who focuses entirely on green building initiatives. The reason for this is that commercial property firms are starting to recognise that expertise in green buildings may give them a competitive advantage in the long-term (GBCA, 2008b). According to Gardiner and Associates (2010) more than 80% of commercial property owners in the United States of America allocated funds to green building measures in 2008 and 45% of those owners increased their funding in 2009. In 2007

a leading Canadian insurance company announced that they would offer a 15% discount in insurance premiums for LEED certified buildings (Gardiner and Associates, 2010). According to Eichholtz *et al*. (2009a) green buildings are of a better quality than conventional buildings, with a proportionally higher number of green buildings gaining 'A grading' compared to conventional buildings. Therefore green buildings offer lower risk and potentially higher long term returns to investors (Eichholtz *et al*., 2009a).

According to Nelson (2008) investors seeking to diversify their portfolios are looking for commercial property acquisitions that incorporate green building measures. Nelson (2008) states that competing in the green building market will require specialised skills and an eye for market opportunities. The competency of a green building specialist depends on the following factors:

- Project experience in both green design and construction.
- Project experience in obtaining green certification.
- A business model that can be easily adapted to current buildings.
- A network of strong relationships that will result in efficient supply chain management to obtain green project objectives.
- Access to reputable multi-national tenants that will endorse a building that has implemented sustainable building measures.

(Nelson, 2008)

### *2.9.3 Impact of Green Building Initiatives on Tenants*

Green buildings result in certain positive impacts for tenants of commercial property. These include *inter alia* achieving certain sustainability goals, improving talent and employee retention, increased marketing and investment opportunities (Persram *et al*., 2007). Table 2.2 describes the potential benefits that tenants of commercial buildings can acquire from green buildings.

**Table 2.2: Benefits for tenants in green commercial buildings**

| Benefit | Description |
|---|---|
| Sustainability Goals | Reduction in green house gases<br>Conservation of natural resources, energy, and water.<br>Waste reduction |
| Human Resources | Talent attraction and retention<br>Higher occupant performance<br>Lower employee absenteeism leading to lower health care costs, leading to increased productivity. |
| Marketing | Altruistic sustainability brand that allows for opportunity for differentiation and competitive advantage.<br>Rapid market growth<br>Viewed by corporate executives as a key to market leadership<br>Associated with innovative technologies |

Source: Persram *et al*. (2007: 2)

Table 2.2 shows that leasing green space is a strategic decision. This is becoming more prevalent in the Canadian commercial property market as buildings contribute to 35% of Canada's green house gas emissions (Persram *et al*., 2007). Leasing green space also affects human resources, as productivity gains could be as much as 30% if optimal IEQ is achieved. Green leases also result in higher employee retention, which decreases training costs (Persram *et al*., 2007). From a marketing and investment perspective green leases are competitively advantageous. This is evident in British Columbia as pension funds are starting to invest in sustainable commercial property as this is seen to increase long-term returns (Persram *et al*., 2007).

Persram *et al*. (2007) states that if tenants of commercial buildings lease conventional (non-green) space then they will be exposed to the following risks: reduction of corporate value by ignoring climate change; volatile energy markets and escalating costs; business interruptions due to power failures; damage due to natural elements; costs of poorer indoor spaces and lighting; air quality litigation due to 'Sick Building Syndrome' and mould; and employee turnover costs (Persram *et al.,* 2007).

## 2.10 Barriers to Green Buildings

The GBCA (2008a) has highlighted a number of barriers to the implementation of green building measures. The obvious one is cost, and there is often contention over who pays and who gains. This is also known as split incentives as property owners want to maximise their return, while tenants want to minimise their costs, therefore depending on how the parties structure the lease there might not be an incentive to implement green building measures (Gardiner and Associates, 2010). Gardiner and Associates (2010) state that the broad ranges in green building rating systems creates a problem for owners and tenants as they lack expertise to understand all the permutations associated with these rating systems. This is further substantiated by the fact that, because green building is still in its infancy, there is a lack of concrete information that allows investors and potential tenants to make informed decisions regarding specific properties (Gardiner and Associates, 2010). Gardiner and Associates (2010) also cite risk associated with potential legal problems regarding green buildings as there are limited statutes describing the legal ramifications and remedies if parties wish to claim delictual damages.

There is a perception that green building measures increase costs substantially and this will have a negative effect on financial returns for the investors. The GBCA (2008a) state that negative perceptions pose the greatest challenge to convincing commercial property owners to implement green building measures.

The GBCA found that the average survey respondent thought that green building measures increased costs by 17%, while in reality the cost increase would be no more than 5% for all specifications (GBCA, 2008a). Lorenz and Lutzkendorf (2008) have similar findings to the GBCA, as there it was misbelieved that green buildings added an extra 15% to capital costs, however they found that actual costs associated with green buildings was less than 3%. Therefore the GBCA concluded that market perceptions that green building measures lead to large increase in costs is false. The Unites States Green Building Council (USGBC) also found that average cost premium of green buildings was approximately 2% amongst a random sample of LEED certified buildings, as shown in Figure 2.7 (Kats *et al*., 2003). Figure 2.7 also shows that the cost premium is significantly higher for platinum rated buildings (6.5%) in comparison to the three remaining certification levels.

| Level of Green Standard | Average Green Cost Premium |
|---|---|
| Level 1 – Certified | 0.66% |
| Level 2 – Silver | 2.11% |
| Level 3 – Gold | 1.82% |
| Level 4 – Platinum | 6.50% |
| **Average of 33 Buildings** | **1.84%** |

Source: Kats *et al*. (2003: 15)

**Figure 2.7: Green cost premium according to LEED certification level**

The GBCA (2008a) also found that an additional barrier is the lack of individuals who fully understand what is required to achieve a green certified building. This lack of knowledge and expertise drives up consultation fees and therefore the building becomes a riskier investment for the owners (GBCA, 2008a; Miller *et al*., 2007). Myers *et al*. (2007) states that in the past little connection has shown that links sustainability to economic return, and this has impacted the decisions regarding the viability of commercial property investments by banks and other financial institutions.

## 2.11 Green Building Costs and Savings

The main building costs that green building initiatives attempt to reduce are energy and water costs (Kats *et al*., 2003; Fullbrook *et al.*, 2006). Initial capital costs for green building features cannot be generalised as the green premium is dependent on the design and purpose of the building. It is further recommended that green building features should be strategically reflected in the budget at the beginning of the project inception as opposed to optional add-ons. It is possible for the green premium to be no more than 1% if it is integrated into the design from inception and is properly value managed (Fullbrook *et al.,* 2006). It was found in research conducted in New Zealand that green lighting control features had a breakeven point of approximately 5 years and rate of return of 15% over a period of 10 years; however green building façades only have a breakeven point of approximately 20-25 years and a rate of return of 6-8% over a period of 50 years (Fullbrook *et al.,* 2006).

Kats *et al.* (2003) conducted research on green building in California and found that green buildings used on average 36% less energy than conventional buildings, as can be seen in Table 2.3. Kats *et al.* (2003) found that the reduction in energy consumption resulted in a positive net present value (NPV) calculation with regards

to the installation of energy saving features. A positive NPV means that energy saving features are a financially viable investment in the long-term for the buildings included in Kats *et al.'s* (2003) research.

**Table 2.3: Reduction in energy usage for green buildings in California**

| LEED rating | Certified | Silver | Gold | Average |
|---|---|---|---|---|
| Total reduction in energy usage | 28% | 30% | 48% | 36% |

Source: Kats *et al*. (2003: 24)

## 2.12 Summary

Chapter 2 has discussed theories on organisational behaviour with specific focus on ethical theory, which has led to a further explanation into Stewardship Theory. Stewardship Theory highlights the type of relationship businesses should have with society by focusing on 'doing the right thing' when making decisions. Stewardship Theory also has links to SRI, CER, CSR, and SRPI as they all focus on making responsible ethical decisions that simultaneously account for the environment, the business and people.

Chapter 2 also examines the green building movement, with specific focus on the evolving definitions, financial benefits, the impact on owners and tenants, barriers to the implementation of green building initiatives and the costs and savings of green building features. The content that was extrapolated from the reviewed literature validates the research questions and propositions in that it highlights the main reasons why green building initiatives are embraced and implemented by both property owners and users. The reviewed literature was used to frame the problem so that it could be effectively investigated when empirical research was conducted.

The theories and research that have been reviewed in this chapter help to determine the validity of the research questions and propositions that are listed in Chapter 1. The types of issues that are raised in the literature are addressed in a South African context in Chapters 4 and 5. Key issues that were raised in the literature addressed in subsequent chapters are green initiatives, motivating factors, the impact of green initiatives, barriers to greening and green strategies.

# CHAPTER 3: RESEARCH METHOD

## 3.1 Introduction

This chapter discusses the chosen method for gathering information that will be analysed against the main research question and research propositions stipulated in Chapter 1.

## 3.2 Research Method

The chosen research method is case studies analysis. Case studies analysis is the ideal research method for this research project because it allows for the inclusion of a wide range of data that can be analysed within a pre-determined group of categories (Leedy and Ormrod, 2005). The case studies were conducted in the form of semi-structured interviews, which acted as a form of guided conversation rather than structured queries (Yin, 2003). Case studies are considered to be the best way to extrapolate meaningful data from respondents for these types of research questions (Yin, 2003). When the interviews were conducted the respondent was engaged in open-ended discussions regarding their business's values with regards to corporate social and environmental responsibility and how it may relate to green building initiatives. Case studies are a preferred way of conducting research when 'how' and 'why' questions are being posed and when the researcher has little control in a real-life context (Yin, 2003). Case studies interviews require a dual level approach that allows the researcher to satisfy issues pertinent to the research, while maintaining a non-threatening open-ended interview (Yin, 2003). Multiple case study analysis allows the researcher to explore differences and similarities between the cases (Ragin, 1989). Multiple case studies can be used to conduct a cross-case analysis in order to compare each case to a set of key issues (Flick, 2011). Therefore it is important that cases are chosen carefully so that the researcher can predict similar or contrasting results based on the initial research propositions (Leedy and Ormrod, 2005; Yin, 2003). The phenomenological research approach is used as it seeks to describe rather than explain the acquired data from the chosen case studies (Lester, 1999). The phenomenological research approach is an effective method in bringing

to the fore the experiences and perceptions of individuals that are being interviewed (Lester, 1999).

Due to the fact that case study interviews are open-ended discussions it is not uncommon for respondents to recommend other potential respondents for future interviews. According to Yin (2003) when multiple case studies are used the researcher can choose to mirror techniques used in survey analysis. Thus, a case study template (survey) was used as a structured guide when the respondent was being interviewed by the researcher. Many of the respondents that participated in the pilot case study interviews for this research have requested that they not be identified with specific comments.

The research method is deemed to be reliable and valid as the questions posed to all respondents were consistent throughout the data gathering stage, and these findings make sense in the context of the proposed research (Miles and Huberman, 1994).



### *3.2.1 Defining the Unit of Analysis*

Trochim (2006) defines the unit of analysis as the major entity that is being analysed in order to extrapolate meaningful data; so that the research questions and propositions can be properly addressed to allow for the formulation of meaningful conclusions.

The unit of analysis was the CER/CSR policies of property owning organisations that chose to participate in the research. The reason why the CER/CSR policies were chosen as the unit of analysis is because they could be compared to how property owning companies chose to design and operate their buildings with regards to green building initiatives. The CER/CSR policy is the one constant that could be compared across the multiple cases that participated in the research. The reason why the research focused on property owning companies is because they made direct property decisions that incorporated green building initiatives to some extent.

## 3.3 Sampling Methods

The type of sampling methods used to select the case study was a combination of convenience and purposive sampling. Convenience sampling selects a particular group but does not sample the entire population. Purposive sampling focuses on a particular group of people that can add value to the research questions and propositions (Silverman, 2010).

Both of the above mentioned sampling methods are classed as non-probability sampling techniques. Non-probability sampling is a sampling technique that is used by researchers to select units from a population that they are interested in studying. An important attribute of non-probability sampling is that respondents are selected by the researcher and not on a random basis (Lund Research, 2010).

Non-probability sampling and quantitative research design such as purposive and convenience sampling is closely linked. Non-probability sampling is also used in exploratory research where the researcher is trying to establish if a problem exists in a quick and inexpensive way, and where the researcher chooses respondents that they know will have an underlying knowledge of the research topic in order to acquire meaningful data (Lund Research, 2010).



### *3.3.1 Purposive Sampling*

Purposive sampling targets a particular group of people when the research topic is highly specialised and therefore requires respondents with a certain level of underlying knowledge (Wadworth Cengage Learning, 2011). Purposive sampling is also defined as a sample method that is designed to focus on a small number of cases that will yield the most information about a certain area of research and that can lead to a greater depth of information. The sample frame in purposive sampling is relatively flexible as it is based on the researcher's opinion or a resource that is identified by the researcher (Teddlie and Yu, 2007). Table 3.1 lists the key components of purposive sampling.

**Table 3.1 Key components of purposive sampling**

| Criteria | Purposive Sampling |
|---|---|
| Overall purpose of sampling | Designed to address a sample that will address research questions. |
| Rationale for selecting cases | To address a specific purpose related to research questions. The researcher selects cases that they can learn the most from. |
| Sample size | Not more than 30 cases |
| Depth of information per case when the sample is selected | Focus on the depth of information generated by the cases, before the study begins and also during the course of the study. |
| How selection is made | Researcher uses their expert opinion to make appropriate sample selections. |
| Sampling frame | Flexible sampling frame |
| Form of data generated | Focus on narrative (qualitative) data |

Source: Teddlie and Yu (2007: 84)



### *3.3.2 Convenience Sampling*

Convenience sampling is a relatively easy form of sampling to implement because there are few rules governing how the sample should be collected. This sampling method can be conducted in a relatively short period of time at a relatively low cost in comparison to other sampling techniques. Convenience sampling also allows the researcher to gather information that they would not normally have access to if they were implementing a probability sampling method (Lund Research, 2010; Marshall, 1996). Convenience sampling comprises collecting samples that are both easily accessible and willing to participate in the research. The two types of convenience sampling are captive sampling and volunteer sampling (Teddlie and Yu, 2007).

One of the main problems with convenience sampling is that it can present biases in the form of under and over representations of particular groups within a given sample. The researcher should be aware that since the given sample is not chosen at random the sample is unlikely to represent the population, therefore undermining the ability for the researcher to make generalisations that links the sample to the population (Lund Research, 2010)

## 3.4 Pilot Case Study

The main purpose of pilot case studies is to refine proposed data collection plans so that an efficient interview and data collection procedure can be formulated and implemented when the main respondents are interviewed (Yin, 2003).

This was an iterative process and the first phase of the pilot case study was conducted with an oil company that owns a head office building in Cape Town and installations/service stations elsewhere around the world, in order to formulate the optimum case study design. It was found that the respondent type and the correct level of employee is important, and has a direct impact on the level and quality of information acquired during the interview process.

The second phase of the pilot case study focused on engineering and built environment professionals, and included four respondents, which comprised a property developer, two architectural firms and a consulting green engineering firm. A lesson learnt from the pilot case studies was structure is needed in order not to allow the respondent to veer off the topic. To remedy this problem a more structured case study template was designed in order to allow the interviewer to ensure that all the relevant issues were covered in the interview. The pilot case studies quickly highlighted that companies and tenants that were not built environment specialists may have CER/CSR policies, but were unaware of the Green Building Council of South Africa and many green building initiatives. These results steered the research to focus on respondents that owned large stocks of properties for investment or similar purposes.



It was found that respondents of companies that owned and managed large property portfolios were far more responsive and had a greater knowledge of green building initiatives within South Africa and they could also answer questions relating to their company's CER/CSR strategy to assess whether there is a link between the two components. Respondents that are built environment specialists were able to raise issues that needed to be further investigated. Another lesson that was learnt was the best type of respondent would be a company with a CER/CSR policy that owned property and operated within the built environment. Therefore it was this respondent type that participated as case studies for the purposes of this research. The

CER/CSR policy of the three case studies is the core focus (unit of analysis) for the purpose of this research.

## 3.5 Justification of the Chosen Cases

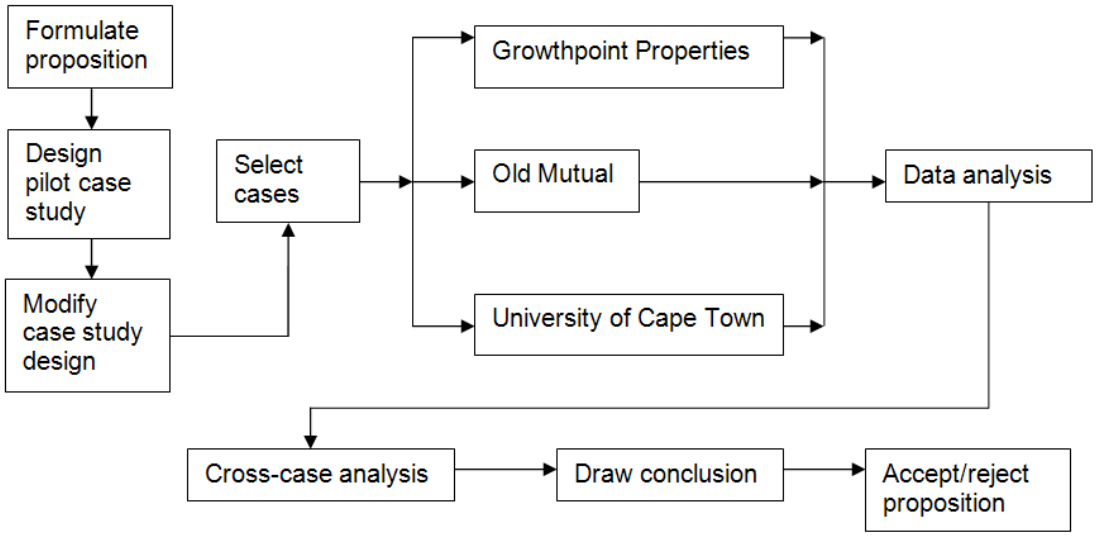
Three property owning organisations were chosen as suitable case studies. They were Growthpoint Properties (GP), Old Mutual (OM) and the University of Cape Town (UCT). All three organisations were attempting to implement green features in their buildings at some level and all state publicly that they are attempting to address the environmental impact of their buildings. All three companies have individuals that are knowledgeable about the green building movement in South Africa, which is required in order for suitable data to be acquired. There is one factor that separates GP and OM from UCT. The first two case studies are corporate entities that are profit oriented, while UCT is an educational institution that is break-even orientated. Other property owning companies were invited to participate in the research, but many failed to respond to correspondence or were unwilling to participate.

The above three respondents were chosen as suitable cases studies because they were accessible and were attempting to engage with the green building movement in some form, either on a low level of just educating staff about how green initiatives can add value to their buildings or by actually implementing green features in their buildings in order to gain some form of future benefit. The required level of knowledge of the three chosen cases was deemed satisfactory in order to make meaningful contributions to the research. The justification of the chosen cases is based on both convenience and purposive sampling techniques.

## 3.6 Method of Analysis

The chosen method of analysis will be to compare the three case studies under a set of issues that have been drawn from the *Case Study Template* (see Appendix A). Comparisons were conducted in order to determine if there are any general similarities across all the cases, or if responses were unique to a specific case. Figure 3.1 shows the processes involved that lead to how the three case studies were chosen and incorporated into the chosen research methodology to enable

meaningful analysis and conclusions, which resulted in the acceptance or rejection of the original research propositions.




Source: Adapted from Noor (2008)

**Figure 3.1: The role of case studies in the research process**

Figure 3.2 gives a more detailed view of each of the respondents and sample buildings that were examined in each of the cases selected per Figure 3.1. A total of ten individual interviews were conducted amongst the three case studies in order to gather the required information in order to get to the point of accepting or rejecting the research propositions.

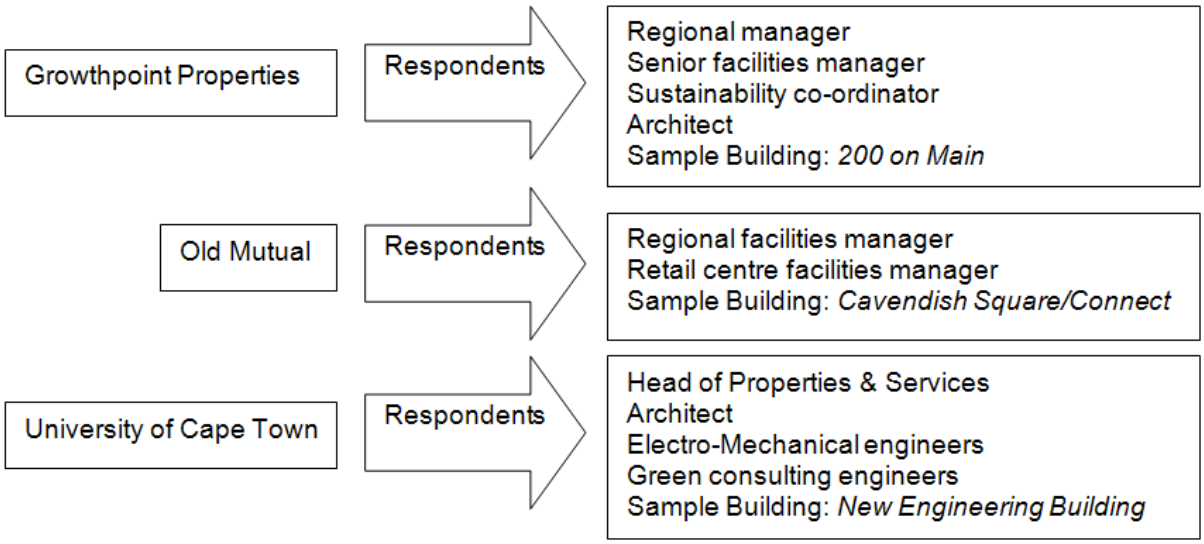



**Figure 3.2: Respondents and building samples for the chosen case studies**

## 3.7 Limitations of the Research Method

Limitations of the chosen research method are that individual respondents from the chosen cases can only divulge as much information as they are permitted by their organisations. Respondents could have used the research to market their organisations by portraying them in a certain light that is not consistent with their actions. Therefore, the possibility of bias, both intentionally and/or unintentionally from the respondents during the interview process needs to be taken into consideration.

## 3.8 Summary

It is evident that the main reason for the chosen research method of case study analysis is because there is no other way of easily obtaining information about environmental and social responsibility and the connection to green building initiatives. Semi-structured interviews are the best way to extract information as formal surveys may not address all the pertinent issues raised by the respondents. Case study analysis also allows for more detailed examination of each individual case as a whole rather than analysing consolidated data, which occurs when quantitative data is analysed.

# CHAPTER 4: ANALYSIS OF THE DATA

## 4.1 Introduction

The purpose of this chapter to analyse and compare data from the three cases in order to address the research questions and propositions stipulated in Chapter 1. This chapter provides both quantitative and qualitative data from the chosen case studies, which will be analysed so that meaningful conclusions can be drawn. The structure of this chapter comprises of each case being individually analysed under a number of sub-headings. Cross-case analysis is conducted at the end of the chapter to highlight similarities and differences between the three cases.

## 4.2 Case 1: Growthpoint Properties

A variety of Growthpoint's staff were approached in order to gather a cross section of information; these included the regional manager of the Cape Town office, the head of facilities management for the Cape Town commercial portfolio, and the junior sustainability co-ordinator (based at the head office in Johannesburg). An interview was also conducted with the Architects that work with Growthpoint in implementing green building initiatives.

Growthpoint Properties is South Africa's largest listed property fund that owns over 450 properties with a combined property value of approximately R35 billon. Growthpoint was included in the JSE's Social Responsibility Index (SRI) in December 2009. For a company to be included in this index it must display positive social, environmental and economic sustainability practices in accordance with good corporate governance (Growthpoint, 2010). Growthpoint is aware of the green building principles and benefits as they are a founding platinum member of the GBCSA and are working with them to formulate a green building tool that can be used to rate existing buildings, and have a number of staff that are Green Star accredited professionals. Growthpoint has also established a close relationship with WSP Green by Design, which is a leading green engineering consultancy.

The relationship Growthpoint has with the GBCSA is linked to the core company values with regards to its greening policy. According to Growthpoint's sustainability co-ordinator, social responsibility is the key driver of formulating green policies. Growthpoint sees no value in going green purely for the sake of going green, unless the policy creates some form of benefit for the company. The sustainability co-ordinator stated that the corporate world will only lead a sustainable movement if it is intrinsically aligned with the profitability of the company and not necessarily because it is the right thing to do. Therefore all true green initiatives and drivers stem from value driven objectives (Growthpoint views this as being true sustainability). Being green for the sake of being green is not viewed as a sustainable strategy.

### *4.2.1 Social and Green Initiatives*

#### *Social Initiatives*

Growthpoint identify social issues that are linked to their company values and their role in society. They make contributions to disadvantaged communities by focusing on health, education and supporting entrepreneurs that they deem to have potential.

Growthpoint target market tends to be a higher LSM (life style measure) to that of Old Mutual and therefore their social initiatives are more streamlined in order to ensure that there is a link between their social contributions and the listed property sector. Growthpoint's *Property Point* Programme is an example of the above mentioned link. *Property Point* is an initiative that provides people from previously disadvantaged communities that own SMMEs (small, medium and micro-enterprises) that provide services to the listed property sector with further skills in business education in order to grow their businesses. *Property Point* is a mutually beneficial social initiative, as it provides potential commercial growth for SMMEs and dedicated service providers for Growthpoint, as they have formed a strong relationship with service providers during the training programme.

#### *Green Initiatives*

Growthpoint has established an Energy Technical Committee and a Sustainability Division and have appointed a sustainability co-ordinator in the Johannesburg office who works from the top-down to implement green features within the portfolio. Its

head of facilities management for the commercial portfolio in Cape Town works from the bottom-up in order to attempt to implement green features. Growthpoint is also fully aware of how non-building activities can impact the environment so they are making an effort to increase the number of video conferences in order to minimise their carbon footprint in terms of company flying. This is due to the fact that Growthpoint have a formal greening policy, which encapsulates how their daily operations impact the environment. They are encouraging their Johannesburg staff to make use of the Gautrain, as their office is conveniently located next to the Sandton station, as this is also incorporated into Growthpoint's greening policy. Growthpoint are slowly introducing hybrid cars into their fleet of company vehicles (Growthpoint, 2010).

Growthpoint have a number of initiatives that they are attempting to implement in order to address green challenges. They have become a signatory on the National Energy Accord and are attempting to formulate an energy programme that will hopefully result in a reduction in consumption from between 10% and 20%. Growthpoint are working with WSP Green by Design in attempting to gain a four star rating for their *Lincoln on the Lake* property in Kwazulu-Natal. They are also introducing measures to better educate their staff about green measures by sending them on green building courses and are embarking on a carbon footprint assessment of their buildings, starting with their head office in Sandton.

Growthpoint currently only has one small project where it is attempting to link its social and green initiatives. The redevelopment of their Sandhurst property includes a scheme whereby construction waste will be used to build a school in Soweto. This will result in a much needed facility and reduce the amount of construction waste sent to landfill sites.



### *4.2.2 Motivating Factors*

There are a number or motivating factors that are causing Growthpoint's push towards green building initiatives. Growthpoint is the largest PLS (Property Loan Stock) company in South Africa and therefore it feels a responsibility to lead the industry with regards to the green building movement as there needs to be a focus on the future. The fact that a company of Growthpoint's stature is addressing green building initiatives and features highlights the importance that is placed on how their

buildings impact the environment.

Growthpoint state that its main objective is good returns for investors, however the strategy they choose to implement in order to achieve this needs to be sustainable. Growthpoint also state that social and environmental responsibility is linked to their overall company strategy. There are a number of regulatory influences such as the newly formed King III reporting structure, which stipulates that CSR and sustainability initiatives need to be reported in a more transparent and methodical manner.

### *4.2.3 Impact of Green Initiatives*

Growthpoint states that they are aware of the long-term benefits of green buildings, but they often battle to convince smaller tenants with shorter leases (less than 5 years), especially in their retail buildings, of benefits in the short-term. Commercial blue-chip tenants that have long leases (more than 5 years) tend to embrace green building initiatives with greater enthusiasm. An example of this is one of Growthpoint's commercial tenants that is planning to build a 5 star building as its new head office. This tenant will effectively be taking co-ownership of the building by signing a 35 year triple net lease. The two main motivating factors that were cited by this tenant were reducing its environmental impact as it believes is right thing to do (which will result in reporting on sustainability in terms of King III), and having a functional building that reflects both companies (owner and tenant) core values.



### *4.2.4 Barriers to Green Initiatives*

The main barriers to the implementation of green initiatives that Growthpoint experiences is the low level of knowledge, capabilities and lack of practical experience of green professionals due to the fact that the green building movement is still in its infancy in the South African commercial property market. Another major issue is that the documentation process of gaining green certification is lengthy and complicated which most of the market is unaware of and therefore leads to frustration, and in some cases abandoning the intention of gaining green certification for a given building. Growthpoint constantly monitors its share price and how the implementation of green initiatives affects the distributions to shareholders. Capital

expenditure, whether on green initiatives or other building maintenance needs to be constantly measured against its impact on distribution performance.

### *4.2.5 Green Strategies*

Growthpoint have sustainability co-ordinators in their Johannesburg head office to address their green strategy from a top-down approach. Their roles are to work with facilities, portfolio and property managers to implement green measures that best fit their buildings while still yielding competitive returns for investors. The head of facilities management for the commercial Cape Town portfolio is attempting to implement green initiatives from a bottom-up approach by working in conjunction with the sustainability co-ordinators in the head office. Growthpoint is working with consulting architects to implement green features in a number of their buildings regardless of whether the building is attempting to gain green certification. Growthpoint and the consulting architect attempt to find a balance in the implementation of green features as capital expenditure is closely monitored for all green features to ensure that all buildings remain financially viable assets.



### *4.2.6 Sample Building – 200 on Main*

Growthpoint has implemented green building features into one of its commercial buildings located in Claremont, Cape Town. *200 on Main* is a recently refurbished office building. The refurbishment was done in conjunction with Green Star accredited professionals. The following green features are included:

- Re-using an existing building rather than building new one. This reduces the carbon footprint, because it decreases the use of new building materials.
- Cyclist facilities and showers to encourage the use of non-motorised transport.
- Installation of double glazing performance glass, which results in minimised heat gain, glare and a reduction in noise pollution from traffic.
- The existing lifts were replaced with energy efficient lifts.
- Installation of natural materials such as marble, timber and glass to accommodate future recycling.
- Installation of water management systems, which includes electronically operated taps that are connected to the power mains in order to eliminate the

use of batteries, cisterns with dual flush functionality, waterless urinals, and the collection of underground water in the basement parking, which is pumped to a roof tank and used to flush the toilets.

- Installation of electrical management systems, which includes sub-metering of lights and power for all tenants, motion sensor lighting, low toxic and low wattage fluorescent lighting with high lumen output, high frequency ballasts are used in all fluorescent fittings, exterior lighting is minimised with no up lighting, only high output LED lamps were used, and the implementation of remote metering for total power management.
- Installation of an energy efficient air-conditioning system that utilises inverter technology and environmentally friendly refrigerants.
- The air supply system allows for 150% of the required amount of fresh air into the building.
- The installation of a heat rejection system that consumes no water, which utilises air to air heat transfer.
- Only low VOC (Volatile Organic Compounds) paints were used.
- No smoking policy throughout the building.

### *4.2.7 Linking Growthpoint's Policy to the Sample Building (200 on Main)*

*200 on Main* is an example of how Growthpoint is attempting to implement its sustainability policies into one of its premier commercial buildings. Growthpoint is not implementing green features in *200 on Main* in order to align the building with its stated policy, but rather because the green features will be mutually beneficial both to Growthpoint (improved financial viability) and the greater community (more efficient use of materials with a lower environmental impact). Therefore the green features that were implemented in *200 on Main* were done so as a strategic decision, rather than purely for altruistic reasons.

## 4.3 Case 2: Old Mutual

Old Mutual is one of South Africa's largest investment companies with a significant property portfolio and was chosen as a suitable case study for this research because it openly states to have a Socially Responsible Investment (SRI) strategy, which includes the implementation of green building initiatives. An interview was conducted with the regional technical building manager, who is responsible for implementing green building initiatives in the Western Cape.

Old Mutual is a founding platinum member of the GBCSA and donated R500,000 to the development of new rating tools for the South African commercial property market in 2008. Old Mutual greening policies are based on implementing green initiatives firstly within the company and then attempting to transfer these initiatives into their property portfolio. Some of the green initiatives implemented internally are there to promote social and environmental awareness (e.g. demarcated recycling bins), while others have been implemented to increase productivity (e.g. plants and natural lighting) and reduce operational costs (e.g. low energy lighting).



### *4.3.1 Social and Green Initiatives*

#### *Social Initiatives*

Old Mutual identify social issues that are linked to their company values and their role in society. They make contributions to disadvantaged communities by focusing on health, education and supporting entrepreneurs that they deem to have potential.

Old Mutual is aware that as one of South Africa's largest and most recognisable corporate brands they need to contribute to society by addressing issues which are congruent with its company values and the values of its clients. The main social issues that Old Mutual focuses on is community upliftment in rural areas through supporting small businesses, support in education (with specific focus on maths and science), and team sports, as Old Mutual feel that team building can be transferred into other facets of life.

### *Green Initiatives*

Old Mutual is attempting to minimise its impact on the environment by reducing the environmental footprint of the properties it manages and develops as well as through environmentally conscious investment decisions.

In February 2008 Old Mutual Properties implemented an energy efficient load shifting project, which was funded by Eskom. This energy project was implemented into the following five buildings in Cape Town: *Cavendish Square, Cavendish Connect, ABSA on Grove, Triangle House* and *Mutual Park*. The projects main focus was on the installation of variable speed drives on several of the air conditioning pumps. This improved the energy efficiency of the pumps as it managed to shift a large portion of the energy demand out of the evening peak. Old Mutual recycle waste at all their retail centres. This recycling operation provides full time employment for disabled persons via the Oasis recycling centre. The income generated from recycling is used to fund the recycling operation; therefore there are no additional operating costs with regards to recycling operations in their retail property portfolio.



### *4.3.2 Motivating Factors*

Old Mutual stated that their main motivating factors were based on triple-bottom line theory, which encompasses their people, the environment and the financial performance of the company. Green building initiatives will only be implemented into its property portfolio if it is financially viable to the point where it starts to make money for the organisation within a three year period. Asset managers will only permit facilities managers to spend money on green building initiatives if they can prove that these initiatives will accrue some form of profit. Old Mutual also cites the benefits of branding as a motivating factor for implementing social and green building initiatives.

### *4.3.3 Impact of Green Initiatives*

Old Mutual is experiencing the same problem as Growthpoint with regards to the level of enthusiasm shown by different tenants in how they embrace green initiatives (i.e. the longer the lease duration the more enthusiastic the tenant will be to embrace green initiatives). Some of the property funds within Old Mutual are becoming

increasingly aware of the benefits of green building initiatives and as a result are starting to implement green features in their portfolios due to the early success of pilot green building projects.

Old Mutual is attempting to conduct redevelopment with greening in mind as they are aware this will benefit its tenants and the surrounding community. Old Mutual is trying to implement a strategy with regards to the placement of its buildings, so this may benefit the building occupants and users. Examples of this are the Old Mutual offices in Cape Town and Johannesburg which are located near public transport nodes.

### *4.3.4 Barriers to Green Initiatives*

Old Mutual encounters similar problems to Growthpoint with regards to implementing green initiatives. The common barriers that are experienced by case studies 1 and 2 surround the issues of education and experience of green certified professionals as a result of the green building movement still being in its infancy in the South African commercial property market.

There are barriers to the adoption of green building principles that are unique to Old Mutual due to the size of the organisation. Certain buildings are located in different funds, so therefore it can come down to individual asset managers to authorise monies for green initiatives. The size of Old Mutual often results in facilities managers not being privy to certain information. The level of greening is also dependent on the condition and circumstances of each particular building. The budget is also the main barrier as the implementation of green features has a direct impact on the yield, which is the main financial indicator in determining the feasibility of any property related decision. Old Mutual needs to justify, in terms of a given building's budget, whether additional money should be spent on it in order to gain another 'star' with regards to green certification. It is for this reason that Old Mutual need to motivate the additional capital expenditure that is required to obtain a four-star rating from the GBCSA. Retail tenants are starting to demand green developments; but are not willing to pay the associated premium.

### *4.3.5 Green Strategies*

Old Mutual's green strategy involves implementing green building features in portions of some of their buildings, to act as pilot projects in order to test energy and water saving systems. If these pilot projects are successful then these green building initiatives will be implemented on a larger scale throughout the building.

Old Mutual is attempting to implement green strategies in pilot projects that are outwardly socially responsible. An example of this is the Old Mutual South Africa Crèche. This crèche was designed with multiple green building features and is located next to Old Mutual Park. The foundation of Old Mutual's green strategy is that it assigns ten percent of its key performance indicators for managers and teams towards the implementation of green building principles.

### *4.3.6 Sample Building – Cavendish Square/Connect*

Old Mutual has implemented green building features into one of its retail buildings located in Claremont, Cape Town. *Cavendish Square/Connect* is one of Old Mutual's flagship retail centres. The following green features have been implemented into this building:

- Energy saving lighting initiative for parking levels, fire escapes and cove areas (lighting contained within the bulkheads in the mall).This project is 80% complete.
- Timers for all common area lighting including the lighting inside the mall, parking levels and exterior lighting.
- Switching off lighting completely in areas where there is enough daylight to compensate for the artificial lighting during the day (especially on certain parking levels).
- Day/night sensors are implemented on certain exterior lighting. The biggest energy savings so far have been achieved through the HVAC system for the centre – VSD's have been installed for all fans and pumps associated with the central VAV HVAC system.
- A building management system was put in place to manage the sequencing of chillers and cooling towers to utilise the least amount of energy given the heat load demand of the centre in any season. The building management

system also switches air handling units, chillers and cooling towers on/off according to a time schedule. There is the utilisation of free cooling during winter via fresh air fans in order to cut the usage of our cooling towers and chillers dramatically.

Energy saving initiatives that Old Mutual are still planning to implement in future are as follows:

- LED replacements for all downlight applications within the centre (in 2012).
- Replacement of halogen starlights with LED starlights (in 2012).
- Replacement energy saver lamps with LED alternatives (in 2012).
- Renewable energy to power low current lighting and applications within the centre – solar panels, possibility of wind turbines (next two to three years).

Other green building features that are already implemented in the centre:

- Waterless urinals are installed in all toilets for *Cavendish Square/Connect* (water saving).
- Old Mutual utilise the bleed-off and overflow water from the cooling towers in order to fill storage tanks. Water from these storage tanks are in turn used by the waste management team in the loading bay in order to wash dirt bins and the general waste processing area (water saving – about 456kl per month).
- A worm farm (vermi-composting) was recently established at *Cavendish Square/Connect* that utilises mostly organic waste from restaurants within the centre (but also newspaper and coffee grinds) in order to produce high nutrient fertilizer. This fertilizer can then be used to grow other plants, fruit and vegetables. The organic waste would usually go to the landfills, if not utilized in this manner. Old Mutual have a compactor at *Cavendish Square/Connect* that takes all non-recyclable waste (including in-organic wet waste) and compacts it up to a ratio of 8:1. This results in both the number of trips to the landfill and the actual volume of waste to landfill being reduced.
- Old Mutual has a waste management company onsite that conducts recycling from the source (i.e. waste from tenants).
- Old Mutual also encourages tenants to recycle in their stores in order to aid this process.
- Old Mutual recycle glass, paper, cardboard, plastic, as well as fluorescent tubes.

- Old Mutual try to use green chemicals as far as possible for cleaning purposes.

### *4.3.7 Linking Old Mutual's Policy to the Sample Building (Cavendish Square/Connect)*

*Cavendish Square/Connect* is an ideal example of how Old Mutual is attempting to apply their CSR policy. *Cavendish Square/Connect* is one of Old Mutual flagship retail centres and therefore they want to implement as many green initiatives as possible to highlight the link between their stated policy and how they manage and operate this building. There is therefore a link between Old Mutual's policy, which is highlighted by its green initiatives and the operations of *Cavendish Square/Connect.*

## 4.4 Case 3: University of Cape Town

The University of Cape Town was chosen as a suitable case study for this research because it owns a property portfolio of approximately R8.9 billion. UCT espouses a value system that is socially responsible and attempts to engage with the university community in a manner that displays a certain level of commitment to society and the environment. An interview was conducted with the Executive Director of Properties and Services, who oversees the management and implementation of strategies regarding current and new building operations. Interviews were also conducted with the architect and the green building consultant that are involved in the *New Engineering Building.* UCT is working with the GBCSA to develop a rating tool specifically for academic buildings.

The University of Cape Town is the leading tertiary institution in Africa and is listed in the top 200 universities in the world. UCT has a Council approved sustainability policy, meaning that UCT is attempting to construct buildings that are socially and environmentally responsible. The role of the Department of Properties and Services at UCT is to implement sustainable strategies that benefit the university and the greater community with regards to the management of university property and the associated services. The Department of Properties and Services have become increasingly aware of how university operations impact the environment and have developed a number of initiatives, such as the Green Campus Initiative (GCI) in recent years to reduce the university's carbon footprint.



### *4.4.1 Social and Green Initiatives*

#### *Social Initiatives*

The University of Cape Town is the number one ranked university in Africa, and therefore is fully aware of the role it plays in society as an institution that not only produces high quality graduates, but also individuals that are aware of how their actions can impact the environment. It is for this reason that there are plans to include material in the academic curricula that teaches students that they are custodians of the environment. This shows that UCT is attempting to align its CSR policy into some form of action.

### *Green Initiatives*

The University of Cape Town has a number of initiatives that address the environment. The Green Campus Initiative (GCI), which was established in 2007, is a student and staff run organisation with over 1000 volunteer members that promotes environmental awareness on campus by engaging with the university community. The GCI promotes recycling on campus through demarcated recycling bins for paper, plastic and cans. The GCI in conjunction with UCT Properties and Services team implemented a car pool initiative called *Ride Link,* which only allows cars carrying a minimum number of three passengers access to certain parking areas. This initiative was formulated in order to tackle carbon emissions. Another transport initiative in recent years is the vastly improved *Jammie Shuttle,* which is the university bus transport network. This relieves some of the parking congestion as it allows students that live within the catchment area to use the bus instead of driving and increasing the university's carbon footprint. The executive director of Properties and Services wants to purchase second hand bicycles from either the Netherlands or India to lease to students for R350 per year (R300 of which is a deposit) in order to promote a cycling culture at UCT. This will obviously have a positive impact on UCT's carbon footprint. However, the topography surrounding UCT and the lack of demarcated bicycle lanes in the area may be perceived as a barrier by students to the adoption of this initiative.

Another project being formulated by the Department of Properties and Services is to install electricity meters at the entrances to buildings (specifically residences). This will act as an educational interface with students in order to make them more aware of the rate at which buildings consume electricity. Negotiations are currently on-going to get Eskom to help fund this initiative and contribute R40,000 as a prize to the most energy efficient residence. This initiative is an example that UCT prides itself on producing graduates that are socially responsible and are conscious of the environment.

The University of Cape Town feels that as a leading tertiary institution it has a role to play with regards to sustainability and how the organisation's operations impact the environment. It is for this reason that UCT decided to implement a pilot project in Kramer Building on middle campus in order test certain green building features, such as low energy light bulbs and waterless urinals. Lessons learnt from the pilot project would possibly be applied to future projects, such as the proposed *New Engineering*

*Building* on upper campus. Green features that will be implemented in the *New Engineering Building* will focus on electricity and water consumption. UCT is trying to mirror the Green Star rating tool however there is no tool that is specifically designed for academic institutions, therefore UCT are working in conjunction with the GBCSA to develop such a tool.

### *4.4.2 Motivating Factors*

The University of Cape Town is motivated to implement environmentally conscious features in its buildings because it feels that as a leading tertiary institution that plays a role in the surrounding community and larger society it should be setting an example, where possible to take responsibility for its environmental impact. UCT's motivation regarding its handling of its environmental impact is encapsulated by the underlying principle of Stewardship Theory, namely it is driven by 'the right thing to do'.

The University of Cape Town is also conscious of the financial viability of green building features; however it will only implement green features within the allocated green budget for a specific building, whilst always being mindful not to compromise the key functionality of the building.

One of the main motivating factors for implementing green features in the *New Engineering Building* is future cost savings. Initially the green premium for the building was R16 million but was cut to R4 million when too much of the buildings functionality was being sacrificed and also because the initial green premium was deemed too costly. UCT is aware of its status in the greater community and feels that it should be attempting to implement some form of environmentally responsible features in its new buildings.

### *4.4.3 Impact of Green Initiatives*

The University of Cape Town is aware that its environmental policies have an impact on the surrounding community. UCT's impact on the surrounding community (Groote Schuur City Improvement District catchment area) can be seen by how members of the university community (specifically students) interact with their environment. UCT

believe that if they educate students and staff about environmental issues then hopefully this will permeate into a shift in behaviour and attitude towards environmental issues.

UCT is attempting to densify the locations of its properties as they believe it will lead to a more sustainable environment, e.g. encouraging students to live near campus will result in a denser student community surrounding campus, which may lead to a more sustainable university transport system. UCT's property portfolio is predominantly located within the Groote Schuur CID, and therefore the manner in which these properties are maintained and managed will have a direct impact on people that live and work in the Groote Schuur CID.

### *4.4.4 Barriers to Green Initiatives*

The University of Cape Town also cite budget as a barrier to implementing green initiatives in their buildings, as a limited budget leads to other building priorities (e.g. teaching space) being preferred to spending money on green building initiatives. The location of the UCT's upper campus limits the scope for design as faculties and departments are competing for space, and therefore designs of new buildings and refurbishments cannot always accommodate green building principles as other priorities need to be considered. As mentioned above there is currently no rating tool available to apply to academic buildings and this results in UCT taking a somewhat *ad hoc* approach to applying green building principles to its property portfolio.



### *4.4.5 Green Strategies*

The University of Cape Town's green strategy is focused on creating social awareness of the environment through student education in addition to directly implementing multiple green initiatives into their property portfolio. The University of Cape Town is slowly implementing some green strategies where it is considered to be financially viable and sustainable (e.g. the *New Engineering Building*). The success of the *Jammie Shuttle* university transport system is being used as a platform to get the next generation of professionals into the habit of using an efficient public transport system. UCT's green strategy is focused on educating the university community that they are custodians of the environment, and that UCT graduates

should continue to be environmentally aware once they begin their professional careers.

### *4.4.6 Sample Building - New Engineering Building*

The University of Cape Town is currently building a *New Engineering Building* on upper campus. The initial green intention was for the building to be submitted to the GBCSA in order to acquire a 4 star rating in accordance with the Green Star rating tool; however this was not obtained due to certain green components being removed as a result of the green budget being reduced to 25% of the original proposed amount. The actual green budget will allow the following green initiatives to be installed in the *New Engineering Building:*

- Double glazing.
- Collection of rain water.
- Cycling facilities and showers.
- Motion sensor lighting, and low energy HVAC (heat, ventilation and air-conditioning) systems.
- The type of air-conditioning unit that has been chosen for the *New Engineering Building* is a VRV (Variable Refrigeration Volume) system. According to air-conditioning energy consumption analysis that was conducted for the *New Engineering Building* VRV annual consumption (284.67 MWh) is significantly less than the water cooled (496.89 MWh) and air cooled (464.89 MWh) systems that were considered for the *New Engineering Building.* Another reason why the VRV system was chosen is that UCT has an air-conditioning policy that only allows lecture theatres and laboratories (not offices) to be fitted with air-conditioning units.

### *4.4.7 Linking UCT's Policy to the Sample Building (New Engineering Building)*

The link between UCT's environmental policy and its attempt to integrate these initiatives into a new building has resulted in mixed success due to a number of barriers. UCT's environmental policy is being implemented and embraced with greater success on a community level rather than on a building-by-building basis.

## 4.5 Cross-Case Analysis

Comparison of the three cases has highlighted similarities and differences with regards to implementation of their stated CSR/CER policies in terms of green building initiatives in their property portfolios.

### *4.5.1 Social and Green Initiatives*

#### *Social Initiatives*

Each of the three cases has a different approach to social initiatives. This is partly due to how they view their position and role in society. Growthpoint emerged out of the private banking sector and therefore is viewed as a high-end specialised property fund. It is for this reason that their social initiatives directly tie into their business operations. Its *Property Point* Programme is an example of how Growthpoint is engaging with members of society from disadvantaged backgrounds. The main purpose of the *Property Point* Programme is to provide training for entrepreneurs. The result is a mutually beneficial relationship for both Growthpoint and the newly skilled entrepreneur, as Growthpoint hires these individual to provide property related services to its buildings.

Old Mutual has more of a holistic approach to social initiatives. Due to the fact that Old Mutual provides a number of financial products to the public their social initiatives are less streamlined than that of Growthpoint and therefore broader in nature. As one of South Africa's more recognisable brands, Old Mutual attempts to contribute to society in areas that are seen to be of national concern, e.g. community upliftment and education.

The University of Cape Town's key objectives are based on education and encouraging the university community to engage with society in a meaningful way, regardless of the chosen format, be it through research or directly led student organisations. It is for this reason that UCT's social initiatives are broad in nature. UCT claim that its largest social contribution is producing graduates that are socially responsible and who behave ethically when operating in a professional capacity.

### *Green Initiatives*

All three cases have increased their environmental awareness in recent years. Evidence of increased environmental awareness for both the corporate case is that there are dedicated sections in their annual reports regarding the company's environmental initiatives. UCT's increase in environmental awareness can be seen on campus by colour coded recycling bins and a dedicated 'Green Week' to promote environmental issues.

For Growthpoint and Old Mutual their green initiatives are based on core business operations and resource management (water and electricity) of their buildings. UCT's green initiatives are more community orientated. UCT is attempting to educate the university community through student led organisations about environmental responsibility. The reason why the two corporate case studies have implemented similar green initiatives is because they are both profit orientated entities and feel the need to portray an image that is environmentally responsible. The implementation of green initiatives by UCT is more altruistic and is being done because members of the university community sincerely believe that is it the right thing to do. This is evident that UCT is more closely aligned with the underlying principles of Stewardship Theory.



### *4.5.2 Motivating Factors*

The main motivating factor for Growthpoint and Old Mutual is financial feasibility. Green building initiatives must prove to accrue some form of future financial benefit in order for implementation to occur. Due to the fact that both Growthpoint and Old Mutual are listed companies, financial analysts are constantly monitoring the change in share price in relation to capital expenditure on their respective property portfolios. Another motivating factor that is cited by the both Growthpoint and Old Mutual encompass 'the right thing to do' mentality, however this is only secondary to that of future financial benefit.

The University of Cape Town is also motivated by financial feasibility, but because UCT is not a profit orientated organisation it only seeks to break even with regards to the implementation of green building features. UCT does not seek to make a direct profit from the installation of green building initiatives but ensures that the installation

of these types of building initiatives do not cost the university more than conventional building features. UCT is motivated to have green building initiatives because it views itself as an ethical custodian for society and therefore feels that it should be pursuing ways to demonstrate that it truly wants to do the right thing from an environmental point of view with regards to the management and operation of its property portfolio.

### *4.5.3 Impact of Green Initiatives*

Both Growthpoint and Old Mutual are aware of the benefits of green building initiatives and are trying to convince tenants to adopt such initiatives. The tenant type and lease duration is a key determinant in the level of enthusiasm from tenants for green building initiatives. This particular finding was expected as retail tenants with short leases and small profit margins are highly sensitive to above inflationary increases in rentals, which are due to increased operating costs, which is a result of green capital expenditure. Tenants with short leases are unlikely to accrue any financial benefit from green building initiatives, even though the cost will be built into their rentals.

The opposite can be said for retail anchor tenants and blue chip companies that sign long (greater than 5 years) commercial leases. Many of these types of tenants embrace green building initiatives with greater enthusiasm as they are aware of both the direct and indirect future financial benefits. These types of tenants see potential in promoting the fact that they are environmentally conscious, and by so doing improve their corporate image.

The full impact of green initiatives by the University of Cape Town is yet to be determined as many of the environmental initiatives are still in their infancy. Assuming that many of UCT's green strategies are properly implemented the impact will be largely felt at a community level, i.e. increasing environmental awareness throughout the university community through a change in attitude towards to the environment, which will be encompassed by the underlying principle of Stewardship Theory, namely 'the right thing to do'.

### *4.5.4 Barriers to Green Initiatives*

The barriers to green building initiatives experienced by all three cases are similar to those mentioned in the literature review. These include a lack of knowledge and experience with regards to the efficient implementation of green building features, and an underestimation on the time taken to collate documents for submission to the GBCSA in order to gain green certification. One of the main barriers is financial constraints and the misperception that the green premium is higher than it actually is. Both the corporate cases have attempted pilot projects to acquire both experience and quantitative data on additional required costs to implement green building features.

The University of Cape Town faces additional barriers due to the fact there is currently no rating tool for academic buildings, added to the fact that there are heritage and building façade limitations with regards to new building design. Due to the organisational structure of UCT new strategies and programmes take relatively longer to implement than in the corporate world. This results in a reactionary approach with regards to the implementation of new ideas, which in turn results in a lack of apparent funds as budgets are set well in advance and cannot be easily manipulated to accommodate changes.



### *4.5.5 Green Strategies*

All three cases have some form of green strategy for the future. These strategies may differ in structure and objectives, but they all address some form of environmental awareness regardless of the underlying motives. In all the cases the core of green strategies is driven by individuals that are passionate about the environment under the auspices of sustainability, and that are trying to convince senior management that environmental consciousness is not just a contemporary social movement, but rather should be a core component of any socially and environmentally responsible organisation's mission statement.

Table 4.1 tabulates the similarities and differences between the three cases in terms of the sub-headings that are used throughout this chapter, namely: social and green initiatives, motivating factors, impact of green initiatives, barriers to green initiatives

and green strategies. Table 4.1 clearly shows that there are core similarities between the Growthpoint and Old Mutual with regards to how they address green building features and initiatives. Table 4.1 also shows the differences between the two corporate cases and the University of Cape Town with regards to how UCT engages with the environment at a community level.

The defining elements of Stewardship Theory as per the literature can be viewed as (1) altruistic motives, (2) contribution to society, (3) environmental awareness, and (4) ethical business practices. Table 4.1 contains criteria that correspond to the above mentioned elements, namely *(1) motivating factors, (2) social initiatives, (3) green initiatives, and (4) green strategies.* The *impact of green initiatives* and *barriers to green initiatives* are also listed in Table 4.1, but are not defining elements of Stewardship Theory.

Therefore Table 4.1 shows the level of engagement to the defining elements of Stewardship Theory by the three cases that participated in the research.

**Table 4.1 Cross-Case Analysis**

| | Social Initiatives | Green Initiatives | Motivating Factors | Impact of Green Initiatives | Barriers to Green Initiatives | Green Strategies |
|---|---|---|---|---|---|---|
| **Growthpoint Properties** | Growthpoint's social initiatives are streamlined for the property industry. | Green initiatives are based on core business operations and resource management of its buildings.(Profit orientated) | Financial feasibility is the primary motivating factor. | Tenants on short leases (< 5 years) are less enthusiastic about green initiatives.<br><br>Blue chip tenants are more willing to embrace green initiatives. | Lack of knowledge and experience.<br>Underestimation of the time taken to collate documents for submission to the GBCSA.<br>Overestimation with regards to the green premium. | Appointment of sustainability co-ordinators.<br>Working with the GBCSA to formulate a rating tool for existing buildings. |
| **Old Mutual** | Old Mutual's social initiatives are broader in nature and attempt to address issues that are deemed to be of national concern. | Green initiatives are based on core business operations and resource management of its buildings. (Profit orientated) | Financial feasibility is the primary motivating factor. | Tenants on short leases (< 5 years) are less enthusiastic about green initiatives.<br><br>Blue chip tenants are more willing to embrace green initiatives. | Lack of knowledge and experience.<br>Underestimation of the time taken to collate documents for submission to the GBCSA.<br>Overestimation with regards to the green premium. | Implementation of pilot green initiatives.<br>Allocation of 10% of its key performance indicators towards the implementation of green initiatives. |
| **University of Cape Town** | UCT's main social initiative is to provide society with graduates that are socially responsible and behave ethically when operating in a professional capacity. | UCT's green initiatives are community orientated. UCT are attempting to educate the community about the environment. | UCT views itself as an ethical custodian for society so it feels the need to set an example.<br><br>Financial feasibility does play a role too. | The impact of green initiatives is yet to be determined as many of the environmental initiatives are still in their infancy. | No rating tool for academic buildings.<br>Building heritage and façade limitations.<br>Organisational structure resulting in a reactionary approach to green initiatives. | Creating social awareness of the environment through student education. |

## 4.6 Connecting the Findings to the Theoretical Framework

The findings of the three case studies have illustrated elements of the theoretical framework, namely that of corporate and environmental responsibility, and socially responsible property investing lead to the implementation of green building initiatives. The theoretical framework is encompassed by the underlying principle of Stewardship Theory, which is that the above mentioned elements of the theoretical framework are implemented because it is 'the right thing to do'.

### *4.6.1 Growthpoint Properties*

Growthpoint are aware of the environmental impact of their buildings. The manner in which they choose to address environmental issues is determined by a combination of factors. Although financial feasibility is a key factor, Growthpoint feel that they need to be environmentally responsible. Their environmental policies which lead to the implementation of green building initiatives do not necessarily encompass the principles of Stewardship Theory as their core reasons; however they still package their green building initiatives as a form of socially responsible property investing.



### *4.6.2 Old Mutual*

Old Mutual tends to focus on their social and environmental initiatives as the two components of how they attempt to 'do the right thing', which links to the principles of Stewardship Theory. The implementation of green building initiatives is strictly monitored by financial indicators. Therefore when Old Mutual implements green building initiatives they must first be approved on financial grounds. Once approved, they are then promoted as a form of socially responsible property investing.

### *4.6.3 University of Cape Town*

The University of Cape Town is attempting to 'do the right thing', which therefore shows the link to the principles of Stewardship Theory. UCT is restricted by budget constraints with regards to the implementation of green building initiatives; however it is always searching for opportunities to promote social and environmental

responsibility. Although UCT may be restricted in implementing green building initiatives throughout its property portfolio, it is always searching for ways to promote forms of socially responsible investing.

## 4.7 Summary

The findings of this research have a shown that there is an attempt by some South African large property owning organisations to engage in green building initiatives. The motivations and level of engagement depends on a number of factors. Some, but not all of these factors directly and indirectly encompass the underlying principles of Stewardship Theory, namely that green building features are implemented because it is the 'right thing to do'.

Although all three cases are aware that being environmentally aware is the 'right thing to do', they are equally aware that it improves their reputations and potentially their market share. Evidence of this is that they promote their green building initiatives on their company websites and in their annual reports. All three cases define the 'right thing to do' by addressing some, if not all of the following socially and environmentally responsible issues: sustainability focused staff appointments, engaging with broader society, reducing their carbon footprint, and reasonably attempting to implement green building features and initiatives.

This illustrates that the research propositions successfully encapsulate both the altruistic and financial drivers of socially responsible property investing (implementation of green building features and initiatives) of the three property owning organisations involved in this study. The altruistic component of the research propositions and the findings that pertain to the altruistic motives pertaining to green building initiatives indicate a link to the theoretical framework and the underlying principles of Stewardship Theory.

# CHAPTER 5: CONCLUSIONS

## 5.1 Introduction

The purpose of this chapter is to link the main underlying questions of this research report and the associated research propositions with the findings, and with components of the literature that was reviewed in Chapter 2. This is done by re-visiting the main research questions and propositions and highlighting core findings that are prudent for the purpose of this research by assessing the link between corporate social and environmental responsibility and the green building movement in South Africa. This chapter will also evaluate the findings in terms of the theoretical framework, namely that of Stewardship Theory.

## 5.2 Re-examining the Research Questions

### *5.2.1 Is environmental awareness a key issue for large South African property owning organisations?*

Environmental awareness has increasingly become an issue for large South African property owning organisations. This can be seen by the fact that there are a large number of property companies that attribute value to being members of the Green Building Council of South Africa. There are a variety of reasons why the environment is starting to garner more attention from property owners that own multi-billion rand portfolios. Industry professionals (property owners, architects and engineers that participated in this research) are slowly becoming more aware of the environmental impact of a building's design and operation and how this affects the financial indicators that are used to assess the financial viability of buildings. Property owners interviewed for this research only cite the environment as a key issue if it is financially viable; however the University of Cape Town was the one case study that seems to be genuinely environmentally conscious because they view it as the right thing to do. Being environmentally aware because it is the 'the right thing to do' is the key principle of Stewardship Theory, whereby UCT is attempting to put the needs of

society ahead of the needs of the organisation. Environmental awareness is becoming a key issue for Growthpoint Properties and Old Mutual, whether because these two case studies acknowledge it purely from a profit perspective, or because they truly feel the need to be custodians of the environment, cannot be determined with complete certainty.

### *5.2.2 How do large South African property owning organisations partake in socially responsible property investments?*

There is very little evidence that suggests that large South African property owning organisations actively seek to partake in socially responsible property investing. Evidence of this is that corporate property owning organisations are driven by return on investment as the primary focal point and only consider the socially responsible element retrospectively. All three case studies that were analysed for this research are aware of socially responsible property investment opportunities due to the emergence of the green building movement in the South African property market. The green building movement has resulted in property owners becoming more aware that they need to be socially responsible, but many owners have yet to determine to what degree they will be socially responsible with regards to the design and operation of their buildings. This is partly due to the infancy of the green building movement in the South African property sector.



### *5.2.3 What motivates large South African property owning organisations to engage in socially responsible property investments?*

There are a number of motivating factors that result in large South African property owning organisations engaging in socially responsible property investments. Financial benefit is the overriding factor for Growthpoint Properties and Old Mutual. If there was no future financial benefit then these two case studies would not engage in socially responsible property investments, even if implementing green building initiatives is considered the right thing to do. Growthpoint Properties and Old Mutual see an opportunity to take the lead in the property industry with regards to being socially responsible and state that they are doing it for altruistic reasons; however

this should be viewed with a degree of scepticism as this could be a strategy to garner good publicity, which can result in future financial benefit. The level at which the University of Cape Town engages with socially responsible property investments is determined by the capital budget and not by life cycle benefits. This is because, as a prominent educational institution it feels that it has a responsibility towards the community and therefore feels it should set the benchmark (when it can afford to) of how property owning companies can be socially responsible. The fact that the University of Cape Town places a degree of responsibility towards the community is indicative of Stewardship Theory.

## 5.3 Re-examining the Research Propositions

### *5.3.1 Environmental awareness is a key issue for large South African property owning organisations specifically to gain superior market share.*



It is clearly evident that environmental awareness is growing in the South African commercial property market. This can be seen as all three cases are attempting to implement initiatives and features into their building portfolios that are non-damaging to the environment. Commercial property owning companies are constantly competing for market share, and in order to maintain long-term investors they need to ensure that they portray an image that is environmentally conscious. Therefore the proposition can be accepted to some degree as both Growthpoint Properties and Old Mutual state their green building initiatives via public channels (annual reports and websites) in order to promote their social and green initiatives to inform the public that they are being socially responsible. Neither Growthpoint Properties nor Old Mutual explicitly stated that a motivating reason for their social and green initiatives was to gain superior market share. Both of these case studies only implemented financially viable green initiatives in order to accrue an improved return on investment. Superior financial performance is the underlying driving force to attract potential investors and therefore gain superior market share. This proposition is not applicable to the University of Cape Town because market share is not a priority when it comes to the purchase, disposal or refurbishment of its properties.

### *5.3.2 Large South African property owning organisations engage in socially responsible property investment through green building initiatives.*

The above proposition is accepted, as all three case studies engage in socially responsible property investment through the implementation of green building initiatives. This form of investing will gain momentum in the commercial sector as more buildings gain green certification in South Africa, thus showing property owning companies that implementing green building features is a sustainable form of socially responsible property investment. The University of Cape Town partially invests in property for commercial reasons, however UCT engages in socially responsible property investment (when possible) because it feels it is the right thing to do. This attitude by the University of Cape Town is consistent with the underlying principles of Stewardship Theory and the values it is trying to instil into members of the university community.

### *5.3.3 Financial return and maintaining a reputable corporate image are key motivating factors with regards to socially responsible property investment.*

Financial return and maintaining a reputable corporate image are essential to corporate property owning companies; however Growthpoint Properties and Old Mutual attempt to find a balance between these two entities by sacrificing short-term gains for higher long-term returns. This is done by making investments that are deemed to be socially responsible such as implementing green initiatives in their buildings, thus improving the corporate image of the company and therefore attracting future long-term investors. Therefore the above proposition can be accepted for the first two case studies, however it can only be partially accepted when analysing the University of Cape Town. This is due to the fact that although UCT will only implements socially responsible property (green) features if it is financially viable, it is not doing so to enhance its public image.

## 5.4 CSR Policies of Property Owning Companies

It is evident that the property owning companies that participated in this research are increasingly starting to publicly state their acknowledgment of the environment and that they are aware how the design and operation of their buildings impacts the environment. It is for this reason that CSR policies (sustainability sections contained in annual reports) of the three case studies are starting to incorporate statements that pertain to the environment with specific reference to green building initiatives. Both Growthpoint Properties and Old Mutual mention the GBCSA in their annual reports and attempts to gain green certification for some of their buildings in the future. The University of Cape Town CSR policy does not have a section that pertains directly to green buildings, but rather makes general statements that the university is environmentally conscious and is taking steps to improve environmental awareness amongst the university community.

## 5.5 Green Buildings of Property Owning Companies

All three case studies are working with the GBCSA in some form and are aware of the Green Star rating system. Growthpoint and Old Mutual are both attempting to implement green building features into some of their existing buildings even though no tool currently exists for rating purposes, while Growthpoint is attempting to gain green certification for their *Lincoln on the Lake* development. The University of Cape Town is retrospectively attempting to implement green building features into the *New Engineering Building.* This is evident in the green budget being reduced from R16 million to R4 million, thus showing that although the university would like to implement green building features it is by no means a priority for this specific building.

## 5.6 Green Building movement in South Africa

This research has revealed that although the green building movement in South Africa is in its infancy there are large property owning organisations that are attempting to, albeit not always, successfully implement green building features into their buildings, which are aligned within the criteria set out by the Green Star rating

tool. All three case studies cited similar barriers to implementing green building features that were experienced by other countries that have their own Green Building Councils. The main barriers to implementation is a lack of education in green buildings by members of the professional team, an overestimation of the additional cost required to install green features, and the cost and time required to acquire green certification from the GBCSA.

## 5.7 Motivating Factors

The foundation of the theoretical framework for this research is based on Stewardship Theory with specific focus on property owning companies making decisions while being mindful of 'doing the right thing'. Obviously there is no one definition of 'doing the right thing' so this left to the discretion of each individual company.

This research has established that there are three core motivating factors why property owning companies implement green building initiatives in their property portfolios, namely: altruistic reasons, improved corporate branding, and financial benefit. The two corporate case studies publicly claim it is 'the right thing to do' (Stewardship Theory), which can result in an improved corporate image. Growthpoint Properties and Old Mutual will only implement green building features if they can afford to and they have conducted analyses to ensure that there will be some form of future financial benefit for investors. The University of Cape Town requires there to be some form of long-term cost saving with less focus on ROI for a specific building. Regardless of whether a building's main purpose is to be an income producing asset or not, financial benefit is the overwhelming criterion that determines to what degree, if any, green building features are implemented.

## 5.8 Link between Environmental Policies of Property Owning Companies and Greening of their Buildings

The main purpose of this research was to determine the nature of the link between the property owning companies CSR policies and the manner in which they design and operate their buildings within the context of socially responsible property

investing with regards to the underlying principles of Stewardship Theory. All three case studies have some form of written environmental policy. However there was not an automatic link between the design and operation of their buildings and their environmental policies. There were some links for the corporate property owning companies, which listed energy and water conservation in their CSR policies. These companies had installed energy and water saving systems into a select minority of their buildings. There were other environmentally aware initiatives taken by the corporate property owning companies such the use of low VOC paints, locating building near public transport nodes, installing green features in offices, and encouraging people to recycle by providing demarcated bins.

Analysis of the three case studies has indicated that there seems to be a gap between the narrative in corporate property owning companies environmental policies and the design and operation of their buildings. A common trend is that a lot of what is mentioned in the policies has yet to be achieved in reality because these companies are still in the process of formulating strategies to effectively implement green building measures. The three case studies would ideally like to gain green certification in the future. The infancy of the green building movement in South Africa impacts significantly on why there is a gap between environmental policies and the actual design and operation of buildings owned by both the corporate and non-corporate property owners. It is likely that as more property professionals become better educated about green buildings and the GBCSA produces rating tools that can be applied to existing commercial and academic buildings so the gap between CSR policies and reality may become smaller.



## 5.9 Link between CSR/CER Policies of Property Owning Companies and their Social and Green Initiatives

The two corporate property owning companies are able to implement their stated social and environmental initiatives as per their CSR/CER policies with relative ease. This is due to the fact that there are few barriers that prevent implementation of these types of policies in comparison to the implementation of green building initiatives. The two corporate property owning companies are fully aware that if they do not deliver in terms of their publicly stated policies this will have a negative impact on their brand and could potentially have a negative impact on the ability to attract

possible future investors. Therefore there seems to be a smaller gap between the implementation of social initiatives and the narratives of CSR/CER policies of property owning companies than the narratives that are linked to green building initiatives and the implementation thereof.

## 5.10 Linking back to the Aims and Objectives

### *5.10.1 Aims*

This research has successfully discussed the driving forces behind socially responsible property investments by large property owning organisations by focusing on corporate social and environmental responsibility in terms of these organisations attempts to implement green building initiatives. The two corporate property organisations, which are profit orientated, are driven to be socially and environmentally responsible because they know it is the right thing to do. However they are primarily motivated by financial feasibility. The non-corporate property owning organisation is restricted by budget (not profit) and is driven to be an ethical custodian for society as it feels being socially and environmentally responsible is the right thing to do (Stewardship Theory).

### *5.10.2 Objectives*

This research has successfully managed to achieve the objectives listed in Chapter 1.

The three cases highlighted the extent of green building initiatives by large South African property owning organisations by examining a sample building for each of the cases, which showed that in each all the three property owning organisations were attempting to implement green building initiatives.

All three cases have corporate social and/or environmental policies, and all three cases have made some attempt to implement these policies within their property portfolios. These socially responsible property investments were made by each of the

three cases in the form of green building initiatives as shown by the sample building listed in Chapter 4.

All three cases highlighted the motives and benefits of socially responsible property investments. The motives differ depending on the nature of the case study (corporate vs. non-corporate), however the benefits are the same for all three cases, namely, savings in energy and water consumption.

## 5.11 Lessons Learnt from the Research and Suggested Topics for Further Research

This research project has resulted in a number of lessons and thoughts for future possible research in the field of green building.

The first challenge with regards to this research project was determining the optimum unit of analysis in order to formulate the most suitable case study design in order to gather findings that could be analysed. This was more difficult than originally thought as the unit of analysis changed as a result of obstacles that were experienced during the pilot case study. The time taken to conduct this research was relatively slow due to the infancy of the green building movement in South Africa as there are few prominent large property owning organisations that are actively engaging in socially responsible property investing. This resulted in more time being required than originally expected to find large property owning companies that had suitable information regarding green building initiatives, and were willing to participate in this study.

The second lesson that was learnt from this research project is that collating qualitative data can be challenging especially when respondents are apprehensive with regards to how much information they want to divulge. The interviewer needs to be able to frame questions in a manner that allows the respondent to feel comfortable to communicate useful information that can be tested against the research questions and propositions.

The reliability and validity of the overall study is deemed to be satisfactory as both the corporate and non-corporate case studies are reputable organisations in South

Africa. There is an opportunity to replicate this study when and if the green building movement gathers more momentum in South Africa. Hopefully there will be more large property organisations in South Africa that will be in a position to participate in this type of study in the future.

Upon reflection, with regards to experiencing difficulty in conducting green building research in South Africa, it is evident that there is a need for an in depth investigation into a single property owning organisation. This investigation should focus on the details of the organisation's green operations and the motives behind the formulation of its green strategy.

Thoughts for future research in the field of green building may include investigating the perceptions of employees of blue chip companies in relation to green building initiatives. This could assess to what degree employees associate social and environmental responsibility to the culture and working conditions of their employers. Another investigation could be conducted in large retail centres to determine whether shoppers are drawn towards centres that are perceived to be more environmentally friendly.

# REFERENCES


Aye, E. and Spear, T. (2008) Sustaining existing buildings. In: *GBCSA Convention and Exhibition*.

Bowman, R. and Wills, J. (2008) *Valuing Green, How green buildings affect the property value and getting the valuation method right.*, Melbourne: Green Building Council of Australia.

Brown, S. (2009) Greener Grass. *RICS Commercial Property Journal*(June-July), 18-19.

Brundtland, G. (1987) *Report of the World Commission on Environment and Development*, United Nations.

Carroll, A. (1979) A three dimensional conceptual model of corporate performance. *The Academy of Management Review*, **4**(4), 497-505.

Carroll, A. (1991) The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organisational Stakeholders. *Business Horizons*(July-August).

Commission of European Communities (2001) *Promoting a European Framework for European Communities*, Brussels: Commission of European Communities.

Coors, A. and Winegarden, W. (2005) Corporate social responsibility - or good advertising? *Regulation*, **28**, 10-11.

Cornforth, C. (2004) The Governance of Cooperatives and Mutual Associations: A Paradox Perspective. *Annals of Public and Cooperative Economics*, **75**(1), 11-32.

Corporate Knights (cited 2011) *Global 100: The 2010 List*. [Available online from http://global100.org/annual-reviews/2010-global-100-list.html.]

Dahlsrud, A. (2008) How Corporate Social Responsibility is Defined: an Analysis of 37 Definitions. *Corporate Social Responsibility and Environmental Management*, **15**, 662-73.

Davis, J., Schoorman, F. and Donaldson, L. (1997) Toward a Stewardship Theory of Management. *Academy of Management Review*, **22**(1), 20-47.

Davis Langdon (2007) *The cost and benefit of achieving green buildings*,

Eichholtz, P., Kok, N. and Quigley, J. (2009a) *Doing well by doing good? An analysis of the financial performance of green buildings in the USA*.

Eichholtz, P., Kok, N. and Quigley, J. (2009b) *Why do Companies Rent Green? Real Property and Corporate Social Responsibility*.

Enright, N. (2009) The Sustainability Dividend. In: *GBCSA Convention and Exhibition*.

Flick, U. (2011) *Introducing Research Methodology: A Beginners Guide to Doing a Research Project*. SAGE Publications.

Frankental, P. (2001) Corporate social responsibility - A PR invention? *Corporate Communications: An International Journal*, **6**(1), 18-23.

Fullbrook, D., Jackson, Q. and Finlay, G. (2006) Value Case for Sustainable Building in New Zealand. In: Ministry for the Environment, New Zealand.

Gardiner (2010) *Green Buildings and the Finance Sector, An Overview of Financial Institution involvement in Green Buildings in North America*, UNEP Finance Initiative.

Garriga, E. and Mele, D. (2004) Corporate Social Responsibility Theories: Mapping the Territory. *Journal of Business Ethics*, **53**, 51-71.

Green Building Council Australia (GBCA) (cited 2010) *Green Building Council Australia*. [Available online from http://www.gbcaus.org.]

Green Building Council Australia (GBCA) (2008a) *The Dollars and Sense of Green Building. Building the business case for green buildings in Australia*.

Green Building Council Australia (GBCA) (2008b) *Valuing Green, How Green Buildings Affect Property Values and Getting the Valuation Method Right*.

Green Building Council South Africa (GBCSA) (cited 2010) *Green Building Council South Africa*. [Available online from http://www.gbcsa.org.za.]

Growthpoint (2010) *Growthpoint Properties Annual Review*.

Hart, D. (2009) *Don't Worry About the Government? The LEED-NC "Green Building" Rating System and Energy Efficiency in U.S. Commercial Buildings*, Industrial Performance Centre, Massachusetts Institute of Technology.

Hernandez, M. (2007) Stewardship: Theoretical Development and Empirical Test of its Determinants. In: Duke University.

Hernandez, M. (2008) Promoting Stewardship Behaviour in Organisations: A Leadership Model *Journal of Business Ethics*, **80**, 121-8.

Holmes, J. (2002) The Property Dimensions of Corporate Social Responsibility *In*, *Proceedings of the 2002 European Real Estate Society (ERES) Conference*, 4-7 June 2002, Glasgow, UK.

Institute of Directors South Africa (IoDSA) (2009) *King Code of Governance for South Africa 2009*.

Jamison, A., Raynolds, M., Holroyd, P., Veldman, E. and Tremblett, K. (2005) *Defining Corporate Environmental Responsibility, Canadian ENGO Perspectives*, The Pembina Institute.

Jones Lang LaSalle (2008) *Perspectives on Sustainability, Results of the 2008 CoreNet and Jones Lang LaSalle global survey on CRE and sustainability*.

Juholin, E. (2004) For business or the good of all? A Finnish approach to corporate social responsibility. *Corporate Governance*, **4**(3), 20-31.

Kats, G. (2003) *Green Building Costs and Financial Benefits*, Massachusetts Technology Collaborative**,** USA.

Kats, G., Alevantis, L., Berman, A., Mills, E. and Perlman, J. (2003) *The Costs and Financial Benefits of Green Buildings*, California's Sustainable Building Task Force.

Leaman, A. and Bordass, B. (2007) Are users more tolerant of 'green' buildings? *Building Research & Information*, **35**(6), 662-73.

Leedy, P. and Ormrod, J. (2005) *Practical Research, Planning and Design*. 8th ed. New Jersey: Merrill Prentice Hall.

Lorenz, D. (2010) Sustainability & Property Value: A brief international overview In: *RICS Climate Change Series*, London.

Lorenz, D. and Lutzkendorf, T. (2008) Sustainability in property valuation: theory and practice. *Journal of Property Investment & Finance*, **26**(6), 482-521.

Lund (cited 2011) *Non-probability sampling*. [Available online from http://dissertation.laerd.com/articles/non-probability-sampling-explained.php.]

Lund (cited 2011) *Convenience sampling*. [Available online from http://dissertation.laerd.com/articles/convenience-sampling-an-overview.php.]

Marshall, M. (1996) Sampling for qualitative research. *Family Practice*, **13**(6), 522-5.

McWilliams, A., Siegel, D. and Wright, P. (2006) Corporate Social Responsibility: Strategic Implications. *Journal of Management Studies*, **43**, 1-18.

Miller, N., Spivey, J. and Florance, A. (2007) *Does Green Pay Off?*, San Diego: Burnham-Moores Centre for Real Estate.

Muth, M. and Donaldson, L. (1998) Stewardship Theory and Board Structure: a contingency approach. *Scholarly Research and Theory Papers*, **6**(1), 5-28.

Myers, G., Reed, R. and Robinson, J. (2007) The Relationship between Sustainability and the Value of Office Buildings. In: *13th Annual Pacific Rim Real Estate Conference*, Curtin University of Technology, Perth, WA.

Nelson, A. (2008) *Globalisations and Trends in Green Real Estate Investment*.

Newell, G. (2009) Developing a socially responsible property investment index for UK companies. *Journal of Property Investment & Finance*, **27**(5), 511-21.

Noor, K. (2008) Case Study: A Strategic Research Methodology. *American Journal of Applied Sciences*, **5**(11), 1602-4.

Palmeri, C. (cited 2010) *Green Buildings: Fewer Sick Days, Higher Rents*. [Available online from http://www.businessweek.com/the_thread/hotproperty /archives/2009/11/green_buildings.html.]

Persram, S., Lucuik, M. and Larsson, N. (2007) *Marketing Green Buildings to Tenants of Leased Properties*, Canada Green Building Council.

Pivo, G. (2005) Is There a Future for Socially Responsible Investments. *Real Estate Issues*, **Fall 2005**.

Plimmer, F. (2009) Responsible Property Investment: Making a Difference. In: *7th FIG Regional Conference, Spacial Data Serving People: Land Governance and the Environment - Building the Capacity*, Hanoi, Vietnam.

Podrug, N. (2008) *Stewardship management behaviour and trust as a source of sustainable competitive advantage in 21st century*, University of Zagreb, Croatia.

Ragin, C. (1989) *The Comparative Method: Moving Beyond Qualitative and Quantitative Research*. University of California Press.

Rapson, D., Shiers, D., Roberts, C. and Keeping, M. (2007) Socially responsible property investment (SRPI).

An analysis of the relationship between equities SRI and UK property investment activities. *Journal of Property Investment & Finance*, **25**(4), 342-58.

Ross, B., Lopez-Alcala, M. and Small, A. (2007) Modeling the Private Financial Returns from Green Building Investments. *Journal of Green Building*, **2**(1).

Royal Institute of Chartered Surveyors (RICS) (2009) *Sustainability and Commercial Property Valuation*, Valuation Information Paper No.13.

Sayce, S., Sundberg, A. and Clements, B. (2010) *Is Sustainability Reflected in Commercial Property Prices: An Analysis of the Evidence Base*, School of Surveying & Planning, Kingston University.

Sebake, T. (2009) *An Overview of Green Rating Tools*, Pretoria, South Africa: CSIR.

Shalley, M. (2008) Green Buildings: A New Paradigm in Real Estate. In: *IPT Tax Symposium*.

Silverman, D. (2010) *Doing Qualitative Research: A Practical Handbook*. 3rd ed. SAGE Publications.

Simply Green (2009a) SA's first green rated building. *Simply Green* (Nov/Dec '09), 66-9.

Simply Green (2009b) The Smartest Money is Green. *Simply Green* (Nov/Dec '09), 72-3.

Smith, A. (2007) Making the case for the competitive advantage of corporate social responsibility. *Business Strategy Series*, **8**(3), 186-95.

South African Institute of Chartered Accountants (SAICA) (2009) *Summary on Report on Governance for South Africa - 2009 (King III)*.

Teddlie, C. and Yu, F. (2007) Mixed Methods Sampling: A Typology with Examples. *Journal of Mixed Methods Research*, **1**(1), 77-100.

Trochim, W. (cited 2006) *Unit of Analysis Research Methods Knowledge Base*. [Available online from http://www.socialresearchmethods.net/kb/unitanal.php.]

United Kingdom Green Building Council (cited 2010) *United Kingdom Green Building Council*. [Available online from http://www.ukgbc.org.]

United States Green Building Council (cited 2010) *United States Green Building Council*. [Available online from http://www.usgbc.org.]

Visser, W. (2006) Revisiting Carroll's CSR Pyramid: An African Perspective. *In:* Huniche, M. and Pedersen, E.R. (Eds.), *Corporate Citizenship in Developing Countries: New Partnership Perspectives*, 1st edn. Gylling: Narayana Press.

Watson, R. (2009) *Green Building Market and Impact Report 2009*,

World Green Building Council (cited 2010) *World Green Building Council*. [Available online from http://www.worldgbc.org.]

Yam, L. and Ismail, M. (2009) *Corporate Social Responsibility in Malaysia Housing Developments House-Buyers' Perspectives*, University of South Australia Universiti Tun Hussien Onn Malaysia.

Yin, R. (2003) *Case Study Research Design Methods Applied Social Research Methods*. Third ed. Vol. 5, SAGE Publications.

Yonghui, C. (2009) Study of Group Stewardship *In*, *Proceedings of the 2009 International Workshop on Information Security and Application*, 21-22 November 2009, Qingdao, China.

# APPENDIX A: Property Owning Companies Interviews

| | |
|---|---|
| **RESPONDENT (COMPANY)** | Growthpoint Properties |
| **RESPONDENT (INDIVIDUALS)** | Regional Manager |
| | Senior Facilities Manager |

Formal policies regarding CSR, CER, SRPI (linking to green building)

- Alignment of building operations with company values
- Long-term programme to green portfolio
- CER in terms of company travel – reduce carbon emissions

**Motivating factors** for being socially and environmentally responsible.
Why do you do it: the right thing to do, financial benefit, influence of King III reporting etc?

- Growthpoint is the largest property loan stock company, therefore has a responsibility to lead the industry.
- Focus on the future
- Increased demand from some tenants
- Awareness of King III reporting and the impact its had on company reporting and CER/CSR strategy.

Discussion of **greening policy** in terms of **company values**
Growthpoint has a formal greening policy due to the fact that they are founding platinum members of the GBCSA and there is a link to their core company values.

How are values communicated?
Survey conducted for value analysis, and results published internally.

Green building **initiatives**

- Focus on energy and water consumption
- Lincoln on the Lake, 200 on Main

**Building operation, design and location**

The link to CSR, CER and SRPI

- Building external and internal design
- Environmental impact of building operation
- Impact of building location

Each building is different, therefore greening is done on a building by building basis.

Awareness of GBCSA and **Green Star** rating tool

Yes – founding platinum member of the GBCSA

Awareness of green building principles - **Green Star categories**

Land use and ecology, Building management, Indoor environmental quality, Transport, Water, Energy, Materials, and Emissions.

Yes

Participating in assisting the GBCSA in developing a rating tool for existing buildings.

**Awareness of green building benefits**

- Increased rental, growth, occupancy levels
- Lower operating costs
- Increased building value
- Improved working conditions – leading to increased productivity

Aware of long-term benefits of green buildings but sometimes battle to convince tenants of the benefits in the short-term.

**Impact of sustainability on owners and tenants**

Is there an allocation of resources to sustainability regarding your building?

- Only long-term benefit to tenant.
- Establishment of *green teams* within the organisation to conduct analysis.

Awareness of **knock-on effects** of greening your buildings to the greater community e.g. carbon emissions, green design, building becoming a focal point within a population node, building becoming a benchmark for future green developments.
Is this is even a **priority** to your company, if so how do you **engage** with the community?

- Green initiatives are important for foreign investment in the future – long-term knock-on effect.
- Green mandates by some companies (tenants).

**Barriers** to green building principles and the implementation of CSR and SRPI

- Distribution performance in terms of capital expenditure.
- Knowledge of capabilities
- Green building is a new concept in South Africa.
- Lack of practical experience in the market.
- Documentation for green certification is lengthy and complicated.
- Educating the market about green buildings.

**200 on Main, Claremont**

This office building, situated at the corner of Bowwood and Main Roads in Claremont, Cape Town, has been upgraded and redesigned with a “green edge”, with the intention to qualify for an environmentally friendly rating. A number of Green Star accredited professionals are involved in the project design team, and environmentally conscious features include:

- Replacing the existing glazing with double glazing, incorporating performance glass, to minimise heat gain, glare and noise levels
- Replacing the existing lifts with energy efficient lifts
- Natural materials like marble, glass and timber, to accommodate recycling
- Water management systems that include:
    - Electronically (vs battery operated) operated taps
    - In wall cisterns with dual flush functionality, and waterless urinals
    - Use of underground water for toilet flushing
- Electrical management systems that include:

    - Sub-metering for all tenants, for power and lights
    - Motion sensor switching for all lighting in the building's common areas and tenancies
    - Fluorescents lights that are low toxic and low wattage, with high lumen output
    - Basement parking lighting that is low toxic and low wattage, with high lumen output and connected to sensor switching
    - Minimised exterior lighting, with no up lighting
    - High output LED lamps
    - Remote metering for total power management
- Energy efficient air conditioning system using inverter technology and environmentally friendly refrigerants. The air supply system allows for 150% of the required amount of fresh air into the building
- Heat rejection system that consumes no water, using air to air heat transfer
- Environmentally friendly low VOC paint
- Cyclist facilities, to encourage the use of non-motorised transport

**RESPONDENT (COMPANY)** Growthpoint Properties Limited
**RESPONDENT (INDIVIDUAL)** Sustainability co-ordinator

**Motivating factors** for being socially and environmentally responsible.
Why do you do it: the right thing to do, financial benefit, influence of King III reporting etc?
To ensure the sustainability of the company's strategy of providing good return on shareholder investment. Social and environmental responsibility is intrinsically linked to this objective. Regulatory influences (King III etcetera contribute towards creating this reality).

Discussion of **greening policy** in terms of **company values**
Greening the company in all levels is a value driven by social responsibility. However, the real impact is driven from the aforementioned driving factors and not a value of being green for the sake of being green. The corporate world will lead a sustainable movement not because it is the right thing to do but because it is intrinsically aligned with the sustainability of the profitability of the company. Therefore all true green initiatives and drivers stem from value driven objectives (this is true sustainability. Being green for the sake of being green is not sustainable – there is a difference.

How are values communicated?
Top down. We've formed/ forming a sustainability division to tackle a comprehensive sustainability drive within Growthpoint.

Green building **initiatives**
Value driven.

Awareness of GBCA and **Green Star** rating tool

Highly aware. We've got Green Star Accredited Professionals within our development and facilities management teams. We train all our facilties management in this regard. Furthermore we work closely with WSP Green by Design on consultancy. Furthermore, I specifically have work experience with WSP Green by Design where I worked under the current GBCSA Technical Executive. We assist in the formation of the tools and are currently working with the GBCSA on the formation of a tool for existing buildings.

Awareness of green building principles - **Green Star categories**

Land use and ecology, Building management, Indoor environmental quality, Transport, Water, Energy, Materials, and Emissions.

We're leaders in this (as discussed above)

**Awareness of green building benefits**

- Increased rental, growth, occupancy levels
- Lower operating costs
- Increased building value
- Improved working conditions – leading to increased productivity

100% aware of, and work closely with extracting these benefits. There are these benefits inerantionally, but nationally we have barriers to realising these benefits. We currently work very closely at creating a market on a macro level where the benefits can be realised. My boss is the chairman of the SAPOA Energy Efficiency committee. He works with all role players in the market on making these benefits a market reality and not just a theoretical principal.

**Impact of sustainability on owners and tenants**

Is there an allocation of resources to sustainability regarding your building?

Yes. We have an Energy Technical Committee and a Sustainability Division. The allocation of resources fall within our Utilities/ Energy Management division.

Awareness of **knock-on effects** of greening your buildings to the greater community e.g. carbon emissions, green design, building becoming a focal point within a population node, building becoming a benchmark for future green developments.
Is this is even a **priority** to your company, if so how do you **engage** with the community?
Complete awareness, although these are only drivers for green washing and painting pretty pictures in ones sustainability reporting. We do this, although try to focus on value driven sustainability to serve as a platform to realise other aspects such as these discussed above.

**Barriers** to green building principles and the implementation of CSR and SRPI
Split incentives; Risk profile of GP & tenants (capex sign off)

**RESPONDENT (COMPANY)** Old Mutual

**RESPONDENT (INDIVIDUALS)** Regional Facilities Manager

Cavendish Square Facilities Manager

**Motivating factors** for being socially and environmentally responsible.

Why do you do it: the right thing to do, financial benefit, influence of King III reporting etc?

Combination of:

- Company values: People, Performance Planet
- Marketing component
- Right thing to do

Discussion of **greening policy** in terms of **company values**

GBCSA certified members of staff

How are values communicated?

Internal OM magazine to staff and clients

Company's **interpretation** of green space

- Open/natural lighting
- Areas with natural features (plants and water features)

Green building **initiatives**

- Recycling (compression of rubbish) in all main retail centres
- Focus on energy and water consumption

**Building operation, design and location**

The link to CSR, CER and SRPI

- Building external and internal design
- Environmental impact of building operation
- Impact of building location

Johannesburg Head Office 'Mutual Place':

- Located in central Sandton next to the Gautrain – blend into the natural environment
- Aiming for 4-star certification

Cavendish Square:

- Replacing lights in parking areas
- Low VOC paints
- Bike racks
- Efficient fittings

(See Cavendish Square/Connect full list of green features at the end of this case study template)

Awareness of GBCSA and **Green Star** rating tool
Yes

Awareness of green building principles - **Green Star categories**
Land use and ecology, Building management, Indoor environmental quality, Transport, Water, Energy, Materials, and Emissions.
Yes

**Awareness of green building benefits**

- Increased rental, growth, occupancy levels
- Lower operating costs
- Increased building value
- Improved working conditions – leading to increased productivity

This is driven by the OM's Properties Managing Director

**Impact of sustainability on owners and tenants**
Is there an allocation of resources to sustainability regarding your building?
Asset managers are required to show that green initiatives will generate a feasible return on investment with 2 years from implementation.

Is this is even a **priority** to your company, if so how do you **engage** with the community?

- Some OM funds are keen to embrace greening
- Redevelopment with greening in mind
- Long-term strategic placement of buildings
- Consolidation of the portfolio for the greater community

**Barriers** to green building principles and the implementation of CSR and SRPI
Different buildings situated in different funds

- FM's only privy to certain building information
- Depends on circumstances of particular buildings
- ROI dependent
- Budget constraints - Is gaining green certification or the additional star worth the additional CAPEX?

**Cavendish Square/Connect Green Building Features**

- Energy saving lighting initiative for parking levels, fire escapes and cove areas (lighting contained within the bulkheads in the mall) – the attached spreadsheet contains info on the existing lighting in each of these areas, as well as what we changed to and the energy savings achieved. There is also a return on investment calculation on the last tab that indicates a payback period for the project, including the rebate from ESKOM as we did this project as part of their standard offer pilot program (SOPP). Lastly, see also the measurement and verification (also attached) conducted by ESKOM to prove the savings that we had calculated as a result of this project. This project is 80% complete.
- Other energy saving initiatives that we have already implemented at Cavendish Square and Connect are as follows: Timers for all common area lighting including the lighting inside the mall, parking levels and exterior lighting. Switching off lighting completely in areas where there is enough daylight to compensate for the artificial lighting during the day (especially on certain parking levels). Day/night sensors are implemented on certain exterior lighting. The biggest energy savings so far have been achieved through the HVAC system for the centre – VSD's have been installed for all fans and pumps associated with the central VAV HVAC system. A building management system was put in place to manage the sequencing of chillers and cooling towers to utilize the least amount of energy given the heat load demand of the centre in any season. The building management system also switches air handling units, chillers and cooling towers on/off according to a time schedule. We also utilize free cooling during winter via fresh air fans in order to cut the usage of our cooling towers and chillers dramatically.
- Energy saving initiatives we are still planning to implement in future are as follows:

- LED replacements for all downlight applications within the centre (next year). Replacement of halogen starlights with LED starlights (next year).Replacement energy saver lamps with LED alternatives (next year).Renewable energy to power low current lighting and applications within the centre – solar panels, possibility of wind turbines (next two to three years).
- Other environmentally green systems already implemented in the centre: Waterless urinals are installed in all toilets for Cavendish Square and Connect (water saving).We utilize the bleed-off and overflow water from the cooling towers in order to fill storage tanks. Water from these storage tanks are in turn used by the waste management team in the loading bay in order to wash dirt bins and the general waste processing area (water saving – about 456kl per month). A worm farm (vermi-composting) was recently established at Cavendish Square that utilizes mostly organic waste from restaurants within the centre (but also newspaper and coffee grinds) in order to produce high nutrient fertilizer. This fertilizer can then be used to grow other plants, fruit and vegetables. The organic waste would usually go to the landfills, if not utilized in this manner. We have a compactor at Cavendish Square that takes all non-recyclable waste (and now in-organic wet waste as well) and compacts it up to a ratio of 8:1. Hence, the number of trips to the landfill is reduced and the actual volume of waste to landfill is reduced as well. We have a waste management company onsite that conducts recycling from the source (i.e. waste from tenants). We also encourage tenants to recycle in their stores in order to aid this process. We recycle glass, paper, cardboard, plastic, as well as fluorescent tubes (2011 waste and recycling chart below). We try to use green chemicals as far as possible for cleaning purposes.

**RESPONDENT (COMPANY)** University of Cape Town

**RESPONDENT (INDIVIDUAL)** Executive Director of Properties and Services

Formal policies regarding CSR, CER, SRPI (linking to green building)

- Responsible Building
- No guidelines for university buildings from GBCSA
- Determining strategy
- Building specific for greening
- Developing rating tool with GBCSA
- Department of Education - co-funded buildings

**Motivating factors** for being socially and environmentally responsible.

Why do you do it: the right thing to do, financial benefit, influence of King III reporting etc?

- Underlying questions:
    - Are UCT only going as green as they need to be?
    - What are they sacrificing to implement their values?
- New Engineering Building greening (electricity and water) based on ROI
- Do the right thing
    - UCT has the opportunity to educate people about the environment
    - Element of social responsibility
    - Largest contribution to society

Discussion of **greening policy** in terms of **company values**

- Approved sustainability plan by UCT Council
- Campus recycling campaign
- Kramer building – pilot green building project

How are values communicated?

- Display electricity meters at the entrances of residences:
    - Interface with students
    - Awareness of the student body
    - Education tool for students
    - Include something in the curricula regarding environmental custodianship.

Green building **initiatives**

- Kramer Building - Pilot project (lighting and waterless urinals)
- New Engineering Building

Awareness of GBCSA and **Green Star** rating tool

Yes

Awareness of green building principles - **Green Star categories**

Land use and ecology, Building management, Indoor environmental quality, Transport, Water, Energy, Materials, and Emissions.

Yes – for transport, energy and water

**Awareness of green building benefits**

- Increased rental, growth, occupancy levels
- Lower operating costs
- Increased building value
- Improved working conditions – leading to increased productivity

Yes – UCT property portfolio approximately worth R8.9 billion

**Impact of sustainability on owners and tenants**

Is there an allocation of resources to sustainability regarding your building?

- Occupants asked to make contributions towards sustainability.
- Meters in buildings monitoring occupants' energy consumption.
- Eskom donating R40,000 as a prize to the residence that operates the most efficiently in terms of energy usage.
- Encouraging the 'right thing to do' amongst occupants.

Awareness of **knock-on effects** of greening your buildings to the greater community e.g. carbon emissions, green design, building becoming a focal point within a population node, building becoming a benchmark for future green developments.
Is this is even a **priority** to your company, if so how do you **engage** with the community?

- Densification of own property contributes to a sustainable environment and transport system.
- UCT not densified.
- The more densified the more sustainable.

**Barriers** to green building principles and the implementation of CSR and SRPI

- Budget - it's about choices
- Lack of experienced green specialist
- No rating tool for academic buildings

# APPENDIX B: Consulting Architects Interviews

**RESPONDENT (COMPANY)** Katlowitz Marais Architects (KAA) - *200 on Main*
Architects for Growthpoint Properties

**RESPONDENT (INDIVIDUAL)** Director

What instructions were you given by the client in terms of green design (main green components, rating etc)?

- To be as green as possible (refurbishments), within the common areas of the existing building.
- Cut down on energy and water consumption

Were there any restrictions in design with regards to the building?
Budget restrictions, however GP are trying to allocate funding in the new financial year.

What were the main green features that the client was prepared to install in its buildings?

- Common areas: flooring, ceilings, lighting, painting (low VOC paints)
- Air-conditioning run 30% cheaper than conventional buildings
- Waterless urinals
- Double glazing windows
    - Reduces noise pollution
    - Improves heat retention
    - Reduces air-conditioning costs
- Electrics: Sub-metering with rentable units
    - Split lighting and plugs
    - Remote metering analysis
    - Sensor lighting with LED

What green features was your client prepared to cut from the design of its buildings?
None
KAA push for green features that they feel are necessary, the GP 'find room' in the budget.

Are you working in conjunction with any green consultants (engineers, GBCSA etc)?
No
Knowledge gained from conferences
Do you have green design experience? Examples
200 on Main is the benchmark for future projects.

Is the green budget sufficiently realistic for a building of this nature?
GP are flexible with their green budget. GP's FM pushes for green items in accordance with KAA's recommendations.

**RESPONDENT (COMPANY)** Stefan Antoni Olmesdahl Truen Architects (SAOTA) – *New Engineering Building* Architects

**RESPONDENT (INDIVIDUAL)** Architect

What instructions were you given by the client in terms of green design (main green components, rating etc)?
Originally wanting a 4 star rated building, but there are no rating tools for academic buildings.

Were there any restrictions in design with regards to the building?

- Aesthetics – maintain consistency with university façade and heritage.
- Height restrictions

What were the main green features that the client was prepared to install in its buildings?
Air-conditioning energy efficiency

What green features was your client prepared to cut from the design of its buildings?
Energy metering and monitoring

# APPENDIX C: Consulting Engineers Interviews

**RESPONDENT (COMPANY)** Solution Station (Electro - Mechanical Engineers for *New Engineering Building*)

**RESPONDENT (INDIVIDUAL)** Electro - Mechanical Engineer

What instructions were you given by the client in terms of green systems (main green components, rating etc)?

- Original Scope: Green Star model
- Money saving features (air-conditioning system for New Engineering Building)

Were there any restrictions in design of the green systems with regards to the building?

No

- Fully centralised air-conditioning system not logical for NEB
- Modular system more efficient (LCC more cost-effective – 30% saving on energy)

What were the main green features that the client was prepared to install in its building?

- Rain harvesting system used to flush urinals
- Energy saving
- Motion detecting lighting

What green systems was your client prepared to cut from the design of its buildings?

- Sub-metering for electricity monitoring
- Indoor Environmental Quality (amount of fresh air): According to Green Star system not feasible for NEB.
- No waterless urinals
- Lighting hotspot point not considered

Do you have any **quantitative data** that show that the green systems will be a long term benefit to the building?

Air-conditioning Systems Annual Consumption Analysis:

- Water cooled system 496.89 MWh

- Air cooled system 464.89 MWh
- Variable Refrigeration Volume system 284.67 MWh

What other buildings have you been involved with where you have installed similar green building systems?

- Nedbank building in Durban - attempting to gain green certification.
- Solution Station is still relatively new in green building work.

Is the green budget sufficiently realistic for a building of this nature?

- Original building value ± R210 million
- Green budget not sufficient
- Difficult to get points for this type of building using Green Star tool

**RESPONDENT (COMPANY)** Agama Energy (*New Engineering Building* Green Consulting Engineers)

**RESPONDENT (INDIVIDUAL)** Director

What instructions were you given by the client in terms of green systems (main green components, rating etc)?

- UCT wanted a green building.
- Energy modelling to reduce the carbon footprint.
- Approach the project in terms of Green Star guidelines.

What were the main green features that the client was prepared to install in its buildings?

- Modelling resulted in optimised HVAC (heating, ventilation and air-conditioning) design – 40% reduction in energy usage
- Waste facility
- Cycling facilities
- Movement and light sensitive light fittings
-

What green systems was your client prepared to cut from the design of its buildings?

- Not going to submit design to the GBCSA for green certification.
- Metering waste management during construction
- Did not use green materials (e.g. low VOC paints)

Is the green budget sufficiently realistic for a building of this nature?
Original green budget according to the QS was R16 million, which was reduced to R4 million.

Additional comments

- Amount of documentation is a criticism of the GBCSA
- Rental premium breakdown = increased rental + decreased operating costs = SAME RENTAL (however there is a rental premium in the net rental amount)
- Customers and shareholders are demanding that the companies that they are dealing with are aware of their carbon footprint.
- No company has an overall view in terms of their carbon footprint. There should be a carbon reduction target that should be achieved within a specified period of time.