Gordon Institute of Business Science
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Green building strategy, investment and change in the South African real estate industry

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ABSTRACT

In the real estate industry the growth and growth opportunities for real estate funds are based on a macroeconomic level, but on a micro economic level the importance of new building investment, the quality of tenants and the length of lease contracts signed are the main determinants of real estate fund growth and return.

This research attempts to understand the perception and investment of green buildings in South Africa and whether real estate funds are focusing on green building investment as a strategic objective, as well as investigating the importance of tenants within the strategic framework. Furthermore the research attempts to investigate what changes would be required from a regulatory and other factors in order for the South African real estate industry to become more focused on green building investment.

The study found that the size of the real estate fund plays a significant role in whether or not real estate funds focus on green building investment as a strategic focus. The role and relationship with tenants furthermore adds to how important real estate fund view green building investment and finally the influence of regulation and the involvement of government, among other factors, plays a significant role in what the future will be holding for green building investment.

DECLARATION

I declare that this research study is my own work. It is submitted in partial fulfilment of the requirements for the degree of Masters of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to perform this research.

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1.1 RESEARCH TITLE

Green building strategy, investment and change in the South African Real Estate Industry

1.2 INTRODUCTION

This chapter will describe the extent to which green building investment is relevant to the South African real estate business and the role it can play in the future of the industry. This chapter will also explain the need for the research and the objectives of doing the research, as well as defining the scope of the research.

The African growth renaissance has reached the very poorest of people in Africa. African poverty is declining and there is data indicating that inequality will lessen over the coming years (Pinkovskiy, & Sala-i-martin, 2014). Should this become a reality in the next few years, we can expect additional growth through Africa including South Africa. This means that the market for commercial property would expand and, at the same time, so will carbon emissions, adding pressure to our environment. As a nation, we are unable to ignore the growth and subsequent impact of carbon emissions.

The concept of green buildings can loosely be traced back to the 1970s energy crisis which was due to the Arab-Israeli conflict. When the concept of a green building went from research and development into a reality, it caused the subsequent explosion of interest in solar power, retrofitting of homes and a range of energy efficient systems and initiatives (Kibert, 2004).

In 1975, 3M decided to aim, not to reduce waste, but rather to be waste free. The company implemented a new approach to control pollution, rather than only treating and disposing of waste, as required by law. 3M called the programme “Pollution Prevention Pays” (3P). A number of large corporations based their waste reduction and prevention programmes on this model. The structure of the 3P model encouraged line-workers and employees to identify waste-reduction opportunities and projects. Between 1972 and 1990, 3M reduced its waste materials by 530,000 tonnes and, in the process, saved up to $500M. This was achieved by lowering raw material waste through better disposal practices and reducing

costs relating to fines payable due to non-compliance to regulatory requirements regarding the correct disposal of material waste.

The case of 3M points to a number of different factors regarding the development of green buildings and environmental initiatives. The focus on greening initiatives have been around since roughly the 70sAlmost 30 years after 3M saw the benefits of greening initiatives, in 2007, the Green Building Council of South Africa was created for the purposes of cost savings. South Africa currently only has around 120 green rated buildings, of which 50 were registered as green during 2014/2015. While this is a positive sign of changes happening in the green building industry, compared to the developed world, South Africa has not reached clarity of exactly what type of financial return is available to real estate funds and investors.

The developed world has been focusing on green building development and investment far longer than has been the case in South Africa. There could be a number of reasons for the delayed responses in South Africa, although these cannot be substantiated and are therefore only based on industry opinion.

In the United States, for example, research found a four to five per cent higher rental income from green buildings, as well as a 14 to 15 per cent higher sales price for the same green buildings (Popescu, Bienert, Boazu, & Schützenhofer, 2012).

There is evidence worldwide that indicates focus on the green building industry and the development of green buildings. In Dubai, the first 360 degree rotating building with 80 floors, each floor having the ability to move independently, is to be completed by 2017 (Acharya, 2013). The building will have the ability to power, not only itself independently, but also have the ability to generate energy for the surrounding community. South Africa could make a substantial difference in the green building industry should all real estate funds focus on building only green buildings going forward.

In Australia, investing in a completely green rated building is only estimated to be two per cent higher than building a standard building (Bond, 2010). This means that green buildings do not have to cost South African real estate companies much more than the development of a traditional building which has inefficient energy, water consumption and disposal of waste.

1.3 PROBLEM DEFINITION

Attracting investors, and attracting and keeping the right tenants are the basic challenges faced by real estate funds. In South Africa, adding to this dynamic the requirement for green buildings, causes a relatively complex scenario in which the landlord and the tenant have different objectives in order to achieve their mandated returns.

By not addressing the strategic future for the real estate industry, which is the investment in green buildings, real estate funds, in the longer term, could possibly lose investors and tenants to other real estate funds that have foreseen, prepared and invested in green buildings for the future.

A further dynamic facing the real estate industry is the high greenhouse gasses emitted by traditional buildings. Up to 40 per cent of greenhouse gasses are caused by the daily operations of buildings (Eichholtz, Kok, & Quigley, 2010). This means that real estate funds are able to contribute to a large reduction in greenhouse gas emissions, as well as formulate a strategy for erecting green buildings that could set them apart from those funds that are not planning for a green building future.

The problem seems to be that there is not a structured, focused approach across the industry indicating exactly how real estate funds are planning for the future in the sense of the role they are able to play, in partnership with the relevant tenants, in reducing carbon emissions.

1.4 RESEARCH OBJECTIVES

The three main objectives the study set out to achieve during the research process were:

- The main objective of this research was to determine to what extent real estate funds are incoporating green building investments into their strategies.
- Secondly, the study sought to esablish the imporance of tenants in the green building process and to what extent the strategy will be successful with or without tenant buy-in.
- The third objective was to determine what the key enablers are to facilitate an increased focus and investment into green buildings within the South African real

estate industry.

1.5 RELEVANCE TO SOUTH AFRICAN BUSINESS

The establishment of the Green Building Council of South Africa in 2007 provided an opportunity for South African business and real estate funds to understand the benefits and drawbacks of green building investment and how to operate, manage and make a financial return from them. Even though development has been slow over the past eight years since inception, it has picked up in the last two to three years.

The South African real estate industry could benefit from the development of technology to accurately forecast returns (Fuerst, & McAllister, 2011) that would incentivise real estate funds to invest into green buildings and also encourage them to be environmentally friendly and conscious. Funds could then attribute reduced carbon emissions to be part of the triple bottom-line reporting structure.

1.6 THEORETICAL NEED

Limited research has been done in South African green buildings spaces as very limited literature was found to have the ability to either substantiate or maintain the idea of green building investment in the South African real estate industry. In fact, only Nhamo (2013) focused on South Africa while the majority of the literature was geared towards developed countries, the possible investment returns and the effect of green buildings on employee productivity.

It is intended that this research would become an incentive for additional research and development being done in the theoretical space of green building investment in South Africa. It is hoped that it will encourage real estate funds to develop a focused strategy and additional capital investment into the green building sector within South Africa and to assist in the reduction of carbon emissions, as well as the reduced operational costs for tenants thereby creating value for the fund itself.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

In the documentary "The Age of Stupid" released in 2012, some of the major role players and legislation makers agree with scientists about the existence and severity of global warming, the pace at which glaciers are melting and the general trend of warmer weather.

Human activities are the single biggest contributing factor towards climate change issues and the severe changes. Science has proven that if emissions are not abated, the world will continue to experience dramatic changes in climate (Stern, 2007, p. 21).

The concept of green buildings can loosely be traced back to the 1970s energy crisis due to the Arab-Israeli conflicts. This was when society, especially the United States, realised that becoming energy efficient and self-sustainable would become a major concern in the future. The idea of green building went from research and development to reality and a subsequent explosion of interest in solar power, retrofitting of homes and a range of energy efficiency systems (Kibert, 2004).

Even though literature and case studies on green building internationally exists, literature on green building in South Africa is limited. There is, therefore, a need for research on the green building industry in this country and the possible investment returns which can be achieved while, at the same time, being environmentally responsible and ensuring sustainable returns for investors.

Through the use of literature, mostly based on international industries, this study will investigate the knowledge levels of portfolio managers, the perception of green buildings, the investment considerations and returns, as well as tenant expectations.

2.2 A "GREEN" BUILDING?

Green, sustainable or low-energy buildings use resources such as water, materials, energy and land more efficiently than buildings that are just built to code (Alevantis, Berman, Katz, Mills, & Perlman, 2003).

It is estimated that, worldwide, 70% of our energy is consumed by buildings. Green buildings

reduce this consumption through more natural light, better air quality, efficient electricity supply and consumption systems as well as water saving and management systems.

The ultimate green building would be a dynamic construction that has the potential to incorporate the building's energy design concepts and does not simply consist of individual or disconnected parts, but rather exists as part of a wider system (Pisello, Goretti, & Cotana, 2012).

The tools and strategies for reducing a building's energy consumption assess a building's energy requirements. Designers and researchers integrate and optimise all possible interconnecting properties during the design phase, taking into account environmental features of the specific location (Pisello et al., 2012).

With Dubai historically being labelled as the biggest polluter in the United Arab Emirates, Dubai is now expected to produce the first rotating, dynamic building for completion in 2017. The 80 story building will have a full rotation of 360 degrees every 90 minutes with floors moving individually from each other (Acharya, 2013).Between each floor, a wind turbine will be placed horizontally generating additional energy for the surrounding community (Acharya, 2013).

2.3 THE DYNAMICS OF GREEN BUILDINGS

There are a number of positive and dynamics of green buildings. They include the following:

2.3.1 Employee productivity

Inadequate lighting, poor air quality, extreme temperatures and insufficient ventilation are all factors that affect employees' health, wellbeing and productivity negatively leading to increased absenteeism and a reduction in productivity (Singh, Syal, Grady, & Korkmaz, & 2010)

In a study done in Lansing, Michigan, employees were surveyed before and after their moves from conventional buildings to green rated buildings. Overall, a substantial reduction in self-reported absenteeism and an increase in productive hours was found due to the perceived improvements in health and well-being.

Addressing environmental and sustainability issues in a systematic way leads companies to focus on core business objectives such as hiring costs, improved productivity and reducing unnecessary expenses at commercial sites. Focusing on core business activities while ensuring employees are satisfied with their working environment means a reduction in employee turnover as well as improved productivity (Willard, 2012).

Enlightened businesses and business leaders are in the best position to ensure the focus stays on environmental issues. Should their focus remain firmly on the green building sector, this will lead to benefits to the company (Willard, 2012).

The three major benefits of a green building is: firstly, it is ethical from both a local and global environmental and sustainability viewpoint. The second benefit is that it promotes the concept of occupational health. The third benefit, and the focus of this study, is that green buildings make economic sense, not necessarily on a cost or capital basis, but on a life cycle basis (Kibert, 2004).

Indoor environmental quality (IEQ) is influenced by a range of factors: air quality, ventilation, temperature control, natural light and furniture quality. These factors influence employee productivity and since people spend between 80-90% of their time inside a building, the IEQ cannot be ignored because employee productivity relates to energy efficient buildings (Ries, Bilec, Gokhan, & Needy, 2006).

2.3.2 Operational Cost reduction

Cost savings on green buildings, when compared with traditional buildings, come from the reduction in operational costs. The cost of building a green building from the ground up is estimated to be 4 to 10% higher than conventional building costs, but cost savings during the operation and maintenance stages will offset the upfront capital requirements (Zhao & Zuo, 2014).

In a study done in the United States, it was found that green certified buildings had an average saving of $1.38/square foot. Savings on overall operations and maintenance, as well as energy reduction can range from 30% to 50% (Zhao et al., 2014).

2.3.3 Investment Returns

As technology is developed to make the earth into a more environmentally friendly place, significant interest has developed in investing in green assets. This is because investment returns can now be predicted and planned for in comparison to previous years (Fuerst & McAllister, 2011).

The benefits are not only seen in employee productivity or operational cost reduction, but also in tax incentives, as well as a competitive advantage linked to marketing and the uplifting the image of the company owning the green asset, in this case, the building (Fuerst & McAllister, 2011).

The benefits of investment in green buildings can also be found in increased rental premiums, due to lower operational costs, lower vacancy rates and higher tenant retention. Further investment advantages lie within the sphere of reduced depreciation, linked to the most up-to-date technologies used and lengthening the life of the building.

In a real estate context, valuation surveys have found that tenants are prepared to compensate owners for additional costs of green buildings through higher rent. A US based study found that buildings with an Energy Star rating achieved a higher effective rental income of 3.3% per square foot on average (Fuerst, & McAllister, 2011). A study done on 199 commercial buildings sales between 2004 and 2007, found that Energy Star rated buildings achieved a substantial 19% price premium over traditional commercial buildings (Fuerst, & McAllister, 2011). Another US study, conducted on 336 green and 1114 non-green buildings, found that green buildings achieved between 4 and 5% higher rental income and higher market or sales values of between 14 and15% (Popescu et al., 2012). A further study in Switzerland found an average premium paid of 7% for energy-efficient buildings, as well as a rental premium of 3.5% for energy-rated buildings (Popescu et al., 2012).

Leasing space in green buildings could very well attract the corporate, image-conscious tenant who has benefits for the landlord in the form of a more stable, more liquid cash flow and a reputation to consider in terms of social and environmental conscious tenant who would look after the property (Eichholtz et al., 2010).

Even though the results reported in the studies differ, this could be attributed to

geographical differences and timing differences, but, more importantly, the studies all point towards a higher investment return than those of traditional buildings.

When a philosophy of not spending unnecessary money on those features of a building that were not going to contribute to a reduction in operational costs, such as the painting of columns, or common area finishes that are costly, it was found that the additional cost of building a green rated building in Australia was only 2% higher than that of a traditional building (Bond, 2010).

2.3.4. Environmental Impact

If carbon emissions are reduced through green buildings, this has a significant impact on the overall greenhouse gas emissions for the country. It is estimated that up to 40% of the consumption of raw material and energy is due to the construction, day-to-day running and maintenance of any building. It is further estimated that about 30% of the world's greenhouse gasses can be contributed to buildings and their construction activities (Eichholtz et al., 2010).

Some of the major negative dynamics of green buildings include:

2.3.5 Capital Costs

While the development stage of a building focusing on energy efficiency systems is more expensive than ordinary buildings, this extra investment ensures the long-term viability and efficient operation of the building. Additional capital will not be required to upgrade the entire system because maintenance of the current system on regular intervals ensures long-term benefits (Eichholtz et al., 2010).

Unfortunately, often the decision to spend additional money during the development stage in order to have the building energy-efficient is not taken because of schedules and budgets. Long-term benefits are overlooked or ignored in favour of short-term gains. This could possible lead to long-term capital costs to upgrade buildings which can cost developers and landlords dearly (Bilec, Hupp, Needy, Ries & Thiel, 2014).

The decision not to invest additional capital during the development phase to improve energy efficiency can be linked to business sectors, such as bankers, appraisers and

landlords who do not understand the green building concept and metrics and choose to avoid the additional capital and extended timeline required to complete the energy efficient system (Bilec et al, 2014).

2.3.6 Unequal distribution of benefits

Real estate funds and real estate developers are often against building or upgrading a building to a green building because the investor has to pay for the higher capital costs and the tenant gets the benefit in reduced operation costs (Hwang & Tan, 2012).

2.3.7 Unclear legislation

Government legislation and buildings codes are often very complicated, hard to understand and very costly to comply with (Hwang, & Tan, 2012).

2.4 STRATEGIC INVESTMENT IN GREEN BUILDINGS

Different types of approaches to environmental strategies have been identified through a number of different studies. These approaches include the following: reactive, defensive, accommodative and proactive (Buysse, & Verbeke, 2003).

Even though this research was done with a focus on the manufacturing industry specifically, it can very well be applied to the green building industry. It depends on whether the management team considers green initiatives during the budget cycle, or whether to acquire only buildings that already have a green rating. This indicates either a reactive or proactive strategic approach. Reactive investment is a knee-jerk reaction whereby limited resources are allocated to ensure compliance with environmental legislation.

Defensive investment means firms would adapt their product levels and production processes to those below the required legal limit, which leads to a prevention of unnecessary waste at the source and possibly could lead to lower costs and reduced legal liabilities. Accommodative investment would see a company adjust products and manufacturing designs in order to minimise the environmental burden during the entire life cycle of the product.

Proactive investment is a strategic approach whereby a company invests in clean,

sustainable technologies to lessen the burden of the entire operation on the environment. It requires the management team to have a long-term vision, strong leadership and the required resources to achieve the company vision.

Investment in energy assets are influenced by a number of factors: large sums of capital are required, longer construction periods, the length of useful live of the asset in order to reach financial payback financial, technical and regulatory uncertainty as well as future maintenance which are required to maximize efficiency (Abadie, Chamorro, & Gonzalez-Equino, 2009).

More than 80% of global energy supplies are still be sourced from fossil fuels and even though legislation is being implemented and updated continuously, the policies still bring with them risks for renewable energy investors. Investors have to revisit their original economic models for investment, and update and adjust these based on the current energy situation within a geographical area, especially when large amounts of funding are required to achieve efficiency (Abadie et al., 2009).

An evaluating formula is “life cycle costing” (LCC) that provides a framework to measure the life cycle performance of energy efficient upgrades of buildings. The tool incorporates all factors such as types of investment, lead time, the size of the funding needed, opportunity costs of other investments and the useful life of the investment in the energy asset (Kibert, 2004). This tool could be used as part of the strategic investment analysis and decision-making by asset and portfolio managers to determine the financial and other rewards of investing in green buildings, especially for asset managers who lack the required experience to understand green investment.

Traditionally, green business makes a distinction between firms that are purely driven to be environmentally compliant, versus those firms that are proactive in their approach to environmental strategies. Including environmental issues into corporate strategy could be perceived as a company aligning itself with environmental concerns pre-empting the concerns the stakeholders have with regards to environmental issues (Buysse, & Verbeke, 2003).

During a Canadian study, it was found that, specifically, customers, shareholders and local

communities are most concerned with the environmental practices of companies. This further proves the statement that landlords cannot ignore the implications of certain environmental issues even though these issues change over time (Buysse, & Verbeke, 2003). Studies done in Singapore found that the biggest barrier to green building construction is still the project costs, even though it was also found that there exists no shortage of knowledge in Singapore's construction industry (Hwang, & Tan, 2012).

2.4.1 The importance of tenants

The importance of tenants with regards to the success of investment in green buildings cannot be underplayed. Tenant expectations are often seen as key drivers for sustainable office property and a mismatch exists between the awareness of sustainability and the implementation of formal sustainability processes. It was found that about 71% of tenants in the Sydney CBD were attempting to reduce their consumption and carbon emissions, but only 31% of those actually had a sustainability policy in place and only 26% had evaluated their environmental performance. Furthermore, only 42% of those were even aware of the existence of the Australian Green Building Regulator (Newell, 2008).

The willingness of tenants to pay a green premium for renting green properties has been changing annually because location and rent are still found to be more important to most tenants than environmental or energy savings features. Tenant buy-in is still crucial for the financial and environmental success of green building investment (Bond, 2010).

There are a number of barriers that are hindering the development of retrofitting and renovation in buildings. These barriers are mostly a lack of information and a lack of economic incentive (Ástmarsson, Jensen, & Maslesa, 2013). From the economical barrier perspective, there is a lack of financial incentives and life cycle perspectives. Demand creates tools and methods for improvement (Ástmarsson et al., 2013) but there is a lack of demand which limits the development of green technology.

Informational barriers are: a lack of political consciousness and a common direction between stakeholders and a lack of understanding of priorities. New developments also get more attention than existing buildings. These barriers combined prevent cost effective, energy efficient investments (Ástmarsson et al., 2013).

2.4.2 The Landlord/Tenant Dilemma

This dilemma occurs where the landlord provides all the capital required for the operational running of the building, but the tenant pays for the energy consumed. Because the landlord is not paying for the energy consumption, there is very little incentive to invest additional capital to reduce energy costs and consumption (Ástmarsson et al., 2013).

Green leases do not mean that a whole new lease should be instated, but flexibility could be ensured through clauses added to the current lease (Wilkinson, Sayce, & Christensen, 2015, p. 239). Green leases have become a common feature between tenants and landlords. A study done in England and Wales found that about 69% of leases contain some form of a green provision (Bright, & Dixie, 2014) which are offered to address the landlord/tenant dilemma. Leases need to be flexible enough to achieve the greenhouse gas reduction targets as set out by the country's regulations. Leases need to be structured in such a way that there is incentive and enough flexibility for both parties to achieve targets (Brooks, 2008).

Different stakeholders have different requirements with regards to the development of green building strategies and implementation. This can affect the retrofit decisions and plans that are needed to reduce the gap between the different stakeholders and their requirements (Menassa, & Baer, 2014).

Decision makers need a framework by which they are able to determine which areas of the building in question are underperforming which include electricity, mechanics, plumbing or enclosures. This will ensure a more focused approach from the landlord in order to address the factors of an underperforming building raised by tenants (Menassa, & Baer, 2014).

2.5 THE SOUTH AFRICAN REAL ESTATE INDUSTRY

2.5.1 Background and Property Sector Charter Company

During 2012, the Property Sector Charter Company published a comprehensive report on the overall real estate industry in South Africa. It was the first study done of this magnitude and provided the real estate industry with a baseline for future years.

The total value of the real estate industry was estimated at R4.9 trillion by The Property

Sector Charter Company, with the residential market value estimated at R3 trillion, comprising about two thirds of the entire value. The commercial market values are broken down as follows: retail worth about R340 billion, office properties about R228 billion and commercial property worth about R187 billion.

Considering the size and contribution of the real estate industry (8,3% to GDP in 2009), combined with the worst recession since the Great Depression that was caused by the real estate industry in the United States, real estate has the potential to have very serious consequences on any economy (Crowe, Dell'Ariccia, Igan, & Rabanal, 2013). Due to our internal exchange control and policy tools, South Africa was protected from the worst of the recession, but the rest of the world, especially Europe, is still reeling from this.

2.5.2 Green Buildings Measurements in South Africa

The Green Building Council of South Africa (GBCSA), part of 95 worldwide members, is a non-profit organisation driving the transformation of buildings into green buildings through the use of a rating system. GBCSA has developed the Green Star SA rating system for commercial property and landlords are required to comply with a range of criteria in order for the building to receive a rating.

The highest rating star a building can achieve is six stars and, currently in South Africa, there are only three six-star rated buildings, 13 five-star rated and 34 buildings with a four-star rating. The only governmental building on this list is the Department of Environmental Affairs in Pretoria.

A more comprehensive tool used in South Africa is the Sustainable Building Assessment Tool (SBAT) developed by a South African, Jeremy Gibberd, for the particular conditions of this country. The tool incorporates social, economic and environmental criteria and each of the theoretical measures has its own criteria. For the purposes of this proposal, the writer will focus on the environmental sustainability factor only. The relevant criteria and indicators shown in Figure 2.1 below are used to assess environmental sustainability.

Green building performance indicators

Environmental Criteria	Building Criteria	Building Indicators
Energy	• Greenhouse gas emissions • Lighting power densities	• kgC02/m2/year • W/m2
Water	• Potable water consumption	• L/m2/d
Indoor environmental quality	• Ventilation rates • Electric lighting levels • Individual comfort control • Daylight	• L/s/p • Lux • area (m2) per control • Daylight factor (%)
Land	• Topsoil	• % retained and reused
Materials	• Recycling	• % recycled content
Transport	• Public transport	• Distance (m2), frequency (minutes)

GAUGE

Figure 2.1: Green building performance indicators
(Source: http://www.slideshare.net/jgibberd/assessing-the-built-environments-contribution-to-sustainable-development

Buildings are assessed with these criteria in mind and results indicating the level of sustainability are presented in Figure 2.2:

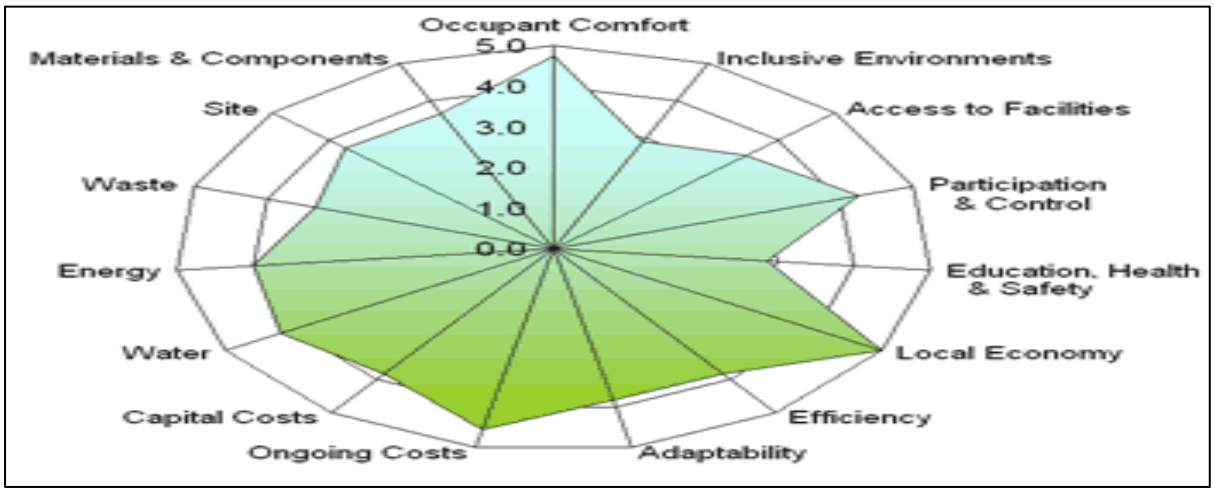

Figure 2.2: Levels of sustainability
Retrieved from: http://www.sustainable.org.za/greenbuilding/assessment.htm

In this case, a score of 3.9 was awarded to this specific building with a rating of "Good". The rating scale runs from zero to five and the closer to five, and the more sustainable the building.

As to date, there is no legislation in place that can tax companies below a certain point on the green building assessment scale.

2.6 IS SOUTH AFRICA GREEN READY?

A plan for the future needs to be established and private sector involvement in the financing of green assets is crucial. Government budgetary support is crucial, especially with regards to policy and infrastructure to partner with the private sector in the investment in green assets (Nhamo, 2013).

Green economy readiness is not only the environmental impact, but includes a number of players and factors that has been identified as the National Green Performance Index parameters.

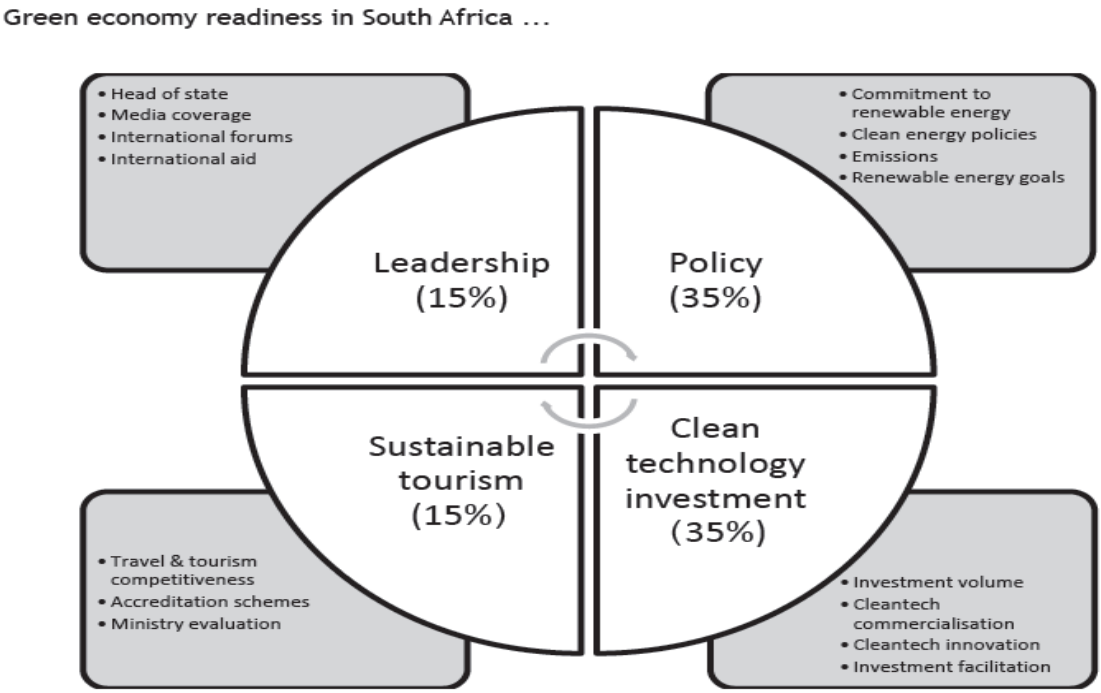

Figure 2.3: National Green Performance Index Parameters
(Source: Nhamo, 2013)

Green initiatives in South Africa need to be continuously promoted so that the relevant audiences learn about a green economy (Nhamo, 2013). It is a relatively new concept and not well-known in this country which means that more infrastructure and economic support is needed to drive the green agenda. South Africa needs to meet and match the global stage in terms of green investments (Nhamo, 2013).

2.7 THE INTERNATIONAL GREEN BUILDING MOVEMENT

In contrast to the South African real estate industry and the investment in green buildings, literature recognises that foreign countries are more advanced than South Africa in the construction of green buildings.

Australia

A range of initiatives from both government and the property industry have been implemented over the last few years. The Green Building Council of Australia, established in 2002, has a system called "Green Star" that was developed in 2003 (Newell, 2008). It rates all buildings from one star to six stars. The Green Building Council's founding idea was to address the country's energy and water shortages (Yudelson, 2010). The Green Star Rating Scheme includes the following nine criteria: energy efficiency, water efficiency, indoor environment quality, management, transport, materials selections, land use and ecology, greenhouse gas emissions and innovations. The green star is awarded as follows: four-star rating is "best practices", five-star is "Australian excellence" and six-star is "World leadership" (Newell, 2008).

Substantial improvements could be made in managing the risks of the development and management of green buildings if there is enough research and development done, training and education, supply chain co-ordination, knowledge and information sharing, building and sharing of experience and using technology to advance the process (Couani, & Zou, 2012).

United States

Leadership in Energy and Environmental Design (LEED) is the most popular green building assessment tool used in the United States. LEED recognises and certifies best-in-class building strategies and practises. In order to get LEED certification, buildings have to reach a basic prerequisites level and points are earned based on different levels of certification (Tang, 2012).

LEED has three broad levels of green building ratings: light green, deep green and adaptive reuse and vernacular architecture (Tang, 2012). Light green emphasises energy efficiency, the adoption of universal and technological designs, has a global vision and focuses on

quantitative outcomes. It also insists that new buildings are superior to reused or retrofitted older buildings (Tang, 2012).

It is estimated that, by 2030, half of the buildings in the United States will have been constructed since the year 2000. It is further estimated that commercial and institutional building space will expand from 9.9 to 14.8 billion square metres. This implies that 45.5% of future commercial and institutional growth will come from the renovation of existing space and 54.5% from new construction (Tang, 2012).

About 76% of greenhouse gas emissions in the United States come from purchased electricity and the greatest reduction that could be achieved in greenhouse emissions is an alternative way to reduce lightning, heating and cooling of spaces (Tang, 2012).

China

Various sustainable practises in property developments have developed into a number of regulatory strategies which include: state intervention, green development policies, awareness with regards to green buildings, strategies to reduce municipal service fees, costs for green building development and proactive education and training programmes for green building development (Zhang, Patten, & Shen, 2011).

In China, it was also found that applying passive design strategy, such as insulation in walls and solar heating appliances are far less expensive to apply than active design strategies, such as Solar PV or heat pumps (Zhang et al., 2011).

A lack of knowledge and awareness of green technologies, as well as inefficient implementation of green building technologies were mentioned as some of the greatest barriers to entry in China (Zhang et al., 2011).

Singapore

Singapore has shifted focus significantly in the last decade with the hope that, by 2030, 80 per cent of buildings in Singapore will be rated as green buildings. The 2nd Green Masterplan of 2009 was developed to ensure that this target could be reached (Hwang, & Tan, 2012).

South Korea

South Korea has been used as a comparison to achieve green readiness in South Africa. Even though the countries cannot be compared entirely, this creates a strong platform for South Africa to emulate. Three pillars were identified, these are: reducing GHG emissions from industries, incentives for business to develop green technologies, products and services; and public information tools for the increased demand for green products (Nhamo, 2013).

2.8 THE ROLE OF GOVERNMENT AND GOVERNMENT REGULATION INTERNATIONALLY

In each of the preceding country cases discussed, it is clearly evident the government is one of the core contributors to the success of green building investments.

The promotion of sustainable or low carbon buildings has been expanded in recent years, particularly in Europe, America and China. The construction and real estate industries are considered major sectors that can achieve lower carbon emissions. Governments across the world are actively pursuing solutions to address the reliance on fossil fuels and the environmental impact (Zhang et al., 2011).

The Department of Environment and Climate Change runs and manages the Australian Building Greenhouse Rating (ABGR) scheme. This is the first organisation in the world of its kind with regards to the benchmarking of greenhouse gas emissions. The scheme requires twelve months of energy data and could be implemented either from a whole building perspective or from an individual tenancy level. More than 29% of Australian office buildings already have the ABGR certification (Newell, 2008). The Federal and state governments have introduced a minimum required standard for government tenants in office buildings. The New South Wales government requires at least an ABGR of 3.5 on existing buildings and a 4.5 rating on new buildings (Newell, 2008).

Government often sees the benefits of sustainable, green buildings as social and environmental, whereas the private sector is driven more by the financial returns, especially because the benefit often applies to the tenant and not the owner. The South African government needs to adopt an active role in ensuring that education and incentives are in place for private investors to start or continue investing in green property (Bond, 2010).

In 2009, a Memorandum of Understanding was developed which had the purpose of raising the number of energy efficient commercial buildings. Some of the measures included: increasing stringency of energy efficient requirements; mandatory disclosure of energy efficiency in commercial buildings and reforming current buildings' energy efficiency standards and assessment processes to achieve consistency across the country (Bond, 2010). This strategy was based on the principle that governments need to work in partnership with private companies and lead the way in ensuring that standards are achieved, maintained and adhered to. The selection of a dedicated team involved early in the process of new buildings was critical to the commitment and success of the strategy (Bond, 2010).

Green building owners in Australia acknowledged the need for the government to offer support, especially to refurbish existing buildings to green standards. Some of the following practical suggestions were: property tax rebates or concessions and increased energy costs that could act as an incentive to conserve energy (Bond, 2010).

A Chinese study found an average reduction of 58,1% energy saving and 21,6% in water savings achieved. The success of this was attributed to the implementation of municipal reductions in fees for green buildings as well as a reduction in development costs for the development of green buildings (Zhang et al., 2011)

Singaporean research regarding the obstacles and solutions for green building development costs, advised that government incentives should be widened to incentivise the market to adopt green principles. Furthermore, the development of a project management framework for the development of green building construction should be implemented to further encourage real estate funds to invest in green building development (Hwang, & Tan, 2012).

Standardisation of specifications across a whole industry or country and, in the case of the European Union, across borders, ensures that a minimum environmentally sustainable standard is met. Government has put these measures in place ensuring transparency and a closer working relationship between government and the private sector (Hwang, & Tan, 2012).

Green roof development in Hong Kong is limited because of a lack of promotion from the

government as well as communities in both the private and public sectors. In order to comply with sustainability standards, compliance will eat into company profits however, if regulation is improved and the right balance between regulation and environmental responsibility is achieved, this could benefit the green building industry overall (Tan, Shen, & Yao, 2011).

In the absence of any government regulatory measures, the initiatives in the greening space are limited and are driven by enterprise profit and corporate social considerations. Government and municipalities also have a leadership role to play. The development of green building strategies cannot only be left up to the private sector to invest in and develop (Lee, & Koski, 2012)

CHAPTER 3: RESEARCH QUESTIONS

The purpose of the research can be defined as: developing an in-depth understanding of how real estate asset managers incorporate, if at all, green building investment into their strategy and how this strategic decision influences their returns, as well as what is required for the real estate fund to achieve targeted financial returns.

Research Question 1

Do real estate asset managers build green building investment into their corporate strategy and what are the factors which contribute towards this decision?

The purpose of this question was to determine if real estate funds are planning, analysing and building green building investments into their strategy and, if they are doing so, what factors will drive or inspire funds to do this.

Research Question 2

What role does tenant and tenant involvement play in the success of the strategy and investment in green buildings?

The purpose of this question was to determine whether the direct involvement and buy-in of tenants makes a significant difference.

Research Question 3

In order for the South African real estate market to develop a more focused view on green building investment, what would have to change within the market?

The purpose of this question was to determine what the industry would like to see happening in order to attract additional investment into the green building space.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 RESEARCH METHOD

4.1.1 Qualitative Research

Qualitative research provides an interpretative tool which can be used to understand experiences from a text perspective, rather than from numbers (Petty, Thomson & Stew, 2012).

Qualitative research's strength is that it

> tends to see the world in terms of people, situations, events and the processes that connect these; explanation is based on an analysis of how some situations and events influence each other (Maxwell, 2012, p.29)

4.1.2 Narrative Research

Narrative research does not offer any normal starting or finishing points and creates a flexible framework within which respondents can tell their stories (Andrews, Squire, & Tamboukou, 2013). Often when researchers use narrative research as their chosen approach, it is because they believe that they are able to pick up different opinions and approaches and then to explore the meaning behind the differences (Andrews et al., 2013).

The author was of the belief that new insights could be discovered through the use of narrative research.

4.2 POPULATION AND UNIT OF ANALYSIS

The population included asset, portfolio and fund managers currently employed within the South African real estate industry to support the validity of the research. The sample was unbiased in terms of race, sex, experience, age or the size of the fund.

Selection was based on those managers who had previous direct dealings with the researcher, or through a common colleague who was willing to do an introduction. The respondents' participation in the study was completely voluntary.

A real estate fund in the context of the proposal is a corporation whose main asset is in the

form of commercial buildings occupied by tenants or the landlord itself. Within the property industry, there are numerous factors influencing the value of the property and the property returns, as perceived by the investor. The importance of energy efficient buildings and building upgrades, from the perspective of the asset manager, was the unit of analysis. In other words, does the asset manager understand, act and ensure that energy efficiency is part of the corporate strategy of the fund?

4.2.1 Location Selection

The focus of the study was specifically on the South African real estate industry which is estimated to be around R6 trillion and is well developed in the local market, with a larger number of listed companies on the Johannesburg Stock Exchange (JSE).

South Africa has the best developed real estate industry in Africa with the industry growing into international markets on a regular basis. The industry is extremely competitive and funds typically are either a growth fund, or a value fund.

4.2.2 Limitation of Population to South Africa

The author focused on one country, South Africa, to exclude the differences between countries and the effect that these differences have on the topic under study. Using the population of South Africa increases convenience, focus and accessibility, the author can focus on one unit/factor within one geographical area.

4.2.3 Inclusion of Real Estate Asset Managers

The rationale for including asset managers in the interview process stems from asset managers having a two-fold role, firstly that asset managers have a very thorough, deep and operational knowledge of each building within his/her portfolio, secondly that asset managers are responsible for the overall financial performance of the portfolio and are often deeply involved in developing the strategy of both individual buildings and a portfolio of buildings.

4.2.4 Demographic Profile

An attempt was made to ensure a diverse population of respondents was selected to reduce bias and ensure that a variety of results could be achieved with the required saturation

reached.

4.3 SAMPLE SELECTION

Theoretical sampling technique was used to enable the author to select a specific sample of South African real estate asset managers who were in the best position to respond to the research questions. This was based on their positions within the different real estate funds, experiences within the real estate industry as well as their involvement in the development of the company strategy.

The agreement was that all respondents and companies would be anonymous and all respondents signed a Letter of Consent (Appendix B). Letters of the alphabet were used to identify companies and numbers to identify respondents.

4.3.1 Purposefully Selected Real Estate Funds

The strategy of the real estate fund influences the investment in green buildings. The opportunity for real estate asset managers to take decisions and implement those decisions from a green building investment perspective is limited, as these decisions are made at board level. Asset managers, however, are the link between the board and the day-to-day operational running of their assets (buildings). This places the asset managers in the unique position where they understand and know their assets and the tenants that are renting from the landlord, as well as being involved in the strategic process and future of each company.

The author drew on a variety of fund sizes and purposefully selected asset managers who are involved in different companies with different strategies. The real estate companies were selected based on the following criteria: the company had to operate within South Africa and the company's main business function would be to invest in buildings and be involved in the managing of the asset day-to-day, however, the companies were not limited to only the South African market, but could have international exposure with assets in foreign territories.

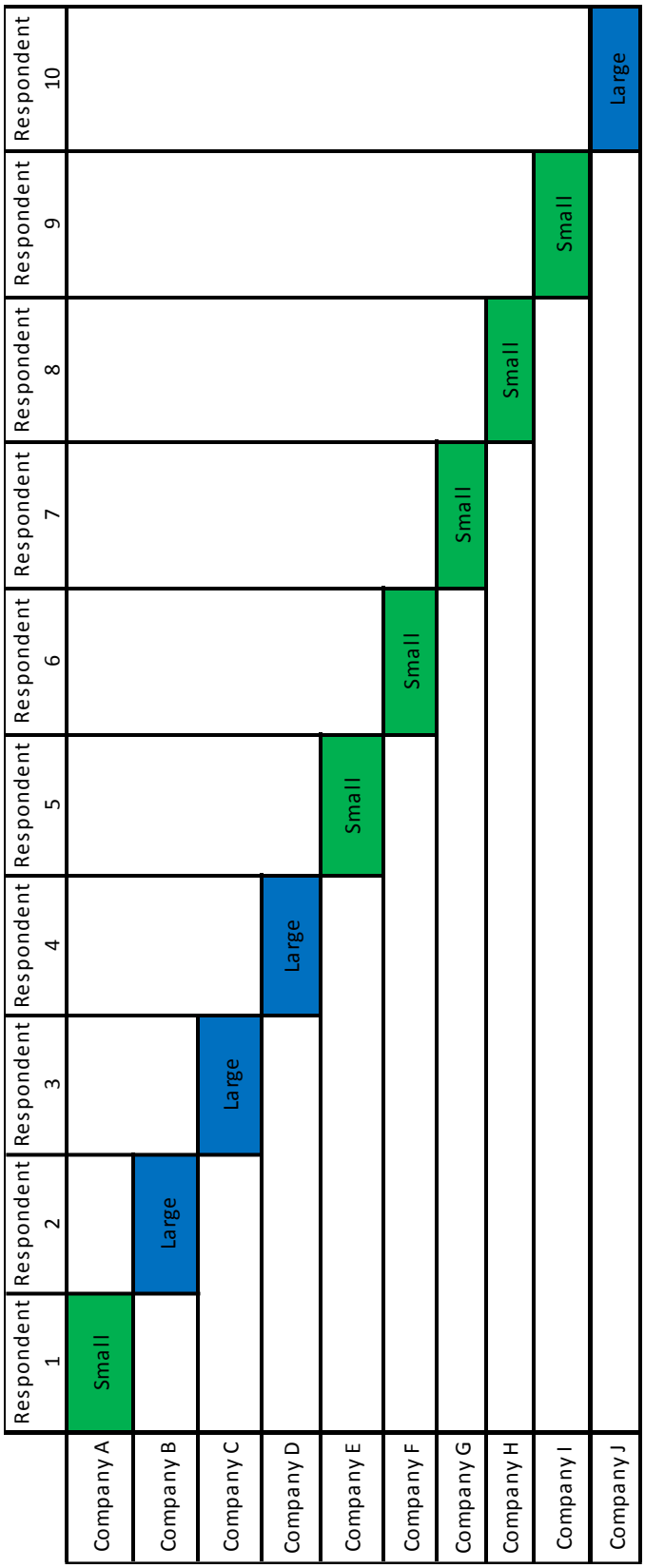

Figure 4.1: Respondent employed per company and respondent employed by size of the balance sheet

4.4 DATA COLLECTION AND ANALYSIS

4.4.1 Data Collection

Primary data collection was done through in-depth interviews with real estate asset managers. The use of semi-structured interviews provided the author with a list of questions to cover, giving the interviews the required structure, but also allowing flexibility to ask additional questions or gather more detailed data on specific themes.

The objective was to allow respondents a space in which to share their experiences and knowledge openly. The face-to-face interview process also allowed the interviewer to have insight into body language and to find out the issues that the respondents were passionate about. The interview process was managed in a manner which instilled trust and respect from both parties in order to gather valuable information.

The interviews lasted between 45 minutes and an hour and consisted of mostly open-ended questions that created a space within which respondents could respond in which ever manner they felt comfortable with. The questions covered a range of topics, ranging from the respondents' opinions and perceptions of the green building industry in South Africa, the internal strategy of the company and the returns they are expecting from the industry.

The interview schedule was a guideline for the discussion to ensure that all the relevant topics were covered. The interviews were done in English, voice-recorded and then transcribed for analysis and for inspection.

4.4.2 Data Analysis

In order to understand and analyse the data,

> A loop-like pattern of multiple rounds of revisiting the data as additional questions emerge, new connections are unearthed, and more complex formulations developed (Srivastava, & Hopwood, 2009, p. 77).

Multiple rounds of data revision ensure a deeper understanding of the data and they alsoensure a deeply reflexive process leading to insight and the interpretation of meaning. Iteration ensures a revisiting of the data with new insights (Srivastava & Hopwood, 2009).

Careful attention was paid to the voice recordings to ensure that, as far as possible, voices were depicted in an authentic way. The focus was to find commonalities between respondents to determine what their perceptions were and whether portfolio managers included green building strategies into their overall strategies. The exploratory method was aimed at understanding the data, was used to develop common themes between the respondents and assisted in the data interpretation through the use of the individual transcripts.

The analysis was focused on finding commonalities and core themes, but definite differences in approaches could be seen and these were highlighted. The core themes were structured in such a way as to answer the research questions and reach the research objectives.

4.5 DATA VALIDITY AND RELIABILITY

In order to ensure the quality of quantitative research performed, the following eight criteria for excellent qualitative research were used (Tracy, 2010):

Worthy topic

Was the topic relevant, timely, significant and interesting? The author is of the opinion that this topic was relevant, considering the energy crisis; it is timely in the sense that corporate companies can no longer operate environmentally irresponsibly; and the author finds the perception and attitude of asset managers' role in the real estate industry's strategy development significant for the topic.

Rich rigour

The study needed to include sufficient, abundant, appropriate and complex:

- Theoretical constructs;
- Data and time in the field – this was done through the in-depth interviews with each respondent regarding his/her role in the real estate industry;
- Samples;
- Contexts;

- Data collection and analysis processes – the semi-structured interviews were the data collection process and each of the interviews was then individually analysed and interpreted.

Rigour also provided validity, which indicated whether the study was reasonable and appropriate.

Sincerity

Sincerity was used "to relate to notions of authenticity and genuineness, but I do not mean to suggest a single reality or truth" (Tracy, 2010, p. 841). There was openness, honesty and transparency about the goals and biases of the researcher.

The study needed to be characterised by:

- Self-reflexivity about subjective values, biases and inclinations of the researcher. The author was very aware of the subjectivity especially with regards to the size of the funds where respondents were employed and how the balance sheet influenced the strategy and approach of each respondent.
- Transparency about the methods and challenges – all the methods used have been explained in the document, specifically in this chapter.

Credibility

The research needed to be characterised by:

- Thick description which includes concrete detail, explication of tactics, knowledge and showing rather than telling;
- Triangulation that assumes that two or more sources of data, theoretical frameworks, types of data, or researchers converging on the same conclusion is more credible. A number of different sources of data were used, through interviews and literature reviews, as well as experience within the real estate industry;
- Multivocality, multiple voices were included in the telling of the story. A variety of respondents were approached who were employed at different companies with different strategies and balance sheet sizes;

- Member reflections would go further by asking for input during data analysis and the production of the research report.

When individuals reading the report trust the research to act on the findings, this indicates credibility in the research. This would be achieved if an individual after reading the findings is inspired to change his/her strategy or to get more involved in the green building industry and form a strategy to address the carbon emission issues as well as the electricity supply shortages we are faced with in South Africa.

Resonance

Resonance would be the ability of the researches to "reach" and affect an audience. In order to do this, the research needs to have

- an evocative representation which is the ability to reach a part of the readers' emotions in order to action. The author was hoping to achieve this through making all real estate funds aware of the benefits of green building investment, as well as inspire the real estate industry to become more aware of the implications of green building and the benefits to their clients.
- a natural generalisation
- transferable findings.

Significant contribution

The research provides a significant contribution in the following areas:

- Theoretically, there is an intellectual contribution;
- Practically, there is a practical contribution in the business environment. This is a clear practical contribution derived from this research, in the sense that the learnings could be taken and used within the strategy of the different companies, motivating the real estate industry to adopt a more environmentally orientated approach;
- Morally;
- Methodically, finding new and creative ways to use research;
- Heuristically, moving people to take the research further. The aim of the reader was to

inform and inspire the real estate industry to move forward by investing in the green building sector.

Ethical

The research considers the following factors from an ethical standpoint:

- Procedural ethics, no unethical actions such as forcing respondents into the study and not allowing them free will. Each respondent signed a letter of consent whereby he/she stated that the participation was entirely voluntarily;
- Situational and culturally specific ethics, always be respectful towards others;
- Relational ethics. Each respondent was approached and interviewed with the required respect as far as possible;
- Exiting ethics, the manner in which the results are shared. Some of the respondents indicated that they would like to view the research following the completion of the project in order to use the results within their company.

Meaningful coherence

The research:

- achieves what is set out to do. The research achieved what it set out to do in the sense that the findings were indicative of the strategy implemented by different real estate funds and the biggest frustrations are experienced within the real estate industry in South Africa;
- used methods and procedures that fitted its stated goals;
- meaningfully interconnected literature, research questions, findings and interpretations with each other.

4.6 Potential Research Limitations

While the research offered some valuable and interesting findings in explaining the perception of real estate asset managers and the views they held regarding green building investment, there are still limitations with regard to the research conducted. These include:

- The data was collected over a limited amount of time. This could have resulted in

information that was biased and was dependent on the asset managers' perception at a single point in time. This could, however, be overcome with future research being done over a much longer time period;

- Although saturation was achieved, it was also firmly split between smaller and larger real estate funds and additional research will have to be done. Respondents were often only asked to present a proposal at board level, but are not involved in the final decision making process of whether to invest capital in green buildings or not. Smaller fund real estate managers were also often less informed about the financial implications and purely saw the capital required as "capex spend". It would be interesting to understand how a country such as Australia overcame these specific hurdles;
- The emphasis of this research was from the real estate fund manager's viewpoint and not that of the tenant or end-user. In order to achieve a more holistic picture and understanding, research could be done from the perspective of the tenant or end-user;
- The research was purely focused on the commercial side of the real estate industry. The residential portion of the real estate industry in South Africa has a bigger monetary value than the commercial sector and focus could also be shifting towards the residential real estate sector.

CHAPTER 5: FINDINGS

5.1 STRATEGY

The findings on strategy are related to Research Question 1: Do real estate asset managers build green building investment into their corporate strategy and what are the factors which contribute towards this decision?

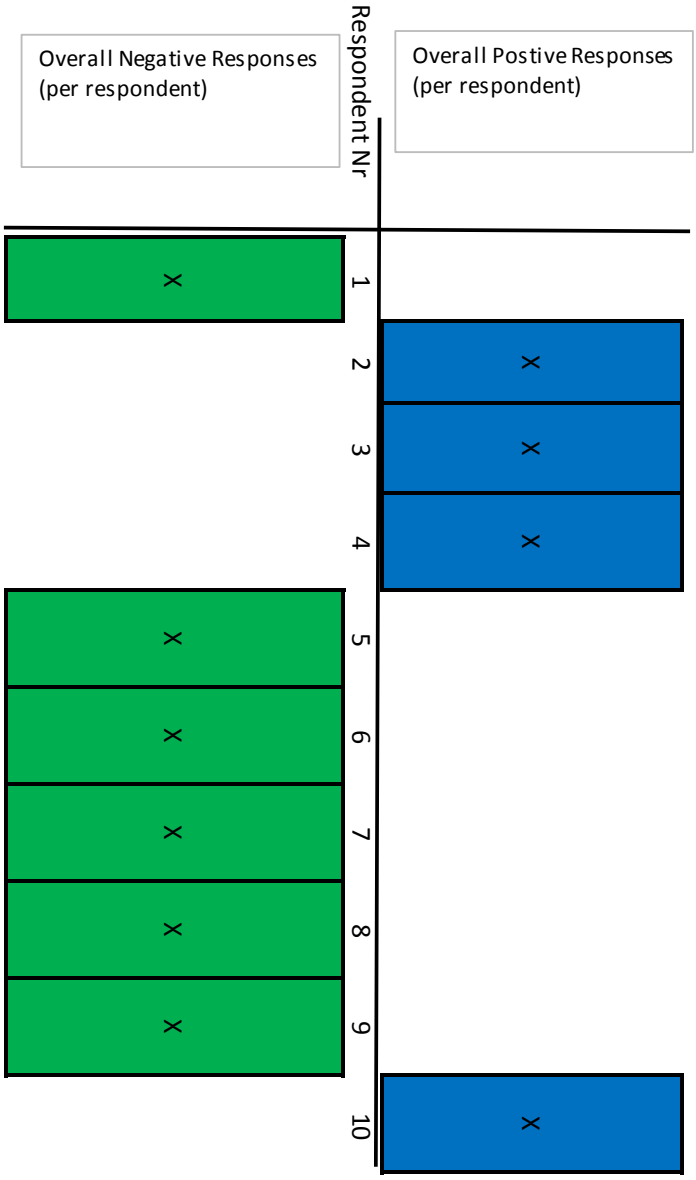

Figure 5.1: Respondents overall negative and positive responses with regards to green building investment and strategy within the real estate fund

5.1.1 Focused Strategy

The larger real estate funds, that have had success to date with green building development and investment, all have a focused individual or team whose function is to concentrate on green building development.

> I develop the whole strategy for the greening of our buildings. It is also a senior divisional director who is driving this process, he is also the deputy chair of the Green Building Council of SA and also a director of the World Green Council. This whole green initiatives and green interventions was started by him and he brought me into the company to draft and formulate a good strategy for the company. (Respondent 4)

The development of green building investment forms a key part of the strategy for those funds that have already successfully implemented green building strategies.

> Yes, it forms very much a key part of our strategy, it falls under our "sustainability" umbrella which does not only refer to environmental, but also to business and financial sustainability. We employ a deep sustainability philosophy on both energy and water wastage and usage. Our philosophy is very detailed internally and each of our different funds follow their philosophy in terms of water and electricity usage, but they don't differ all that much. I also sit on the board of the Green Building Council and what is learnt there is shared with the funds and so sustainability forms a very big part of our focus in principle. (Respondent 10)

> We have this strategy in place to certify a lot of buildings in the next 3 years. (Respondent 4)

There is also a clear plan of action in place on how to ensure the strategic objectives are achieved.

> What we do first is what we call an energy-water performance bench marking, where we use the tool from the Green Building Council. So we bench mark all our office buildings against that tool, so we know exactly which buildings are not performing on an energy and/or water basis, then we get the building that is performing above the benchmark, you get them in the certification pool, to get them certified. The buildings that are not performing, that are below the benchmark, we put in a different camp, called our "Green X5 campaign" which drives efficiencies in those buildings so they can

> get certified. (Respondent 4)

The industry leader which all respondents mentioned have a different company structure toother companies within the industry. This company is the landlord, as well as the managing agent and the success of the company was attributed to this structure by a number of respondents.

> If you were the landlord themselves, like Company A, you can cut your profit, we can't. We need to get the approval from the fund managers and we are such a small portion of that fund that we don't have the right to be able to play with those profits. Maybe they could do it, maybe they do social responsibility on their own, and … it doesn't have to be done through their properties. They also do a triple bottom line, but we just feed into them. (Respondent 9)

> … internally managed so that maybe another reason why they are the leaders. (Respondent 2)

A respondent employed by the industry leaders where they themselves see the value of their company structure and how this makes decision making significantly easier and a managing agent does not have to consult with an asset manager before decisions are made. There is also no budgeting conflict whereby managing agents are trying not to spend capital in order to achieve profit and bonus targets.

> Yes, no doubt. It is easier on a couple of fronts, from originating an idea, I think there is a lot less back-and-forth, because we all sit together, we don't have to have meetings, go back, present again. The managers are the owners, we come up with the strategies and we implement them and, from a costing point of view, we don't have to cost, come back, and get it approved. Obviously the asset managements will query why have we done that (Respondent 3)

All respondents employed by smaller real estate companies were very upfront about their strategy not including green building investment. This could be interpreted as a lack of financial incentive and/or the restricted availability of capital.

> The short of it, there is no green strategy. As a long term view, we would like to go that way and we are starting to look at it, but there isn't a formal green strategy as such. (Respondent 6)

> No, it does not form part of our strategy as far as I am aware. It is not something we believe is financially viable in the long-term and we can't afford to spend money on solar which should be going for new additions, upgrades of our buildings, maintenance and all those type of things. As I said, we don't really see the financial value in the capital we need to spend on the upgrading or greening, as you call it, of our buildings. (Respondent 7)

> It is very difficult to have a philosophy on green properties, ear marking green properties, or for that matter wanting to have any in our portfolio, because it would essentially be counter intuitive to our philosophy, because you would think green property or properties that are off grid or any of those kind of things would require specialist maintenance, they would require specialist people on the ground and they would probably cost more than what would fit into our yield pattern. (Respondent 5)

5.1.2 New versus Old Buildings

The smaller real estate fund respondents especially felt that there was no incentive to invest capital into existing building upgrades and that this was not in any way part of their strategy.

> When we start looking at old buildings, it is very tricky, the buildings to convert them to green status buildings, at the very minimum, at the lowest level of being green, … it can be challenging, especially if you look at buildings such as CBD buildings. (Respondent 1)

> … it is a very difficult thing to do retrospectively, to retro fit, because you have all sorts of issues around. (Respondent 2)

Larger real estate fund respondents all stated that whenever they are building or developing a new building, they will be taking a green building approach and will invest funds upfront to ensure that the building can be classified as a green building.

> We have two which have been completed, but all our new buildings will be energy efficient and green buildings and the developments are targeted as such. (Respondent 10)

> New developments work, I don't think for existing buildings that the green side of it is purely a rand and cents for them either. I think their (Company A) return probably has a buffer enough to allow them to be socially responsible, because they are the industry

> leader, they need to show they are responsible and it's an image that goes with it. (Respondent 7)

> The point I am trying to make is that all our brand new buildings, there is no rating tool for industrial, but all our buildings are being built as green buildings. It is massively important for us to ensure that we follow green principles and that is a strategic objective from GP head office [that] we have to follow. (Respondent 3)

Successful strategy implementation also has the performance of green buildings' strategy incorporated into the KPIs (Key Performance Indicators) of those individuals responsible for the execution of the strategy.

> They (Company A) also focus on their ESGs, same as we do, Environmental, Social and Governance. (Respondent 10)

5.1.3 Fund Size and International Exposure

Research question 1 referred to the factors contributing to the decision to incorporate green buildings into the strategy. A clear difference between the findings indicated that the size of the real estate fund played a significant role in whether or not to invest funds into green buildings.

The size of the balance sheet of the real estate fund played a significant role from all respondents and also the exposure that funds have to either international tenants or real estate investment in foreign territories.

> … By the way, those companies that have already been doing that, you will notice something interesting, they have an international exposure…. You see it in their reporting, you will see it in how they communicate certain things that are not necessarily South Africa, is not at that level yet and they have brought some of those trends home. (Respondent 1)

> So we have started seeing a trend, however, what is common in all of these trends is that it is done by companies or funds with reasonably big balance sheets and perhaps they found the mechanisms to absorb it initially from a returns perspective. (Respondent 1)

> I think it is easier when you have some capital to spend and to fast track decisions, because your small capital is often trapped and protected, as to not use it for in case you urgently need it at some point. Your payback period is often then non-negotiable and hard to achieve. More importantly, I think that your attitude and approach and we believe we have to lead by example, make sure our own environmental footprint is something that tenants and others in the industry can aspire to. (Respondent 10)

> We (Company B) have got an investment in Australia and our directors go over there once a month and when they come back we always see an emphasis on green, 'guys, what are doing?' What is our next building? We would never have embarked on a new development in Bryanston without a Green Star Rating. The directors would just have said no, impossible, we have to do that. It's definitely playing a part and influencing it. (Respondent 9)

> They (Company A) are also just structured the right way, they are the leaders in most things, so they are leading now. They don't have to pay school fees and they are confident because they have seen it work, they have seen guys make it work, first hand. (Respondent 2)

Smaller real estate company respondents stated that they do not have these international ties and the ability to learn and copy from foreign countries because they do not have foreign investments.

> … it's more international versus local, like the internationals are fussier about it. The international companies have more pressure. (Respondent 6)

> We don't have those [international] ties, but, I mean, Company A has those ties, they try and make it known that they have this expertise, they are innovative, compared to the rest, they have a very European/international standard. (Respondent 5)

Smaller real estate companies with smaller balance sheets do not have the resources to necessarily achieve green building targets and they are protective of capital, spending this only on the basic capital necessities.

> So you might find the trend escalating, certainly in listed companies around their green initiatives and how they meet carbon and all that. However, if we look at non-listed private corporates, he just wants to get through any day, another year. (Respondent 1)

> If you don't have a leader in the field or you don't have a person that wants to be a specialist, why should we even get involved? I think that is really the sad part of it, no one is saying let's stand together and do something. Everybody is saying 'I am a high yielding or low yielding or C graded fund'. Those are the specialisations as opposed to the developed world where 300 buildings in Germany can be built and get off the grid in order to benefit my tenant. (Respondent 5)

5.2 RETURNS

This section refers to research question 1 and the factors contributing to success.

The responses received on returns can be split exactly in a forty/sixty per cent ratio. The respondents that are of the opinion that there is no return for green building investment are all employed by small funds, with smaller balance sheets, the positive responses were all from those individuals employed by larger funds with large balance sheets.

There have been two respondents, one from a smaller fund and one from a larger fund who had overlapping responses. These are respondents two and three.

5.2.1 Smaller Funds

It is clear that smaller real estate funds with smaller balance sheets have not been able to develop a model that provides these funds with the return they require to encourage green building investment.

> I think income would outstrip environment every day. (Respondent 5)

> I have not seen to date that a model that shows from a development perspective if you call green you have better returns from an IRR perspective, relative to just going plain how we used to do in the good old days, because certainly in the short term you are probably out of pocket. (Respondent 1)

> Mostly I think it's because it doesn't make any financial sense to our shareholders and investors or the board to invest in upgrades or refurbs when there won't be a return seen on our rental income and we have strict requirements in terms of when and what we need to pay out to investors. We can't afford not to reach a targeted return, of let's say 11% and then you can't spend capital on something that is going to reduce that return to 7%. (Respondent 7)

> Our big focus on that is that you get hit in your bottom line with unexpected maintenance or capital expense, but effectively you want to have relatively even keel through a 12 month period and, to do that, you can't go 'we'll just throw something green in' for the sake of it. (Respondent 5)

> I think money versus environment, I think it has become the term in question and it is both a global and local problem. I think income would outstrip environment every day. (Respondent 5)

Smaller funds understood clearly that larger real estate funds have a model that works for them and can show the desired returns whereas smaller funds do not have a working model yet.

> Company A has not done that out of the goodness of their heart, they found an economic model that works. (Respondent 6)

In the real estate industry, the returns are basically the rental income, the quality of your tenant, the length of your leases and the rental income received that plays a very large role in fund returns. None of the respondents employed by smaller funds were of the opinion that tenants would be willing to pay premiums for renting a green building.

> Your existing tenants are not going to pay you more money, because they are already paying market for that space, that's what they can afford. (Respondent 9)

> Not priority at the moment, I tell you what, recently I have been involved in that and that's why I suppose you interviewing me, I have been involved in doing the green side of it and every time we brought a motivation together it's a problem, there is no financial reward let's call it, direct financial reward for green buildings. I know there's environmental and there's social and all that, but the financial reward on a building that's owned, owner occupied, that is of huge reward, but if you have tenants it becomes a problem in recovering that money. (Respondent 9)

5.2.2 Larger Funds

All respondents employed by larger real estate funds with sizeable balance sheets are seeing a financial return and they have developed models that work well. These larger funds also tend to have more international tenants, or large corporate tenants who are very image

conscious which means that they are willing to pay premiums for green buildings.

> Absolutely, the rental income would lead to capital growth. (Respondent 9)

> You would see the top quarter of the more efficient buildings outperform the rest of the pool by almost 2.7%, that is, capital and rental growth. That is a hard fact; one can argue what buildings are in the more efficient pool, but still a sold statistics. (Respondent 4)

> No, there would definitely be, because you can almost warrant a higher rental, because there is savings in terms of your cost of occupation, therefore, the capital growth would be there. (Respondent 6)

> Your fixed cost will be higher and municipal cost form about 55% of your overall cost. If you can get that down through prudent management and energy savings initiatives that goes down to the tenant and your bottom line just keeps growing, because your costs are less. (Respondent 2)

5.2.3 New Development versus Existing Buildings

There is a significant difference in the returns perception of building new, green buildings versus the upgrading of existing buildings to green buildings and the associated costs of these. The retrofitting of existing buildings to be greener will often only be done when and if there is a big lease renewal due and the tenant makes certain demands in terms of the reduction of the operational costs.

> There's quite a bit you can do to the old buildings, but just with new technology, quite difficult to retrofit and I mean with, we are investigating PV for roofs and that's, I mean the older buildings offer opportunity there, especially industrial ones, because of the large roof space, but in terms of, you know, retrofitting lights and things, it is a costly exercise, so we are tending to find on the newer developments, there is more of an ability to look at greening those, rather than the older buildings. (Respondent 9)

> I think there's this mind-set that green buildings are so much more expensive to construct, so maybe it starts at the education. Everyone needs to do the exercise as to what the real cost is and they will find it is not as high as everyone is making it out to be. (Respondent 9)

Large real estate companies all have the same approach with regards to new developments. These will automatically be green buildings and, in future, they will all be built to reach at least a four star graded rating.

> Definitely, what you will see is that we put a statement out there, any new development that we are doing will be a minimum of a 4 star Green Star Rating and how we see a lot of other companies coming on board. In the last 2 years, a lot of other listed property companies that is jumping on the bandwagon, it creates some credibility to the industry; it puts a brand to the certification. (Respondent 4)

> On the old buildings, the way it will work there is if there is a big lease that is coming up, with a big tenant, then we will allocate monies in that green development that we can hopefully put into sustainable development, that is how we do it there, so if we spend we need to get a return. (Respondent 3)

5.2.4 Green Fund Possibility

The possibility of creating a green investment fund, whereby capital is only invested into green buildings and investors will only earn returns on green building, can make the conscious decision to invest in responsible projects. The issue, however, is that there could be a perception problem as individuals think that there are no return possibilities, as is the case with smaller real estate companies.

> You know what they are going to have to overcome the perception problem, because people are going to think it is a do-good fund and it's not financially viable. That is the perception unfortunately. (Respondent 9)

> It is definitely viable, it is just I think it is education in this country to do it and maybe even more stringent legislation. I think it has increased the value, because people's perception of green buildings change. (Respondent 2)

> So what we do now is we offer our tenants green offer, we do offer them green buildings, we will make this building green for you, because it will cut your op costs by 20%. (Respondent 3)

5.3 STAKEHOLDERS

Tenants refer to changes that need to be made to contribute to a more focused approach on green building investment. This refers to Research Question 2: What role does tenant and tenant involvement play in the success of the strategy and investment in green buildings?

5.3.1 Tenant Buy-In

The buy-in from tenants is vital to the success of green building investment and development. The willingness of tenants to pay an additional rental premium for lower operational costs is key to the success of the green building model. Tenants need to increase their fixed costs in order to reduce their floating costs on a monthly basis.

Other tenants are getting pressure from the holding companies or boards to maintain an energy conscious and environmentally friendly image.

> The tenants that are part of bigger groups, for example, Steiner, Bidvest, you know they obviously have pressure on all of their premises to do something about energy consumption and greening, so they did come to us and you know they want us to share in the cost of new light fittings. I think it's the bigger corporates that are getting pressure, but certainly they are. (Respondent 9)

Responses regarding whether the pressure to upgrade buildings to green buildings came from the landlord or the tenants were mixed. It depends on the type of tenant and international tenants or tenants with an international footprint require green buildings. In other cases, it is the landlord driving the changes.

> What we finding from the tenants, they coming to us and saying something needs to be done to remove these operational costs, so it can be from the energy efficiency interventions, resource management. There is a pressure from that perspective from tenants, there are also tenants that are saying, they want solar on the roofs, we are willing to pay for it ourselves. Our utility bills need to come down, those are things we have picked up. From a certification point of view, we see that it is easier to market a certified green building than a regular building. (Respondent 4)

> It will be blue chip, multinational companies, but it is also the big drivers here [that] are

> different than global and it is because of Eskom. Electricity is on everybody's minds, so we seeing some pressure from smaller tenants as well to reduce operational costs, not to have certified buildings, but to reduce their utility bills. (Respondent 4)

> We have approached the tenants with our strategy, because we want them to come along with us and obviously there are cost issues and generally on my portfolio the tenants are single tenanted, industrial buildings. The tenant is the one who benefits the most, apart from the social and environmental aspects, the tenants are coming along and a lot of tenants are doing their own thing. (Respondent 2)

The dilemma is further increased because in a number of cases where the building is occupied by a single tenant, the entire costs of energy consumption are passed onto the tenant, thus not incentivising the landlord to try and reduce costs.

> For a small fund like us, initially it didn't make sense for us, most of our buildings are single tenanted buildings, so it didn't really affect us, because they pay 100%. (Respondent 6)

> The smaller tenants are not worried about these things, they want to have electricity and be able to trade. Smaller tenants often don't stay longer than 2 years and if you install solar after 1 year they won't pay for that, as they know they will probably be leaving and we won't get the payback from them for the installation of solar. (Respondent 7)

All respondents made mention of the importance of tenant retention, however the larger fund respondents (40 per cent) had a different approach to the value of the tenants and rather than just using green building upgrades as a way in which to keep tenants, their approach was based on a longer term view.

> The tenants realise it is not just the landlord issue, we need to do it as a partner or I have to do it myself and people will only do the projects if there is some economic long-term benefit. Even the solar thing, you can make out of solar. (Respondent 2)

Smaller real estate funds mentioned that they would do green upgrades only when a large lease comes up for renewal and the tenant is thinking about leaving. They would use green upgrades in order to keep tenants, rather than to inspire responsible and reduced energy

consumption.

> For us, it is also about tenant retention, so a tenant will go to a building where the cost of occupation is lower as opposed to higher. (Respondent 6)

Some tenants are mandated to run their own energy initiatives, further not incentivising the landlord to invest capital into green buildings.

> No, we haven't gotten any pressure from tenants as far as I am aware. Our bigger or anchor tenants, such as Pick n Pay or Woolworths, they have their own initiatives and their own requirements as per their internal strategies from their head offices. The anchor tenants or bigger tenants mostly do their own thing and input changes as per their internal company requirements. (Respondent 7)

5.3.2 Tenant/Landlord Dilemma

The biggest reason why landlords are reluctant to invest in green buildings is because the benefit of reduced energy costs is directly to the tenant which is why tenants need to buy into the idea. The landlord needs to develop a model so that both the landlord and the tenant benefit.

> There are tenants that are educated and there are tenants that understand the benefits, but they don't want to lay out the capital cost upfront. They want the landlord to pay for greening the building, but the tenant gets the benefit of paying lower electricity or water etc. (Respondent 6)

> If they are happy, then they will go ahead with it and some tenants are happy to pay for some of the lights. (Respondent 6)

The larger real estate funds understood that investing in green buildings is a value-add to the tenant and the reputation of the landlord.

> You know there is a benefit to us in that we can help the tenant in the long run, you know that is also a value add. (Respondent 3)

Larger real estate fund respondents, or landlords in this case, understood the importance of having tenants on board when embarking on the green initiative journey. They understand that a different type of incentive is needed to have tenants buy into the idea of green

buildings and ensuring tenants are able to see the long-term benefits of doing so.

> We are actually putting pressure on our tenants, all our buildings are A or B graded buildings and we want our tenants to come with us on this journey, which is what most of them are doing, because we don't really give them a choice. (Respondent 10)

> If we can be doing things proactively, reduce the costs of occupation for our tenants, we believe we will have a better chance of renewing and getting better renewals, but the second is right now, driving our bottom line. If we are able to identify savings, which will require capital expenditure, but it will generate savings, the question is how much do we keep and how much does the tenant keep? (Respondent 3)

The type of tenant was mentioned by all respondents and whether this has an effect on the ability of the landlord to upgrade their buildings. Larger blue chip companies or international companies were more focused on their green image and carbon footprint.

Tenant profile was mentioned as being an issue that the South African real estate market simply does not have.

> My understanding no one, we don't really care. South African corporate don't actually care. We would like to go as green as possible, but we don't have the tenants. (Respondent 6)

> It will be predominantly international, unless we get government buy-in, I can tell you now, and we are far from it. It blows my mind that tenants aren't asking for it. Theoretically speaking, from a landlord perspective, if it is capital return for us and then for a tenant it reduces the cost of occupation, it has been proven that it does. (Respondent 6)

Tenant, landlord and market education was mentioned as an issue.

> But what happens [in Australia] is the tenants are educated, the tenant asks what the incentive is, I want the incentive, plus, everyone else is green, so therefore I have to be in a green building. A 5 star building, that is what they are asking for, whereas guys here aren't. (Respondent 6)

Respondents indicated that they would only do green building upgrades when a big lease is

coming up for renewal and this could be utilised as a bargaining tool to renew the contract with the tenant.

> Lease contracts are an opportunity. If a tenant is still in a leased contract they won't ask questions on the utility cost, it is when the lease contract starts to expire then the guys come up with nice innovative ideas to reduce costs. (Respondent 4)

> There is an example where one of our tenants who is coming up for renewal in the next few months and they are actually bargaining against us and saying they have another building available that is a certified building. It is becoming a leverage tool, certified green buildings in the industry is starting to present a quality standard of the building. (Respondent 4)

5.4 GOVERNMENT REGULATION

Research Question 3: In order for the South African real estate market to develop a more focused view on green building investment, what would have to change within the market?

This section deals with changes required within the industry ensuring a more focused approach on green building investment.

> … [Regulation] is a toddler and, in some corners, it is starting to crawl and walk. (Respondent 1)

Out of the ten respondents interviewed, all ten experienced a lack of government regulations in order to encourage green behaviour within the industry. Comments regarding tax rebates were made as well as a suggestion that these rebates be put back into the industry to further develop the green industry. These incentives could have a positive impact on the real estate industry and reduce the pressure on our electricity supply.

> If we now have a 4 Star Green Rated building, there is an environmental benefit, surely there should be a little bit of a kickback on your rates or tax breaks or something to motivate the industry? It will be great and that is where council needs to come to the party, because, at one stage, there was a whole who-ha about PV, what they can charge. So they also have to, it would be great if they reduced assessment rates for Green Star buildings. (Respondent 9)

We'll give you the option of CIDs, tax rebates, what went from a couple of specialised developers, everybody jumped in. In this country, big brother is the government, if the regulation changes we can pull the green buildings forward. (Respondent 5)

From a government side, I would imagine … if you are building a green building, you need tax subsidies, put cash back into the system, instead of your normal rates account, your account is reduced by 50%. So if you are a 5 star rated building, it is good for the environment etc., so we are going to slash your rates in half, because you are doing well. (Respondent 3)

We need a regulatory body that ensures that the right thing is being done, as well as policing it, because currently nobody is policing it. If you are saving on CO^2 emissions then you need a tax break or something to incentivise companies to do the right thing, but not only that, regulation needs to ensure that the money goes back into the industry and that it is not just another burden on the industry, another form to fill out, something else to comply with. So the policing is important to avoid unnecessary regulation, as well as ensuring the money goes back into the industry to grow the industry somehow. (Respondent 10)

That whole idea of having a green fund, what would the implications be in terms of tax rebates, government rebates, is there an incentive to do it? We need the government to say we are going to stand up and do this, we are going to regulate this, guys who have 20% green in their portfolio will get a rebate, like they do in inner-city development. (Respondent 5)

There should maybe be a subsidy on your tax, but really it is not that difficult. (Respondent 2)

…that there needs to be leadership and leadership is presented with terms and incentives. So CID, tax rebates and I also think if we can think green outside of Sandton and Cape Town, I think the changing of the green idea is key. (Respondent 5)

The regulation in this regard is lacking and companies should be able to produce their own electricity and put it back into the grid that what is additional and use the profit to pay back the solar quicker. This is what needs to happen, but government regulation is

not coming up to speed to deal with the electricity issue and we are all spending money on generators, which is the least carbon efficient of anything. This is what I don't understand. (Respondent 7)

I don't think until it is legally promulgated, that you need to act like this and you have to install this or have to do that, I don't think until that date comes and everybody has to do it, it the green buildings will attract great staff, not until it is legally promulgated will you get all the investment companies on board because of the finances. (Respondent 3)

Maybe if the industry is forced, you must force the industry, like a law, you say to the guys, you cannot install asbestos, we spent lots of money taking it out, but we had to do it. So you are saying now, these lights are a problem for the environment and insert LEDs, it will be done. (Respondent 9)

The incentive would have to be … tangible, in order for us to justify the costs and also if we are going to ask tenants for their inputs as well, then we will have to be able to prove that there is value in it for us and them to spend the money. (Respondent 9)

I also think that the building plans that are being passed takes months to pass, but if it's a green building, let's get it done in a week, because the guys are putting effort in and fast track the green building past everybody else. So from government we need tax subsidies and building plans fast tracked, no questions asked, that is an incentive that could help. (Respondent 3)

I just think that the government is pretty rudderless, it is not a focus for them and I don't understand all the conventions and what is globally, but I just don't think they can get simple things right. It is really lagging; you need a leader that can enforce it. (Respondent 2)

Nine out of ten of the respondents referred to the green building movement in Australia and how government involvement and regulation has driven the green building industry there significantly.

Our question is, where is our incentive, where is our contributions, savings, rates holiday or tax break, that is why Australia is so far ahead. It dictates your behaviour and what you are going to do. (Respondent 6)

> Certain regulation the Australian government that is driving efficiencies, they have something called 'a neighbours rating', it is not rating your neighbour, but it is an energy efficiency rating that you need to disclose when you sell off a building. That was made a requirement by government, so that also drove the energy, green buildings more than what we have done in South Africa. (Respondent 4)

> I will tell you the difference, America, Australia, the governments are backing it, and here you have a government official doing nothing. So what I am saying to you at SAPOA, we have these guys, they say like let's do this whole greening thing, but you are going to pay for it. We have done it the other way round [from Australia], we have driven the certification, but the bench marking is lacking. The government must put certain stuff in place and meet a certain requirement before certification. (Respondent 4)

> For Australia they still get a return, if they don't they get massive penalties, but there is still a returns based approach. We need incentives, Australia works well, because it is driven by government and regulated. Don't forget here you have so many other initiatives that government requirement as well. (Respondent 6)

> They make it easy, UK, Australia, they make it easy, so everybody decides, hey actually good to be green and consider the environment. Then it changes the mind-set, so suddenly your tenant that currently doesn't care, suddenly says hey, next time you build me a building I would like to be green and then they will come to us and say we will only rent a green building, because the whole mentality has changed. (Respondent 6)

One respondent linked the Australian green building industry to the leases written for tenants, which was a further indication of the lack of regulation in South Africa to incentivise green building investment.

> Speaking about green leases, I can't believe that is how they do it anywhere else in the world, like Growthpoint is doing it. All the other places, they also get tax breaks, government should say they want you to have a green rating, but then they get incentives. (Respondent 6)

Out of the ten respondents, two are serving on the Green Building Council and an additional

five respondents found value in the establishment of the Green Building Council of South Africa.

> I think the establishment and entrenchment of GBCSA has been an important and fundamental catalyst to the extent it's no longer a 'nice to have' organisation, but it is an organisation now that is of national stature to the extent of saying continental stature. (Respondent 1)

Three respondents made specific mention of the costs and administration involved in the registration of green buildings which was an indication that the regulation is in place, but the process to register is too arduous and expensive.

> It is so onerous to get that final stamp; I just know that it took time. (Respondent 9)

> There is also big a cost involved to actually get the rating itself. (Respondent 6)

> We looked at getting buildings rated, but didn't look at it again. It was ridiculous; I think … for a 3,000 square metre building it was something like R400,000, just to get the rating, without the work, to do anything else. So now the question is, we do the rating and then you come back and you say either your building is fine, or you spend another R1m to get your building where you want it to be. (Respondent 9)

> The fees that must be paid, just to the council itself and they said no, it's not impossible, it's like a filing fee and it's a R120,000 filing fee, it's ridiculous. That is something that must be regulated; I don't know why they charge such a fee. Other than that, I think there is also lack of knowledge in terms of what makes a building green. (Respondent 9)

For some respondents, the lack of action from government regarding the energy crisis and the hypocrisy of government behaviour when it comes to greening of buildings and, by extension, the environment, is difficult to contend with.

> I still think a lot of our economy is housed under parastatals and governments, it is so unfortunate, but the funny thing is they basically insist on the greening of their premises. It might be like a coal smelter in the middle of nowhere and then have this green office with this one down-lights and recycled grey water. (Respondent 5)

> The ivory towers and the disparity between rich and poor is terrible in this country, if

> you had a collective bridge between those two, I think there would be a far more, open approach to being earth friendly. (Respondent 5)

> … in that instance, maybe the sector move and adopt a standardised way of regulating and justify the pricing for that stock. (Respondent 1)

> The whole Eskom with what is happening with energy and stuff, having generators in the buildings, negates any greening you do. (Respondent 6)

> We have fundamental structural issues in our country before we can even look at these things. Solar, you would say, we have 300 blue skies years, solar costs a fortune; you can't put it back into the grid, because it's an unstable system. That has to change, they have to change this whole grid thing. If you allow people to put back into the grid … you will have solar increasing significantly. It would be great to be able to put back into the grid; it would bring down the costs, because you are importing energy. Government needs to let go a bit in terms of their monopolies that will make a massive difference. (Respondent 6)

The role of Eskom, or rather the lack of performance from Eskom, was mentioned by eight of the respondents. The respondents and their respective funds were of the opinion that, as a fund, a part solution could be offered to the electricity supply shortages we are facing in South Africa.

> So we go and generate power of the solar panels at a fraction of the cost of Eskom and we make a margin on that that is a greater margin than if we were just a re-seller of electricity. So that makes sense for us, but then we also get to control the cost we charge onto the tenants, so instead at 15-20% per year, we escalate at 8%, but we still make a proper margin. (Respondent 6)

The frustration with regards to regulation not allowing independent electricity suppliers to input energy into the grid, was often raised as a frustration and could be the incentive real estate funds are looking for to invest in alternative energies and make their buildings greener.

5.5 ADDITIONAL FACTORS

5.5.1 Leadership

Leadership deals with research question 3 in the sense that leadership is required for change to happen.

> There is plenty of things to do if there is the will and the leadership. (Respondent 2)

As with most industries, leadership, vision and will are required to drive change forward within the green building space. Findings indicate that there is a definite industry leader in the green building space who had the foresight to see the value in green building investment and to create strategies that could work for them.

Another part of the industry recognises the industry leader, but is reluctant to get involved with greening their own buildings as they have not been able to see the financial returns, possibly due to a lack of leadership within their own companies.

> We are having a couple of guys who are spearheading that space and are probably a couple of years ahead of the crowd, but 80/20 the 20 is just the spear headers and they are roaring ahead and cheering everyone on, the 80 are like, 'not so sure, guys, not so sure'. (Respondent 1)

> I think it is gaining traction and as the funds hear of other funds doing things and Company A is the leader, those are the guys that will give you the best information. They are the leaders. (Respondent 2)

All respondents referred to the Company A as the industry leader that has the buy-in from senior management, as well as a focused approach to the process, indicating the value and importance of leadership within the industry.

> I develop the whole strategy for the greening of our buildings. It is also a senior divisional director who is driving this process, he is also the deputy chair of the Green Building Council of SA and also a director of the World Green Council. This whole green initiatives and green interventions was started by him and he brought me into the company to draft and formulate a good strategy for the company. (Respondent 3)

5.5.2 Skills

The responses regarding the availability of skills were mixed with respondents employed by larger real estate funds indicating that they believe the necessary skills are available, even if it is in the form of consultants.

> We have got the people and we have a lot of engineers, so I don't think we have a shortage of skills in the industry. (Respondent 9)

> Yes, I believe we have the correct skills available to us, there is a large number of consultants that are specialised in different aspects of the greening of buildings. Professional teams are available to provide the correct consultation and provide the correct advice to adapt to new technology and how to apply this. (Respondent 10)

Respondents employed by smaller funds felt that the South African market does not have the required skills or technology to move the market forward.

> I don't think we have the skill to value that greening properly, the valuers don't understand all the elements yet, these 10 or 15 green elements your building should be higher compared like-to-like you should get a 10% premium. Over the next 10 years, we could get there. (Respondent 3)

> I am not sure if we have the right technology yet, because something like solar is still just too expensive. (Respondent 7)

The differences in responses regarding the skills available within the green building industry could be attributed to the exposure that respondents have or do not have to the investment and development of green buildings.

Because green buildings are not a focus for smaller real estate funds, these respondents indicated that they have not, as yet, had to explore the available skills level within the market whereas the larger funds had exposure to the wider industry and the skills available, either employed internally or using consultants in the development and implementation of their green initiatives.

5.5.3 Changing Industry

All ten respondents were of the opinion that the real estate industry, in terms of green

buildings, has been changing, especially over the last two to three years and will continue to do so, even though some respondents do not focus on green buildings as a part of their internal strategy.

Real estate companies believe the industry is already changing, but that some are not adapting to these changes. Their future strategies must include the greening of buildings because they simply cannot afford to ignore the impact of the growth and development into the green building space.

> It has become a priority, I'd say over the last year, he (a colleague) brought a lot of knowledge with him and encouraged us to just, well, he initiated, getting the green star ratings for some of our existing developments. (Respondent 9)

Industry leading companies are also stating that the industry will be changing going forward, because it is also the correct thing to do for any environmentally and socially responsible company.

> For us it's about doing the right thing, about saving the environment and some of the clients are more, buildings generate more than 40% of CO^2 and because of the product we deal with, by us doing the right thing, it will hopefully, even it is a small thing, only 500 buildings, it will help with what's going on. (Respondent 3)

> Even though it is slow, it is definitely catching on and as you get these companies evolving as well, they are actually doing. So I think once the property management companies evolve, things are going to be very much be progressing. (Respondent 2)

> Yes, definitely, what you will see is that we put a statement out there, any new development that we are doing will be a minimum of a 4 star green star rating and how we see a lot of other companies coming on board. In the last 2 years, a lot of other listed property companies that is jumping on the bandwagon, it creates some credibility to the industry, it puts a brand to the certification. (Respondent 4)

From an industry body perspective, respondents mentioned SAPOA (South African Property Owners Association) and that green building development had been discussed at SAPOA but respondents were not convinced that anything substantial would emerge from it.

> Yes, I do believe the industry has been changing, it is something that is mentioned at SAPOA and that we are aware of. That doesn't mean we are doing anything about it, because of the lack of financial incentive, but it is something we are aware of. (Respondent 7)

5.5.4 Fund Size

The size of the fund and the strategy development are closely linked to research question 1.

Eighty per cent of respondents were of the opinion that the size of the industry plays a role in the funds' involvement in the green building space.

> They (Company A) have got volume, huge volume, I think they have about 20 odd green buildings, we've got one. I think you also have to look at it as a percentage of the total portfolio, but, maybe I suppose, it's also experience, they do the first 5, they realise what's involved and the team runs with it and that's time consuming. (Respondent 9)

> It is very easy to see, for instance, if they develop one property, it is very easy for us to duplicate that is what happens in the industry, they will do one and then it will be duplicated. (Respondent 9)

This could be interpreted as having funds available to subsidise pilot projects and test whether the financial return could be achieved or use the green project investment as a part of the social responsibility initiatives.

> They have enough fat in their returns that they can reduce the returns in order to cater for the triple bottom line. Meaning you drop your profit line to cater for your social responsibility, which is what a lot of companies are doing, that is exactly what they are doing. (Respondent 9)

The availability of capital to spend on project upgrades could very well be a limitation for smaller funds who have extremely tight budgets in place and any capital budget not spent will be allocated towards shareholder returns as this would directly affect the returns of the fund to a larger extent.

> Yes, I think it is easier when you have some capital to spend and to fast track decisions, because your small capital is often trapped and protected, as to not use it for in case

> you urgently need it at some point. Your payback period is often then non-negotiable and hard to achieve. (Respondent 10)

5.5.5 Green Fund Creation

The idea of the establishment of a green building investment fund that only makes investment into green buildings and their development to attract more international attention to the South African industry, was received positively from those respondents who understood the implications of the creation of such a fund.

> Yes, something to look at. I don't think we will partner with somebody else, but it will be an option. (Respondent 4)

The creation of a green fund could contribute to attracting additional knowledge and skills internationally to South Africa.

> I definitely think there is value although there is power in it, I think there would be value and it would probably help with knowledge sharing, collaboration, because I think with greening, it is not like one over each other, so if we could collaborate we could get better results. So I reckon it's a good idea. (Respondent 3)

5.5.6 Triple Bottom-Line

Large corporate companies are using the triple bottom-line concept and implementing this into their overall social responsibility. Larger real estate funds focusing on green building investment are using it as a part of their triple bottom-line concept, which takes care of the environmental angle.

> You sit on the board and the question is, the new financial reporting, you are going to go triple bottom-line, you are going to be socially responsible as well, they are going to say that, they are going to say what their initiatives are. So when you are international, that is definitely a huge thing with international companies. (Respondent 9)

> They did that around their core strategy and they took their tenants along on the journey. They also focus on their ESGs, same as we do, Environmental, Social and Governance. (Respondent 10)

CHAPTER 6: DISCUSSION OF RESULTS

6.1 STRATEGY

Reference to research question 1 is made here.

6.1.1 International Links

Companies that have links or exposure to international companies or countries where green building investment is a priority, could be clearly seen as proactive in the development and understanding of green buildings and the impact this could have on their portfolios. All respondents referred to the effect or influence of international tenants or tenants whose base company is not South African. Respondents were all of the opinion that international companies with international links are more likely to have a green building or a green image than local South African companies apart from very large corporations locally that have to uphold an image conscious reputation.

Referring to the real estate company that is the market leader in the green building space, mention was often made with regards to their international exposure and the real estate property fund they operate in Australia. This influences their approach to green buildings in South Africa. It was agreed that international companies are much more aware of the importance of renting a green building.

Leasing space in green buildings could attract more corporate, image conscious tenants who want to uphold the image of responsibility towards the environment. The benefit to the landlord is a more stable, more liquid cash flow from a stronger tenant, as well as a tenant who would care for the asset to benefit their own image (Eichholtz et al, 2010).

6.1.2 Dedicated Teams

Larger funds also had a focused strategy in that they had a dedicated team or individual managing and growing this portion of their business. “Going green” was also ingrained in their philosophy through strategies such as constructing new developments as green buildings.

Those companies that have a dedicated team or individual focusing on the development,

understanding and implementation of the green strategy, found that the strategy was more successful. The selection of a dedicated team involved early in the process of developing the Memorandum of Understanding was critical to the commitment and success of the strategy developed in Australia (Bond, 2010).

Those individuals employed by smaller real estate funds, with smaller balance sheets, questioned whether they should get involved if they were not the leaders or specialists in the green building field. The smaller fund respondents did not have a dedicated team or resource that is solely responsible for the implementation of the green building strategy. They were of the opinion that there is no financial return to the real estate fund and if the smaller fund were to spend money on greening the building, the benefit would purely be for the tenant and would not contribute to their primary strategy which is to make a targeted return on an annual and continuous basis.

The larger real estate funds that had dedicated teams focusing on the development of the green building strategy also had enlightened business leaders that could influence business decisions and management buy-in which plays a major role in the success of the dedicated team and the mandate they are given (Willard, 2012).

6.1.3 Reactive vs Proactive Environmental Strategies

Reactive strategy implies that companies have a knee-jerk reaction to their environmental strategy (Buysse, & Verbeke, 2003). This was obvious in the findings from the smaller funds who often stated that they would not be investing in the greening of their buildings, except where a larger tenant's lease is up for renewal and they would use it to ensure the tenant renews the lease. If the tenant threatens to move to a different property, the landlord could implement greening to reduce the tenant's operational costs.

In the case of the larger funds, there is a more proactive investment strategy approach whereby companies invest in clean, sustainable buildings or contributing factors that make the building greener in order to reduce the operational costs. The management team has a long-term vision, with strong leadership and the required resources to achieve the company's green vision and strategy.

6.1.4 Measurement Tools

Those real estate funds that are successfully implementing and investing in green initiatives or green buildings have a definite measurement tool or structured plan in place defining how they are going to achieve the targets they have set up. The Life Cycle Costing (LCC) is a formula used to measure success of energy efficient upgrades to buildings. All factors such as investment types, lead times, the funding size required and opportunity costs of other investments can all be measured by the LCC to ensure success is achieved (Kibert, 2004).

In Singapore, the government implemented a strategy that, by 2030, 80 per cent of all buildings should be green buildings. The target is straight forward, transparent and easy to understand by all role players (Hwang, & Tan, 2012).

6.1.5 New Building Development Strategy

All of the larger funds where respondents were already involved in the green building spaces as a part of their strategy, aim to have all new developments, in conjunction with tenants or not, rated as green buildings. These funds seem to have an understanding that the smaller funds do not yet possess which is that if they spend capital on features that contribute towards energy savings, they could achieve a green building with only a 1 to 2 per cent higher capital cost required for development (Bond, 2010).

6.1.6 Green Leases

Even though the landlord provides the capital for upgrading buildings to green buildings, the tenant derives the benefit in the form of reduced operational costs. The real estate fund that is both the property and green building leader in South Africa, has a focus on green leases and how to structure them for the tenants.

Findings in England and Wales stated that 69% of leases in place contain some form of green provision (Bright, & Dixie, 2014). Green leases could be offered as the solution to the landlord/tenant dilemma to ensure that both parties benefit from the green initiatives in place, as well as the achievement of greenhouse gas emission reduction targets that are set by regulation (Brooks, 2008).

6.1.7 Doing the Right Thing

Those real estate funds that are involved and already focusing on the green building space all stated that, apart from the potential or actual returns they are achieving, they also believed that this is "the right thing to do" because they cannot simply ignore the effect their operations have on the environment.

A Canadian study found that customers, shareholders and local communities are all concerned with environmental practises of companies which means that landlords cannot ignore the implications of their assets on the environment (Buysse, & Verbeke, 2003).

Green business makes a distinction between companies that are purely complying from an environmental perspective versus companies that are proactive in their strategy with regards to environmental concerns and the concerns their stakeholders might have in relation to the environment (Buysse, & Verbeke, 2003). The industry leader in the green building space understands that, from an environmental standpoint, investing in green buildings is the correct approach for the future and that by reducing their carbon footprint, they are contributing to the reduction of the 40 per cent greenhouse gases emitted by buildings (Eichholtz et al., 2010).

6.2 GOVERNMENT

Reference to research question 3 is made here.

6.2.1 Government Strategy

The involvement and regulation created, implemented and policed by government was one of the major findings of the study. All respondents felt that government needs to play a much larger role than it does presently in the green building space in order to incentivise real estate funds to further encourage investment in greening initiatives. The lack of strategy or strategy options were evident in the responses received because respondents felt that government should have strategies in place in a variety of different areas within the industry.

In China, various regulatory strategies have been developed and implemented. Tax breaks, reductions in rates bills and fast tracking of green building plans can be linked to the positive

effect of regulation as a strategy to reduce municipal service fees and costs for green developments that could be successful in South Africa (Zhang et al., 2011). Combining all these regulatory strategies in China has led to a proven reduction of 58,1% in energy costs and 21,6% in water costs for those developments that were green. If government regulations could be implemented, that would incentivise real estate funds and owners to implement green initiatives to affect traction in the investments in green buildings.

Research comparing South Korea and South Africa defines three pillars that could lead to the successful implementation of green building regulation strategies to ensure incentives for South African real estate companies to develop green buildings. They are: reducing GHG emissions from industries, incentives for business to develop green technologies, products and services, and public information tools for the increased demand for green products (Nhamo, 2013).

6.2.2 International Comparison

The number of comparisons drawn between South African real estate companies and the success of Australian green initiatives show that Australian regulations have been the catalyst for change. The creation of the "Australian Building Greenhouse Rating" scheme, with its focus on the benchmarking of greenhouse gas emissions, is run by The Department of Environment and Climate Change in Australia (Newell, 2008). The Australian government has also introduced a minimum required standard for government tenants in office buildings as a way of indicating that government is committed to the process of greening the building industry (Newell, 2008).

Respondents' frustrations regarding the energy shortage and the management of electricity in South Africa could clearly be seen here. The opinion of the South African real estate industry is that government and government regulations should be "leading by example" when it comes to the management and implementation of green building standards. There was also frustration around the pollution created in South Africa through government entities creating electricity by burning coal. This is counterproductive to any greening efforts made by private institutions. In addition, the use of a large number of generators due to a shortage of electricity negates any positive initiatives implemented by private companies.

A study in Singapore regarding the obstacles and solutions for green building investments showed that the cost of construction of green buildings was still the number one barrier to the development of green buildings. One solution was that government widens its incentives to the real estate market and those players who are developing green buildings. In addition, the development of a project management framework developed by government, in conjunction with private sector skills, was also suggested as a solution (Hwang, & Tan, 2012).

The same study found that the Singaporean government put a firm, straight forward target in place that 80% of all buildings in Singapore will be classified as green buildings by the year 2030. Respondents mentioned that the targets should be simple and clear but that the requirements from the Green Building Council of South Africa are vague and difficult to understand.

6.2.3 The Future

Respondents were aware of the lack of strategy and a future plan for the South African real estate industry. The need for government regulations to be developed for the future was clearly evident, as there is currently no such strategy in place to ensure the continued investment into the green building space. The establishment of a future plan for the South African green building industry is crucial in order to involve the private sector in the development and financing of green assets (Nhamo, 2013).

Respondents who were already involved in the green building space all referred to Sandton,Johannesburg and Cape Town as the central hubs of green building development or greening initiatives but that there was a lack of understanding and standardisation of what exactly is a green building. Government standardisation across the industry and country is required to ensure that all players know exactly what is required to qualify as a green building and that all cities have similar standards (Hwang, & Tan, 2012).

A standardised approach across the entire South African real estate industry, including industrial, retail and commercial property, can be developed and could assist in ensuring that the implications, requirements and measurements are clear and understandable, similar to the 2009 Memorandum of Understanding in Australia (Bond, 2010).

Every respondent felt that a strong government involvement is required to establish the correct incentives (economic support) for companies to make green investments a reality. This will make financial sense and provide the required returns to be able to put the funds back into the industry and create a continuous cycle of investing in green buildings. The lack of infrastructure and involvement of the local councils was also mentioned. It is believed that they are not functioning optimally at the moment and, in order for any green building regulation to be a success, the municipal councils will have to be running efficiently. This means that additional economic support and infrastructure is required to drive the green agenda (Nhamo, 2013).

6.2.4 Cost of Regulation

The cost of regulation and complying with green building standards was mentioned as a concern especially from the perspective of those funds that are trying to register their buildings with the Green Building Council of South Africa. Similar situations were found in Singapore, where developers felt that the cost of regulation, compliance and building codes was too expensive to justify the additional capital outflow to develop the new green building and also to get accreditation is too high and legislation is difficult to understand (Hwang, & Tan, 2012).

All respondents that were already involved in the green building industry, with buildings rated by the South African Green Building Council, mentioned that, in order to register, the compliance with green standards is a costly and often lengthy process. They felt that this process could be easier and should run smoothly. The cost of compliance can also reduce the profits of the company, or limit the funds that could be used for additional green initiatives or to retrofit a traditional building to be a green building. The correct balance between the cost of regulation and green building investment needs to incentivise the real estate industry to invest additionally in green buildings (Tan et al., 2011).

6.3 STAKEHOLDERS

Reference to research question 2 is made with regards to the importance of tenants.

6.3.1 Tenants

Those respondents already involved in green building spaces made mention of the quality of tenants they attract and the standard of professional environment required by these tenants.

The effect of indoor environmental quality on employees' health, wellbeing and productivity in their work spaces can affect employees' productivity negatively should the lighting be inadequate, should there be poor air quality, extreme temperatures and insufficient ventilation. These factors lead to increased absenteeism and reduction in productivity (Singh et al., 2010)

Attracting and retaining quality tenants was one of the major concerns mentioned by all respondents. Addressing environmental and sustainability issues in a systematic way leads companies to focus on core business objectives, such as hiring costs, improved productivity, reducing unnecessary expenses at commercial sites. Focusing on core business activities and ensuring employees are sufficiently satisfied in their working environment, would mean a reduction in employee turnover, as well as improved productivity (Willard, 2012).

6.3.1.1 Tenant Buy-In

For a landlord who owns the property and lays out the capital, tenant buy-in is still a crucial factor (Bond, 2010). Mention was often made during the interview process, when discussing the reluctance of landlords to invest in green buildings that tenants are not willing to pay more rental in order to compensate for higher capital outlay. Where tenants were buying into the concept of energy savings and realising that their operational costs could be reduced, the financial return for the landlord made sense and they were willing to take on the capital outlay to achieve a green rated building as well as the required capital returns.

The willingness of tenants to pay a green premium for renting green properties is increasing annually, but location and rent were still found to be more important than environmental or energy saving features to most tenants (Bond, 2010).

6.3.2 The Tenant/Landlord Dilemma

The tenant/landlord dilemma where landlords input the capital costs, but tenants pay for

the energy and water consumption is difficult to overcome. The barriers preventing technological advancements in this space were attributed to a number of factors including a lack of financial incentives and life cycle perspectives, a lack of political consciousness and a common objective between stakeholders (Ástmarsson et al., 2013).

Where reference was made to tenants, this mostly referred to smaller tenants who are struggling to survive in the current economy. Smaller retail tenants will not buy into the idea of paying more for their portion of Solar PV, for example, because they may be in the retail space for shorter periods than large tenants. This affects the payback period that is acceptable within the real estate fund's benchmark returns.

Some respondents mentioned that tenants were willing to buy into the idea of greening their buildings if there was proof of a reduction in energy costs or, as referred to by respondents, a reduction in operating costs. Numerous studies found that energy savings or operational costs could be lowered by anywhere between 30 and 50 per cent (Zhao et al, 2014).

In Switzerland, it was found that tenants were willing to pay up to 7 per cent higher in rental premiums if proof of energy reduction could be shown (Popescu et al., 2012). In the United States, green certified buildings had an average saving in energy costs of about $1.38 per square foot in operational costs and maintenance (Zhao et al, 2014).

It could be argued that if the indoor environmental quality is improved, the wellbeing of employees and tenants could benefit from increased productivity and lower employee turnover. Even though this could be difficult to prove to tenants, it could be argued that employee productivity will be higher in a green building. This argument could be used during the renegotiation process of tenant leases.

For the smaller funds, whose focus is not on the greening of buildings, it was mentioned that these smaller funds will go out of their way to avoid losing tenants to other landlords. This could include the greening of their buildings.

6.3.3 Landlords

The smaller real estate respondents were of the opinion that there is no financial benefit in

greening to themselves, but only to the tenants. This perspective prevents landlords from investing additional capital in green initiatives or green buildings.

Landlords are not always knowledgeable about what aspects of a building needs retrofitting or upgrading to green status. Landlords need to ensure that they understand where their buildings are underperforming from an energy consumption perspective. A very close working relationship between tenants and landlords is required in order to ensure that the required upgrades are done as per the tenant's feedback with regards to building performance (Menassa, & Baer, 2014).

6.3.4 Immediate Surroundings

Respondents were aware of the quality of their neighbours' assets and the subsequent effect this could have on the future value of their assets.

Customers, shareholders and communities are concerned with the environmental practises of landlords and the implications of these environmental impact factors (Buysse, & Verbeke, 2003).

6.4 RETURNS

6.4.1 New Developments

The difference between upgrading and retrofitting old buildings to green buildings versus the development of new green buildings was often mentioned. Eighty per cent of respondents did not believe that there could be a financial return achieved from the upgrading or retrofitting of old or older buildings to green status buildings.

The role of the construction industry, especially in the new green building development space, cannot be underplayed. The funds that are focusing on the development of green buildings have realised this and respondents stated that the investors are working very closely with the construction companies and the developers. This was evident from the responses of those real estates' respondents who were involved in developing a building specifically for a tenant on the tenant's specifications and requirements.

Collaboration between the different parties could lead to significant improvements in the

green building development space. If there is enough research and development to manage the risks, sufficient training and development to ensure all the necessary resources have the correct skills, a co-ordination in the supply chain, good communication in order to share knowledge, information and experience, as well as the use of the right technology to advance the building process and to ensure that costs and risks are as low as possible, sufficient returns can be achieved (Couani, & Zou, 2012).

The LEED rating scale in the United States defines a light green building as one that is built on green principles. It emphasises energy efficiency and is more focused on the quantitative outcomes (Tang, 2012). Respondents who are employed by smaller real estate funds referred to this stating that the investment does not have quantitative returns.

6.4.2 Retrofitting Existing Buildings

The major challenge found that persuades real estate funds not to invest in green buildings was clearly stated as a lack of financial returns. This was supported through research done in Singapore that found that the number one barrier to green building construction is still that of project costs (Hwang, & Tan, 2012).

Those respondents who are employed by larger funds felt that the rental returns are there and they have seen these returns in the manner they are able to structure some of their leases. These higher returns could be attributed to the type of tenants that use larger real estate funds. They tend to be companies with an international footprint who have had exposure elsewhere in the world where they had to comply with green building standards and are now transferring this mind-set to their South African offices. Leasing space in green buildings could attract more corporate, image-conscious tenants who benefit the landlord in the sense that the cash flow and income is more stable and liquid (Eichholtz et al, 2010).

Similarly, respondents employed by larger real estate funds felt that the rental income is higher and that the capital growth is very closely linked to the rental income. When selling a property, the type of tenant in the property makes a difference. If the tenant is a stable company with a consistent cash flow, the buyer of the property would be willing to pay a premium for the asset. Energy Star rated buildings achieved a 19 per cent price premium over traditional buildings when comparing a total of 199 buildings with each other over a

period of three years (Fuerst, & McAllister, 2011).

Fuerst and McAllister (2011) found a higher rental income of 3.3 per cent per square foot for green rated buildings. A separate study in the United States done on 336 green and 1114 traditional buildings found that green buildings achieve between four and five per cent higher rental income and higher market sales of 14 to 15 per cent (Popescu et al., 2012).

The reason that real estate funds believe there is no investment return to be achieved may be because of unnecessary spending of capital on features that are not contributing towards energy savings. When a philosophy of not spending money on features of a building that was not contributing to a reduction in operational costs, such as the painting of columns, or common area finishes that are high costs, it was found that the additional cost of building a green rated building in Australia was only 2% higher than that of a traditional building (Bond, 2010).

The studies all indicate that there is an additional return to be achieved through spending additional capital, but spending additional or unnecessary capital should be limited to those features that are really in need of green retrofitting or that will be contributing to a financial return.

6.5 ADDITIONAL FACTORS

6.5.1 Skills

The findings on skills had mixed reactions from the respondents. As was found in China, a lack of knowledge and awareness of green technologies and their implementation could lead to decision makers curbing the process as they may lack the skills and understanding, especially in smaller fund spaces (Zhang et al., 2011).

The respondents employed by larger real estate funds responded positively believing that the South African real estate industry does have access to the correct skills and a significant knowledge base. Singaporean research had similar results in that, even though the cost of investment was high, there was no shortage of knowledge regarding green building construction in the real estate industry (Hwang, & Tan, 2012).

An understanding of the difference between active and passive design strategies could be

interpreted as a lack of certain skills. Smaller real estate fund respondents stated that they will only go out of their way if so required by the tenant they could lose, as opposed to larger real estate funds that have access to the required skills in order to enable them to have a proactive approach and reap the benefits, financially and from a tenant retention perspective, as well as from a reputational perspective.

6.5.2 Industry and Perception Change

All respondents, whether they were involved or not in green building spaces, stated that they believed the real estate industry is changing and that focus will continue to be given to the green building space.

Through its evolvement in almost all developed countries, the changing nature of the green building space is evident worldwide. This could be seen in the development of LEED (Leadership in Energy and Environmental Design) in the United States, where different levels of green rated buildings are achieved (Tang, 2012). Sustainable practice developments that had a number of regulatory strategies that evolved were also implemented in China (Zhang et al., 2011).

In South Africa, the establishment of the Green Building Council of South Africa gave developers and landlords a reference base on how to develop green buildings and how they can be rated and assessed on a common, transparent basis. GBCSA is part of a network of 95 members worldwide that developed the Green Star Rating system for South Africa.

Even though a large number of the respondents have not made any changes within their own real estate companies, all of the respondents were of the opinion that the industry has been changing significantly over the last two to three years and that the focus was now firmly on the greening of the working environment.

A South African industry leader has emerged that is driving the change significantly and even small real estate funds were of the opinion that they might have to consider changing their perspectives going into the future in order to stay relevant and competitive, as long as the financial incentives were worthwhile. The expectation is that this change will continue happening in the industry and the private sector and that the larger real estate funds will continue driving for change from within the industry.

The establishment of the Green Building Council of South Africa is indicative of the changing nature of the green building industry and the shift in focus towards this. Further support of the changing nature of the industry from a government perspective was the awareness found in all respondents with regards to the Department of Environmental Affairs building which is a green rated building by the Green Building Council of South Africa. Respondents were of the opinion that this is a shift within the industry towards a more conscious move from both the private and public sectors.

6.5.3 Triple Bottom-line

Respondents made reference to the triple bottom-line concept and how the sustainability portion of the concept referred to the development of green or sustainable buildings. Larger real estate funds have the triple bottom-line as part of their KPIs (Key Performance Indicators) whereby real estate asset managers are rated and critiqued on their ability to ensure environmental sustainability within their businesses.

A tool used in South Africa, the Sustainable Building Assessment Tool (SBAT), incorporates social, economic and environmental criteria and could form part of the triple bottom-line principle to which respondents referred and can be used further in South Africa to ensure the success of green building investments.

6.5.4 Leadership

Respondents referred to one specific company in South Africa that is viewed as the industry leader within the green space and other portions of the private industry. It is investing in and leading the industry to change but, at the same time, making reference to a lack of leadership in the municipal and government spaces.

Although certain pockets of the private sector are attempting to change the industry and do what they perceive as being right, reference to a lack of leadership in the government and municipal sectors was made. For green building initiatives to be successful, municipalities have to play a leadership role in the development of green buildings and the incentivising of green building initiatives (Lee, & Koski, 2012).

6.5.5 Size of the Fund

All respondents made reference to the large industry leading fund that is driving the industry towards a greener environment consciousness. The larger the number of buildings in a fund, the larger the opportunities for green building investment. Respondents who are not employed by this specific fund were all of the opinion that the size of the fund made a significant different with regards to the ability to invest in green initiatives.

Respondents were of the opinion that the larger the fund, as a percentage of the overall funds, the better the ability of the fund to test new green building investment initiatives, learn from mistakes and make better decisions with regards to green investment.

CHAPTER 7: CONCLUSION

7.1 INTRODUCTION

In this chapter, the main findings of the research are discussed and suggestions for future research as well as recommendations to stakeholders are made. The role of management in achieving green building success is also discussed.

7.2 FINDINGS

7.2.1 Mixed Findings on Financial Returns

The differences in the abilities of smaller and larger real estate funds to gain a definite financial return outcome has been a consistent contrast throughout the research. Smaller funds were of the opinion that there is no financial incentive to invest in green buildings, whereas the large real estate funds were convinced that there is a financial incentive and returns.

Larger funds were able to find models that could ensure financial returns. These models took on the form of green leases, or involving tenants, so that the tenants carry some of the capital costs while gaining the reduced operation cost benefit.

7.2.2 Type of Tenant

The type of tenant plays a very significant role in whether a real estate fund would invest in green buildings. Tenant buy-in is vital to the financial and environmental success of any green building investment.

International tenants and large corporate tenants who are image and/or environmentally conscious cannot afford to be seen in the market place as irresponsible. These are the tenants who are most likely to share costs and buy into the idea of green buildings. They will also have a clear idea of what they require from the investment and their building especially if they have international links and their parent company in a foreign country has specific requirements with regards to green specifications.

Larger corporates based in South Africa will also receive certain standards to achieve by their corporate offices as is the case especially in the large corporate retail sector where

stores have to achieve a certain look and feel while, at the same time, adhering to set energy consumption standards.

7.2.3 Government

The role or lack of involvement from government with regards to the creation of incentives for real estate funds to invest in green buildings is very obvious. The involvement of government is required in order to encourage the real estate industry to ensure that investment is continuously made into the green building and green initiatives spaces.

The behaviour of government and the pollution created in South Africa due to the heavy reliance on coal for electricity is seen as counterproductive. Government needs to ensure that pollution levels are at a minimum. Government needs to "up its game" and start leading by example to enable the private sector to follow suit. The private sector is already implementing certain initiatives but, on its own, it is not able to make a substantial change.

The investment in green buildings, such as the installation of solar PV, could assist government with the electricity supply and reduce the heavy reliance on the grid. This would have a twofold advantage, the pressure on the grid would be reduced and the real estate industry would attract additional investment in green buildings.

7.2.4 Education

A lack of education within the green building space could be seen but the size of the fund plays a significant role in how focused and educated an individual is on green building investment.

There is clearly a disconnect between what the larger real estate funds know, what the smaller funds know and what the government knows about green building investment and what is required to achieve success in the space, as well as how to achieve this.

This is a very limited knowledge sharing culture within the industry and there is also very limited knowledge sharing between the private and public sectors.

7.2.5 Strategy

A focused strategy with definite carbon emission targets that is transparent and achievable is required to ensure the targets are achieved.

An individual or team that is solely responsible for the implementation and achievement of the green strategy is very important to the success of the strategy. Individuals or teams need to be measured and compensated on the basis of the achievement of green building targets and reduced carbon emissions. KPIs that are structured around the green building targets have been found to be the most successful. Without a focused strategy with allocated responsibilities, any green building strategy would end up failing.

7.3 RECOMMENDATIONS

7.3.1 Focused Strategies

Without the required resources investigating, planning and implementing the green building strategy, it will not be successful. The same could be said for real estate funds that are not focusing on green building strategy at all. As long as there is no focus, there will be no progress.

Larger real estate funds, with larger balance sheets have had significant success in Australia due to a focused green strategy in place, being driven by a focused team and management (Bond, 2010). Real estate funds need to implement a focused strategy by starting with a dedicated team or at least an individual who has the mandate to ensure the execution of a green building strategy for the real estate fund.

7.3.2 Green investment fund creation

It is recommended that a “Green Building Investment Fund” is created whereby investors only invest in buildings of a green nature.

The advantage of this fund would be that it could be done in collaboration by a number of funds reducing risks across each fund. A further advantage would be through the attraction of international investors who already are only investing in environmentally sustainable projects and could also transfer this knowledge across to the South African real estate market place, with specific attention on the green building sector.

This would also provide smaller real estate funds the opportunity to get involved in the green building space with relatively less risk. Larger funds that have not been involved in the green building space could also invest in the fund, track returns and investigate how success is achieved by other funds, thus creating an environment through which to be involved on a smaller basis while gaining experience in the process.

7.3.3 Knowledge transfer and sharing

The real estate industry operates in pockets and funds are not willing to share knowledge and collaborate due to competition. In order for the green building area of the real estate industry to move forward, knowledge sharing plays a significant role, especially from larger funds to smaller funds, which will encourage further investment into this space.

7.3.4 Tenant Education

The success of the green building industry and the future investment in it is very closely linked to the ability of tenants to pay a premium for them. It also depends on the tenants to understand their responsibility once the retrofitting of the building has been completed to that of a green building.

If tenants leave an air-conditioner running for a weekend in a building that has light sensors, this negates the benefit of the lights installed by the landlord. Tenants need to be educated of the significant role they play in the success of any green building project. Tenants also need to understand that, as tenants, they are getting the economic benefits of green building upgrades or retrofits due to lowered operational costs on a continuous basis. Operational costs could be reduced between 30 and 50% on a monthly basis depending on what type of green retrofitting has been done (Zhao et al., 2014).

Tenants should also be educated as to the role they can play in the reduction of greenhouse gasses. Keeping in mind that buildings are responsible for up to 40 per cent of all greenhouse gas emissions, they could assist in bringing this down significantly by realising the possible impact they could have (Eichholtz et al., 2010).

7.3.5 Government Involvement

Without the involvement of government and the necessary changes in regulation, the chances of a strong and growing green building industry in South Africa will continue to be limited as only pockets of the private sector attempt to make a difference.

The private sector will have to engage with the public sector in order to implement the required legislative changes to enforce change within the industry. Governments across the world are actively focusing on the real estate sector because buildings are responsible for such a large portion of greenhouse gas emissions (Zhang et al., 2011).

Nhamo (2013) suggested that government implement the following three pillars to ensure the reduction of greenhouse emissions:

1. Reducing GHG emissions standards for different industries. If government puts in place legislation ensuring that the building industry is only, by law, allowed a certain percentage of emissions, this will force the real estate industry to react to the required law and force the industry to comply.
2. Incentives for business to develop green technologies. Incentives for the implementation and investment in green strategies seem to be the key to change in the industry. This means a reduction in a rates bill should the building reach a certain level of greenhouse gas emissions, or a tax rebate on profits that have to be invested in additional green building initiatives.
3. Public information tools for the increased demand for green products. Social media could assist in this regard whereby real estate companies that achieve the required reductions in emissions could be named and the public could vote for the favourite green building per area or per city.

This could be a marketing tool for both the landlord and the tenant of a specific building.

7.3.6 New Building Developments

Ensuring that new buildings achieve green building standards are the least interruptive of any green building upgrades or retrofitting. Starting the building off correctly has additional costs but not nearly to the extent of having to upgrade or retrofit an existing building to that

of a green standard. Costs are usually estimated around one to two per cent higher than building a non-green rated building from the ground up (Bond, 2010).

Legislation should be implemented with regards to the development of new buildings and the process followed during construction in order to ensure the least amount of environmental damage is done during the construction period. A proper project plan should be set up before construction starts to establish exactly how waste will be dealt with during the construction process (Hwang, & Tan, 2012).

7.4 MANAGERIAL IMPLICATIONS

Every success has had some failures preceding it. This is also the case for real estate funds moving into the green building space for the first time. Managers and boards need to realise that the company will most probably make mistakes or work with the wrong consultants or contractors. Management, or the manager responsible for the final decision, needs to have the ability to admit that a mistake or mistakes have been made and continue exploring alternatives and solutions and not allow a single failure to stop the team and the company from moving forward and continue investment in green buildings.

Open and honest discussions regarding what went wrong needs to be analysed and discussed to ensure that this does not happen in the future. Small gains should be celebrated as this field will be new to most real estate industry management teams and employees and encouragement is needed to ensure teams do not get despondent.

Management teams will also have to design a model or models that are tailor-made for their specific tenants, especially the larger tenants. The models need to ensure that both the fund and the tenant enjoys the benefit of the investment. The responsibility of educating the tenant lies with the management team on the landlord's side. Without the necessary education and team approach between tenant and landlord, success will be limited.

7.5 FUTURE RESEARCH

7.5.1 Financial Returns Clarity

Additional qualitative and in-depth quantitative research into the accuracy of financial returns of green building investments in South Africa specifically need to be clarified, confirmed and proven. Without the necessary proof of financial returns, real estate funds will continue to be reluctant to invest in green buildings and investors to invest in green building funds, or funds that invest in green buildings. Investors also need to understand what a green building is and the implications of investing in such a focused fund and the risks involved.

The manner in which financial success is achieved by those real estate funds investing in green buildings, needs to be understood, such as the implication of green leases and how that affects the financial returns of green building investments, otherwise additional funds will not be invested, especially from smaller real estate funds.

7.5.2 Government Competence

The role of government is vital to the success of the green building industry in South Africa but it is questionable whether the government has the required skills and resources to understand what is required by the industry to move forward.

Future research should be done on a smaller, much more focused basis on what is required within government to drive a nationwide green strategy forward and become a leader in the green building industry in Africa.

The size of the funds required from a government perspective in order to implement the required legislation and provide the necessary incentives to the industry also need to be calculated on a nationwide basis to ensure that the programme does not run out of funds. If these funds are used as per the required guidelines, they are to be channelled back into the green building industry and policed.

A matrix (see Figure 7.1 below) combining building grade and green building grade could provide the real estate industry with a tool to assess the quality of buildings.

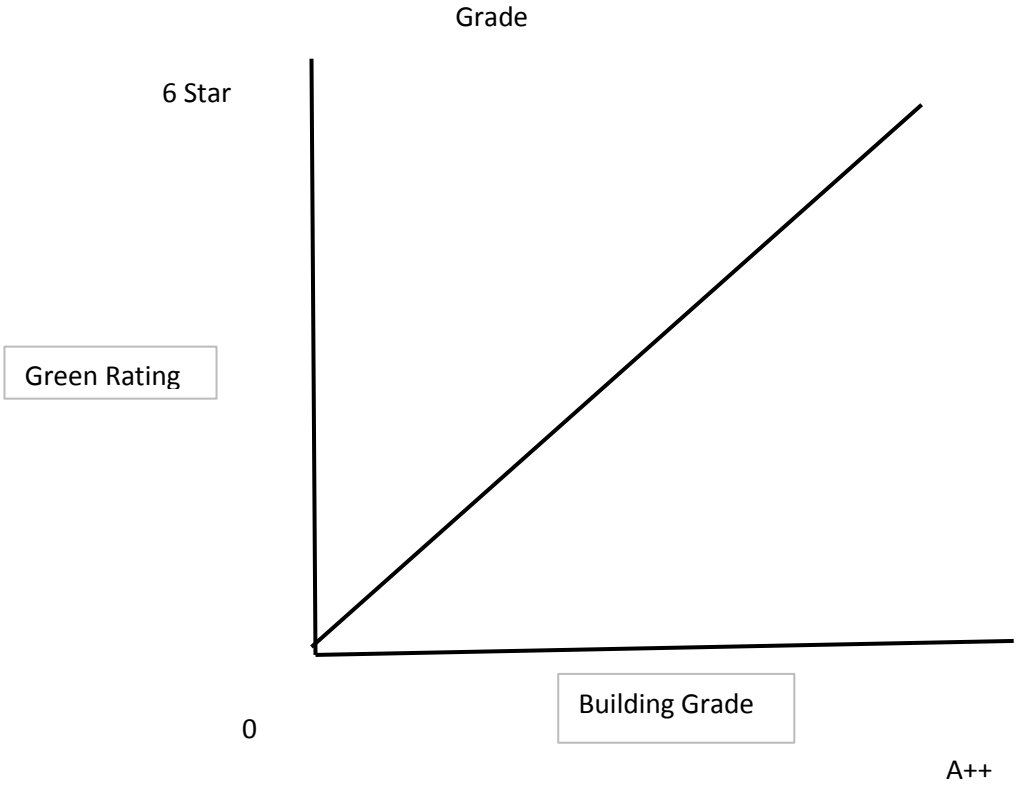

Figure 7.1: A model to assist in the quality determination of buildings, combining the traditional building grade with that of a green star rated building

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