



## GREEN STAR SUSTAINABLE PRECINCTS

### LOCAL CONTEXT REPORT FOR RSA

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## 1 Executive summary

This report applies to the Australian Green Star Communities Tool v1.1. and considers the applicability of the tool in South Africa. Included in the report is an overview of the methodology to develop this LCR, a communities' perspective in South Africa and an in-depth credit-by-credit analysis. The credits have all been analysed to assess their applicability in South Africa. The brief was to make amendments to the credits so that the tool is applicable to the South African context. This did not include a complete tool development process to create the South African Sustainable Precincts Tool v1.

A summary of recommended credits requiring adaptations can be found below (all other credits are proposed to remain unchanged, but where projects do want to propose changes these must be applied for through the TC/CIR process on the GBCSA website):

<b>GOV-01</b>	<b>Green Star AP</b>
Minor changes made to this credit – the credit references the GBCA's (Green Building Council of Australia's) CPD Programme. The Green Building Council of South Africa (GBCSA) does not have a CPD Programme in place, therefore, this requirement has been replaced with the alternative for the Green Star South Africa Accredited Professionals to attend a Green Star Sustainable Precincts Workshop and pass the Green Star Exam instead of being part of the GBCA CPD Program. Documentation requirements also edited to align with the new requirement.	
<b>GOV-02</b>	<b>Design Review</b>
Minor changes and additional reference documents listed within the credit to make it more applicable to the South African market.	
<b>GOV-03</b>	<b>Engagement</b>
Minor changes made to the credit – the credit calls for the use of (International Association for Public Participation) IAP2 Australasia core values in carrying out the public participation, this was changed to IAP2 Southern Africa.  Projects also have the option to align the Public Participation carried out during the Environmental Impact Assessment (EIA) process with GOV-03 requirements, ensuring that all the GOV-03 requirements are addressed.	
<b>GOV-04</b>	<b>Adaptation and Resilience</b>
Minor changes made – additional South African reference documents have been listed within the guidelines to assist in rendering the credit more applicable to the South African Market. As the credit is to be compiled by a suitably qualified individual, the onus will be on the said professional to use the correct Global Circulation Models (GCMs) endorsed by the IPCC (Intergovernmental Panel on Climate Change).	
<b>GOV-05</b>	<b>Corporate Responsibility</b>
Changes made to the credit to enable smaller and Public entities to target the credit.  In addition to using the (Global Reporting Index) GRI Sustainability Guidelines for the second part of the credit, project may elect to use King IV, which is applicable to all types entities.	
<b>GOV-06</b>	<b>Sustainability Awareness</b>
No changes, credit to remain as is. Requirements stipulated within the credit are straightforward and applicable to the South African market.	
<b>GOV-07</b>	<b>Community Participation and Governance</b>
No changes, credit to remain as is. It was determined that the credit is applicable in the South African Context.	

<b>GOV-08</b>	<b>Environmental Management</b>
<p>Changes have been made to the credit to make it more applicable to the South African Market.</p> <p>The first part of the credit requires that appointed contractors with contract amounts over \$5 million (AUD) to be ISO 14001 Certified. Research had to be conducted to convert the AUD amount to ZAR. In order to convert the AUD to ZAR, two alternatives were considered; Purchasing Power Parity and direct conversion. Direct conversion was used with the contract amount set at 50 million ZAR.</p> <p>The second part of the credit references the use of the Western Cape Environmental Management Plan Guidelines (instead of the New South Wales Guidelines) for the development of the Environment Management Plan.</p>	
<b>LIV-09</b>	<b>Healthy and Active Living</b>
<p>Under Guidance in the Submission Requirements the existing Table 9.0 summarising the AMCORD requirements have been replaced with a new 'Table 9.0 Characteristics of Street Types and Pedestrian Walkway Provision' and includes changes to terminology. The changes serve to provide localized guidance.</p> <p>No changes are proposed for credit 9.2 Recreational Facilities. It is suggested that the guidelines provided by the Australian Communities tool be followed until an equivalent local standard has become available. An additional reference has been added under Additional Information namely the City of Cape Town Urban Design Policy (2013), as further localised reference for credit 9.3 Healthy Places.</p>	
<b>LIV-10</b>	<b>Community Development</b>
<p>A definition of 'Community' has been added in order to focus the scope of the credit. A reference to the Governance Credit 03 has been added under 'Synergy with other Credits' with an explanation of the connection between these credits. The reference already exists in the Governance section, but questions raised by Pilot Project representatives made it clear that it will be useful to make this cross reference again under Liveability Credit 10.</p>	
<b>LIV-11</b>	<b>Sustainable Buildings</b>
<p>It is proposed that the credit be adapted to the local context by making up to 4 points available based on the percentage of dwellings in the project site that achieve a Green Star SA Multi Unit Residential rating or an EDGE rating for 11.2. The application of the Green Star SA Multi Unit Residential Tool brings credit 11.2 in line with credit 11.1. The option for projects to apply the EDGE rating tool to dwelling units in the project makes this credit applicable to projects that have a variety of dwelling types on the project site. The new proposed criterion is also aligned with the way the credit is approached in New Zealand.</p> <p>The benchmark for Energy saving in the EDGE tool ensures an improvement over the SANS10400 standard that is equivalent to four points under the ENE 01 credit in Green Star. It would thus be required of projects that target the Green Star SA Multi Unit Residential rating to achieve a minimum of four points in the ENE 01 credit in order to align it with the EDGE tool requirement.</p> <p>11.2NZ was written exclusively for projects in New Zealand, therefore it could be removed.</p>	
<b>LIV-12</b>	<b>Culture, Heritage and Identity</b>
<p>No changes were made to this credit</p>	
<b>LIV-13</b>	<b>Walkable Access to Amenities</b>
<p>No changes were made to this credit</p>	
<b>LIV-14</b>	<b>Access to Fresh Food</b>
<p>Although 14.2 might be challenging for projects to achieve, no changes were made to the criteria as this credit remains relevant. The Pilot process will allow the level of difficulty of this credit to be tested in practice.</p>	

<b>LIV-15</b>	<b>Safe Places</b>
<p>The only changes to this credit are that projects seeking to achieve certification through GBCSA can also make reference to the City of Cape Town, Design and Management Guidelines for a Safer City Best practice guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town.</p> <p>This document addresses the following six key overlapping CPTED principles, which align to the requirements of 15.1.2.</p> <p>A further additional South African web based resource has been added that disseminates information on CPTED.</p>	
<b>ECON-16</b>	<b>Community Investment</b>
<p>In order to reflect the South African context, the investment amounts were converted to South Africa context using the average house prices as a reference point.</p> <p>The South African investment amounts identified are as follow:</p> <ul style="list-style-type: none"> <li>- For Residential Infrastructure Investment the minimum investment amount is R10 000; and</li> <li>- The minimum investment amount for infrastructure provided should be at least R80 per square meter for non-residential space.</li> </ul>	
<b>ECON-17</b>	<b>Affordability</b>
<p>Affordability is a complex issue in South Africa, especially as it relates to the provision of housing.</p> <p>Minimal changes to Section 17.1 Residential Affordability Strategies were required, to bring it in line with South African terminology. The essence of the credit is however acceptable and retained. The specific terminology changed that were made include:</p> <ul style="list-style-type: none"> <li>- 'lot sizes' were changed to 'erf sizes'</li> <li>- 'lots' changed to 'erven'</li> <li>- reference to the Australian National Construction Code (NCC) was changed to refer to the South African National Building Regulations and Building Standards Act (No. 103 of 1977) (as amended)</li> </ul> <p>In terms of 17.2 no further investigations were required for the non-residential and mixed-affordability strategies as set out in the Green Star Communities v1.1. submission guidelines and were therefore retained as is.</p> <p>For 17.3 changes were necessary to bring the credit in line with South African legislation. References to the Australian National Construction Code (NCC) were replaced with reference to the South African National Building Regulations and Building Standards Act. No. 103 of 1977 (as amended).</p>	
<b>ECON-18</b>	<b>Employment and Economic Resilience</b>
<p>Only minor changes were proposed in order to bring specific references to economic/industry classifications and building regulations in line with South African legislation.</p> <p>For 18.1, 18.2A and 18.2C the following changes were made:</p> <ul style="list-style-type: none"> <li>- Reference the Australian and New Zealand Standard Industrial Classification (ANZSIC) was replaced with reference to the Standard Industrial Classification (SIC) used in South Africa;</li> <li>- Specific building classes as contained within the Australian National Construction Code (NCC) was compared and changed to refer to the equivalent building classes as set out in the South African National Building Regulations and Building Standards Act (No. 103 of 1977) (as amended).</li> </ul> <p>18.2B required some changes to the text to clarify credit requirements regarding the definition of <i>Major City</i>.</p>	

<b>ECON-19</b>	<b>Education and Skills Development</b>
<p>This credit makes significant reference to 'Higher Education', which in the South African context refer to a very exclusive segment of the population. In order to ensure that this credit retains the original intent, revision is required.</p> <p>The following changes were recommended:</p> <ul style="list-style-type: none"> <li>- For 19.1.1 and 19.1.2 - To protect the integrity of the credit removing all references to the term 'higher' education;</li> <li>- For 19.2.2 and 19.2.4 removing the reference to Technical and Further Education (TAFE) institutions, and replacing it with reference to the following institutions: Technical Vocational Education and Training (TVET), Further Education and Training (FET) Colleges, and Community Education &amp; Training Facilities</li> <li>- For 19.2.3 it was recommended that the reference to the Australian Skills Quality Authority be replaced with the more relevant South African Qualifications Authority</li> <li>- Additionally, 19.2.3 and 19.3.1 required definitions to be added to ensure clarity on credit requirements.</li> </ul>	
<b>ECON-20</b>	<b>Return on Investment</b>
<p>Credit to remain as is, with the option of pursuing a CIR for South Africa specific methodology or methodology not yet specified.</p> <p>Alternative methodologies are available to South African projects, and CIRs regarding methodologies not yet mentioned will be considered on a project specific basis.</p>	
<b>ECON-21</b>	<b>Incentive Programmes</b>
<p>This credit required minor adjustment to reflect South African appropriate investment amounts, and to refer to specific location examples more appropriate to the South African context.</p> <p>To calculate South Africa relevant investment amounts, the same approach used in Credit 16: Community Investment was used. The investment amounts were expressed in terms of average residential value and the ratio used to convert for South Africa by multiplying it with South African average house price.</p> <p>The proposed new investment amounts were R2 000 per residential dwelling and R16 per sqm of non-residential spaces. The specific pathway selected is dependent on whichever development type occupies a greater proportion of the project site.</p>	
<b>ECON-22</b>	<b>Digital Infrastructure</b>
<p>Investigations on the suggested connection speeds (25-50Mbps) revealed that this referred specifically to a new service rolled-out by an Australian service provider. Engagement with a South African industry expert indicated that although similar digital infrastructure is available in the market through VDSL which provides line speeds of 25-100Mbps, the slightly lower line speeds provided by ADSL2+ infrastructure (10-25Mbps) are more widely available.</p> <p>The appropriate line speed identified for consideration within the South African context is therefore 10-50Mbps/5-20Mbps.</p> <p>Even with the lowered line speed, there is still some concern that the issue of service and infrastructure availability might lead to complications for projects. The Green Star Communities v.1.1 does provide for Alternative Compliance Methods to be considered on a project-by-project basis, which is deemed sufficient.</p>	
<b>ECON-23</b>	<b>Peak Electricity Demand Reduction</b>
<p>The requirements of the credit were regarded as clear and appropriate, and were retained as is.</p>	

The only proposed change was the additional of the term 'heat pump' to support the use of the term 'solar air-conditioning' as the first mentioned term is better known in the South African context.	
<b>ENV-24</b>	<b>Integrated Water Cycle</b>
<p>Stormwater is a critical topic for the South African context. It is therefore important that project teams get encouraged to apply the requirements in the credit. From the research and stakeholder interviews it became clear that the credit was too onerous for South Africa and it was suggested to break up the credit into achievable parts.</p> <p>Therefore, whereas in Australia a project achieves 2 points for meeting all requirements, South African projects can get up to 2 points, depending on if they are targeting quantity and quality separately.</p> <p>From the stakeholder interviews, it was also a recommendation to address the smaller storms as they cause severe damage to the direct surroundings. Therefore, we included both the 1 and 5 year ARI to be addressed in the stormwater quantity requirements.</p>	
<b>ENV-25</b>	<b>Greenhouse Gas Emissions</b>
<p>Performance Pathway: The major change in this credit is that we had to change to the Australian references to South African relevant references. The major reference in South Africa related to energy efficiency is the SANS 10400 Part XA, which has been the baseline for most of the Green Star SA tools.</p> <p>Prescriptive Pathway: There are also some additional initiatives that projects can target to achieve points. Maximum number of points remains 4 points. The new initiatives are an option for energy efficiency for new buildings; energy metering; and monitoring.</p>	
<b>ENV-26</b>	<b>Materials</b>
<p>For South Africa, we changed the minimum requirement to a credit where projects can achieve 1 point for meeting the credit criteria. From research, experience and stakeholder interviews the conclusion was that these requirements are still tough to achieve in South Africa. We want to encourage the projects to target points for Materials and the minimum requirement was seen as a barrier to this.</p> <p>The point that was allocated to the minimum requirement was taken out of the points for the 26A.1 and 26B.1 pathways.</p>	
<b>ENV-27</b>	<b>Sustainable Transport and Movement</b>
No changes were made to this credit	
<b>ENV-28</b>	<b>Sustainable Sites</b>
Minor changes were made to this credit; the Australian act was replaced with the NEMA act; and the definition of the Suitable Professional was changed accordingly.	
<b>ENV-29</b>	<b>Ecological Value</b>
Minor changes were made to this credit; mainly to change the definition of the Suitable Professional to a South African relevant profession.	
<b>ENV-30</b>	<b>Waste Management</b>
No changes were made to this credit	
<b>ENV-31</b>	<b>Heat Island Effect</b>
No changes were made to this credit	
<b>ENV-32</b>	<b>Light Pollution</b>
No changes were made to this credit	



## 2 Introduction

**What is Green Star Sustainable Precincts?** Green Star is an internationally recognised rating system that delivers independent verification of sustainable outcomes throughout the life cycle of the built environment. Green Star Sustainable Precincts is a holistic rating tool for communities and precincts.

As per the Australian Green Star Communities v1.1. Submission Guidelines:

Green Star – Communities is a rating tool that evaluates the sustainability attributes of the planning, design, and construction of large-scale development projects, at a precinct, neighbourhood, and/or community scale. The Green Star – Communities rating tool will assist governments, development project teams, contractors and other interested parties aiming to deliver large-scale sustainable developments around Australia to:

- Provide diverse, affordable, inclusive, well connected and healthy places to live, work and play;
- Protect, maintain and restore the natural environment by reducing the ecological footprint of developments;
- Receive recognition for demonstrated leadership and commitment to sustainability;
- Achieve real value for money through demonstrated whole-of-life cost savings; and
- Encourage opportunities for business diversity, efficiency, innovation, and economic development.

Green Star – Communities assesses projects against a holistic set of distinct social, environmental, and economic categories, and an innovation category. The categories are called:

- Governance;
- Liveability;
- Economic Prosperity;
- Environment; and
- Innovation.

The Green Star Sustainable Precincts Rating Tool is composed of the following documents

- I. Green Star Australia – Communities Submission Guidelines and Submission Templates
- II. Green Star Australia – Communities Scorecard; and
- III. Green Star Australia – Communities Change in Ecological Value Calculator.
- IV. Green Star – Sustainable Precincts Local Context Report

### 2.1 Local Context Report – Green Star Sustainable Precincts for South Africa

The development of the Australian Communities Tool was been a complex process and took an extensive amount of time in Australia. The objective of the Local Context Report (LCR) was to assess where the tool needs to be changed to be applicable to the South African Context. The development of the LCR did not constitute the development of a South African Communities v1 tool, it will however be the point of departure for a future version 1 tool.

The GBCSA initiated the LCR process to be carried out as the demand for a Sustainable Precincts tool was growing in South Africa, which is evident by the number of PILOT projects involved in this process. USAID provided the budget for a Technical Consultant to be appointed to undertake the work. Solid Green was appointed to lead the development of the LCR; which is done in collaboration with Urban Reflection and TAP Properties. The Technical Advisory Panel (TAP) consisted of 20 experts from the industry and thirteen PILOT projects were selected to provide input to the LCR development.



## 2.2 Stakeholders, Roles & Responsibilities

### **GBCSA**

The GBCSA was the client on the project as they are the custodians of the LCR and guided the LCR development to ensure the Technical Consultant adheres to the GBCSA's vision.

### **Technical Consultant**

The Technical Consultant is the appointed party, responsible for managing and leading the stakeholder participation and the developing of the LCR. The Technical Consultant was responsible for administrative tasks related to minutes and meetings, as well as ensuring that the pilot projects and expert's opinions are considered. They did interviews with industry experts where the expertise was missing on the Technical Advisory Panel (TAP) team. The consultant worked closely with the representatives of the PILOT projects and the TAP team to ensure the most inclusive results.

### **PILOT projects**

Thirteen pilot projects were selected to participate in the LCR development. Pilot projects contributed to the LCR by participating in a technical advisory panel (TAP) and by providing their written feedback to the GBCSA and the Technical Consultant.

### **Technical Advisory Panel (TAP)**

There were 15-20 people accepted for the Technical Advisory Panel (TAP); several of these individuals are also representatives of pilot projects, so there was an overlap of expert input and project input from the TAP. The TAP has a wealth of experience and knowledge, which the consultant captured into the development of the LCR.

## 2.3 Methodology

The Sustainable Precincts tool is different from the other Green Star tools as it does not follow the standard eight categories of Green Star. The Sustainable Precincts tool has four categories; namely Governance, Liveability, Economic Prosperity and Environment. In total, there are 32 credits in the four categories and 100 points are available for the projects.

The team looked at the eligibility criteria and the certification process and evaluated if all the requirements are appropriate for South Africa.

Each credit was reviewed in the following manner:

- **Aim of the Credit**
  - Is the aim of the credit relevant to the South African Context?
- **Credit Criteria**
  - Are the credit criteria relevant to the South African Context?
  - Are the benchmarks set correctly for the South African Context?
  - Are there local equivalent standards/legislation that can be referenced?
  - What must be amended to make the credit criteria appropriate for implementation in RSA.
- **Calculator (credit 29 Ecological Value)**
  - Is the Calculator for Ecological Value applicable to South Africa?
  - What changes to the benchmarks and calculator are required?
- **Total suite of credits**
  - Are there any major gaps in the issues that the credits address?
  - Are there South African specific planning items that must be included?

### **TAP Workshops**

As part of the LCR development process, three TAP workshops were held.

- TAP 1 5 October 2016
- TAP 2 2 November 2016
- TAP 3 2 December 2016

The goal of the workshops was to get as much feedback and technical input from the different stakeholders and PILOT projects as possible. The workshops were structured as follows, first a general session followed by working group sessions. In the general session we discussed the tool name, eligibility criteria and recertification. During the latter part of the workshops, the TAP members were divided in 4 groups, a group for each category. In the working groups the TAP members were taken through the details of each of the credits for the TAP to comment on.

Solid Green appointed group leaders to each of the categories.

Governance	Working Group Leader: Bakang Moeng (TAP properties)
Livability	Working Group Leader: Zandre Compion (Solid Green)
Economic Prosperity	Working Group Leader: Adrie Fourie (Urban Reflection)
Environment	Working Group Leader: Marloes Reinink (Solid Green)

### **PILOT feedback**

The pilot projects were requested to provide feedback to the Technical Consultant. This was done in two parts; one deadline on the 19th of October and one deadline on the 16th of November. Each project had to complete two categories for each deadline. This information was summarised and included in the LCR Tracker sheet.

### 3 South Africa from a Communities Perspective

*A sustainable city can be defined as a city that meets its developmental responsibility (social justice and urban safety) in a sustainable, spatially transformed and resource-efficient way (natural and economic resources, and human capacity) that takes into account the limited biophysical planetary boundaries (environmental thresholds). Living sustainably means grappling with the “perfect storm” associated with the inseparability of water, food, energy and climate change (Oxford Martin University, 2013: 18).*

#### 3.1 Historical background

##### Displacement and segregation

Across the country, politically driven social engineering of the 1950s is physically manifested in the structure of cities and towns and their surrounding areas. Apartheid planning left South Africa with a spatial legacy of ‘sprawl, low densities, functional segregation between home and work, and overlapping racial and class separation’ (COGTA 2016:22). The global phenomenon of urbanisation with its impetus in people’s search for better economic opportunities and improved quality of life, adds an additional layer to the massive challenge of spatial transformation that has become the centre of urban development policy discussion in the South Africa.

Apartheid created a legal system based on racial segregation to forcibly remove and take away the rights of African, Indian and Coloured people to own land outside specified areas. Physical marginalisation of people to the peripheries of urban centres had other structural consequences. Limited access to economic opportunities, restricting housing availability to the outskirts of cities leading to expensive long haul transport requirements, and consequently further socio economic marginalisation.

##### Continuation of apartheid spatial patterns

With the advent of democracy in 1994, armed with the Constitution of 1996, South Africa began a process to address systemic issues by investing in programmes to improve housing, transport, education, healthcare and bulk services. Despite significant improvements to the lives of many South Africans through improved service delivery and access, the processes have been slow, often politicised and ‘unintentionally served to reinforce the apartheid status quo’ (COGTA 2016:22).

Public housing based on the RDP model, again provided on the outskirts of cities, still houses the majority of poor people. A homogenous approach and urgency hampered any efforts to deliver complete urban solutions there. In reaction to dysfunctional urban centres and with the promise of safety and holistic community living, privately developed housing estates and other gated living solutions also developed on the urban fringe adding to existing problems of sprawl. The context drove the development of a huge informal economy in South African cities, but little understanding of the role of informality and a lack of will to convert this into formal economy has proved a missed opportunity. Continued exclusion, isolation and separation serve to exacerbate problems of the past. Additional burdens on road and service infrastructure, continued economic exclusion along class lines and general barriers to decent living conditions, in addition to social and political impacts places strain on state resources, individuals, families and on our natural resources. (SACN 2016: 50-58)

High crime rates in large cities and towns became an urban reality perpetuated by structural and spatial inequality in the country. South African industry responded to crime by fleeing from city centres, which only compounded the problems in CBDs. Suburbanites responded by barricading, building higher walls and moving into ‘estates’, further expanding unhealthy spatial hierarchies.

More than two decades later it has become even more apparent that the legacy of spatial segregation is physically entrenched in so much of the fabric of the city that it will not change without long term vision and deep determination.

### Spatial Transformation

The South African Cities Network (SACN) *State of South African Cities Report 2016* describes the characteristics of quality urban environments as follows:

*Urban residents are content when they feel as though they have a hand in shaping and building the city and where governance is driven by the state but shared with civil society. Cities that have content residents display certain characteristics, such as Accessibility, Mix of land uses and incomes, Quality public spaces, Innovative urban design, safety and Integration.*

Through much change to policy and planning, South Africa now has a *National Development Plan* (2012) and the recently published *Integrated Urban Development Framework* – IUDF (COGTA 2016), both placing a focus on spatial transformation as integral to change. On the back of the South African urban reality the vision of the IUDF - liveable, safe, resource efficient cities and towns that are socially integrated, economically inclusive and globally competitive where residents actively participate in urban life – appears a mammoth task. While much of the change required is of a physical nature and literally requires the transformation of how space is structured, it clearly must go hand in hand with transformation in areas of governance, the economy of cities, social equality, and sustainable growth.

## 3.2 Socio-economic perspective

Over the past 20 years, mixed progress has been achieved in addressing capital injustice and socio-economic inequality in South Africa. Since the start of the South African democracy in 1994, the reality for many South Africans was displacement, marginalization, inadequate shelter, tenure and asset insecurity, and poor access to the socioeconomic opportunities (SACN, 2016:48).

During this time, the scale, nature and appearance of South African cities have visibly changed. Cities have become modernized providing people with access to basic services, shelter and city resources.

Transformation is an ongoing process and changes are taking place across South Africa's towns and cities, albeit at different rates, and more often than not, the changes are not universal but rather location specific, (Harrison and Todes, 2014).

According to the *State of South African Cities Report* (2016) public investment has been focussed on a number of interventions, including “low-income housing, public transport infrastructure, and bulk infrastructure for basic services provision, as well as in improved access to health and education”. In parallel, investments from the private sector have been concentrated on “office parks, shopping malls and residential developments, predominantly in the form of townhouses and gated estates with an emphasis on security” (Schensul and Heller, 2010).

Jobs have been increasingly provided close to places of residence and other services, but the process of changing the legacies of the past have been slow, and some feel that this process has not been ‘inclusive enough and has (in some instances) extended undesirable urban trends’ (SACN, 2016:49). Challenges around housing, affordability and appropriate configuration of developments to provide sustainable human settlements, persist. Through the *National Development Plan* (NDP) and other policy drivers, such as the *Integrated Urban Development Framework* (IUDF) there is an increasing drive to move away from provision of housing toward to creation of appropriate urban communities.

### The Importance of the City

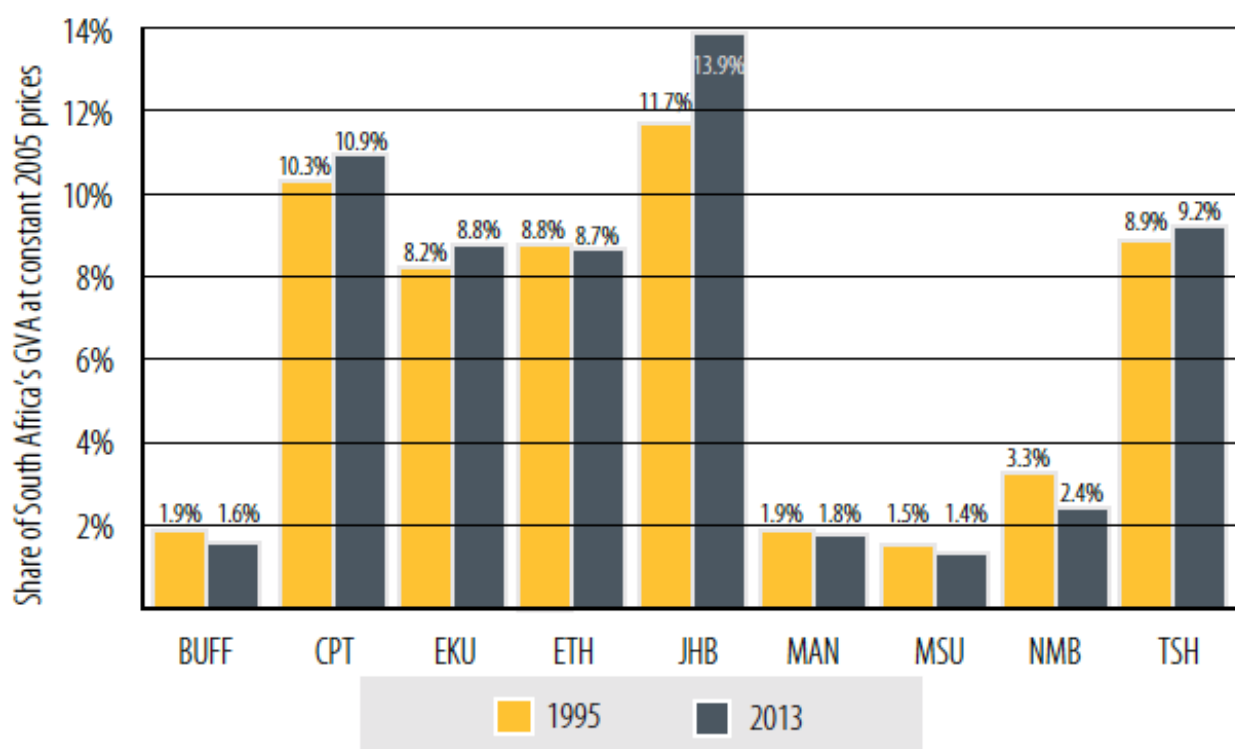
The economy of South Africa has become increasingly geographically concentrated over the past two decades, with cities playing an increasingly important role in creating growth, development and providing a diverse range of opportunities. The South African Cities Network's focus is on nine city members which now account for 58.7% of South Africa's gross value added (GVA), which is a measure of economic activity at the city or regional level. The nine cities fall into two sub-groups:

- **Five large cities** (Johannesburg, Cape Town, Tshwane, Ekurhuleni and eThekweni) that dominate the national economy, and home to 35% of South Africa's people with generally diversified economies; and
- **Four smaller cities** (Nelson Mandela Bay, Mangaung, Buffalo City and Msunduzi) which serve as regional economic hubs and tend to have smaller economic bases and are also more at risk from volatile global and domestic economic forces (SACN, 2016:93).

The following diagram provides additional insight into the growth of GVA contributions as it has changed between 1995 and 2013. From this data, the following main points can be highlighted:

- Johannesburg, the provincial capital of the Gauteng province is the largest and fastest growing economy, which from 2005 has outpaced all other larger cities in terms of growth;
- Gauteng cities led economic growth performance between 2005 and 2013;
- Cape Town and eThekweni experienced similar growth rates, but significant potential will drive these two nodes to exceed expectations moving forward (SACN, 2016:95).

Diagram 1 - City contributions to South Africa's total economic output (1995 and 2013)



Source: SACN, 2016.

In general, the SACN cities' economies are driven by tertiary services and in 2013, this made up almost three-quarters (74.2%) of the cities' combined economic base, which is at a higher proportion than the national average (69.8%), and these cities also accounted for almost four-fifths (79.3%) of total city employment. Secondary sectors or production accounted for less than a quarter (22.2%) of total city economic activity, and only 18.3% of employment (SACN, 2016:95).

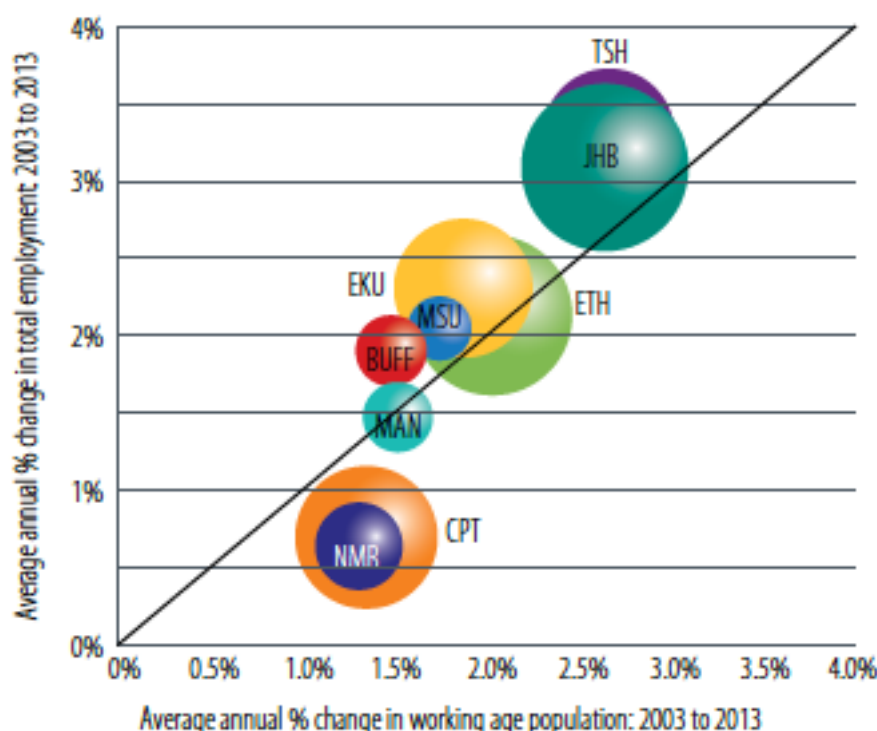
### Employment and Economic Sector Labour Intensity

The ability of cities to create employment opportunities was negatively affected by the 2008 economic downturn, with the effects still ongoing. South African cities need to create jobs with work-seekers, with additional pressures due to the attraction of economic migrants to these major economic centres.

Between 1995 and 2013, informal work increased from 21% to 29% of average city employment, while unskilled formal work declined from 36% to 25% (Figure 3.9). At the same time, the share of highly skilled and skilled formal jobs increased, which points to the main reason for the widening income inequality over the past two decades (SACN, 2016:102).

The diagram below provides a snapshot of labour intensity experienced by various economic sectors. Sectors with an increasing labour intensity are shown above the line, and the size of the bubbles is an indication of total sectoral employment in 2013.

Diagram 2 - Cities labour absorption rate (2003 - 2013)



Source: SACN, 2016:101.

The five largest cities account for almost half (43%) of all employment in South Africa: Johannesburg with 11.3%, eThekweni with 8.8%, Cape Town 8.4%, Ekurhuleni 7.1% and Tshwane with 7.9% (SACN, 2016:101).

To make cities economically competitive, productive and inclusive, a lot is required. An integrated approach combining the investment power of the public and private sector aimed at creating appropriate human settlements and economic growth nodes, is essential.

Improving the ability of people to actively participate in the formal economy by expanding their skills base, providing access to basic services, and enhancing the enabling environment required to support economic infrastructure development. Addressing the apartheid city legacy by improving approaches to spatial settlement patterns can drive the growth and development of social, economic and environmentally efficient cities that are inclusive, enabling people to access economic opportunities across the city.

### 3.3 Integrated Urban Design Framework (IUDF)

As sustainable development progresses within the South African context, it becomes important to understand the scale of environmental problems not only at a building (household) scale but on a community, city and regional scale also. A broader understanding of sustainability gives an appreciation of various strategies that can be implemented to address environmental efficiency simultaneously at building scale as well as at city and regional scale.

In examining environmental issues on city scale, one starts identifying commonalities between building scale environmental issues and city scale, which presents great opportunity for an integrated design approach that will address issues at these varying scales. At Community/City scale, some of the factors that would affect the environmental performance would be;

- Absence of and inappropriate laws and legislation;
- Inadequate tax/financial revenue;
- A limited understanding of the environmental issues;
- Loss of biodiversity, habitats and endangered species;
- Appropriate infrastructure design to deal with natural disasters, water pollution as well as air pollution;
- Densification; maximising land-use and limiting the need for vehicular transport.

The South African government has developed an Integrated Urban Design Framework (IUDF) that is geared at addressing high levels of environmental inefficiencies within South African cities. These inefficiencies; that have been the result of the Apartheid legacy of poor planning, poverty and exclusion from social and economic opportunities are addressed through nine policy levers within the IUDF. Directly dealing with high inefficiencies in the use of non-renewable resources, with a particular focus on maximising efficiency for land-use and infrastructure networks.

The policy levers are described within the IUDF as follows:

#### **Policy lever 1: Integrated spatial planning**

Integrated spatial planning is essential for coherent development. It stimulates a more rational organisation and use of urban spaces, guides investments and encourages prudent use of land and natural resources to build sustainable communities.

#### **Policy lever 2: Integrated transport and mobility**

Integrated transport and mobility is a vital component of South Africa's economic infrastructure investment. It contributes to a denser and more efficient urban form, supports economic and social development, and is crucial for strengthening rural-urban linkages.

#### **Policy lever 3: Integrated and sustainable human settlements**

Integrated and sustainable human settlements are key to redressing the prevailing apartheid geography, restructuring cities, shifting ownership profiles and choices, and creating more humane (and environment-friendly), safe living and working conditions.

#### **Policy lever 4: Integrated urban infrastructure**

An integrated urban infrastructure, which is resource efficient and provides for both universal access and more inclusive economic growth, needs to be extensive and strong enough to meet industrial, commercial and household needs, and should also be planned in a way that supports the development of an efficient and equitable urban form and facilitates access to social and economic opportunities.

#### **Policy lever 5: Efficient land governance and management**



Both municipalities and private investors have a vested interest in land value remaining stable and increasing. At the same time, property values reflect apartheid patterns of segregation and mono-functional use, which need to be addressed to promote spatial transformation. Efficient land governance and management will contribute to the growth of inclusive and multi-functional urban spaces.

**Policy Lever 6: Inclusive Economic Development**

Cities and towns that are dynamic and efficient, foster entrepreneurship and innovation, sustain livelihoods, enable economic growth and generate the tax base needed to sustain and expand public service and amenities.

**Policy Lever 7: Empowered Active Communities**

Cities and towns that are home to socially and culturally diverse citizens, who are actively involved in city life and committed to making South Africa work.

**Policy Lever 8: Effective Urban Governance**

Deliver cities and towns that have the necessary institutional, fiscal and planning capabilities to build inclusive, resilient and liveable urban spaces.

**Policy Lever 9: Sustainable Finances**

Cities and towns that are supported by a fiscal framework that acknowledges the developmental potential and pressures of urban spaces, manage their finances effectively and efficiently, and are able to access the necessary resources and partnerships for inclusive urban growth.

An integrated approach becomes a key aspect in addressing environmental issues on a city scale. Acknowledging the interconnectedness of systems and infrastructures whilst identifying environmental efficiency opportunities that present themselves at such scale and making use of those opportunities to minimise the city's impact on the natural environments.

### 3.4 Urban Realities in South Africa

*'The typical South African city has followed a resource-intensive growth path, and suffers from inefficiencies across sectors such as energy, water, waste, food, and transport. The energy mix is unsustainable, landfill sites are fast running out of airspace, freshwater resources are constrained, and greenhouse gas emissions are increasing (mainly from electricity generation and vehicles that run on fossil fuels). Cities have to develop sustainable city growth paths and priorities, and put in place systems to monitor their performance.'* (SACN 2016:10)

The county's apartheid legacy has left cities lagging behind with infrastructure and service delivery not able to meet the needs of population growth. Planning and service delivery approaches need to be overhauled as the current situation is perpetuating exclusion and is ineffective. The focus has theoretically shifted to a sustainable emphasis on densification of cities through encouraging housing delivery and Transit Oriented Development (TOD), public open spaces and green zones in cities. In reality spatial transformation is very slow to move beyond theory. For this to change it is necessary for cities to realise that growth and development is dependent on sustainability and vice-versa and sustainability therefore has to be an integral part of the city's development paradigm and not only a part of its long term goals.

The IUDF describes the following challenges that prevent growth and economic prosperity while placing additional burden on land and resources as South Africa's current urban reality.

- The urban population is growing larger and younger;

- Urban centres dominate South Africa's economy
- Cities and towns have been shaped by the apartheid legacy
- Demographic, migration and settlement patterns have shifted toward urban areas
- A simplistic concept of a rural-urban 'divide' does not reflect the reality of rural-urban interdependency'.
- Urban resilience needs to be strengthened and adapt capacity to climate related hazards and disasters
- Urban Safety is a basic human right and public good

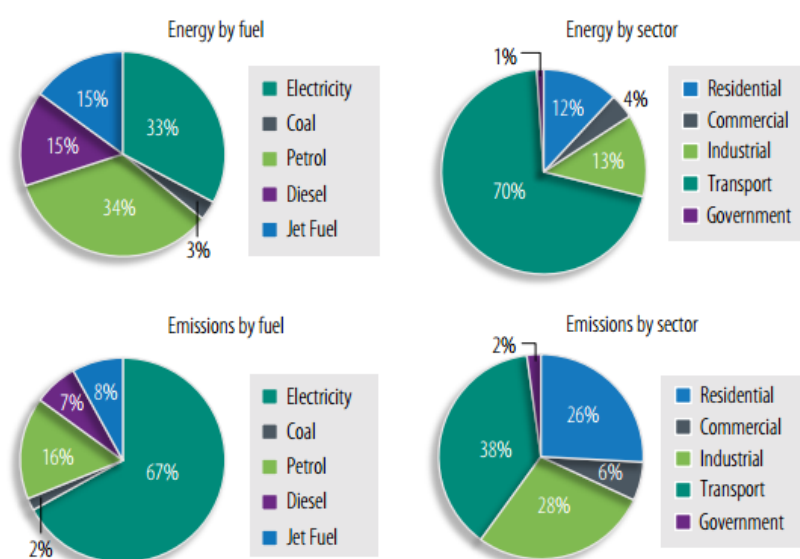
South African cities can be described as 'resource intensive' placing major pressure on natural resources without equal steps to maintain, manage and replenish. Policy level commitments to becoming more sustainable and resource efficient has not brought change at a sufficient pace. In order for cities to become resilient they need to be more resource efficient and deal with the challenges presented by for instance High Population Growth and Urbanisation; Energy and Electricity Usage; Access to Reliable Safe Water and Sanitation Services; Waste Generation & Transport and Mobility.

### Population Growth and Urbanization

- The United Nations estimates that by 2030, 71.3% of the South African Population will live in urban areas, increasing to 80% in 2050. A great challenge is presented by the slow pace of formal housing delivery and land release under the pressure of the large housing demand that urbanisation together with previous exclusion presents. People are looking for opportunities in cities, but numerous challenges mean that the concentration of poverty in large urban areas is growing. There is a lack of sufficient social and rental housing. Access to affordable housing is limited by a shortage of well-located land and high property prices. This contributes to the proliferation of marginalized and disconnected settlements.

### Energy and Electricity Usage

Eskom, the country's main electricity provider is under severe financial and political strain. It is struggling to keep up with demand while municipal debts are causing it extra financial woes. South Africa has lived through bouts of load shedding with damaging economic consequences. South Africa is struggling to fully shift its focus to development of alternative energy even though the country has committed to GHG reductions.

**Figure 5.2: Energy use and emissions for a typical metro**

Source: SEA (2015)

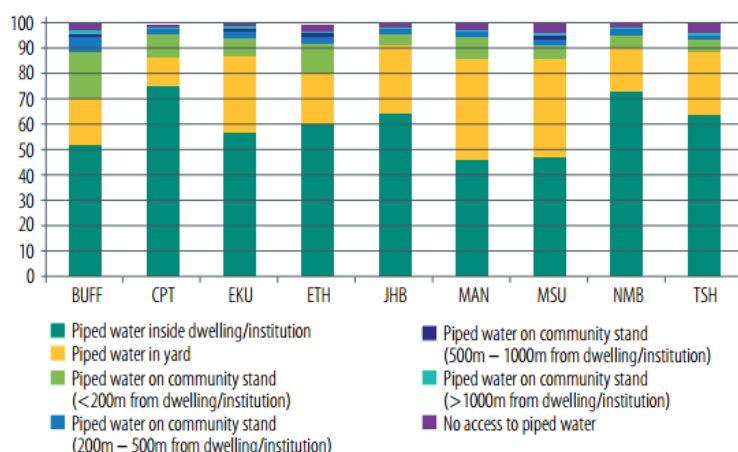
While eight of South Africa's cities consume more than a third of the country's total energy, municipalities are reluctant to embrace alternatives as electricity sale profits are used to cross subsidise other municipal services. The transport sector is responsible for 70% of the energy consumption in cities, which translates to 38% of GHG emissions. Electricity is the largest emitter of GHG emissions as it is generated by coal. Residential and Commercial sectors are responsible for 16% of the energy used, but 32% of the GHG emissions. (SACN 2016:166-167)

While cities stand to lose out on energy tariffs and oil import duties were renewables to grow substantially they have an opportunity to play a major role as a leader in this field as the savings opportunities would make a considerable impact and provide substantial demand for alternative industry development.

### Access to Reliable Safe Water and Sanitation Services

Most recently droughts throughout the country have made South Africans sit up and notice water as a scarce and critical resource. In major cities, the middle class and up take safe clean drinking water for granted, while large numbers of South Africans still collect water from communal taps and share communal pit latrines within marginalised areas on the outskirts of these metros. Water restrictions across the country and critical levels of major dams made the importance of water slightly more difficult to ignore. In times of drought the country's unmaintained infrastructure also comes under scrutiny as government demands citizen's cooperation to curb their water usage while potable water gushes from burst municipal mains and pollution of natural rivers and wetlands by big industry are ignored.

Even though the last 20 years has seen the biggest increase in the number of people that can access safe drinking water the provision of sanitation services is lacking. Further, there is inadequate access to public ablution facilities in public places, where these are either privately controlled or not maintained becoming no-go zones from a safety perspective. Quality sanitation services for all are critical to ensure the health and dignity of citizens and the quality and cleanliness of natural resources in and around cities. (SACN 2016:178-183)

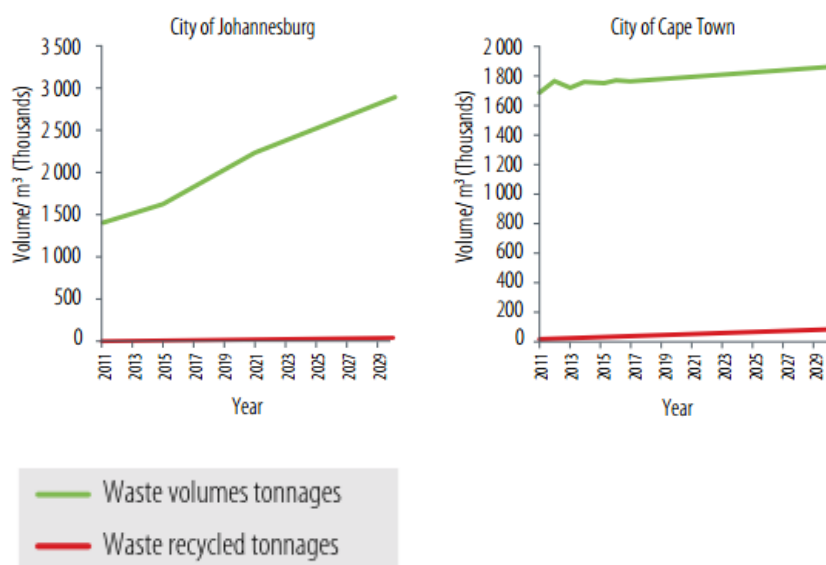
**Figure 5.12:** Percentage of households with access to water (2010)

Source: SALGA/WRC (2014)

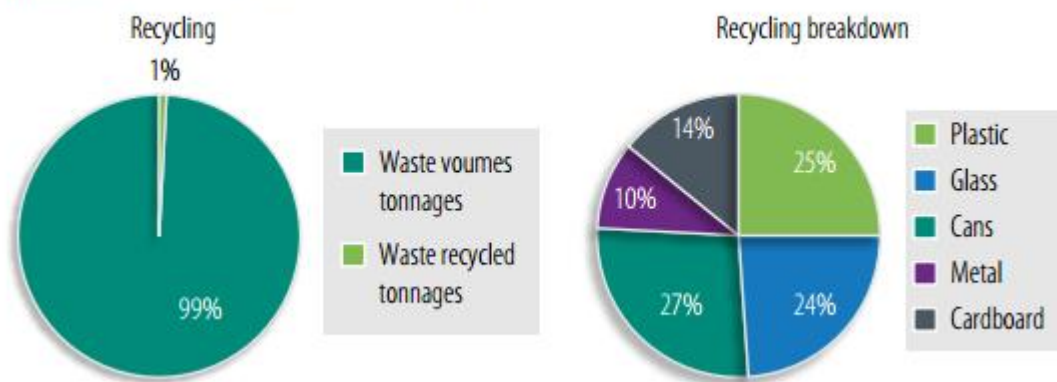
The threat of future water scarcity demands that greater attention be paid in the present to the management of water related services, the approach of the city to service provision and maintenance, as well as citizen's role in water use and conservation. Spatial transformation such as densification and public service upgrading alongside improved inclusivity of human settlements will benefit water and sanitation service management, if this resource's efficiency is aggressively pursued.

### Waste Generation and Recycling

Due to increased urbanisation the levels of waste generated in cities are increasing. While South African cities are grappling with landfill sites that are filled to capacity, a large amount of waste produced is not managed and does not even reach an overextended landfill site. Waste management is an essential municipal service, but in cities dealing with high levels of informality in commercial and housing districts, more creative solutions to waste management will need to be found to protect public health, the environment as well as the people's perception of the quality of city spaces.



Source: State of Cities Report 2016

**Figure 5.7: Recycling figures for the City of Cape Town**

**Source:** State of Cities Report 2016

Recycling initiatives have somewhat reactively been pushed forward in big cities with mixed results, but recycling rates remain shockingly low in all cities. Recycling initiatives by municipalities have however contributed to an increased demand for waste products and a greater variety of products produced from post-consumer recycled materials. Waste is a resource that can provide economic opportunities while reducing environmental pollution and improving the quality of cities, if managed well.

### Transport and Mobility

Transport in South African cities is predominantly orientated towards private car use. The greatest percentage of South Africans make use of public transport to get to work, of which part of this trip they need to walk. The second highest number of people travel by private car, although this number would be far lower if cities were designed for walking and low income communities were not situated on the outskirts of cities. (STATSSA, 2013) Due to the remnants of apartheid planning, poor people still have to commute long distances and pay high transport costs to get to where they want to go. Public transport services differ across cities. The larger cities have begun to overhaul their public transport services, but many challenges exist due to the disconnected sprawling nature of these cities.

Several municipalities are looking at Transit Orientated Development (TOD). A TOD is a type of development, which is focused around a public transport station or interchange and is characterized by a mixture of land uses (dwellings, workplaces, facilities, shops and services) and an accessible, walkable public environment. These types of development will help to restructure the city and redress dysfunctional socio-spatial patterns. The 2011 National Development Plan called for TOD principles to be employed more widely. TOD's can create economic opportunities as a direct result of situating people close to business and opportunity.

### Green Infrastructure

Some of the inherent issues with resource inefficiency can be addressed with a move toward Green Infrastructure. The current thinking in city design tends to reflect an older style of engineering thinking in which every problem can be solved by some human structure to control nature. This often means that open green spaces are thought of as secondary compared to development and progress. For example, natural rivers systems are turned into concrete channels to help speed storm water away (which creates problems downstream) and free up more land for building development. Green spaces are not seen as adding value to the city and it is very difficult to put a monetary value to it, although new systems are being developed to help with that problem.

A large problem that faces cities in South Africa is that the infrastructure development has not kept pace with the population growth in urban areas and is currently over-stressed and in some cases beyond their

intended service life. To build all the required infrastructure the traditional way would require a very large amount of time and resources, Green infrastructure can provide the same services at lower initial costs and with increasing benefits over time.

Planning for green infrastructure is making its way into city policy documents with Johannesburg, eThekweni, Cape Town and Tshwane, incorporating design ideas that incorporate, use, encourage and protect green spaces in the city to promote a more resilient and sustainable framework in the city. These involve developing existing green spaces and expanding and networking them together to form a city-wide system to make use of existing infrastructure, meet health requirements, address social concerns and deal with the impacts of climate change.

### 3.5 Legislation, Policies and strategies

South Africa has a range of legislation, policies and strategies to guide integrated planning:

- National Development Plan 2030
- White Paper on Local Government (1998)
- Municipal Systems Act (no 32, of 2000)
- National Environmental Management Act
- Spatial Planning and Land Use Management Act

This legislation provides principles for integrating and aligning government plans in:

- Spatial Development Frameworks (SDF)
- Integrated development Plans (IDP)
- Built Environment Performance Plans (BEPP)
- Long term vision and city development strategies (e.g. Tshwane 2055, JHB Corridors of Freedom)

These plans provide the platforms to integrate public and private sector investment, addressing specific issues specific to region it serves. The responsibility for developing and implementing these plans are at a municipal scale with significant potential for public participation to ensure interventions ultimately align with the needs of the communities it will serve.

## 4 Green Star Sustainable Precincts

### 4.1 Eligibility

#### Space Use

Set out below are the building classifications as defined by the NCC 2016 Building Code of Australia – Volume One. Effort has been made to find a correlated description from the Occupancy and Building Classifications as set out in the South African National Building Regulations and Building Standards Act No. 103 of 1977.

First, each class is set out according to the NCC, these descriptions are then followed by a reference to the South Africa standards description.

**Class 1:** one or more buildings, which in association constitute—

- a) **Class 1a** — a single dwelling being—
  - i. a detached house; or
  - ii. one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, townhouse or villa unit; or

b) **Class 1b** —

- i. (i) a boarding house, guest house, hostel or the like—
  - A. with a total area of all floors not exceeding 300 m<sup>2</sup> measured over the enclosing walls of the Class 1b; and
  - B. in which not more than 12 persons would ordinarily be resident; or
- ii. 4 or more single dwellings located on one allotment and used for short-term holiday accommodation, which are not located above or below another dwelling or another Class of building other than a private garage.

**Class 2:** a building containing 2 or more sole-occupancy units each being a separate dwelling.

**Class 3:** a residential building, other than a building of Class 1 or 2, which is a commonplace of long term or transient living for a number of unrelated persons, including—

- a) a boarding house, guest house, hostel, lodging house or backpackers accommodation; or
- b) a residential part of a hotel or motel; or
- c) a residential part of a school; or
- d) accommodation for the aged, children or people with disabilities; or
- e) a residential part of a health-care building which accommodates members of staff; or
- f) a residential part of a detention centre.

**RSA:** Class 1 – 3 refers to residential uses, which, in the South African code is classified as: H2, H3, H4 and H5

**Class 4:** a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

**Class 4 is excluded from the Space Use requirements as set out in the Communities Guidelines.**

**Class 5:** an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

**RSA:** A similar classification in the SA code is covered by G1

**Class 6:** a shop or other building for the sale of goods by retail or the supply of services direct to the public, including —

- a. an eating room, café, restaurant, milk or soft-drink bar; or
- b. a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or
- c. a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- d. market or sale room, showroom, or service station.

**RSA:** A similar classification in the SA code is covered by A1

**Class 7:** a building which is—

- a. **Class 7a** —a carpark; or
- b. **Class 7b** — for storage, or display of goods or produce for sale by wholesale.

**RSA:** No direct comparative classification for Class 7a is set out in the SA Code, and Class 7b best relates to F3.

**Class 8:** a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

**RSA:** The closest related description for this use in the SA code is category B3



**Class 9:** a building of a public nature—

- a) **Class 9a** — a health-care building, including those parts of the building set aside as a laboratory; or
- b) **Class 9b** — an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or
- c) **Class 9c** — an aged care building.

**RSA:** Class 9 in the NCC seem to refer to buildings of a public nature, and in the SA code this is covered by: E2, E3 and E4.

### Spatial Differentiation

No changes to the current requirements

### Conditional Requirement

Projects must meet the Conditional Requirement as set out in CREDIT 28 Sustainable Sites. The project must not be subject to the NEMA Act, or alternatively have an approved Record of Decision from the department.

### Timing of Certification

No changes to the current requirements

## 4.2 Implementation & Re-certification

### Green Star Sustainable Precincts - Certification and Recertification

Green Star – Sustainable Precincts requires projects to maintain a valid rating throughout their lifetime, until the plan for development is fully built out. The certification process for Green Star – Sustainable Precincts requires an Initial Certification, and subsequent **Recertification** at 5 (five) year intervals until the plan for development is fully built out. If the project is not recertified within these 5-year intervals the rating will expire.

If your project build out programme is somewhat longer than 5 years or 5 year multiples, the GBCSA will accept 6 or 7 years as an acceptable period - this is to be agreed on a project-by-project basis via Technical Clarification.

The Recertification process consists of three types of checks:

1. **New credits check** – new credits that were not submitted at the Initial Certification stage require complete assessment to verify compliance with the credit criteria.
2. **Revised/updated credits check** – where project details have changed (i.e. physical changes to the design or changes in design methodology) and compliance with the credit criteria needs to be reaffirmed.
3. **Unchanged credits check** - no check required.

### Costs

Recertification registration - R15,000 (including VAT)

- **New credits check** – R5,000 (including VAT).
- **Revised/updated credits check** – R2,500 to R5,000 (including VAT) – depending on the extent of the change/update.
- **Unchanged credits check** - R0.

Fees are subject to annual increases

### 4.3 Credit Overview

GOVERNANCE			28
	Credit	Credit Name	Points
	GOV-1	Green Star Accredited Professional	1
	GOV-2	Design Review	8
	GOV-3	Engagement	6
	GOV-4	Adaptation and Resilience	4
	GOV-5	Corporate Responsibility	3
	GOV-6	Sustainability Awareness	2
	GOV-7	Community Participation and Governance	2
	GOV-8	Environmental Management	2
LIVEABILITY			22
	Credit	Credit Name	Points
	LIV-9	Healthy and Active Living	5
	LIV-10	Community Development	4
	LIV-11	Sustainable Buildings	4
	LIV-12	Culture, Heritage and Identity	3
	LIV-13	Walkable Access to Amenities	2
	LIV-14	Access to Fresh Food	2
	LIV-15	Safe Places	2
ECONOMIC PROSPERITY			21
	Credit	Credit Name	Points
	ECON-16	Community Investment	4
	ECON-17	Affordability	4
	ECON-18	Employment and Economic Resilience	2
	ECON-19	Education and Skills Development	3
	ECON-20	Return on Investment	2
	ECON-21	Incentive Programs	2
	ECON-22	Digital Infrastructure	2
	ECON-23	Peak Electricity Demand Reduction	2
ENVIRONMENT			29
	Credit	Credit Name	Points
	ENV-24	Integrated Water Cycle	7
	ENV-25	Greenhouse Gas Emissions	6
	ENV-26	Materials	5
	ENV-27	Sustainable Transport and Movement	3
	ENV-28	Sustainable Sites	2
	ENV-29	Ecological Value	2
	ENV-30	Waste Management	2
	ENV-31	Urban Heat Island	1
	ENV-32	Light Pollution	1
INNOVATION			10
	Credit	Credit Name	Points
	INN-33	Innovation	10
	= No changes to the credit		
	= Minor changes to the credit		
	= Major changes to the credit		

## 4.4 Credit by Credit – Governance

Refer to the table on the next page for a Credit-by-Credit evaluation of the Governance Category.

GOV-1	Green Star Accredited Professional
GOV-2	Design Review
GOV-3	Engagement
GOV-4	Adaptation and Resilience
GOV-5	Corporate Responsibility
GOV-6	Sustainability Awareness
GOV-7	Community Participation and Governance
GOV-8	Environmental Management

		Aim of the Credit	Credit Criteria Summary	Compliance Requirements	Definitions	Guidance	Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be confirmed	Reasons for changes/Summary	GBCA Concluding Comments
GOV-01	Green Star SA AP	To recognise projects that engage a Green Star SA Accredited Professional to support the Green Star SA certification process.	1.1 point is available where a Green Star SA Accredited Professional (GSAP AP) has been contractually engaged to provide advice, support, and information related to Green Star SA principles, structure, timing and process throughout the relevant certification period.	1.1 One (1) point is awarded when a <del>Green Star Accredited Professional (GSAP)</del> Green Star South Africa Accredited Professional (GSAP AP), with Green Star <del>Accredited Professional</del> Sustainable Precincts training, has been contractually engaged as part of the project team, to deliver services in accordance with the requirements of 1.1.1 to 1.1.6.	Green Star (SA) <del>Accredited Professional</del> Sustainable Precincts Accredited Professional – an individual who has acquired the appropriate competencies, skills and knowledge to become a Green Star SA Accredited Professional. The person must have attended the Green Star <del>Accredited Professional</del> Sustainable Precincts Course and passed the Green Star <del>Accredited Professional</del> Sustainable Precincts exam.	1.1 As per the Green Star Communities v1.1 Submission Guidelines	1.1 Additional Supporting Documents - Copy of Green Star Sustainable Precincts AP Certificate	1			1.1 The credit references the GBCA's (Green Building Council of Australia) CPD Programme. The GBCSA (Green Building Council of South Africa) does not have a CPD Programme in place; therefore, this requirement has been replaced with the alternative for the Green Star South Africa Accredited Professionals to attend a Green Star Sustainable Precincts Workshop and pass the Green Star Sustainable Precincts Exam instead of being part of the GBCA CPD Program.	AGREED WITH GBCA
				1.1.1 The <del>GSAP</del> GSAP AP must be available in the Green Building Council of Australia (GBCA) CPD program and have current accreditation throughout the project.		1.1.2 The <del>GSAP</del> GSAP AP must provide advice and support (see Guidance) to ensure that the project team has access to information covering Green Star principles, structure, timing, and process including: a. Eligibility b. Categories c. Point allocation and scores d. Documentation and Compliance Requirements e. Technical Clarifications and Credit Interpretation Requests f. Certification process g. Green Star branding and marketing rules	1.1.3 For initial certification the <del>GSAP</del> GSAP AP must complete the Project Inception Checklist (see Guidance).	1.1.4 The <del>GSAP</del> GSAP AP must facilitate at least two workshops (see Guidance) with the project team, covering the Green Star principles, structure, timing, and process topics outlined in 1.1.2.	1.1.5 The <del>GSAP</del> GSAP AP must provide guidance and support to the design team at all stages of the project, as follows: a. Participate in meetings and workshops; b. Review all documentation for compliance with Green Star; and c. Be responsible for the preparation and execution of the Green Star submission(s) for certification.	2.0 Last paragraph: Green Star does not require a specific design review meeting to be held for the sole purpose of a Green Star – Communities project submission. In most cases, the regulatory design review processes and panels that are required by government organisations or approval authorities will be sufficient for compliance, provided that all other Compliance Requirements are met. Examples of this type of design review panel <del>are the Urban Design Review Panel (UDRP) and the City of Cape Town Urban Design Policy going through the relevant reviews and approval by the City of Cape Town.</del>	2.0 Additional Supporting Documents As per the Green Star Communities v1.1 Submission Guidelines	
GOV-02	Design Review	To encourage and recognise projects that undertake a design review process designed to facilitate sustainable urbanism.	2.0 Design Review Requirements	2.0 Design Review Requirements As per the Green Star Communities v1.1 Submission Guidelines	2.0 As per the Green Star Communities v1.1 Submission Guidelines	2.0 As per the Green Star Communities v1.1 Submission Guidelines	2.0 Additional Supporting Documents As per the Green Star Communities v1.1 Submission Guidelines				2.0 More relevant references for South Africa.	AGREED WITH GBCA
				2.0.1 Including Design Review in the Planning and Design Process a. As per the Green Star Communities v1.1 Submission Guidelines b. At least one design review meeting must be held prior to the submission of a <del>Development Application/ Site Development Plan (SDP)</del> for similar with any relevant approval/consent authority. It is the responsibility of the applicant to organise and implement the design review of the site planning, layout and urban design; the GBCA does not facilitate this process.		2.0.2 Composition of the Design Review Panel a. As per the Green Star Communities v1.1 Submission Guidelines b. As per the Green Star Communities v1.1 Submission Guidelines c. Be registered by a relevant professional <del>professional</del> and be bound by that institution's code of ethics in relation to objectivity, integrity and accountability.	2.0.3 Type of Design Review The Design Review process undertaken by the project can be one of the following types: a. As per the Green Star Communities v1.1 Submission Guidelines b. As per the Green Star Communities v1.1 Submission Guidelines	2.1 Site Planning and Layout Up to 4 points are available where the project's site planning and layout is subject to a design review process. 2 points are awarded for an in-house design review process. 3 points are awarded for a mixed design review process. 4 points are awarded for a fully independent design review process.	2.1 As per the Green Star Communities v1.1 Submission Guidelines	2.1 Additional Reference Documents Act No. 16 of 2013: Spatial Planning and Land Use Management Act, 2013 City of Cape Town Municipal By-Laws, 2015 (for applicable Municipal By-Laws based on project location)	2.1 Additional Supporting Documents As per the Green Star Communities v1.1 Submission Guidelines	4
GOV-03	Engagement	To encourage and recognise projects that develop and implement a comprehensive, project specific stakeholder engagement strategy early in the planning process.	3.1 Stakeholder Engagement Strategy	3.1 Stakeholder Engagement Strategy Three (3) points are awarded where the project has a Stakeholder Engagement Strategy prepared in accordance with the core values of the International Association for Public Participation (IAP2) for public participation (see Guidance). The scope of the strategy must include the planning, design and construction phases of the project in accordance with 3.1.1 to 3.1.3.	3.1 As per the Green Star Communities v1.1 Submission Guidelines	3.1 Reference Standards IAP2 Australasia – Southern Africa Alternative compliance Projects can use an alternative method through aligning the public participation process required during an Environmental Impact Assessment (EIA) process with the GOV-03 credit requirements. Projects should use Guided Public Participation in the Environmental Impact Assessment Process Guidelines and will have to demonstrate that all the GOV-03 requirements have been addressed.	3.1 Additional Supporting Documents As per the Green Star Communities v1.1 Submission Guidelines	3			3.1 Project team may elect to use either the IAP2 Southern Africa Guidelines or the Guided Public Participation in the Environmental Impact Assessment Process Guidelines. The public participation process (carried out during an EIA process) is usually carried out by an environmental assessment practitioner and these practitioners are required to identify interested and/or affected parties (IAPAs), which in the case of this credit would be the project's stakeholder. There is opportunity to align the public participation process carried out during an EIA process with the GOV-03 credit requirements. In electing to use the EIA public participation process for compliance, project team will need to demonstrate that all the requirements outlined within the GOV-03 Engagement credits have been incorporated and addressed during the public participation process.	AGREED WITH GBCA
				3.1.1 Commitment 3.1.1.1 The Strategy must contain a commitment statement from the project applicant that addresses the International Association for Public Participation (IAP2) core values for public participation. This commitment may include elements such as a value statement, policy and/or procedures for engagement.		3.2 Strategy Implementation 3 additional points are available where 3.1 has been achieved and there is evidence that the Stakeholder Engagement Strategy is being implemented and formal monitoring, evaluation and reporting within the submission.	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3		3.2 No changes
GOV-04	Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	4.1 Climate Adaptation	4.1 Climate Adaptation 2 points are available where a project-specific Climate Adaptation Plan (CAP) has been developed in accordance with a recognised standard; and Solutions have been included into the plan for development that specifically addresses the risk assessment component of the adaptation plan	4.1 As per the Green Star Communities v1.1 Submission Guidelines	4.1 Climate Scenario (South Africa) It is recommended that project teams refer to <del>Guided Public Participation in the Environmental Impact Assessment Process Guidelines</del> , the <del>SA Department of Environmental Affairs</del> 2013 Long-Term Adaptation Scenario's Flagship Research Programme (LTAS) for South Africa: Climate Trends and Scenarios for South Africa, Pretoria, South Africa, when selecting the appropriate climate scenarios from IPCC AR5 climate models.	4.1 As per the Green Star Communities v1.1 Submission Guidelines	2			4.1 Additional South African reference documents have been listed within the guidelines to assist in revisiting the credit more applicable to the South African Market. As the credit is to be completed by a suitably qualified individual, the ones will be on the job professional to use the correct Global Circulation Models (GCMs) endorsed by the IPCC Intergovernmental Panel on Climate Change).	AGREED WITH GBCA
				4.2 Community Resilience 2 points are available where, prior to the occupation of any habitable building on the project site, a project-specific Community Resilience Plan (CRP) has been developed that addresses preparation, during and post-disaster communication, safety, and response		4.2 Additional Reference Documents National Climate Change Response Climate Change Adaptation – The City of Johannesburg 2009	4.2 As per the Green Star Communities v1.1 Submission Guidelines	4.2 As per the Green Star Communities v1.1 Submission Guidelines	4.2 As per the Green Star Communities v1.1 Submission Guidelines	2		4.2 Additional reference added
GOV-05	Corporate Responsibility	To encourage and recognise projects with a project applicant that has corporate responsibility as a core value.	5.1 Corporate Responsibility	5.1 Corporate Responsibility 1 point is available where the project applicant has a corporate responsibility policy and reports publicly against it annually.	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	1			5.1 No changes	AGREED WITH GBCA
				5.2 Sustainability Reporting Up to two (2) points are available where the project applicant undertakes sustainability reporting annually in compliance with the GBI Sustainability Reporting Guidelines, or the King Code IV, and in accordance with one of the following <del>three</del> alternative pathways: A. One (1) point is awarded where the sustainability reporting is in accordance with the 'Core' option of 5.2.1A, or B. Two (2) points are awarded where the sustainability reporting is in accordance with the 'Comprehensive' option of 5.2.1B. C. Two (2) points are awarded where sustainability reporting is in accordance with the King IV.		5.2 As per the Green Star Communities v1.1 Submission Guidelines	5.2 Additional Reference Documents King IV	5.2 Additional Supporting Documents For King IV - The documentation listed below to demonstrate that the project applicant undertakes sustainability reporting annually in accordance with King IV - Extracts from the King IV report demonstrating compliance with all stipulated credit requirements	2		5.2 Whilst the GBI Sustainability Guidelines are applicable to South Africa, it was flagged during a TAP workshop that the King Code may also be used. There was concern with regards to smaller entities being able to achieve the second part of the credit (i.e. core and/or comprehensive sustainability reporting in accordance with the GBI guidelines), that this requirement may prove too costly for smaller entities. Suggestions were made to make the credit not applicable to smaller, non-listed entities. The GBCA has stated its reluctance to change the points structure within the guidelines. Therefore, the option of making the points non-applicable for smaller entities was not viable. It was decided to leave the credit as is, as the credit will always be aspirational for smaller entities. Research revealed that the King IV Report has recently been released. King IV can be applied to all organisations irrespective of their form of incorporation. Sector supplements, illustrating how the King IV Code "should be interpreted and applied in various contexts, situations and legislative regimes have been provided. Supplements have been provided for the following sectors: - Municipalities; - Non-profit organisations; - Retirement funds; - Small and medium enterprises; and - State-owned entities. This means that the code can be applied to smaller and public entities; however, the application of King IV remains statutory only for listed entities. The application of King IV by smaller entities remains voluntary and is seen as a 'best practice' but is not a prerequisite.	AGREED WITH GBCA

Credit	Aim of the Credit	Credit Criteria Summary	Compliance Requirements	Definitions	Guidance	Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be confirmed	Reasons for changes/Summary	GRCA Concluding Comments
GOV-06	Sustainability Awareness	To encourage and recognise those projects that enhance knowledge and understanding of its sustainability attributes. <b>6.1 Community Users' Guide</b> 1 point is available where a Community Users' Guide is developed for, and provided to all project occupants. The Community Users' Guide must also be publicly available. <b>6.2 Sustainability Education Facility</b> 1 point is available for the provision of physical sustainability education facilities on-site.	6.1 As per the Green Star Communities v1.1 Submission Guidelines  6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines  6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines  6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines  6.2 As per the Green Star Communities v1.1 Submission Guidelines	1  1			6.1 No changes  6.2 No changes	AGREED WITH GRCA
		Community Participation and Governance	To encourage and recognise projects that establish mechanisms for community participation in management arrangements for facilities and programs. <b>7.1 Community Facility Management</b> 1 point is available where a community led entity is responsible for the management and/or coordination of at least one community facility. <b>7.2 Community Program Management</b> 1 point is available where a community led entity is responsible for the management and/or coordination of at least one community program or service.	7.1 As per the Green Star Communities v1.1 Submission Guidelines  7.2 As per the Green Star Communities v1.1 Submission Guidelines	7.1 As per the Green Star Communities v1.1 Submission Guidelines  7.2 As per the Green Star Communities v1.1 Submission Guidelines	7.1 As per the Green Star Communities v1.1 Submission Guidelines  7.2 As per the Green Star Communities v1.1 Submission Guidelines	1  1			7.1 No changes  7.2 No changes	AGREED WITH GRCA
GOV-08	Environmental Management	To encourage and recognise the adoption of formal environmental management practices. <b>8.1 Environmental Management System</b> 1 point is available where all contractors with a contract value of > <del>R5million</del> 240 000 million have a valid ISO 14001 Environmental Management System (EMS) accreditation prior to and throughout the duration of the contract(s).	8.1 Environmental Management System One (1) point is awarded where all contractors, with a contract value of > <del>R5million</del> 240 000 million, have a valid ISO 14001 Environmental Management System (EMS) accreditation. <b>8.1.1</b> All contractors, which have one or more contracts for the project site, which have a total combined contract value of > <del>R5million</del> 240 000 million, must meet the accreditation requirement. Contractors with a combined contract value of > <del>R5million</del> 240 000 million or less are excluded.  <b>8.1.2 &amp; 8.1.3 As per the Green Star Communities v1.1 Submission Guidelines</b>	<del>Construction Works</del> – any design, construction or operation activity associated with development under Part 4 of the Environmental Planning and Assessment Act 1979. <del>Operational</del> – any activity undertaken in or on the existing building or on the site.  <del>Construction Works means any of the following work:</del> Any activity that alters the physical form or biological functioning (e.g. using paint on site) has the potential to alter the biological function of the site of the site, including but not limited to: - Demolition; - Earthworks; - Construction; and - Provision of services	8.1 As per the Green Star Communities v1.1 Submission Guidelines	<b>8.1 AT referenced \$5 million amounts to be replaced with 240000 million.</b>	1		<b>8.1</b> The first part of the credit requires that appointed contractors with contract amounts over \$5 million (AUD). Research had to be conducted to convert the AUD amount to ZAR. In order to convert the AUD to ZAR, two alternatives were considered: 1. Use the Purchasing Power Parity conversion factor to calculate what the equivalent amount of \$5million AUD would be in ZAR. The World Bank for the South African implied Exchange Rate for RSA 2015 as 5.5 whilst the Australian implied Exchange Rate is listed as 1.5. The new conversion factor was then calculated as follows:  5.5/1.5 = 3.67 1.67*55 000 000= R91 350 000  The amount calculated using the PPP proved to be too low. It was suggested that an amount that is too low may disadvantage smaller contractors, so attaining an ISO 14001 certificate may prove to be too expensive for them.  <b>2.</b> The second alternative investigated was a direct conversion from AUD to ZAR using the current exchange rate (November 2016). The amount converted amount came approximately R50 882 435. For ease of reference the amount used within the guideline ZAR is R50 million.  Further research was done to determine if this amount is acceptable for the South African market, to ensure that the credit is challenging enough to make it aspirational but not so challenging that it would not be targeted by projects. The Construction Industry Development Board (CIDB) grades contractor to determine the maximum amount contract that the said contractor may deliver based on set criteria. The criteria consider a number of factors; i.e. the number of professionals within the company, best annual turnover, largest contract value delivered and available capital. The Grading designation is from 1 to 7 with contractors graded between 1 and 7 approved to deliver contracts of values R200K to maximum R40 million. Setting the CIDB minimum contract amount at R50 million would mean that contractors of Grading 8 & 9 (able to deliver contracts of R40+) will not be able to R40 million contract. The credit will be for environmental within the South African context.  <b>8.2</b> NEW Guidelines were replaced with the Western Cape Environmental Management Plan (EMP) Guidelines to make the credit more applicable to the South African Market. The Western Cape EMP Guidelines are already in use and stipulated in other Green Star SA Technical Manuals.	AGREED WITH GRCA	
		8.2 Environmental Management Plan 1 point is available where the developer requires the development and implementation of a comprehensive, project-specific Environmental Management Plan (EMP) for construction work.	8.2 Environmental Management Plan <b>8.2.1</b> As per the Green Star Communities v1.1 Submission Guidelines <b>8.2.2</b> The EMP must be developed in accordance with <del>National</del> the most recent version of the <del>NEM</del> Environmental Management System – <del>Guidelines</del> Western Cape Environmental Management Plan Guidelines.	<b>8.2 Environmental Management Plan</b> <del>National Environmental Management System Guidelines</del>  The Western Cape Environmental Management Plan Guidelines have been identified as the reference benchmark for best practice in the development and implementation of a comprehensive EMP. This does not however mean that projects cannot use an alternative guideline to undertake the development of their EMP. Alternative guidelines used to undertake the development and implementation of an EMP must be approved by the GRCA through a Credit Interpretation Request.  <b>Standards and Guidelines</b> - Western Cape Environmental Management Plan Guidelines - National Environmental Management Act (NEMA)	8.2 Documentation to specify the use of the Western Cape Environmental Management Plan Guidelines in the development of a project-specific EMP. NEW Environmental Management System Guidelines references to be replaced with the Western Cape Environmental Management Plan Guidelines	1					

## 4.5 Credit by Credit – Liveability

Refer to the table on the next page for a Credit-by-Credit evaluation of the Liveability Category.

LIV-9	Healthy and Active Living
LIV-10	Community Development
LIV-11	Sustainable Buildings
LIV-12	Culture, Heritage and Identity
LIV-13	Walkable Access to Amenities
LIV-14	Access to Fresh Food
LIV-15	Safe Places

Credit	Title	Aim of the Credit	Credit Criteria Summary	Compliance Requirements	Definitions	Guidance	Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be Confirmed	Reasons for Changes/Summary	GBCA Concluding Comments
ENV-09	Healthy and Active Living	To encourage and recognise projects that promote healthy and active living	9.0 Minimum Requirement: Footpaths To be eligible for points in this credit, projects must provide footpaths in line with the project's street hierarchy.	9.0 Minimum Requirement: Footpaths The project must be provided with footpaths in accordance with the requirements of 9.0.1 to 9.0.4. 9.0.1 Footpaths must be provided in accordance with the principles outlined in the <a href="#">South African National Facility Guidelines (2014)</a> for pedestrian facilities (see Guidance). This Code for pedestrian facilities must be applied to all development types. All other Compliance Requirements as per the Green Star Communities v1.1 submission guidelines	Best practice standards – for the purposes of this credit the default standards for open space planning in NSW have been identified as the best practice standard for Australia and for South Africa.	9.0 MINIMUM REQUIREMENT: FOOTPATHS (9.0) <b>AMCQSD Requirements:</b> The following is a summary of the AMCQSD requirements for footpaths: <b>Appendix 9.0 National NMF Facility Guidelines (2014):</b> This table is a summary of the SA National design criteria for pedestrian walkways. <b>Table 9.0 Characteristics of Street Types and Pedestrian Walkway Provision</b>	9.0 As per Green Star V1.1 Communities Submission Guidelines	0		9.0 Under Guidance in the Submission Requirements the existing Table 9.0 summarising the AMCQSD requirements have been replaced with a new Table 9.0 Characteristics of Street Types and Pedestrian Walkway Provision and includes changes to terminology. The changes serve to provide localised guidance.	AGREED WITH GBICA	
			9.1 Active Lifestyle 2 points are available where the project site has been designed and built to promote an active lifestyle, through well designed walking paths and cyclist facilities.	9.1 As per Green Star V1.1 Communities Submission Guidelines	9.1 As per Green Star V1.1 Communities Submission Guidelines	2		9.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA			
			9.2 Recreational Facilities 2 points are available where all habitable buildings have easy access to both a local park and at least one publicly accessible sports facility.	9.2 As per Green Star V1.1 Communities Submission Guidelines	9.2 As per Green Star V1.1 Communities Submission Guidelines	2		9.2 No changes are proposed for credit 9.2 Recreational Facilities. It is suggested that the guidelines provided by the Australian Communities Council be followed until an equivalent local standard has become available.	AGREED WITH GBICA			
			9.3 Healthy Places 1 point is available where 9.1 and 9.2 have both been achieved, and the development has been designed and built in line with holistic and active and healthy living principles.	9.3 As per Green Star V1.1 Communities Submission Guidelines	9.3 As per Green Star V1.1 Communities Submission Guidelines, except include under the heading STANDARDS AND GUIDELINES Additional Information <i>City of Cape Town (2013), Urban Design Policy.</i>	1		9.3 An additional reference has been added under Additional Information naming the City of Cape Town Urban Design Policy (2013), as further localised reference for credit 9.3 Healthy Places	AGREED WITH GBICA			
ENV-10	Community Development	To encourage and recognise projects that engage in and facilitate the development of the project's community.	10.0 Minimum Requirement Community Development Plan To be eligible for points in this credit, a Community Development Plan for the project community must be developed and implemented.	10.0 As per Green Star V1.1 Communities Submission Guidelines	Include after COMPLIANCE REQUIREMENTS, before GUIDANCE, a new heading <b>DEFINITIONS</b> <b>Community:</b> the relevant stakeholders who impact or are impacted by the project, for example, residents, business representatives, education representatives.	10.0 Include under the heading GUIDANCE, a new heading <b>SYNERGY WITH OTHER CREDITS IN THE BATING TOOL</b> <b>Engagement &amp; Community Participation and Governance</b> Facilities or programs that would benefit from management by a community entity could be identified through the stakeholder engagement process outlined in the Engagement credit. It is anticipated that the mechanisms for the management by a community entity would be included in the Community Development Plan as outlined in this credit.	10.0 As per Green Star V1.1 Communities Submission Guidelines	0		10.0 A definition of 'Community' has been added in order to focus the scope of the credit. A reference to the Governance Credit (3) has been added under 'Synergy with other Credits' with an explanation of what the connection between these credits are. The reference already exists in the Governance section, but questions raised by Pilot Project representatives made it clear that it will be useful to make this cross reference again under Viability Credit 10.	AGREED WITH GBICA	
			10.1 Community Development Officer 1 point is available where a Community Development Officer is employed to implement the Community Development Plan for the project.	10.1 As per Green Star V1.1 Communities Submission Guidelines	10.1 As per Green Star V1.1 Communities Submission Guidelines	1		10.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA			
			10.2 Community Group 1 point is available where a community group is established and contributes to the implementation of the Community Development Plan.	10.2 As per Green Star V1.1 Communities Submission Guidelines	10.2 As per Green Star V1.1 Communities Submission Guidelines	1		10.2 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA			
			10.3 Community Events 1 point is available where free community events are facilitated and supported.	10.3 As per Green Star V1.1 Communities Submission Guidelines	10.3 As per Green Star V1.1 Communities Submission Guidelines	1		10.3 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA			
ENV-11	Sustainable Buildings	To encourage and recognise projects that deliver sustainable buildings and energy efficient homes designed and constructed to meet the changing needs of occupants across their lifetime.	10.4 Community Information 1 additional point is available where at least two of the first three initiatives are undertaken and community information is made directly available and distributed to the community.	10.4 As per Green Star V1.1 Communities Submission Guidelines		10.4 As per Green Star V1.1 Communities Submission Guidelines	10.4 As per Green Star V1.1 Communities Submission Guidelines	1		10.4 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA	
			11.1 Certified Non-residential Buildings Up to 4 points are available based on the percentage of all buildings in the project site, which are eligible to be certified using the Green Star SA Multi-Unit Residential rating tool or another compliant environmental rating tool, that achieve a certified rating.	11.1 As per Green Star V1.1 Communities Submission Guidelines	<b>EDGE: Excellence in Design for Greater Efficiency</b>	11.1 As per Green Star V1.1 Communities Submission Guidelines	4		11.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA		
			11.2 Certified Residential Buildings Up to 4 points are available based on the percentage of all dwellings in the project site, which are eligible to be certified using the Green Star SA Multi-Unit Residential rating tool or the EDGE rating tool.	11.2 As per Green Star V1.1 Communities Submission Guidelines	11.2 CERTIFIED RESIDENTIAL BUILDINGS Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a rating in accordance with 11.2.1. Points are awarded on a pro-rata basis. 11.2.1 Compliant Building Rating Tools Building rating tools that can be used for demonstrating rating compliance include: A. The Green Star SA Multi-Unit Residential Tool with a minimum of 4 points achieved under EN6-01 B. The EDGE rating tool	11.2 Residential buildings, <del>Non-Residential Multi-Unit Residential (MUR) or EDGE rating</del> Prior to construction A commitment from the project applicant that they will seek to have dwellings designed and constructed to achieve a <del>minimum of 4 points under EN6-01 or an EDGE rating</del> MUR rating with a minimum of 4 points achieved under EN6-01 or an EDGE rating and Project documentation that supports the implementation of the project applicant's commitment. During construction A table plan showing the progress to date, and showing all completed dwellings: A summary of which dwellings have achieved a <del>minimum of 4 points under EN6-01 or an EDGE rating</del> MUR rating (with a minimum of 4 points achieved under EN6-01) for an EDGE rating. After construction A summary of how many dwellings have achieved a <del>minimum of 4 points under EN6-01 or an EDGE rating</del> MUR rating (with a minimum of 4 points achieved under EN6-01) for an EDGE rating, and For those dwellings completed, provide a copy of the <del>Building MUR or EDGE rating certificate(s)</del> . Where the amount of dwellings certified would result in excessive amounts of documentation, confirmation from <del>the GBICA (MUR) or from the GBICA (EDGE)</del> of the number of dwellings certified <del>under EN6-01 or an EDGE rating</del> is the project site will be accepted.	11.2 It is proposed that the credit be adapted to the local context by making up to 4 points available based on the percentage of dwellings in the project site that achieve a Green Star SA Multi-Unit Residential rating or an EDGE rating. The application of the Green Star SA Multi-Unit Residential Tool brings credit 11.2 in line with credit 11.1. The option for projects to apply the EDGE rating tool to dwellings in the project makes this credit applicable to projects that have a variety of dwelling types on the project site. The new proposed criteria is also aligned with the way the credit is approached in New Zealand. The benchmark for Energy ratings in the EDGE tool ensures an improvement over the SANS10400 standard that is equivalent to four points under the EN6-01 credit in Green Star SA. It is noted that the requirement of projects that target the Green Star SA Multi-Unit Residential rating to achieve a minimum of four points in the EN6-01 credit in order to align with the EDGE tool requirement.	AGREED WITH GBICA				
			11.3 2NZ Certified Residential Buildings Up to 4 points are available based on the percentage of all dwellings in the project site, which are eligible to be certified using the 2NZ MUR rating tool or the EDGE rating tool.	11.3 As per Green Star V1.1 Communities Submission Guidelines	11.3 2NZ CERTIFIED RESIDENTIAL BUILDINGS Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a rating in accordance with 11.3.1. Points are awarded on a pro-rata basis. 11.3.1 Compliant Building Rating Tools Building rating tools that can be used for demonstrating rating compliance include: A. The Green Star SA Multi-Unit Residential Tool with a minimum of 4 points achieved under EN6-01 B. The EDGE rating tool	11.3 2NZ CERTIFIED RESIDENTIAL BUILDINGS Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a rating in accordance with 11.3.1. Points are awarded on a pro-rata basis. 11.3.1 Compliant Building Rating Tools Building rating tools that can be used for demonstrating rating compliance include: A. The Green Star SA Multi-Unit Residential Tool with a minimum of 4 points achieved under EN6-01 B. The EDGE rating tool	11.3 2NZ This credit was written exclusively for projects in New Zealand, therefore it can be removed.	AGREED WITH GBICA				
ENV-12	Culture Heritage and Identity	To encourage and recognise projects that celebrate and incorporate the heritage, culture and historical context of the project site, supporting communities and places with the development of a sense of place and identity.	12.1 Understanding Culture, Heritage, and Identity 1 point is available where the culture, heritage, and identity of the project site has been researched and interpreted as part of the master planning process.	12.1 As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	12.1 As per Green Star V1.1 Communities Submission Guidelines	12.1 As per Green Star V1.1 Communities Submission Guidelines	1		12.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA	
			12.2 Enhancing Community Culture, Heritage, and Identity 2 additional points are available where the interpretation of the culture, heritage, and identity of the project site informs the design of the project in a way that strengthens cultural and heritage connections, and contributes to building a strong local identity.	12.2 As per Green Star V1.1 Communities Submission Guidelines		12.2 As per Green Star V1.1 Communities Submission Guidelines	2		12.2 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA		
ENV-13	Walkable Access to Amenities	To encourage and recognise projects that celebrate and incorporate the heritage, culture and historical context of the project site, supporting communities and places with the development of a sense of place and identity.	13.1 Walkable Access to Amenities 2 points are available where all habitable buildings on the project site have walkable access to a diverse number of amenities.	13.1 As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	13.1 As per Green Star V1.1 Communities Submission Guidelines	13.1 As per Green Star V1.1 Communities Submission Guidelines	2		13.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBICA	



Credit	Title	Aim of the Credit	Credit Criteria Summary	Compliance Requirements	Definitions	Guidance	Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be Confirmed	Reasons for Changes/Summary	GBCA Concluding Comments
IV/16			14.1 Access to Fresh Food To encourage and recognise projects where occupants have access to fresh food within walking distance of where they live or work.	14.1 As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	14.1 As per Green Star V1.1 Communities Submission Guidelines	14.1 As per Green Star V1.1 Communities Submission Guidelines	1			14.1 No changes have been made, this credit has been accepted as is.	AGREED WITH GBCA
			14.2 Local Food Production 1 point is available where the project has a strategy to integrate productive landscape within the landscape objectives for the project site.	14.2 As per Green Star V1.1 Communities Submission Guidelines		14.2 As per Green Star V1.1 Communities Submission Guidelines	14.2 As per Green Star V1.1 Communities Submission Guidelines	1	14.2 Although 14.2 might be challenging for projects to achieve, no changes were made to the criteria as this credit remains relevant. The Pilot process will allow the level of difficulty of this credit to be tested in practice.	AGREED WITH GBCA		
IV/15	Safe Places	To recognise projects in which the activity of planning and detailed design for land use, development and redevelopment takes into consideration designing out crime principles.	15.0 Minimum Requirement - Visibility To be eligible for this credit: All fences and underpasses within the project site must have end-to-end visibility; and All public areas, such as playgrounds, skate parks and community food gardens, must be visible from at least one street.	15.0 As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	15.0 As per Green Star V1.1 Communities Submission Guidelines	15.0 As per Green Star V1.1 Communities Submission Guidelines	0			15.0 No changes have been made, this credit has been accepted as is.	AGREED WITH GBCA
			15.1 Design for Safety 2 points are available where the Minimum Requirement has been met and: -A crime risk assessment process is undertaken; and -A design strategy has been adopted that incorporates designing out crime principles.	15.1 As per Green Star V1.1 Communities Submission Guidelines		15.1 As per the Communities Tool except, add under DESIGN FOR SAFETY (15.1) Designing out Crime (South Africa) Project seeking to achieve certification through GB/SA can also make reference to the City of Cape Town, Design and Management Guidelines for a Safe City - Best practice guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town. This document addresses the following six key overlapping CPTED principles which align to the requirements of 15.1.2 above: 1. Clear boundaries and collective ownership of public space 2. Improved surveillance and visibility 3. Safe access and movement 4. Aggressive image 5. Positive relationship and layered spaces 6. Good urban management and monitoring  STANDARDS AND GUIDELINES Referenced Documents City of Cape Town (2014). Design and Management Guidelines for a Safe City Best practice guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town. <a href="http://resource.capetown.gov.za/documentcentre/documents/Procedures,%20Guidelines%20and%20regulations/Design%20and%20Management%20Guidelines%20for%20a%20Safe%20City.pdf">http://resource.capetown.gov.za/documentcentre/documents/Procedures,%20Guidelines%20and%20regulations/Design%20and%20Management%20Guidelines%20for%20a%20Safe%20City.pdf</a>  Additional Information <a href="http://www.safespaces.org.za/">http://www.safespaces.org.za/</a>	15.1 As per Green Star V1.1 Communities Submission Guidelines	2	15.1 The only changes to this credit are that projects seeking to achieve certification through GB/SA can also make reference to the City of Cape Town, Design and Management Guidelines for a Safe City Best practice guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town.  This document addresses six key overlapping CPTED principles which align to the requirements of 15.1.2.  A further additional South African web based resource has been added that disseminates information on CPTED.	AGREED WITH GBCA		

#### 4.6 Credit by Credit – Economic Prosperity

Refer to the table on the next page for a Credit-by-Credit evaluation of the Economic Prosperity Category.

ECON-16	Community Investment
ECON-17	Affordability
ECON-18	Employment and Economic Resilience
ECON-19	Education and Skills Development
ECON-20	Return on Investment
ECON-21	Incentive Programs
ECON-22	Digital Infrastructure
ECON-23	Peak Electricity Demand Reduction





## 4.7 Credit by Credit – Environment

Refer to the table on the next page for a Credit-by-Credit evaluation of the Environment Category

ENV-24	Integrated Water Cycle
ENV-25	Greenhouse Gas Emissions
ENV-26	Materials
ENV-27	Sustainable Transport and Movement
ENV-28	Sustainable Sites
ENV-29	Ecological Value
ENV-30	Waste Management
ENV-31	Urban Heat Island
ENV-32	Light Pollution







Title	Aim of the Credit	Credit Criteria Summary	Credit Criteria Sub-Paths	Compliance Requirements	Definitions	Guidance	Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to Be Confirmed	Reasons for Changes/Summary
		28.1 Previously Developed Land 1 point is available where 75% of the project site comprises previously developed land.		28.1 As per the Green Star Communities v1.1. submission guidelines	28.1 As per the Green Star Communities v1.1. submission guidelines	28.1 As per the Green Star Communities v1.1. submission guidelines	28.1 As per the Green Star Communities v1.1. submission guidelines	1			28.1 No changes have been made. This credit has been accepted as is.
		28.2 Best Practice Site Decontamination 1 point is available where the site contains significant contamination, such that the uses in the proposed development would have been precluded, and the developer has adopted best practice remediation strategies as detailed to secure development permission for the project.		28.2 Best Practice Site Decontamination 28.2.1 - 28.2.3 : As per the Green Star Communities v1.1. submission guidelines 28.2.4 : To be deemed remediated (no longer contaminated), the site must meet the regulated levels deemed suitable by the relevant competent authority. The environmental auditor or waste management control officer who certifies that the site has been duly decontaminated must meet the requirements of standards set at National, Provincial and Local level.	Contamination remains as per the Submission Guidelines: "The condition of land or water where any chemical substance or waste has been added at above background levels, and represents, or potentially represents, and adverse health or environmental impact"  A suitably qualified professional is a registered ecologist is defined as a Professional Natural Scientist currently registered with the South African Council for Natural Scientific Professions (SACNISP) in accordance with the Natural Scientific Professions Act, 2003 (Act 27 of 2003). The SACNISP practitioner may have other specialists produce components of work under his or her guidance, but he/she must sign off the final report.  All other definitions as per the Green Star Communities v1.1. submission guidelines	28.2 As per the Green Star Communities v1.1. submission guidelines	28.2 Prior to Construction: - CV of the suitably qualified professional; - A contamination report must be prepared by a suitable professional that describes: - Identifying the type and extent of contamination; - It should also outline all available decontamination options, and proposing the remediation strategy where required; and - show that the site was contaminated such that the uses permitted under the relevant planning scheme were initially precluded.  All other Documentation Requirements as per the Green Star Communities v1.1. submission guidelines.			28.2 The definition of a Suitable Professional has been updated to the South African requirements in line with the current Green Star SA Tools.	
ENV-29	Ecological Value	To encourage and recognise projects that enhance the ecological value or biodiversity of the project site	29.1 Change of Ecological Value Up to 1 point is available where the ecological value of the site is enhanced, based on a comparison of the ecological value of the combination of land types in the project site at the date of site purchase (or option contract) to the value after project completion. Partial points are available, with full points awarded where an improvement of 20% or more is achieved.	29.1 Change of Ecological Value 29.1.1 Project teams must complete the Green Star - Communities Ecological Value Calculator to quantify the ecological value of the project site at the date of site purchase or option contract and the ecological value to the project after completion. South African Projects must find the closest match with the land types listed. If project wish to add land types to the calculator, the project must submit a CIR to the GBISA.  All other Compliance Requirements as per the Green Star Communities v1.1. submission guidelines.	A suitably qualified registered ecologist is defined as a Professional Natural Scientist currently registered with the South African Council for Natural Scientific Professions (SACNISP) in accordance with the Natural Scientific Professions Act, 2003 (Act 27 of 2003). The SACNISP practitioner may have other specialists produce components of work under his or her guidance, but he/she must sign off the final report.  All other definitions as per the Green Star Communities v1.1. submission guidelines	29.1 As per the Green Star Communities v1.1. submission guidelines	29.1 As per the Green Star Communities v1.1. submission guidelines	1		29.1 The definition of a Suitable Professional has been updated to the South African requirements in line with the current Green Star SA Tools.	
		29.2 Biodiversity Enhancement 1 point is available where: a. A Biodiversity Management Plan has been prepared by a suitably qualified professional and is implemented demonstrating the management of the long term biodiversity values of the project site (and off site values, where effects are established); and b. It is demonstrated that the Biodiversity Management Plan for the project site will create a net biodiversity gain representing an enhancement over the project's biodiversity at the date of site purchase (or option contract). Partial points are available in this criterion, with full points awarded where an improvement of 20% or more is achieved.		29.2 As per the Green Star Communities v1.1. submission guidelines	A suitably qualified registered ecologist is defined as a Professional Natural Scientist currently registered with the South African Council for Natural Scientific Professions (SACNISP) in accordance with the Natural Scientific Professions Act, 2003 (Act 27 of 2003). The SACNISP practitioner may have other specialists produce components of work under his or her guidance, but he/she must sign off the final report.  All other definitions as per the Green Star Communities v1.1. submission guidelines	29.2 As per the Green Star Communities v1.1. submission guidelines	29.2 As per the Green Star Communities v1.1. submission guidelines	1		The definition of a Suitable Professional has been updated to the South African requirements in line with the current Green Star SA Tools.	
ENV-30	Waste Management	To encourage and recognise projects that reduce the environmental impact of waste.	30.1 Construction and Demolition Waste Up to 1 point is available where: a. The project develops and implements a Waste Management Plan for the project site's construction and demolition waste; and b. ≥ 60% of the construction and demolition waste associated with project site has been recycled or reused. Partial points are awarded based on the percentage of waste recycled over 60% and up to 100%.	30.1 Note: The WMP must also include "Designing out Waste" as per the compliance requirements and guidance sections.  All other Compliance Requirements as per the Green Star Communities v1.1. submission guidelines.	All other definitions as per the Green Star Communities v1.1. submission guidelines	30.1 As per the Green Star Communities v1.1. submission guidelines	30.1 As per the Green Star Communities v1.1. submission guidelines			30.1 No changes have been made. This credit has been accepted as is.	
		30.2 Operational Waste 1 point is available where measures are implemented to reduce the overall environmental impacts associated with operational waste. Points are awarded based on the initiatives implemented in the project from the following list: A. Public place recycling scheme B. Residential recycling scheme C. Hazardous waste collection or disposal services D. Pay as you throw (PAYT) scheme; or E. Composting or Green Waste scheme. These initiatives are required to achieve 1 point.		30.2 As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	30.2 As per the Green Star Communities v1.1. submission guidelines	30.2 As per the Green Star Communities v1.1. submission guidelines	1		30.2 No changes have been made. This credit has been accepted as is.	
		INNOVATION CHALLENGE Project teams are invited to sign up for an innovation challenge to develop an approach to have developers enter into a partnership or agreement with the project applicant to reduce waste to landfill volumes as a result of the construction of the buildings. For further information on Innovation and Innovation Challenges see the Innovation section of the GBISA website		As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines				No changes have been made. This credit has been accepted as is.
ENV-31	Heat Island Effect	To encourage and recognise projects that implement measures to reduce heat island effect.	31.1 Urban Heat Island Effect 1 point is available if at least 50% of the total project site area, in plan view, comprises building or landscaping elements that reduce the impact of heat island effect:  One or a combination of the following can be implemented: - Vegetation - Green Roofs - Roofing Materials (including shading structures) SRI - Unshaded landscaping elements SRI - Landscaping elements shaded - Water Bodies and/or water courses - Areas directly to the South of vertical building elements, including green walls and areas shaded by these elements at the summer solstice	31.1 As per the Green Star Communities v1.1. submission guidelines	31.1 As per the Green Star Communities v1.1. submission guidelines	31.1 As per the Green Star Communities v1.1. submission guidelines	31.1 As per the Green Star Communities v1.1. submission guidelines	1		31.1 No changes have been made. This credit has been accepted as is.	
		INNOVATION CHALLENGE Beyond Plan View: Project teams are invited to sign up for an innovation challenge to develop an innovative approach to heat island effect which goes beyond simply assessing the plan view of the project site. The proposed approach should also consider for example urban geometry (the height and spacing of buildings and how this affects the amount of radiation received and emitted by urban infrastructure), weather and the geographic location. For further information on Innovation and Innovation Challenges see the Innovation section of the GBISA website		As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines				No changes have been made. This credit has been accepted as is.
ENV-32	Light Pollution	To encourage and recognise projects that minimise the adverse impact of light emissions.	32.1 Light Pollution 1 point is available where, relative to their particular mounting orientation, 95% by number of all external public lighting luminaires within the project site boundary have an Upward Light Output Ratio less than 5%.	32.1 As per the Green Star Communities v1.1. submission guidelines	Note: ULOR: The ratio of the luminous flux emitted by a luminaire above the horizontal to that emitted by the lamp. The reference to AS/NZS standard does not add new information to this definition, as such the project does not need to obtain the standard.  All other definitions, as per the Green Star Communities v1.1. submission guidelines	32.1 Note: CELMA guide on Obtrusive Light is an useful (free) document to have a look at.  All other guidance as per the Green Star Communities v1.1. submission guidelines	32.1 As per the Green Star Communities v1.1. submission guidelines	1		32.1 No changes have been made. This credit has been accepted as is.	

## APPENDIX A: ENV-25 Greenhouse Gas Emissions

### Reference Building Definition:

When calculating the predicted greenhouse gas emissions for this credit, please refer to the factors used in the ENE-00/01 GHG Emissions Calculator in the Green Star Tools

### Artificial lighting

- The effective installed lighting power density for at least 95% of the tenancy area is less than the values prescribed in the below table (adapted from SANS 10400 2011 and ASHRAE 90.1 2007):

Building Code Classification	Occupancy	Minimum Lighting Power Density (W/m <sup>2</sup> )
A1	Entertainment and public assembly	7
A2	Theatrical and indoor sport	7
A3	Places of instruction	7
A4	Worship	7
B1	High risk commercial service	16.8
B2	Moderate risk commercial service	14
B3	Low risk commercial service	10.5
C1	Exhibition hall	10.5
C2	Museum	3.5
D1	High risk industrial	14
D2	Moderate risk industrial	14
D3	Low risk industrial	14
D4	Plant room	3.5
E2	Hospital	7
E3	Other institutional (residential)	7
E4	Health care	7
F1	Large shop	10.5
F2	Small shop	10.5
F3	Wholesalers' store	10.5
G1	Offices	7.7
H1	Hotel	7
H2	Dormitory	3.5
H3	Domestic residence	3.5
H4	Dwelling house	3.5
H5	Hospitality	7
	Parking Areas	2
	Toilets and Ablutions	6

### Heating, Ventilation and Air Conditioning

The table below shows a minimum efficiency for HVAC equipment as per SANS 204 2011.

Equipment	Capacity Range kW	Minimum COP
Unitary console and split type*	<7	2.5
Packaged and Split Air Conditioning (Including VRF and air cooled chiller)**	7<9	2.6
	10 < 40	2.96
	40 < 70	2.72
	>70	2.64
Water cooled chiller**	> 70	3.2

\* COP includes indoor fan unit at 30°C outdoor temperature.

\*\* COP is for outdoor unit/chiller only at 30°C outdoor temperature

### Domestic Hot Water

50% of domestic hot water heating is provided by non-electric resistance means.

### 25B.2: Energy Efficiency – Existing Buildings

The reference to the Australian building code can be replaced by the following requirements:

Artificial Lighting: Existing Building Upgrades: 20% improvement over the minimum Lighting Power Density listed in the above table

HVAC: Existing Building Upgrades: 20% improvement over SANS204:2011

Hot Water: Existing Building Upgrades: 100% of domestic hot water heating is provided by non-electric resistance means.

### 25B.5 Energy Efficiency – New Buildings

One point available where the GHG strategy for the project site incorporates minimum energy requirements for new buildings to best practice requirements. (Compliance requirements are drawn up in line with the following requirements for Lighting, Ventilation and AC, and Domestic Hot Water).

Artificial Lighting: New Buildings: 40% improvement over the minimum Lighting Power Density listed in the above table

HVAC: New Buildings: 30% improvement over SANS204:2011

Hot Water: New Buildings: 100% of domestic hot water heating is provided by non-electric resistance means.