GREEN BUILDING IN SOUTH AFRICA

GUIDE TO COSTS & TRENDS

2025 EDITION

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GBC SA
Green Building Council South Africa

The Association of South African Quantity Surveyors

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GREEN BUILDING IN SOUTH AFRICA
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AND
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ACCESS PREVIOUS EDITIONS OF THIS BOOKLET

FOREWORD

Since its inception in 2007, the Green Building Council South Africa (GBCSA) has successfully issued more than 1500 certifications, most of which are Green Star certifications. One of the major hurdles to adopting green building best practice and certification is the perceived additional cost premium when compared to a conventional building.

In 2014, in order to address this concern, the GBCSA, the Association of South African Quantity Surveyors (ASAQS) and the University of Pretoria (UP) established a research study with the aim to quantify the cost premium associated with green buildings and identify trends in costs associated with the construction of green buildings in South Africa.

Through the publishing of this resource, we intend to equip our members and the sector at large with thorough data-led research that is relevant, useful, and insightful, to validate the wider adoption of green building certification.

Much has shifted since the first release of this flagship study with COVID 19 having a negative impact on the economy, construction and property sector, including the associated costs of buildings. On the positive side, the pandemic has resulted in an increase in Environmental, Social and Governance (ESG) reporting and the adoption of sustainability measures with a direct impact on the property sector, accelerating the shift towards net zero targets.

KEY FINDINGS

The primary reason and principal focus of this long-term study on green building cost, is measuring the Green Building Cost Premium (GBCP) of new, green certified office buildings that is the difference in their cost from new non-certified office buildings of similar specification level.

The projects certified between **2009 – 2014** reported a **5,95% average GBCP**. Since then the GBCP has been trending lower, with the **2015 – 2018** certified projects easily dipping below the 4,0% GBCP barrier with a **3,49% average GBCP**, calculating to an average GBCP since 2009 of 3,90%. The **2019 – 2021** projects' **GBCP of 3,15%** was pushing ever closer to the 3,0% GBCP barrier, calculating to an **overall average GBCP of 3,63%**.

This 2025 report confirms that the 2022 – 2024 projects did not dip below, but smashed the 3,0% GBCP barrier with an impressive period average GBCP of 2,40%, calculating to an average GBCP since 2009 of 3,43%.

IN SUMMARY: AVERAGE GBCP - 2009 – 2024

REPORT PERIOD	PERIOD AVERAGE	CUMULATIVE PERIOD	OVERALL AVERAGE
2009 – 2014	5,95%	2009 – 2014	5,95%
2015 – 2018	3,49%	2009 – 2018	3,90%
2019 – 2021	3,15%	2009 – 2021	3,63%
2022 – 2024	2,40%	2009 – 2024	3,43%

STUDY AIMS

This study aims to dispel the myth that green buildings cost more to build. Now in its 4th edition and spanning over 10 years of in-depth research by the UP and supported by the ASAQS, the study focuses on new office buildings certified by the GBCSA using the Green Star office tool. Green Star New Build Office (of which there are versions v1 and v1.1) is a comprehensive green building certification tool for new buildings and major refurbishments. It is a once-off assessment of design features at tender stage (design assessment) or at construction completion (as-built assessment). It is applied by an accredited Green Star professional (Green Star AP) when assisting clients with the certification process, and advising them on green building best practice. The client's submission to the GBCSA is then independently verified resulting in a credible certification that allows the market to understand: "How green is green?" and "Who says it is green?"

This study unpacks "What the green building **penetration** is" within office buildings, as well as "What the green building **cost premium** is". By using the financial reporting on the certified buildings to unpack these two aspects, the study produces robust and useful results for the industry, confirming a modest green building cost premium which has been reducing as efficient technologies come down in price and are more widely adopted.

This booklet is a valuable resource in that it clearly communicates the cost benefits to clients when pursuing Green Star certified buildings, while at the same time promoting the adoption of Green Star certification for buildings.

This 4th Edition also discusses the investment and financial performance of green certified buildings. Part 3 summarises some key findings from the MSCI South Africa Green Annual

STUDY AIMS CONTINUED

Property Index 2024. This index compares the performance of green certified and non-certified offices, demonstrating an overall outperformance by the green certified properties. Data from this, and from parts 1 and 2, is then synthesised into a powerful business case, that models a similar certified and non-certified office to demonstrate how strongly the value added by certification outweighs its additional upfront costs.

As Green Star certified buildings become increasingly attractive to clients because of lower capital cost premiums and higher long-term returns, their adoption and proliferation also contributes to the achievement of the global net zero carbon emissions target by 2050.

Buildings are a key part of South Africa's decarbonisation strategy, accounting for more than 15% of the country's Greenhouse Gas (GHG) inventory.

In order to play an equitable role in limiting global temperature increases to well below 2°C, and preferably to below 1,5°C – as per the Paris Agreement's targets - South Africa will need to set ambitious nearer term emissions targets.

If South Africa is to align itself to a 2°C scenario, building emissions will need to decrease by 34% in relation to the International Energy Agency's Reference Technology Scenario by 2050 (or by 82% below current emissions). This means that most buildings will need to be at or near to Net Zero Carbon (NZC).

REPORT EDITIONS

2016

2009 – 2014

The first edition of the **Green Building in South Africa – Guide to Costs & Trends**. (hereinafter referred to as the 2016 report). Before this report, no data existed to unpack the perception that green building attracts a significant cost premium when compared to the cost of non-green/conventional buildings.

ACCESS REPORT HERE

2019

2015 – 2018

This edition confirmed previous outcomes as well as the previous conclusions reached. It additionally provided analysis from MSCI to support the business case for green building. (hereinafter referred to as the 2019 report).

ACCESS REPORT HERE

2022

2019 – 2021

This edition, through further analysis, continues to gain deeper insights into the growing maturity and adoption of green building certification in the industry. Findings are supported by extensive content from the **MSCI South Africa Green Annual Property Index 2021**.

ACCESS REPORT HERE

2025

2022 – 2024

This current edition continued the previous analysis with extended insights into green building cost, supported by the most recent data from **MSCI South Africa Green Annual Property Index 2024**. This edition also added a section on the **Business Case for Green Building** (hereinafter referred to as the 2025 report).

STUDY PARAMETERS

The purpose of the Green Building in South Africa Study is to describe the actual costs and trends of green building in South Africa in a credible, unbiased, consistent and user-friendly manner. The study findings are based on actual case studies of office buildings that were awarded with a Green Star certification.

Assumptions and/or qualifications have been made for the purpose of this study, therefore use the findings of this study with due caution and discretion.

The study sample is drawn from new South African office buildings certified by the GBCSA, which meet the following criteria:

- Are 4-, 5- or 6-Star Green Star certified buildings
- Have either “Design” and/or “As Built” ratings
- Used the Green Star SA Office v1/v1.1 rating tool

The study is therefore representative of certified new office buildings only.

The cost data used in the report has not been normalised to allow for differences in typology and or specification level required by the specific grade of office space provided (i.e. Premium grade, A grade, B grade, etc.) other than to evaluate the effect of base building cost on green cost premiums.

The design methodology of the study used estimated costs based on elemental estimates for projects with “Design” Green Star certification and final cost for projects with “As Built” Green Star certification. The actual cost data available did not always allow for this methodology. (i.e. only final cost data may have been available for a project with “Design” certification). However, this deviation is not considered to be of significance as all study projects with both estimated and final cost available indicated only very minor/insignificant differences between the estimated and final cost.

STUDY PARAMETERS CONTINUED

The approval of owners was secured before the financial details of their buildings were included in this study.

The SANS 10400 XA 2021 ed. 2 and or SANS 10400XA: 2011 national building code for energy efficiency in new buildings were not specifically considered in the report.

The 2025 report considered a population of 199 office buildings owned by 107 different companies.

About Green Star SA

Originally adopted from Australia, the Green Star rating system has been used in South Africa for over 15 years and has been heavily contextualised for the South African market and climate. Each tool offers a flexible framework with robust strategies to certify green buildings in South Africa. Each building goes through an independent verification process that validates the environmental initiatives. The tool for new buildings and major refurbishments is an asset rating i.e. a once off rating achieved at the design (tender) stage and or at the as-built stage. The tool that has been used as the basis for this study is the Green Star SA office V1 and V1.1 tool.

STUDY PARAMETERS CONTINUED

The role of the Green Star SA tools is to guide an in depth and holistic approach to green buildings by factoring in all of the critical elements that work together to create the best building possible by:

- Ensuring new buildings are designed to operate at future global best practice.
- Reducing the environmental impact of buildings by reducing their contribution to global climate change, increasing biodiversity, driving water and electricity efficiencies.
- Enhance and better human health by creating places and spaces that promote health and wellbeing while reducing use of toxic materials and promoting good indoor environmental quality.
- Allow different designs to have their environmental initiatives fairly benchmarked, rewarded and appreciated.
- Encourage the implementation of new and emerging technologies that result in better performing buildings;

The Green Star SA New Buildings and Major Refurbishments tool allows for 2 certifications based on timelines typically applied to the development of buildings.

1. **Design:** Based on tender drawings & specifications; this rating essentially verifies the building is designed to certain specifications and performance standards.
2. **As Built:** Based on as-built drawings and commissioning records; this asset rating essentially verifies the as-built building is performing as designed.

GREEN STAR LEVELS

Buildings certified with the Green Star SA New Buildings & Major Refurbishments tool are rewarded as below:

greenstar

4-STAR	“Best Practice”
5-STAR	“South African Excellence”
6-STAR	“World Leadership”

THE STUDY

The study has four parts. Parts 1 and 2 analyse green building cost data, followed by Part 3 which compares key operational performance metrics between green certified and non-certified buildings. Part 4 concludes the study using the cost and performance data from Parts 1 to 3 in a **Business Case for Green Building**. Parts 1 and 2 are based on the ASAQS's "**Guide to Elemental Cost Estimating 2016**" and the GBCSA's "**Green Star Office v1/v1.1 for New Build and Major Refurbishments**" rating tool.

These two parts report on two primary aspects of green building cost:

PART 1

GREEN DESIGN PENETRATION

This indicates the extent to which the "Green Star Office v1/v1.1 for New Build and Major Refurbishments" rating tool has introduced green design into the different elements of a project, expressed as a percentage (%) of total project cost.

For example, a penetration factor of 45% would indicate that green design has been integrated into 45% of the total project budget.

PART 2

GREEN BUILDING COST PREMIUM

The green cost premium is defined as the additional cost of green building over and above the cost of conventional construction, expressed as a % of the total cost of the project.

For example, a green building project which costs R100 million in total and includes green building costs of R3 million over and above the cost of conventional construction, is considered to have a green cost premium of R3m/R100m x 100/1% = 3%.

Parts 3 and 4 focused on the financial performance of green buildings:

PART 3

INDUSTRY PERFORMANCE

The financial performance of green buildings is an essential part of the developers' decisions to invest in green buildings.

Since 2016 **MSCI's South Africa Green Annual Property Index** has compared the financial performance of certified vs non-certified office buildings.

Part 3 discusses the findings of the **MSCI South Africa Green Annual Property Index 2024**.

PART 4

BUSINESS CASE FOR GREEN BUILDING

Commercial real estate investors pursue two objectives - a solid annual income resulting in a desirable return on investment; and capital asset growth.

Part 4 provides a **Business Case for Green Building** based on the findings on Green Design Penetration (Part 1), Green Construction Cost Premium (Part 2) and Industry Performance (Part 3).

KEY CONCEPTS

TO DESCRIBE GREEN BUILDING COST IN MORE DETAIL, THE GREEN COST PREMIUM IS ANALYSED IN TERMS OF THE FOLLOWING:

Certification level

Evaluating green building costs in terms of the three different certification levels i.e. 4-Star, 5-Star, or 6-Star Green Star certification.

Location

Evaluating the effect of location on green building costs. Building costs often vary between different provinces in South Africa.

Construction area

Evaluating the effect of the size of a building on the Green Building Cost Premium (GBCP). Larger projects often attract more competitive building rates compared to smaller projects, due to economies of scale. Larger construction companies may achieve higher levels of efficiency/productivity. However, mega projects (i.e. major sport stadiums or power stations) warrant specialised construction and services and may restrict effective competition which in turn may result in higher building costs.

Base building cost

Evaluating the effect of base building cost (R/m^2) on GBCP. A project with a higher base building cost can more easily afford additional green design items and can expect to have a lower GBCP. However, a project with a low base building cost will often have to add extra cost items to the bottom line for additional green items and can therefore, expect to have a higher green cost premium. The study evaluated the effect of base building cost on the GBCP.

Vertical façade ratio

Evaluating the effect of the vertical façade:construction area ratio on the GBCP. The interaction between a building and the physical environment takes place to a large degree via the vertical façade of

the building. Therefore, the vertical façade area is closely associated with green building design. The study evaluated the effect of façade:construction area ratio on the GBCP.

Certification date

Evaluating the effect of time/maturity of the green industry on the GBCP. Green building certification introduced new concepts to the construction industry. Over time, the risks associated with adopting new green concepts are reducing; replaced by greater certainty of green design and costs related thereto, indicating a maturing of the green building industry.

Tenant mix

Evaluating the effect of single corporate vs generic tenant mix on the GBCP. The majority of the office buildings certified by the GBCSA during 2009 – 2013 were buildings designed for single, corporate tenants. Corporate clients tend to place high value on marketing and public image and therefore are inclined to spend more on buildings. The study evaluated the effect of tenant mix on GBCP.

Certification rating

The Green Star Office v1/v1.1 tool allows for “Design” and “As Built” Green Star certification rating. The study evaluated the effect of the certification level on the GBCP.

Rating tool categories

Evaluating the GBCP in terms of the categories of the Green Star Office v1/v1.1 tool. The Green Star Office v1/v1.1 tool consists of nine different categories and a total of 69 credits. The tool therefore offers many design alternatives when pursuing Green Star certification. The study evaluated the portion of the GBCP spent on each of the categories of the Green Star rating tool.

SAMPLE PROFILE – CERTIFICATIONS ACHIEVED

The profile of the combined study population size of 199 projects provides context for the study results that follow.

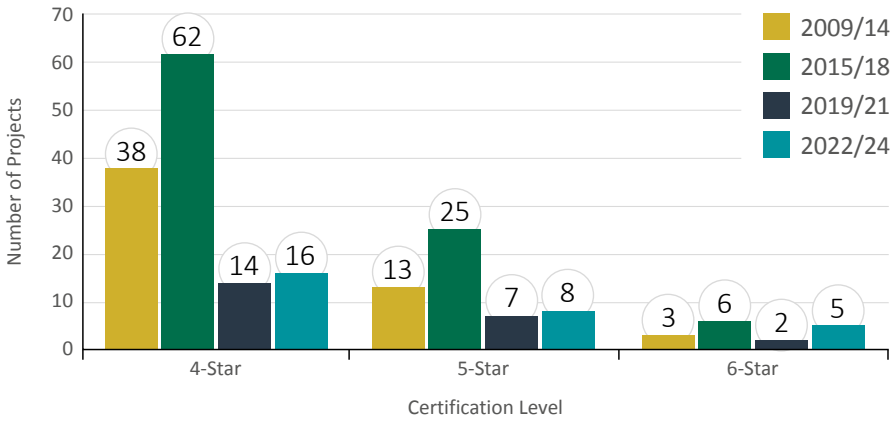
The study population size consists of:

- 54 projects (27,1%) certified from 2009 – 2014.
- 93 projects (46,7%) certified from 2015 – 2018.
- 23 projects (11,6%) certified from 2019 – 2021.
- 29 projects (14,6%) certified from 2022 – 2024.

These projects are certified as follows:

- 130 projects (65,3%) have a 4-Star Green Star certification.
- 53 projects (26,6%) have a 5-Star Green Star certification.
- 16 projects (8,0%) have a 6-Star Green Star certification.

FIGURE 1: **SAMPLE SIZE & CERTIFICATION ACHIEVED**

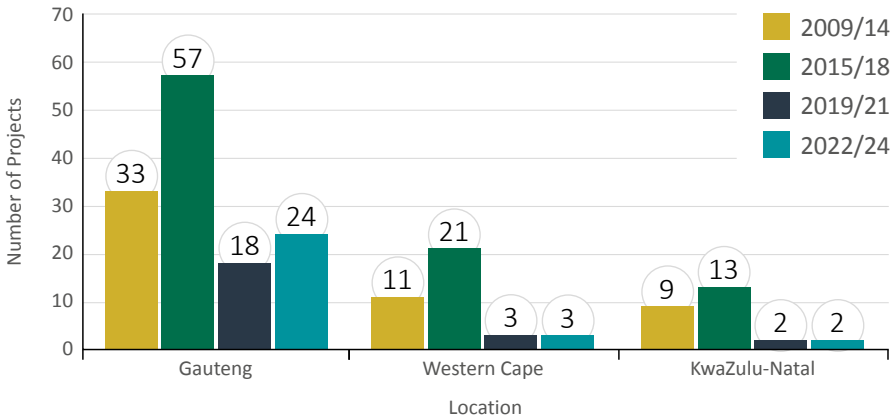


SAMPLE PROFILE – PROJECT LOCATION

Of all certified office projects in the study population size a total of:

- 132 office projects (66,5%) are located in Gauteng with
- 38 office projects (19,1%) from the Western Cape and
- 26 office projects (13,1%) from KwaZulu-Natal

FIGURE 2: **PROJECT LOCATION**

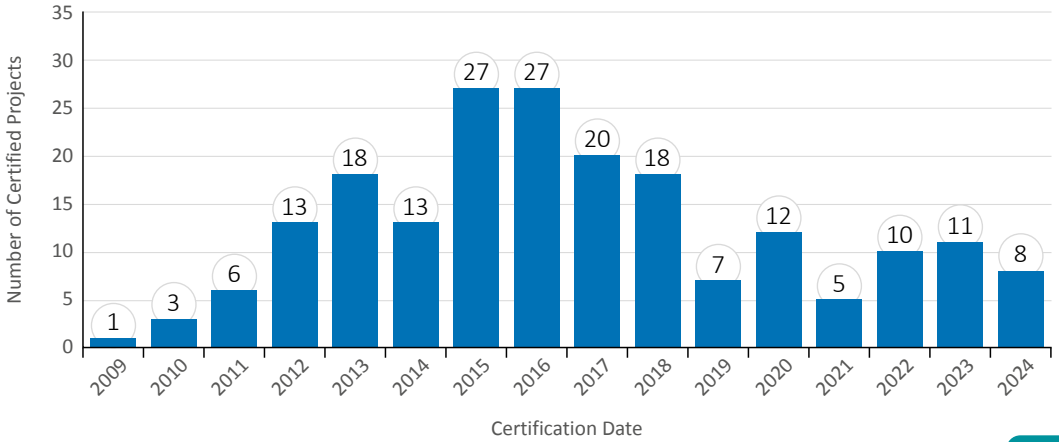


SAMPLE PROFILE – CERTIFICATION DATE

The number of office projects certified per year clearly indicates the substantial and sustained growth in green building in South Africa since 2009.

The slow-down in growth noticeable from 2016 – 2024 is largely due to the severely challenging business conditions experienced by the South African economy and specifically the construction industry during recent years.

FIGURE 3: **CERTIFICATIONS PER YEAR (OFFICES)**



STUDY RESULTS

PART 1

GREEN DESIGN PENETRATION

The study revealed that the application of the Green Star Office v1/v1.1 tool resulted in the introduction of green design elements accounting for an average of 39,2% of the budgets of projects included in the sample (42,4% in 2019 and 41,0% in 2022). During 2022 – 2024 the green design penetration dropped to below 30% per year.

This finding indicates that the maturing green industry finds it increasingly easy to achieve Green Star certification under the V1.1 Green Star tool.

For some projects more than 80% of the budget included green design elements. However, no clear correlation was apparent between the different rating levels, and the green design penetration achieved.

TABLE 1: **GREEN DESIGN PENETRATION - RATING ACHIEVED**

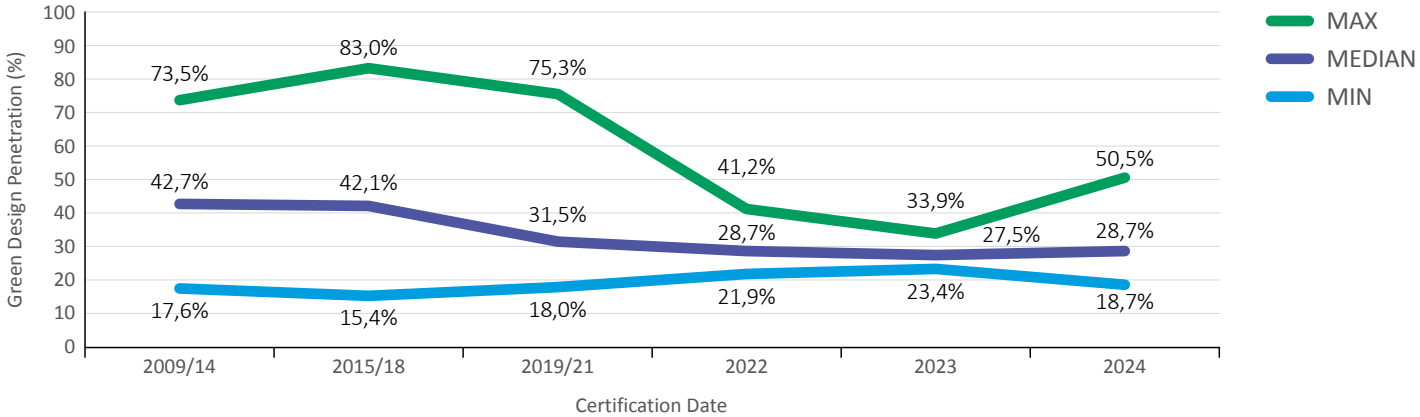
Rating achieved - Green design penetration (%)	MIN	AVERAGE	MAX
TOTAL	**15,4%**	**39,2%**	**83,0%**
4-Star	15,4%	40,6%	81,0%
5-Star	18,0%	33,4%	83,0%
6-Star	15,8%	36,9%	45,9%

The average green design penetration of projects are trending lower since 2019 to between 20% and 30%. This trend may indicate toward a more efficient and mature green building industry. The finding may also confirm that the Green Star tool may be in need of updating to reflect the increasing industry efficiency levels (see Table 2 and Figure 4).

TABLE 2: **GREEN DESIGN PENETRATION - PUBLICATION DATE**

Publication date - Green design penetration (%)	MIN	AVERAGE	MAX
TOTAL	**15,4%**	**39,2%**	**83,0%**
2009/14	17,6%	42,7%	73,5%
2015/18	15,4%	42,1%	83,0%
2019/21	18,0%	31,5%	75,3%
2022	21,9%	28,7%	41,2%
2023	23,4%	27,5%	33,9%
2024	18,7%	28,7%	50,5%

FIGURE 4: **GREEN DESIGN PENETRATION - CERTIFICATION DATE**



STUDY RESULTS

PART 2

GREEN BUILDING COST PREMIUM

The average green cost premium for office projects certified in the period 2022 – 2024 has positively decreased from 3,15% for the previous period 2019 – 2021, to 2,40%.

The average since 2009 for the green cost premium as expressed by the median has reduced from 5,95% to 3,43%.

***NOTE:** The choice of indicator for the central tendency of the data (to describe the average since 2009 green building cost premium) was the median. The median is the midpoint of a frequency distribution or the numerical centre of a set of data. Since the data sample was right skewed (1,060), the median was chosen as the preferred indicator over the arithmetic mean as it is less sensitive to skewed data.

TABLE 3: **GREEN COST PREMIUM - DATA PER PUBLICATION DATE**

Publication date - Green cost premium (%)	MIN	AVERAGE	MAX
TOTAL	**0,47%**	**3,43%**	**14,24%**
2009/14	1,14%	5,95%	14,24%
2015/18	1,14%	**3,49%**	12,01%
2019/21	0,47%	**3,15%**	10,83%
2022/24	1,19%	**2,40%**	6,06%

FIGURE 5: **GREEN COST PREMIUM - DATA PER PUBLICATION DATE**

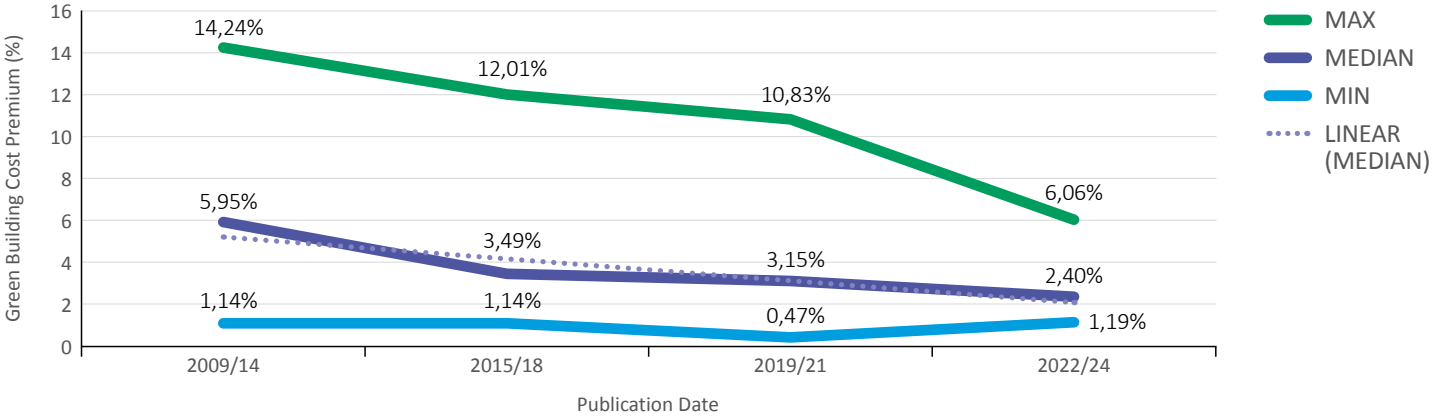


Figure 6 details the spread of the green building cost premiums analyses in sequential categories of 1,0% across the range from 0,47% to 14,24%.

The largest concentration of 56% of the projects occurred in the green building cost premiums categories of 1,0% – 4,0%.

The green building cost categories from 0% – 6,0% account for 74% of all the projects.

FIGURE 6: **GREEN COST PREMIUM - DISPERSION ACROSS THE RANGE**

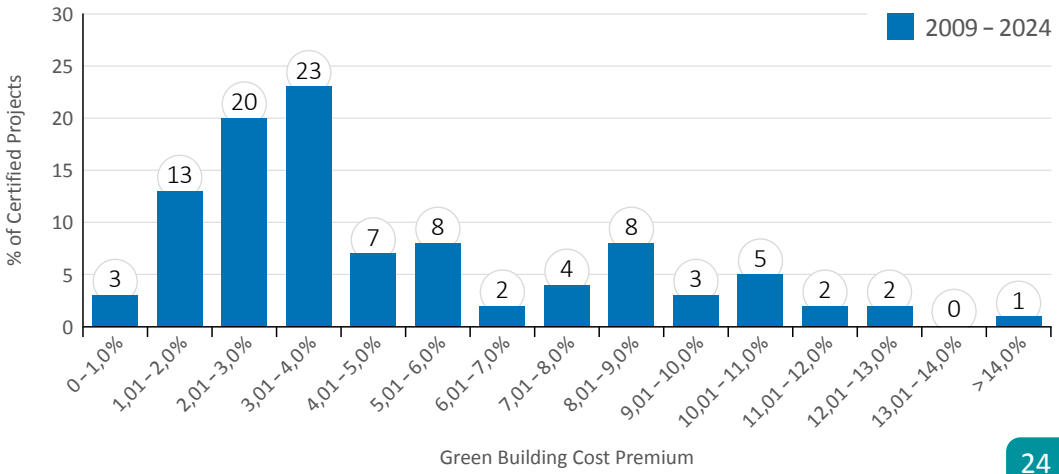


Figure 7 details the spread of the green building cost premiums analyses against time as published in 2016 (2009/14 data), in 2019 (2015/18 data), in 2022 (2019/21 data) and in 2025 (2022/2024 data).

This detail confirms that the spread of the green building cost premium narrowed considerably during the more recent past and also decreased in size.

FIGURE 7: **GREEN COST PREMIUM - DISPERSION ACROSS PUBLICATION DATE**

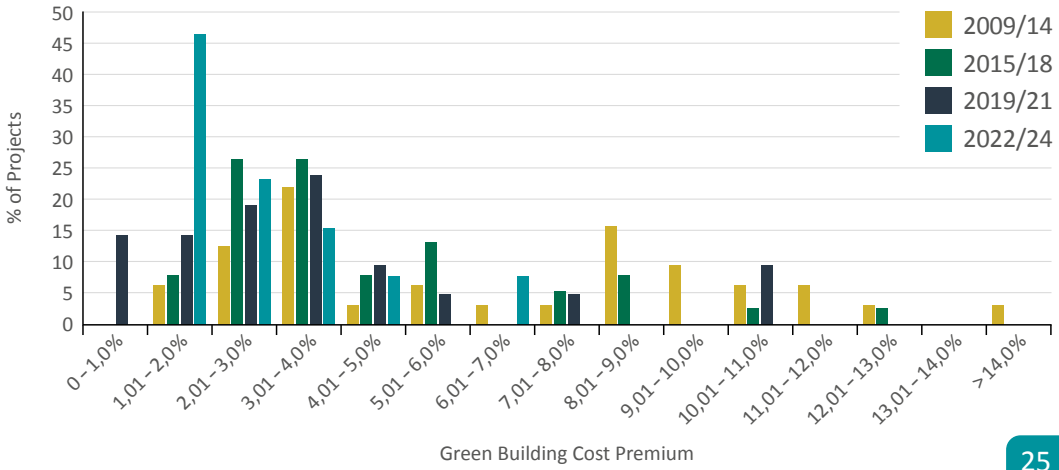


Figure 8 details the spread of the green building cost premiums expressed in monetary terms escalated to December 2024.

Although the escalated amounts of the green building cost premiums are very widely dispersed, this detail does confirm that 57% of the projects reported a green cost premium of less than R15,0m.

As the size of buildings in the study sample differ significantly, the green building cost premium normalised for R/m^2 will provide a very insightful perspective on the green building cost premiums achieved.

FIGURE 8: **GREEN COST PREMIUM - IN ESCALATED MONETARY TERMS**

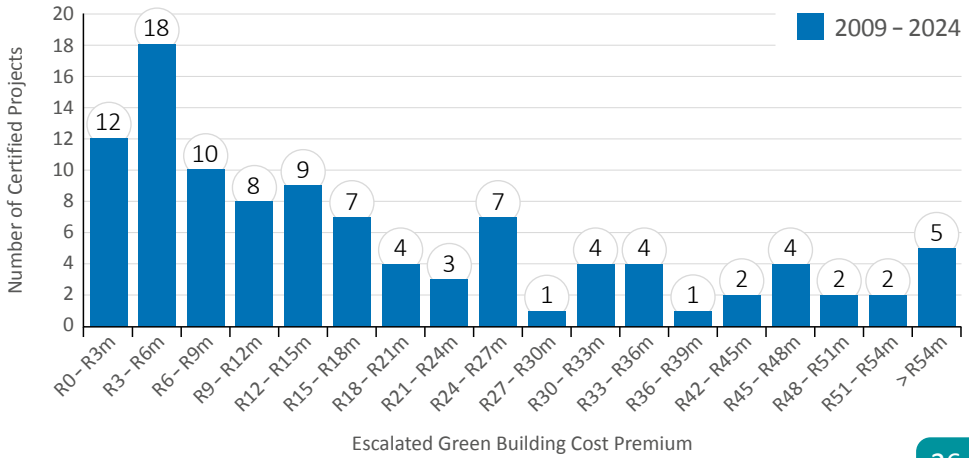
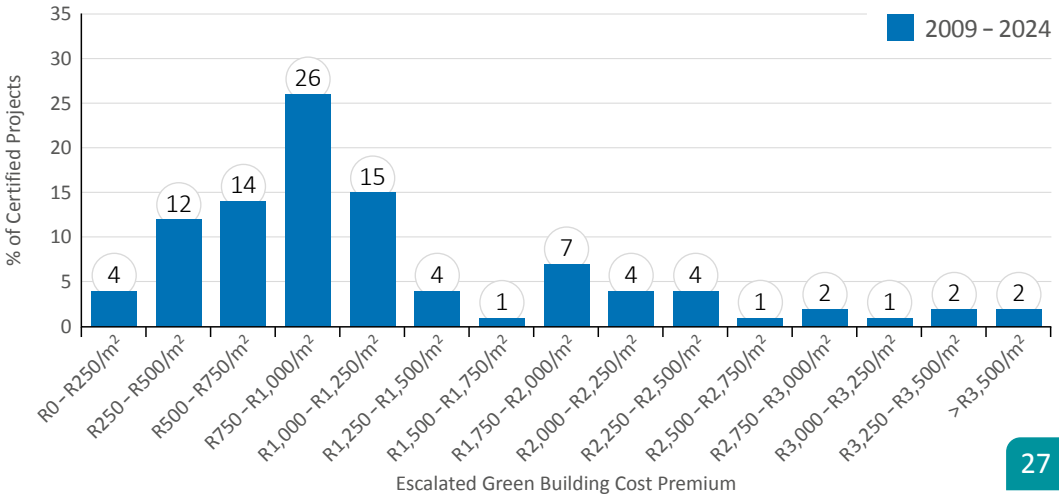


Figure 9 details the spread of the green building cost premiums expressed in R/m² escalated to December 2024.

The green building cost premiums varied from R176/m² to R5,243/m². The escalated green building cost premiums are very widely dispersed, but this detail confirms that 67% of the projects reported a green cost premium of between R250/m² and R1,250/m².

FIGURE 9: **ESCALATED GREEN COST PREMIUM - IN R/m²**



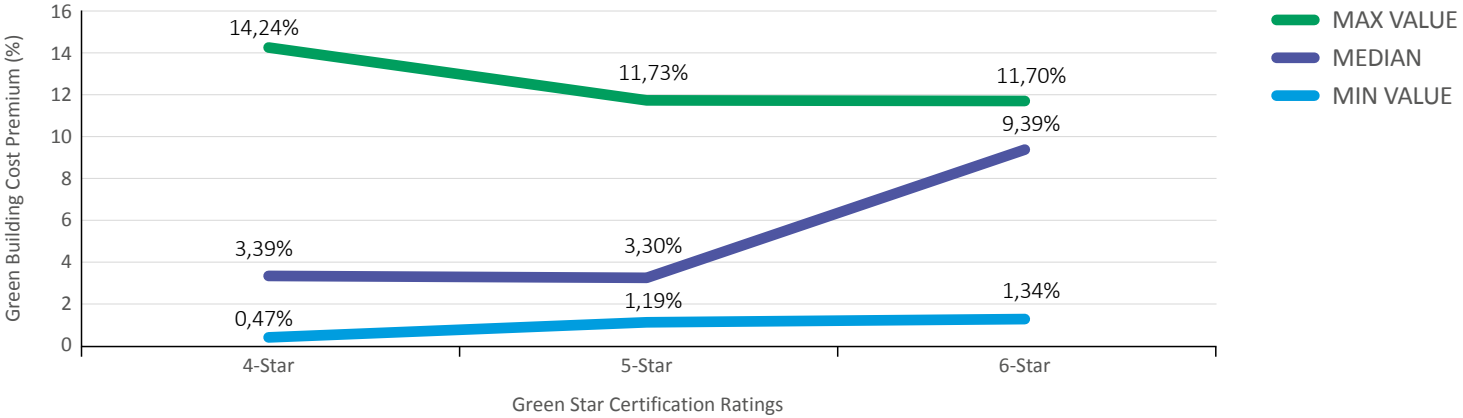
The average green building cost premium was 3,43% of the total project cost. The lowest cost premium reported was 0,47% and the highest was 14,24%.

Both Table 4 and Figure 10 confirm no significant difference between the green cost premium of 4-Star and 5-Star buildings. However, 6-Star buildings have a 280% higher green cost premium (9,39% vs. 3,35%).

TABLE 4: **GREEN COST PREMIUM - RATING ACHIEVED**

Rating achieved - Green cost premium (%)	MIN	AVERAGE	MAX
TOTAL	**0,47%**	**3,43%**	**14,24%**
4-Star	0,47%	3,39%	14,24%
5-Star	1,19%	3,30%	11,73%
6-Star	1,34%	9,39%	11,70%

FIGURE 10: **GREEN COST PREMIUM - RATING ACHIEVED**



The average green cost premium of 4,45% for projects in KZN was about 33% higher when compared to the projects from other locations.

TABLE 5: **GREEN COST PREMIUM - LOCATION**

Location - Green cost premium (%)	MIN	AVERAGE	MAX
TOTAL	**0,47%**	**3,43%**	**14,24%**
GAUTENG	0,47%	3,33%	10,72%
WESTERN CAPE	0,49%	3,37%	14,24%
KWAZULU-NATAL	1,19%	4,45%	8,72%

Both Table 6 as well as Figure 11 confirm the strong negative correlation between green cost premium and construction size. Larger buildings achieve Green Star certification for a smaller green cost premium. The maturity of the local green industry has, however, managed to close this gap between large and small buildings' green cost premiums from 358% (9,3% vs 2,6%) in 2014 to 190% (4,62% vs 2,43%) in 2024.

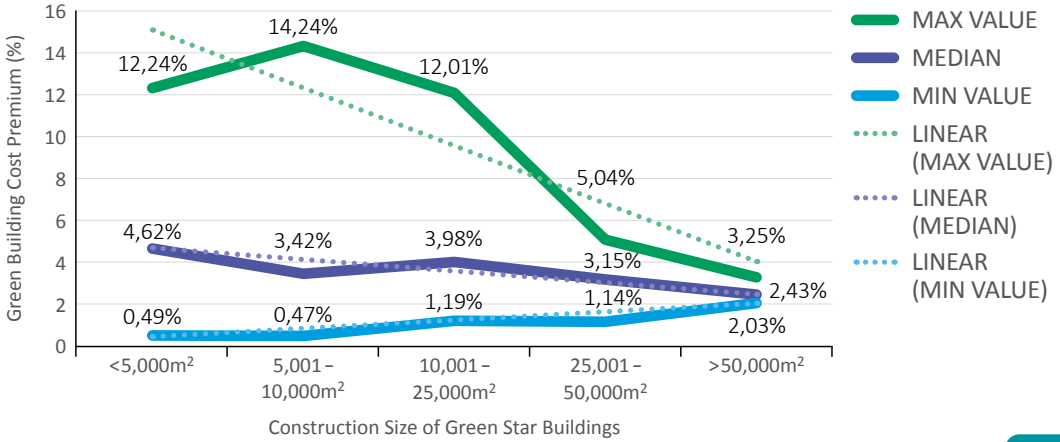
TABLE 6: **GREEN COST PREMIUM - CONSTRUCTION AREA**

Construction area - Green cost premium (%)	MIN	AVERAGE	MAX
TOTAL	**0,47%**	**3,43%**	**14,24%**
<5,000m^2	0,49%	4,62%	12,24%
<10,000m^2	0,47%	3,42%	14,24%
<25,000m^2	1,19%	3,98%	12,01%
<50,000m^2	1,14%	3,15%	5,04%
>50,000m^2	2,03%	2,43%	3,25%

The 2009/24 data set confirmed the strong negative correlation (r = −0,8782) between green cost premium and construction size of office buildings. This finding was consistent for all the previous data sets of 2009/14 (r = −0,915), 2015/18 (r = −0,906), and 2019/21 (r = −0,843).

Smaller buildings with a construction size of less than 5,000m² are however closing the gap. Their green cost premium reduced from 9,3% (2009/14) to 4,62% (2009/24).

FIGURE 11: **GREEN COST PREMIUM - CONSTRUCTION AREA**



The base building cost has been calculated as the total project cost minus the basement cost divided by the building construction area minus the basement area. To allow for the time value of money, all costs were escalated to December 2024. The base building cost for the project sample ranged from R13,861/m^2 to R45,914/m^2 with an average cost of R21,445/m^2.

To evaluate the relationship between base building cost and green cost premium, the base building cost range was split into five categories that are spread evenly around the average cost.

*This long term study has to ensure comparability of building cost between projects with financial data from 2010 to projects from late 2024. Every publication of the study therefore escalated the financial data of all projects from their respective dates to December of the most recent year of reporting. The escalated project data is spread across five categories with a middle, average building cost category, as well as two lower and two higher cost categories to accommodate all projects.

TABLE 7: **GREEN COST PREMIUM - BASE BUILDING COST** (AT 12/2024)

Base building cost (R/m^2) - Green cost premium (%)	**MIN**	**AVERAGE**	**MAX**
<R17,500/m^2	0,80%	3,93%	10,50%
R17,501 – R21,000/m^2	1,14%	4,73%	11,73%
R21,001 – R24,500/m^2	0,47%	3,20%	8,41%
R24,501 – R28,000/m^2	0,49%	3,43%	10,02%
>R28,001/m^2	2,03%	3,23%	12,24%

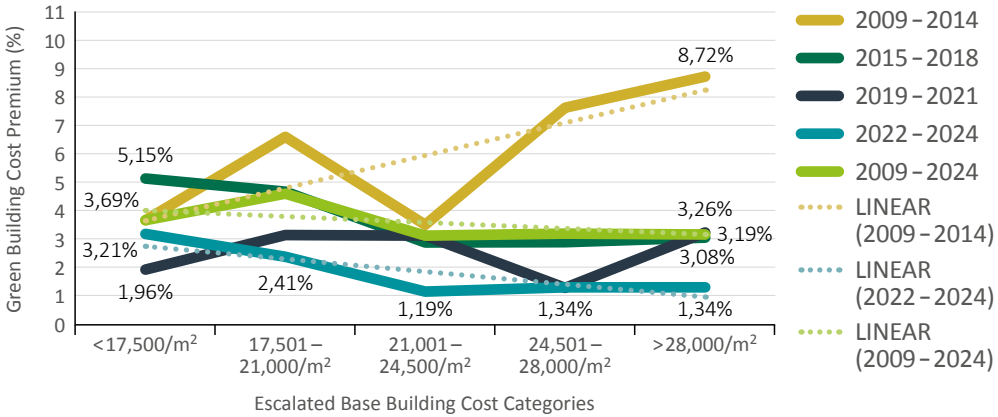
The base building cost categories are:

- much lower (<R17,500/m²),
- lower (R17,501 – R21,000/m²)
- similar (R21,001 – R24,500/m²)
- higher (R24,501 – R28,000/m²)
- or much higher (> R28,001/m²) than the average base building cost.

The combined 2009/24 data confirmed a negative relationship between base building cost and green cost premium (r = –0,5496).

Contrary to expectation the early data 2009/14 was positively correlated (r = 0,828) while the 2022/24 data indicated a negative correlation (r = –0,7291) (see Table 7 & Figure 12).

FIGURE 12: **GREEN COST PREMIUM - BASE BUILDING COST** (AT 12/2024)



The ratio of vertical façade : construction area of the sample projects varied from 0,18:1 to 0,90:1 with an average of 0,44:1.

To evaluate the relationship between façade ratio and green cost premium, the façade ratio range was split into five categories that are all defined in relation to the average ratio. The categories are:

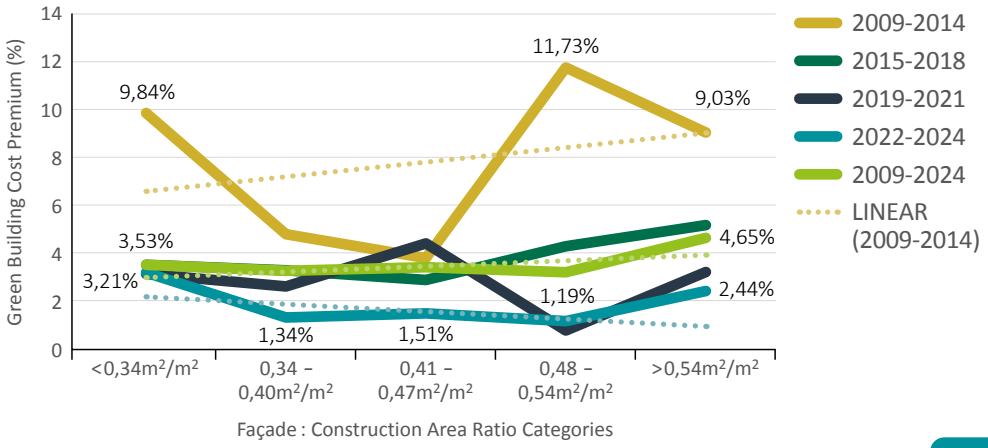
- much lower (<0,34:1),
- lower (0,34 – 0,40:1),
- average (0,41 – 0,47:1),
- higher (0,48 – 0,54:1) or
- much higher (>0,54:1) than the average ratio.

TABLE 8: **GREEN COST PREMIUM - VERTICAL FAÇADE RATIO**

Vertical façade ratio- Green cost premium (%)	MIN	AVERAGE	MAX
Much↓ than average (<0,34:1)	2,70%	3,53%	11,70%
↓ than average (0,34 – 0,40:1)	1,30%	3,28%	8,60%
Average (0,41 – 0,47:1)	1,14%	3,43%	10,83%
↑ than average (0,48 – 0,54:1)	0,49%	3,22%	11,73%
Much↑ than average (>0,54:1)	0,47%	4,96%	12,24%

Table 8 and Figure 13 indicate the correlation between vertical façade ratio and green cost premium. The overall 2009/2024 data revealed a reasonable positive correlation with the façade ratio (r = 0,7211). This trend has weakened with time but still indicates that buildings with an above average vertical façade:construction area ratio (exceeding 0,54:1) also tend to have a higher green cost premium.

FIGURE 13: **VERTICAL FAÇADE RATIO**



The 2016 and 2019 reports suggested a maturing of the South African green industry with a gradual decline in average green cost premium between 2010 – 2018.

The 2022 report confirms that the green cost premium is still declining as the green industry matures

(r = – 0,574). Table 9 and Figure 14 indicate as a general trend that since 2011 the average green cost premiums have been declining.

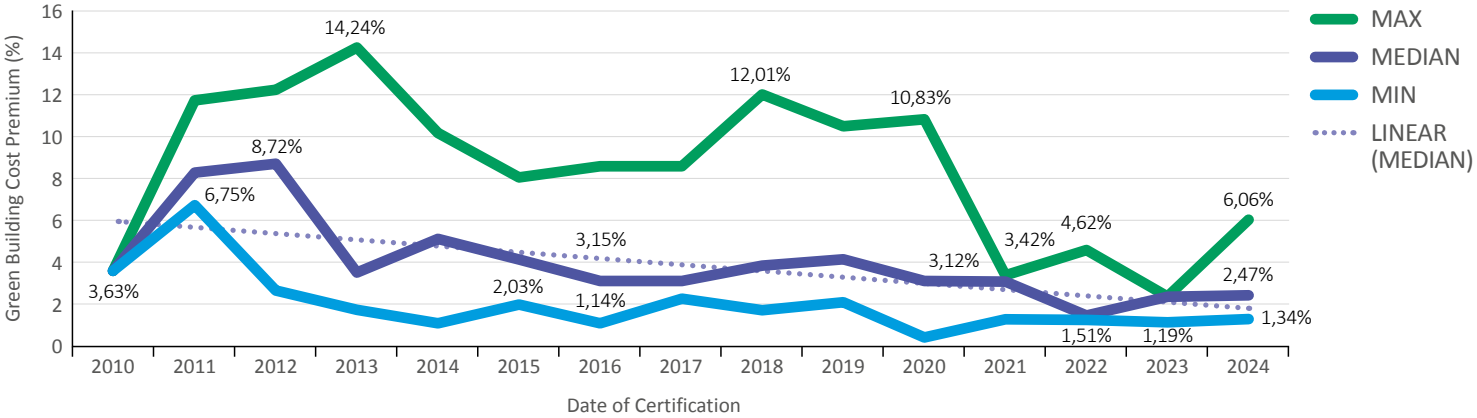
TABLE 9: **GREEN COST PREMIUM - CERTIFICATION DATE**

Certification Date - GCP (%)	MIN	AVG	MAX
2010	3,63%	3,63%	3,63%
2011	6,75%	8,30%	11,73%
2012	2,70%	8,72%	12,24%
2013	1,78%	3,55%	14,24%
2014	1,14%	5,15%	10,18%
2015	2,03%	4,17%	8,07%
2016	1,14%	3,15%	8,60%
2017	2,31%	3,15%	8,60%

Certification Date - GCP (%)	MIN	AVG	MAX
2018	1,76%	3,88%	12,01%
2019	2,14%	4,18%	10,50%
2020	0,47%	3,15%	10,83%
2021	1,33%	3,12%	3,42%
2022	1,30%	1,51%	4,62%
2023	1,19%	2,40%	2,41%
2024	1,34%	2,47%	6,06%

GCP = Green Cost Premium

FIGURE 14: **GREEN COST PREMIUM - CERTIFICATION DATE**



The majority of the office buildings certified by the GBCSA during 2009 – 2013 were buildings designed for single, corporate tenants. Corporate tenants tend to place high value on marketing and public image and therefore are inclined to spend more on buildings.

However, the local green industry has matured quickly and the trend of new Green Star certified buildings with a generic tenant mix has been growing since 2011 (See Figure 15).

FIGURE 15: **GREEN COST PREMIUM - MULTIPLE TENANT MIX**

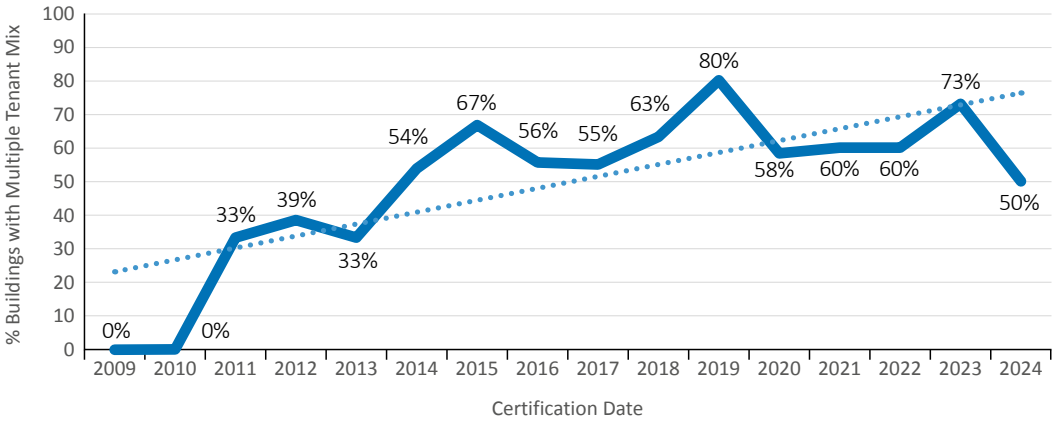


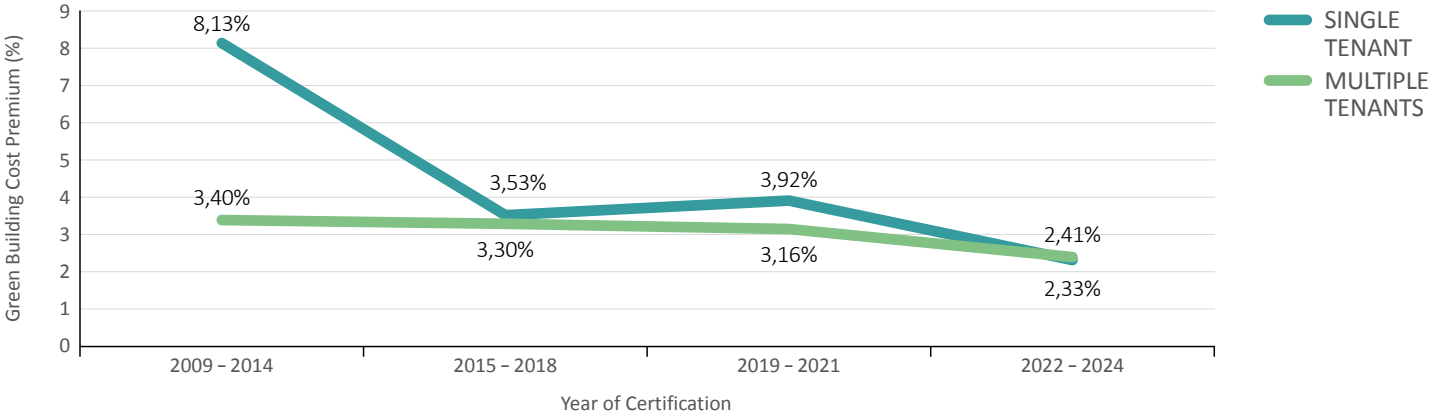
Table 10 and Figure 16 confirm that projects with a single corporate client, will on average have a higher green cost premium compared to projects with a multiple tenant mix.

The gap between the green cost premium of single tenanted buildings vs multiple tenant buildings did, however, narrow dramatically from 239% (8,13% vs 3,40%) for the 2009/14 projects to 124% (3,92% vs 3,16%) for the 2019/21 projects. The 2022/24 projects even indicated an even lower green cost premium of 97% (2,33% vs 2,41%) for single tenanted buildings.

TABLE 10: **GREEN COST PREMIUM - TENANT MIX**

Tenant mix - Green cost premium (%)	MIN	AVERAGE	MAX
TOTAL	**0,47%**	**3,43%**	**14,24%**
Single Corporate	0,49%	4,62%	14,24%
Multiple Tenants	0,47%	3,17%	12,01%

FIGURE 16: **GREEN COST PREMIUM - TENANT MIX**

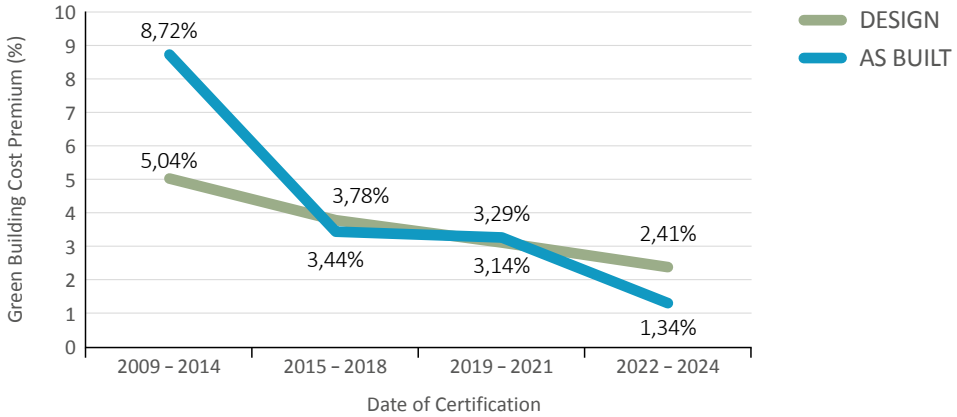


During the early years of the study the 2009/14 projects with a “Design” certification rating revealed a much lower average green cost premium than projects with an “As Built” certification rating.

However, the 2015/21 projects indicated very similar average green building cost premiums for both “Design” and “As Built” certification ratings.

- 2009 – 2014 projects: 5,04% vs 8,72%
- 2015 – 2018 projects: 3,78% vs 3,44%
- 2019 – 2021 projects: 3,14% vs 3,29%
- 2022 – 2024 projects: 1,34% vs 2,41%

FIGURE 17: **GREEN COST PREMIUM - CERTIFICATION RATING**



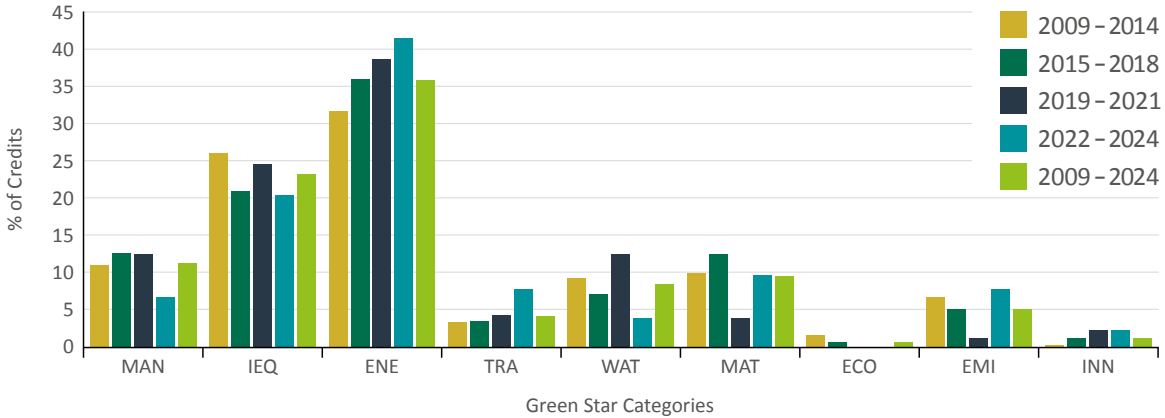
The allocation of the green cost premium to the nine categories of Green Star Office v1 tool revealed that 59% of the total green cost premium was allocated to only two categories namely, Energy and Indoor Environmental Quality (IEQ). It is notable that the five categories comprising Energy, Indoor Environment Quality, Management, Materials and Water, made up for more than 88% of the total green cost premium allocation (see Table 11 and Figure 18).

TABLE 11: **GREEN COST PREMIUM - RATING TOOL CATEGORIES**

RATING TOOL CATEGORIES	GCP ALLOCATION	RATING TOOL CATEGORIES	GCP ALLOCATION
Management	11,3%	Materials	9,6%
Indoor Environmental Quality	23,2%	Land use & Ecology	0,8%
Energy	35,8%	Emissions	5,2%
Transport	4,2%	Innovation	1,3%
Water	8,5%		

GCP = Green Cost Premium

FIGURE 18: GREEN COST PREMIUM - RATING TOOL CATEGORIES



KEY

MAN	Management
IEQ	Indoor Environmental Quality
ENE	Energy
TRA	Transport
WAT	Water
MAT	Materials
ECO	Ecology
EMI	Emissions
INN	Innovation

CONCLUSION

- Green building in South Africa has matured significantly since 2009 and is still maturing.
- Office buildings of all sizes have successfully applied for Green Star certification.
- Green Star certified buildings are still currently located predominantly in Gauteng, the Western Cape and the Durban/ Umhlanga area of KwaZulu-Natal.
- The average since 2009 of the green cost premium (as expressed by the median) is 3,34%. This finding confirms the continuous lowering of the average green cost premium from 5,95%, measured in 2014, to 3,90%, measured in 2018, and 3,63% measured in 2021. This positive downward trend is further supported by the latest period average, 2,40%, for the 2022-2024 period. This is the lowest period average yet recorded.
- Since 2015, generic office buildings that have been developed for a multi-tenant mix, make up 66% of all Green Star certified buildings.
- Pursuing Green Star certification through the Green Star Office v1/v1.1 tool, has resulted in an average green design penetration of 39,2% of the total project budget.
- Higher levels of certification (4-Star vs 5-Star vs 6-Star) have resulted in a progressive increase in the green cost premium.
- The green cost premium appears to be progressively diminishing over time, largely as a result of a growing maturity in the green industry.
- Compared to smaller office buildings, large office buildings generally achieved Green Star certification with lower green cost premiums.

CONCLUSION CONTINUED

- Office buildings with higher vertical façade : construction area ratios tended to have higher green cost premiums.
- Office buildings that were developed for single corporate tenants had initially attracted higher green cost premiums compared to buildings developed for a multi-tenant mix. Since 2015 this gap has narrowed to less than 1,0%.
- Originally, office buildings with higher base building costs did not necessarily achieve lower green cost premiums, but more recently such buildings seem to be achieving lower green cost premiums.

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Mr Karl Trusler

Green Building Council South Africa
Ms Georgina Smit
Mx Abi Godsell

PARTICIPATING ORGANISATIONS

PROPERTY OWNERS AND DEVELOPERS

- Abland Property Developers
- Absa Bank Ltd
- Alchemy Property Development
- Attacq
- Atterbury Property
- Barrow Properties
- Capitalgro (Pty) Ltd
- Chevron South Africa (Pty) Ltd
- Cinzaco 128 (Pty) Ltd
- Citadel Investment Services
- City of Cape Town
- Department of Environmental Affairs
- Department of Public Works
- Dipalopalo Concessions (Pty) Ltd
- Equites Property Fund
- Eris Property Group
- First National Bank
- GEMS (Government Employees Medical Scheme)
- Growthpoint Properties Limited
- Ingenuity Property Investments Ltd
- Intaprop Property Development and Investment
- KZN Department of Basic Education
- Legaro Property Development
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- Old Mutual Property
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- Penalten Investments (Pty) Ltd
- Rabie Property Group (Pty) Ltd
- Rangewave Trade and Trust
- Redefine Properties Limited
- Sharmane Investments (Pty) Ltd
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- The South African National Roads Agency Ltd
- Tower Property Fund Ltd
- Umhlanga Rocks Property Trust
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- Western Cape Department of Transport and Public Works
- Zenprop Property Holdings (Pty) Ltd
- Zatovect (Pty) Ltd

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- RLB Pentad Quantity Surveyors
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- Smith & Company
- Talani Quantity Surveyors

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- Aurecon
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- LMC Green Consulting

GREEN STAR ACCREDITED PROFESSIONALS

- Ludwig Design Consulting
- Mott MacDonald
- PJ Carew Consulting
- Royal HaskoningDHV
- Silito
- Solid Green Consulting
- Terramanzi
- WSP

EXTRACTS FROM

MSCI SOUTH AFRICA GREEN ANNUAL PROPERTY INDEX 2024

COURTESY OF MSCI

SPONSORED BY GROWTHPOINT PROPERTIES

PART 3

INDUSTRY PERFORMANCE

PART 3: MSCI SOUTH AFRICA **GREEN ANNUAL PROPERTY INDEX 2024**

Annually MSCI South Africa releases the Green Property Index that continues to support the investment case for green buildings in the South African commercial property sector. This ground-breaking index is a collaboration between GBCSA data sets, and MSCI analytical expertise, and is sponsored by Growthpoint Properties. The index showed that the investment performance of certified green, Prime, and A-grade offices improved in 2024 and outperformed non-certified assets of a similar quality by 120 bps during the year.

Now in its ninth year, the MSCI SA Green Annual Property Index provides an independent and consistent comparative return on investment for green certified and non-certified offices. Released in May 2025 the index provides an independent, globally consistent view on the investment performance of green certified and non-certified offices.

At the end of 2024, the index sample comprised 242 prime and A-grade office properties valued at R54,2 billion of which 122 were green certified buildings. These were compared to 120 non-certified offices of a similar quality. The MSCI index results reflect the business case for green-rated buildings. Not only are these buildings more efficient, reducing the cost of occupancy for tenants, but they also provide a healthier environment for occupants, which is particularly relevant as staff return to their offices. The fact that green buildings achieve better returns shows that tenants are recognising these benefits.

Green offices outperform non-certified offices by 28%*

For the year ended December 2024, the green certified office sample delivered a total return of 10,1%, 120 bps above the non-certified sample's return of 8,9%. This was a similar outperformance to that measured in 2020 and takes the cumulative

MSCI

BPS = Basis Points

*since 2016

total return of green certified offices to 79,5% since the inception of the index nine years ago. Over this period, green certified offices outperformed the non-certified sample by 28,2% – an annualised outperformance of 200 bps. A key reason behind the strong performance of green certified offices is its comparatively high income return despite a 45,7% higher capital value per square metre. This was achieved courtesy of a 48,3% higher Net Operating Income (NOI) per square meter compared to non-certified office buildings (R160,07 vs R107,94), again reinforcing the importance that blue chip occupiers are placing on green office accommodation.

Green office cashflows deemed lower risk

Green offices' higher income per m^2, their lower vacancy rates and their normally lower operating costs result in the green certified offices having a lower capitalisation rate when compared to the non-certified sample. This means that valuers' view green certified office properties as a lower risk investment.

Green certified offices better across all measures

The MSCI South Africa Green Annual Property Index demonstrates the link between green certified buildings and investment performance through a **lower vacancy rate, higher net operating income and lower discount rate** in an extremely tough office market following the COVID-19 pandemic and resulting poor market conditions. The research clearly indicates that green certified buildings continue to outperform non-certified buildings. Not just because the perceived risk in the income stream is lower but also because the income stream is underpinned by better property fundamentals – vacancies are lower, and margins are higher. Certification is therefore strongly associated with buildings providing an enhanced investment return.

BPS = Basis Points

COMPARISON OF GREEN STAR CERTIFIED BUILDINGS VS NON-CERTIFIED BUILDINGS IN 2024

The MSCI SA Green Annual Property Index is based on the market performance of Green Star certified buildings vs Prime and A-grade non-certified buildings in South Africa with the aim of understanding the comparative value of green building certification.

The MSCI index based on the financial performance of a building together with the GBCSA/ASAQS/UP data on the green cost premium included in the initial capital cost of a building, provide the metrics for a convincing business case in support of Green Star certified buildings.

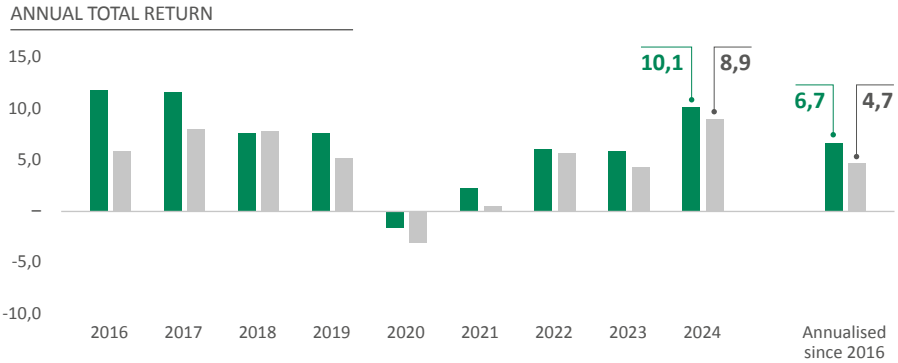
TABLE 12: **INDUSTRY PERFORMANCE 2024**

	CERTIFIED	NON-CERTIFIED
Total Return (%)	10,1	8,9
Vacancy Rate (%)	11,1	14,8
Net Operating Income per square metre	160,07	107,94
Capital Value per square metre	22,793	15,639
Total Operating Cost % of Gross Income	39,0	46,0

GREEN STAR CERTIFIED OFFICES **OFFER HIGHER TOTAL RETURN** OVER THE IMMEDIATE PAST AND OVER THE PAST 9 YEARS

Total return is the most widely recognised measure of overall investment performance. It serves as the definitive "bottom line" metric for comparing different assets across time periods. Total return accounts for both capital appreciation and income generation, and is expressed as the percentage change in value plus net income earned, relative to the capital invested. The calculation is time-weighted and indexed annually. It is notable that the sum of the income return and capital growth components may not equal the total return exactly, due to the cross-product effect – a compounding interaction between price changes and reinvested income.

FIGURE 19: **CERTIFIED OFFICES RETURNS 2016–2024**



Source: MSCI

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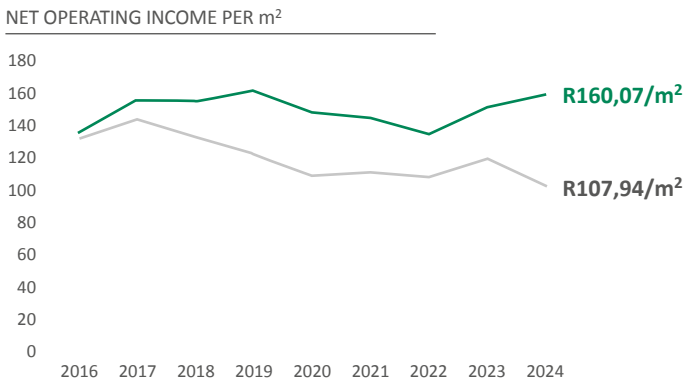
GREEN STAR CERTIFIED OFFICES **OFFER HIGHER NET OPERATING INCOME PER m²**

FIGURE 20: **NET OPERATING INCOME PER M²**



Source: MSCI

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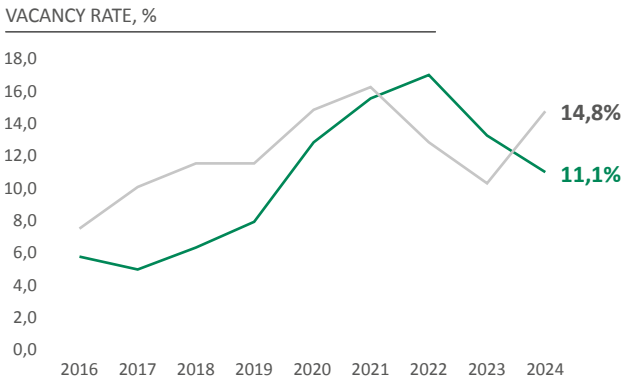
GREEN STAR CERTIFIED OFFICES **HAVE LOWER VACANCIES**

FIGURE 21: **OFFICE VACANCIES**



Source: MSCI

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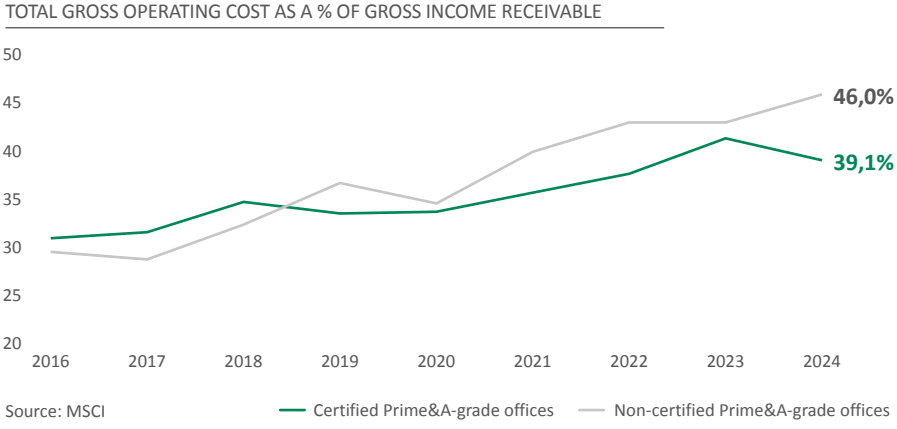
GREEN STAR CERTIFIED OFFICES
HAVE LOWER GROSS OPERATING COST
AS % OF GROSS INCOME

FIGURE 22: **OFFICE OPERATING COST**



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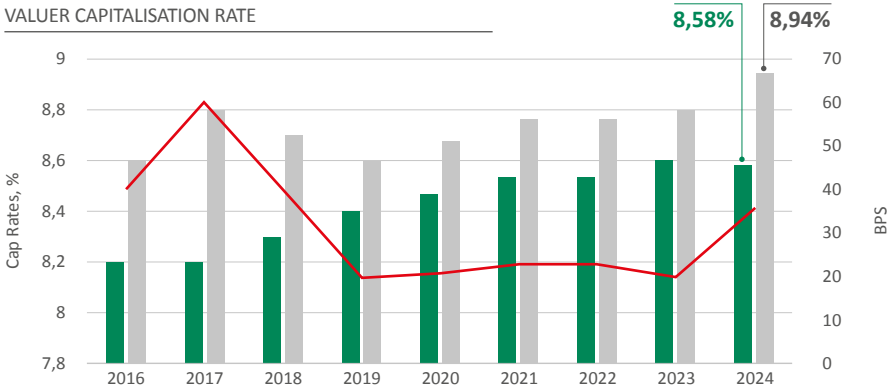
GREEN STAR CERTIFIED OFFICES **CARRY A LOWER CAPITALISATION RATE** RESULTING IN A **HIGHER CAPITAL VALUE** PER m^2

FIGURE 23: **OFFICE CAPITALISATION RATE**



BPS = Basis Points

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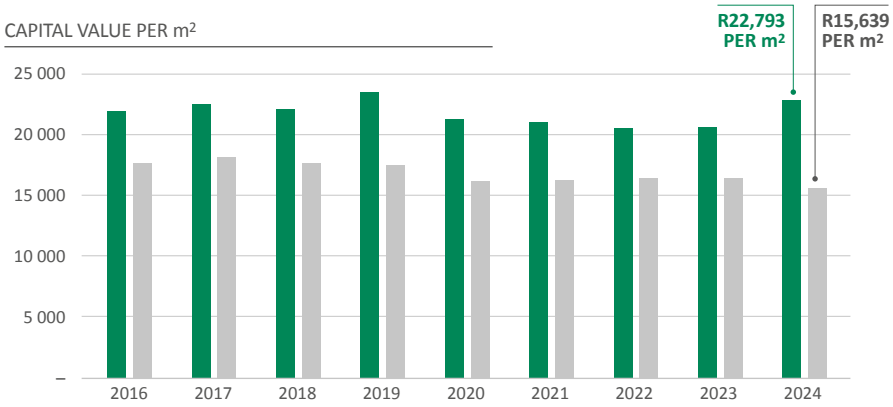
GREEN STAR CERTIFIED OFFICES **CARRY A LOWER CAPITALISATION RATE** RESULTING IN A **HIGHER CAPITAL VALUE** PER m²

FIGURE 24: **OFFICE CAPITAL VALUE**



Source: MSCI

MSCI

CONCLUSION PART 3: MSCI SOUTH AFRICA **GREEN ANNUAL PROPERTY INDEX 2024**

Certified Green Star Prime and A-grade offices produced a total return of 10,1% in 2024 vs 8,9% for non-certified Prime and A-grade offices. Additionally, certified buildings outperformed non-certified buildings by 28,2% over the 9 year period (2016 – 2024).

Certified green buildings achieved a 45,7% higher capital value per square meter supported by 48,3% higher net operating income per square meter when compared to non-certified buildings.

Green Star certified capital growth is driven by superior valuation metrics and property fundamentals:

- Lower discount rate
- Lower capitalisation rate
- Higher net income per m^2
- Lower vacancy rate
- Lower cost to income ratio

The ASAQS and GBCSA wish to extend their gratitude and appreciation to the MSCI for the permission granted to include extracts from the **MSCI SA Green Annual Property Index 2024.**

STUDY RESULTS

PART 4

BUSINESS CASE FOR GREEN BUILDING

Investors in commercial real estate have two main investment objectives:

1. To secure a dependable annual income stream resulting in a desirable return on investment; and
2. To manage real estate assets and their associated risks effectively, thereby creating solid asset capital growth over the medium to longer term.

Investors pursue the above objectives within the confines of our planet's finite resources. Furthermore, global warming requires considering and reinstating almost every aspect of human activity. To achieve a more environmentally friendly and sustainable built environment, the industry has responded with the concept of green building and green building certification.

However, the question that now needs answering is what impact green building has on discerning investors' objectives?

To address this, a **Business Case for Green Building** has been developed, which compares two hypothetical office buildings which are similar in every respect except that one of the buildings is green certified and the other is non-certified.

The key finding is that green certified buildings are likely to outperform non-certified buildings significantly on first year return on investment (by 240 bps or over 60%), but also on marginal return and capital value created.

These findings are explored below.

BPS = Basis Points

The investment performance of a green certified office building versus a non-certified office building has been quantified and analysed based on the following:

1. METRICS FOR COMPARISON:

a. Total Capital Outlay (TCO)	= All-inclusive land and building costs
b. Net Operating Income (NOI)	= (Gross income – operational costs) in the 1st year
c. Return on Investment (RoI)	= Rate of return in the 1st year
d. Marginal return	= Rate of return in the 1st year based on the marginal difference in the TCO and NOI of the two buildings
e. Capitalised value	= Market value

2. ASSUMPTIONS:

a. Construction area	10,000m²
b. Gross Lettable Area (GLA)	9,200m²
c. Estimated building cost	R20,000/m²
d. Estimated land cost as a percentage of building cost (say)	15%

3. DATA FROM *GREEN BUILDING IN SOUTH AFRICA: A GUIDE TO COSTS AND TRENDS 2025*:

a. Average green cost premium	+2,4%

4. DATA FROM *THE MSCI SOUTH AFRICA GREEN ANNUAL PROPERTY INDEX 2024*:

a. Green certified offices gross income premium (incl. recoveries)	+31,4%
Green certified offices gross income (incl. recoveries)	R262,44/m²
Non-certified offices gross income (incl. recoveries)	R199,76/m²
b. Reduced green certified offices vacancy rate	–25,0%
Green certified offices vacancy rate	–11,1%
Non-certified offices vacancy rate	–14,8%
c. Increased green certified offices operational cost (including rates and taxes)	+11,5%
Green certified offices operational cost	R102,36/m²
Non-certified offices operational cost	R91,83/m²
d. Capitalisation (CAP) rate	–36 bps
Green certified offices CAP rate	8,58%
Non-certified offices CAP rate	8,94%

The **Business Case for Green** as at 2024/25 is presented across the following pages.

BPS = Basis Points

THE BUSINESS CASE FOR GREEN CERTIFIED BUILDINGS VERSUS NON-CERTIFIED BUILDING – AS AT 2024/25

TOTAL CAPITAL OUTLAY (TCO)	AREA (m^2)	RATE PER m^2	%	OFFICE BUILDINGS		MARGINAL EFFECT
				NON-CERTIFIED	**GREEN CERTIFIED**	
Escalated building cost	10 000	R20 000		R200 000 000	R200 000 000	–
ADD: Average green cost premium (part 2)			2,4%	–	R4 800 000	R4 800 000
Adjusted escalated building cost				R200 000 000	R204 800 000	R4 800 000
Land and associated costs (say)			15,0%	R30 000 000	R30 000 000	–
TCO				**R230 000 000**	**R234 800 000**	**R4 800 000**

THE BUSINESS CASE FOR GREEN CERTIFIED BUILDINGS VERSUS NON-CERTIFIED BUILDING – AS AT 2024/25

NET OPERATING INCOME (NOI) – IN 1ST YEAR	AREA (m^2)	RATE PER m^2	%	OFFICE BUILDINGS NON-CERTIFIED	OFFICE BUILDINGS GREEN CERTIFIED	MARGINAL EFFECT
Gross monthly income incl. recoveries	9 200	R199,76		R1 837 792	R1 837 792	–
ADD: Green certified offices gross income premium (MSCI)			31,4%	–	R577 067	R577 067
Gross monthly income incl. recoveries (before vacancies)				R1 837 792	R2 414 859	R577 067
LESS: Vacancy rate			14,8%	R271 993	R357 399	R85 406
ADD: Reduced green building vacancy rate (MSCI)			-25,0%	–	R89 350	R89 350
Gross monthly income incl. recoveries (after vacancies)				R1 565 799	R2 146 810	R581 011
LESS: Monthly operational costs	9 200	R91,83		R844 836	R844 836	–
LESS: Green certified offices operational cost premium (MSCI)			11,5%	–	R97 156	R97 156
Net monthly operational income				R720 963	R1 204 818	R483 855
NOI				**R8 651 556**	**R14 457 816**	**R5 806 260**
					= 67,1%*	

*Marginal effect of green certified offices' NOI compared to non-certified offices.

THE BUSINESS CASE FOR GREEN CERTIFIED BUILDINGS VERSUS NON-CERTIFIED BUILDING – AS AT 2024/25

RETURN ON INVESTMENT (RoI) – IN 1ST YEAR	AREA (m^2)	RATE PER m^2	%	OFFICE BUILDINGS		MARGINAL EFFECT
				NON-CERTIFIED	**GREEN CERTIFIED**	
NOI				R8 651 556	R14 457 816	R5 806 260
TCO				R230 000 000	R234 800 000	R4 800 000
RoI				**3,76%**	**6,16%**	**120,96%**
					= +240bps or = +63,7%*	

*The percentage by which the RoI of green certified offices exceeded that of non-certified offices.

BPS = Basis Points, **NOI** = Net Operating Income, **TCO** = Total Capital Outlay

THE BUSINESS CASE FOR GREEN CERTIFIED BUILDINGS VERSUS NON-CERTIFIED BUILDING – AS AT 2024/25

CAPITALISED VALUE	AREA (m^2)	RATE PER m^2	%	OFFICE BUILDINGS		MARGINAL EFFECT
				NON-CERTIFIED	GREEN CERTIFIED	
NOI				R8 651 556	R14 457 816	R5 806 260
Capitalisation (CAP) rate non-certified offices (MSCI)			8,94%	8,94%	8,94%	8,94%
LESS: Reduced green certified offices CAP rate (MSCI)				0,00	-0,36%	-0,36%
Effective CAP rate				8,94%	8,58%	8,58%
CAPITALISED VALUE				**R96 773 557**	**R168 506 014**	**R67 672 028**
					= +74,1%*	

*The percentage by which capitalised value of green certified offices exceeded that of non-certified offices.

NOI = Net Operating Income

METRIC	TCO	GROSS INCOME (BEFORE VACANCIES)	GROSS INCOME (AFTER VACANCIES)	NOI	RoI	MARGINAL RETURN	CAPITALISED VALUE
GREEN BUILDING IMPACT	+ 2,1%	+ 31,4%	37,1%	67,1%	+240 bps	120,96%	+74,1%
OBSERVATION	The TCO of the green certified building is 2,1% higher than the non-certified building due to the 2,4% average green cost premium on the building cost (excluding land and other costs) of green certified buildings	The gross income (before vacancies) for the green certified building is 31,4% higher than the non-certified building due to the 31,4% green building income premium on green certified buildings	The gross income (after vacancies) for the green certified building is 37,1% higher than the non-certified building due to the 25,0% reduced vacancy rate for green certified buildings	The NOI for the green certified building is 67,1% higher than the NOI for the non-certified building due to a 31,4% higher green building gross income premium, a 25% lower vacancy rate and an 11,5% higher green building operational cost premium	The RoI for the green certified building is 240 bps or 63,7% higher than the RoI for the non-certified building	The marginal return of 120,96% in favour of the green certified building represents the RoI on the marginal difference in the TCO and NOI of the two buildings	The capitalised value of the green certified building is 74,1% higher than the capitalised value of the non-certified building

BPS = Basis Points
NOI = Net Operating Income
RoI = Return on Investment
TCO = Total Capital Outlay

In conclusion:

Analysis of the **Business Case for Green Building** confirms that green certified buildings are likely to outperform non-certified buildings significantly on first year return on investment, marginal return and capital value created.

"Property owners need to understand that certification isn't the end goal.

It's how you prove that a building is actually performing in practice and on paper.

It gives owners, investors, and tenants confidence that a building will deliver environmental and financial value over time.

This enduring partnership between the intellectual leaders from UP, industry standard-bearers ASAQS, and GBCSA, with the invaluable support from MSCI has given us the first hard data to tell the great story of green building in South Africa"

Lisa Reynolds
CEO – GBCSA

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We wish to thank the following organisations for their generous support in sponsoring the production of this ground breaking document.

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