

GREEN STAR Kenya

LOCAL CONTEXT REPORT

for Green Star Interiors in Kenya

This LCR applies to **Green Star Interiors v1.**

Revision 2 – 22 March 2022





Report Acknowledgement

Revision 2

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RATING TOOL	Green Star Interiors v1	DISCIPLINE	GSSA AP

Executive Summary

This report applies to the Green Star – Interiors (V1) tool and considers the applicability of the tool in Kenya. Included in the report is a background analysis of Kenya, as well as a credit-by-credit analysis. This considers the applicability of each credit to the local context.

The Green Building Council of Australia (GBCA) currently license the Green Building Council South Africa (GBCSA) to allow certification using the Green Star rating tools only in South Africa, Ghana, Namibia, Uganda, Zimbabwe, Kenya, and Rwanda. Through this local context assessment, the GBCSA, in collaboration with the Kenya Green Building Society (KGBS) allows for certification in Kenya using all the Green Star – Interiors (v1) tool – with some minor adaptations recommended in this report.

Through this local context assessment, the GBCSA aims to apply for approval from the GBCA to allow for certification in Kenya using the Green Star v1 Interior’s rating tool (with some minor adaptations recommended in this report). The GBCSA would manage and allow the certification through its existing established processes but call the certification Green Star - Kenya. The GBCSA will then use the opportunity to allow capacity to grow in Kenya through the KGBS, by allowing selected Kenyan professionals to be trained as Green Star - Kenya Assessors who would join the GBCSA Assessor teams on Kenyan projects where the KGBS has the capacity to organise and coordinate the Green Star - Kenya Assessors-in-Training in the timelines required.

In addition, the GBCSA would deliver the Green Star Accredited Professional – Interiors (v1) course in Kenya, in collaboration with the KGBS, which would allow professionals in Kenya to take the Green Star Accredited Professional online course and/or examination. The details would be agreed upon in a Green Star license agreement between the GBCSA and the KGBS.

Recommendations

A summary of recommended credits requiring Credit Interpretation Requests (CIRs), Technical Clarifications (TCs) or 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: www.gbcsa.org.za

	CREDIT	REQUIRMENT	ACTION
1	MAN-4: ENVIRONMENTAL MANAGEMENT	To be kept in its current form and no adjustments are to be made. References to be updated to include any additional Kenyan environmental legislation where relevant.	Adaptation – No further action required.
2	MAN-5: CONSTRUCTION WASTE MANAGEMENT	To be kept in its current form. If /where recycling is undertaken as informal process a record of the informal recyclers collectors must be kept including their acknowledgement of collection of such materials and quantities as per the Additional Guidance in the GS Interiors Technical Manual.	Mandatory CIR only if a project specific alternative methodology is applied to the project.
3	IEQ-1: QUALITY OF INTERNAL AIR	To be kept in its current form and no adjustments are to be made. Note an alternative compliance path is optional for the provision of outside air. Where a professional team wishes to use an alternative standard, a CIR is to be submitted to the GBCSA provided the alternative standard is equally or more stringent than SANS 10400-0:2011.	Mandatory CIR only if an alternate methodology is applied to the project.
4	IEQ-3: LIGHTING COMFORT	<p>To be kept in its current form and no adjustments are to be made noting the following.</p> <p>An alternative compliance path optional for Light Levels is optional where a professional team wishes to use an alternative standard. A CIR is to be submitted to the GBCSA provided the alternative standard is equally or more stringent than the standard/s given in the technical manual.</p> <p>An alternative compliance path for Glare is optional where a professional team wishes to use an alternative standard. A CIR is to be submitted to the GBCSA provided the alternative standard is equally or more stringent than the standard/s given in the technical manual.</p>	Mandatory CIR only if an alternative methodology is applied to the project.
5	ENE-1: GREENHOUSE GAS EMISSIONS	<p>It is recommended that ene-1 credit criteria for up to 12 points remains applicable to all projects in Kenya seeking green star certification.</p> <p>Should a project intend to use Part E.2 energy modelling (HVAC only) compliance route, either by adopting SANS 204:2011 based modelling protocol or an alternative standard, the identified approach to establish notional building must be motivated by the registered project through a mandatory CIR.</p>	Mandatory CIR only if an alternative methodology is applied to the project.
6	WAT-1: POTABLE WATER	<p>Compliance route 1: to be kept in its current form for compliance route 1. An update of regional rainfall values shall be required.</p> <p>Compliance route 2: to be kept in its current form and no adjustments are to be made.</p>	Adaptation – No further action required

7	MAT-2: FURNITURE	<p>To be kept in its current form with additional alternative compliance paths. The GBCSA has a published list of third part certifications that are currently recognised within the materials calculator, but which exclude numerous third party European and US certifications and that may have the same or similar standards but not been reviewed.</p> <p><u>Alternative compliance route:</u></p> <p>Under the product stewardship category: allow projects to complete a checklist for Environmentally Preferable Products (as per GSSA EBP MAT-1) and assign a 30% criterion score.</p> <p>Add a new stand-alone category: environmental product declaration and assign a criterion score of 30% for products that opt to use products with third party verified environmental product declaration.</p>	No further action required.
8	MAT-3: ASSEMBLIES	"As above"	"As above"
9	MAT-4: FLOORING	"As above"	"As above"
10	MAT-5: WALL COVERINGS	"As above"	"As above"
11	MAT-6: LOCAL SOURCING	<p>To be kept in its current form with the following Adaptations:</p> <p>One point is awarded where:</p> <ul style="list-style-type: none"> 50% of the project contract value is represented by materials and products that have been manufactured from within the member states of the East African Community (EAC) and Southern African Development Community (SADC) regions' borders as defined on http://www.eac.int and https://www.sadc.int, current at the time of project registration or more recent. Submissions shall be compiled as per the Documentation Requirements indicated in the Green Star Interiors v1 Technical Manual for Short Reports, Confirmation for supplier(s)/manufacturer(s) and Additional Guidance. <p>One point is awarded where:</p> <ul style="list-style-type: none"> 20% of the project contract value is represented by materials and products that have been extracted, harvested, processed and manufactured from within the member states of the East African Community (EAC) and Southern African Development Community (SADC) regions' borders as defined on http://www.eac.int and https://www.sadc.int, current at the time of project registration or more recent. Submissions shall be compiled as per the Documentation Requirements indicated in the Green Star Interiors v1 Technical Manual for Short Reports, 	Adaptation – No further action required.

		Confirmation for supplier(s)/manufacturer(s) and Additional Guidance.	
12	ECO-1: SITE SELECTION	To be kept in its current form but to include buildings that are rated under other building rating systems including LEED, EDGE, BREEAM and any other rating system that has been developed by a full member of the WGBC.	Mandatory CIR only if an alternate rating is applied to the project.
13	INN-1: INNOVATIVE STRATEGIES AND TECHNOLOGIES	Inn-1 should remain as is, with reference to Kenya instead of South Africa.	Adaptation – No further action required
14	INN-2: EXCEEDING GREEN STAR BENCHMARKS	Inn-2 should remain as is.	
15	INN-3: ENVIRONMENTAL INITIATIVES	Inn-3 should remain as is.	

Acronyms

ACRONYM	TERM
ANGBC	African Network of Green Building Councils
AP	Accredited Professional
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning
CIBSE	Chartered Institute of Building Services Engineers
CIR	Credit Interpretation Request
ECO	Land Use and Ecology category
EAC	East African Community
EMI	Emissions category
EMP	Environmental Management Plan
ENE	Energy category
ETS	Environmental Tobacco Smoke
FSC	Forest Stewardship Council
GBCA	Green Building Council of Australia
GBCSA	Green Building Council South Africa
GS	Green Star
GWP	Global Warming Potential
HVAC&R	Heating, Ventilation, Air-Conditioning and Refrigeration
IEQ	Indoor Environmental Quality category
INN	Innovation category
KGBS	Kenyan Green Building Society
MAN	Management category
MAT	Material category
NESREA	National Environmental Standards and Regulations Enforcement Agency
ODP	Ozone Depleting Potential
SADC	Southern African Development Community
TC	Technical Clarification
TRA	Transport category
WAT	Water category
WMP	Waste Management Plan

1. Introduction

OVERVIEW OF KGBS

Kenya has a green building council, the Kenya Green Building Society (KGBS), which is registered with the World Green Building Council as a fully established member. The KGBS is still relatively newly established and has therefore not yet produced an environmental rating tool that would be used for Interior fit-out projects in Kenya.



Figure 1. Current Green Building Councils on the African continent (WGBC, 2021)

As a member of the African Network of Green Building Councils (ANGBC), the Green Building Council of South Africa (GBCSA) has therefore expressed a willingness to allow the rating of Kenyan buildings under the Green Star rating system until such a time that the KGBS is established. However, as intellectual property owners of the Green Star brand, consent from the Green Building Council of Australia (GBCA) must be obtained for the use of Green Star in Kenya through contextualisation.

This report, which must be read in conjunction with the Green Star South Africa– Interiors v1 Technical Manual (January 2015) with Technical Clarifications and Errata, serves to provide the local Kenyan context to allow the certification of commercial interior projects in Kenya using the Green Star Interiors v1 rating tool.

GREEN STAR

Green Star is a voluntary environmental rating system that evaluates the environmental design and construction of buildings and their interiors. Green Star tools were developed to provide the property industry

with an objective measurement for green buildings and to recognise and reward environmental leadership in the property industry.

- The objectives of the Green Star Rating Tools are as follows:
- Establish a common language and standard of measurement for green buildings;
- Promote integrated, whole-building design;
- Raise awareness of green building benefits.
- Recognise environmental leadership;
- Reduce the environmental impacts of development.

Each Green Star tool consists of nine separate environmental impact categories under which specific key criteria are grouped and assessed. These nine categories are:

- Management
- Indoor Environmental Quality
- Energy
- Transport
- Water
- Materials
- Land Use and Ecology
- Emissions
- Innovation

The categories are divided into credits, each of which addresses an initiative that improves or has the potential to improve a design, project, or building's environmental performance. Points are awarded in each credit for actions that demonstrate that the project has met the overall objectives of Green Star and the specific aims of the Green Star rating tool. Once all credits are assessed in each category in Green Star – Interiors, a score for the project is calculated to reach a single score.

LOCAL CONTEXT REPORT – GREEN STAR INTERIORS V1 FOR KENYA

This report therefore serves as a local context assessment to allow for Interior fit-out projects in Kenya to be certified using the Green Star Interiors v1 (2015) rating tool. This would entail collaboration between the GBCSA and KGBS to facilitate the use of the South African rating tool in Kenya, while allowing Kenyan professionals the opportunity to participate in the tool's development, through a formal consultation process, as the council progresses.

The GBCSA would manage and allow the certification through its existing established processes as facilitated by the ANGBC.

Two Green Star Interiors' workshops for two potential pilot projects were set up in online with members of the KGBS, industry professionals and stakeholders to discuss each credit in the Green Star rating tools available at the time and their applicability to the Kenyan context. The comments from the workshop and views expressed by the professionals have been summarised in this report.

METHODOLOGY

The context report addresses climatic conditions and ecology, water, and energy patterns, building regulations and any other Kenya-specific circumstances which may conflict with certain Green Star requirements. The context report also analyses the Green Star Interiors Rating tool credit-by-credit, identifying any ramifications that may result from the application of the Interiors tools to the Kenyan context.

2. Kenya Context

Kenya, officially the Republic of Kenya (Swahili: *Jamhuri ya Kenya*), is a sovereign state in the East African Community (EAC) region spanning 580 367 square kilometres with a population, according to the UN census in 2020, of 53.77 million people. Kenya (with geographic coordinates of 1 00 N, 38 00 E) lies on the equator with the Indian Ocean to the south-east, Tanzania to the south, Uganda to the west, South Sudan to the north-west, Ethiopia to the north and Somalia to the north-east (Figure 2).



Figure 2. Kenya (The World Factbook, 2014)



Figure 3. Regional context of Kenya (BBC, 2013)

GEOGRAPHY

Kenya's terrain is composed of low plains that rise into central highlands that are bisected by the Great Rift Valley. There is also a fertile plateau in the west of the country. The lowest point on Kenya is at sea level on the Indian Ocean. The highest point on Kenya is 5,199 meters above sea level at Mount Kenya.

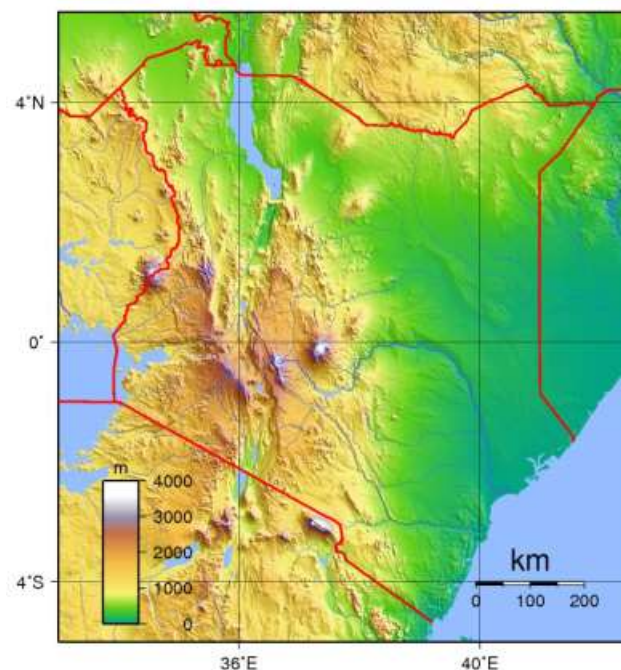


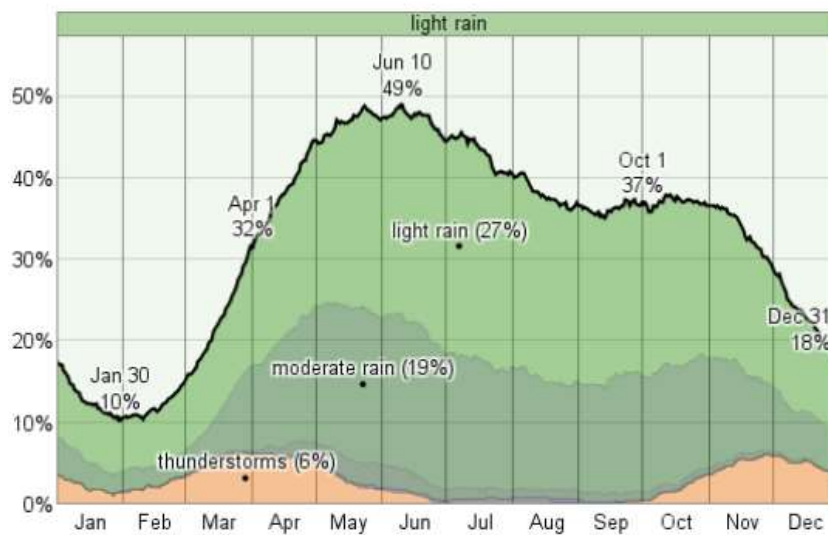
Figure 4. Topographical map of Kenya

CLIMATE

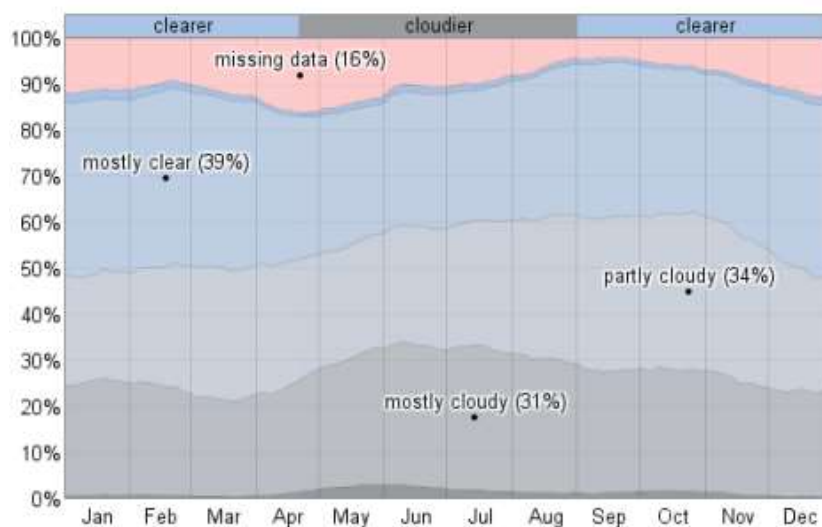
Although Kenya lies across the equator, annual rainfall over most of the country is low and variable from year to year. This is because the inter-tropical belt of cloud and rain passes quickly across Kenya in April and October and because the predominant seasonal winds, the north and south monsoons as they are called in East Africa, have a track parallel to the coast and have already passed over large areas of land before reaching Kenya.

COASTAL REGION CLIMATIC ZONE

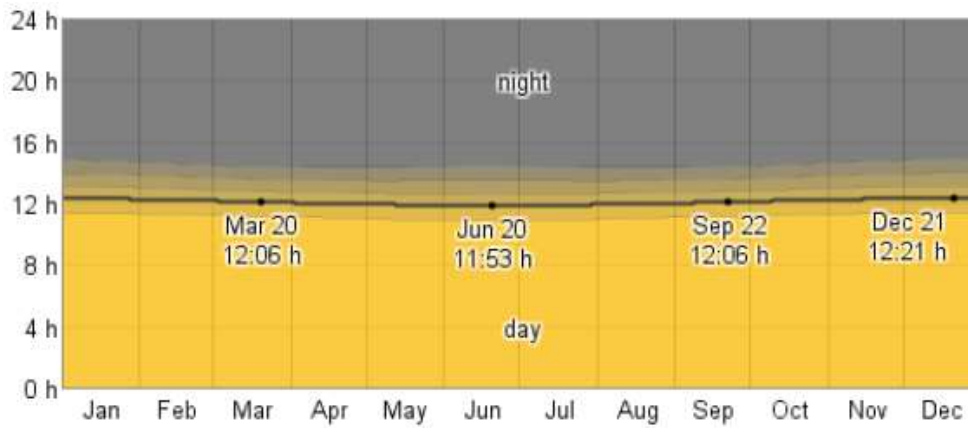
In the coastal region, including part of Coast province (Mombasa, Lamu), the average annual rainfall is over 1,000 mm. The wettest season is in April and May as the inter-tropical rain-belt moves north. The second rainy season in October and November results in less precipitation. Some rain, often in the form of night or early morning showers, occurs in all months. Temperatures remain quite high around the year as does humidity, but the weather is less oppressive than might be thought because of the regular and strong onshore winds in the daytime and the greater number of sunshine hours which average seven to eight a day in all months.



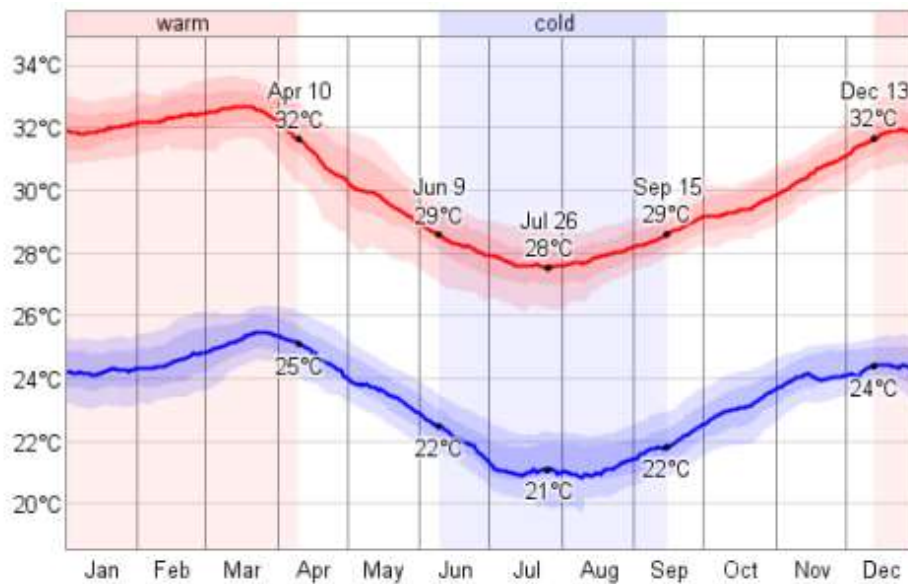
Graph 1. Coastal region: Probability of precipitation



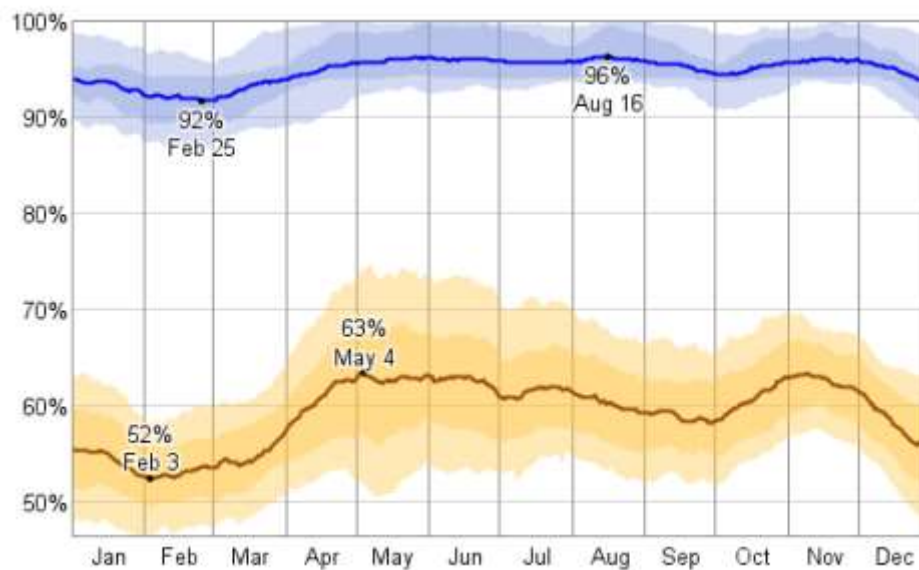
Graph 2. Coastal region: Cloud cover types



Graph 3. Coastal region: Daily hours of daylight and twilight



Graph 4. Coastal region: Daily high and low temperatures



Graph 5. Coastal region: Relative humidity

THE NORTHERN FRONTIER DISTRICTS AND THE LOWER INLAND PLATEAU CLIMATIC ZONE

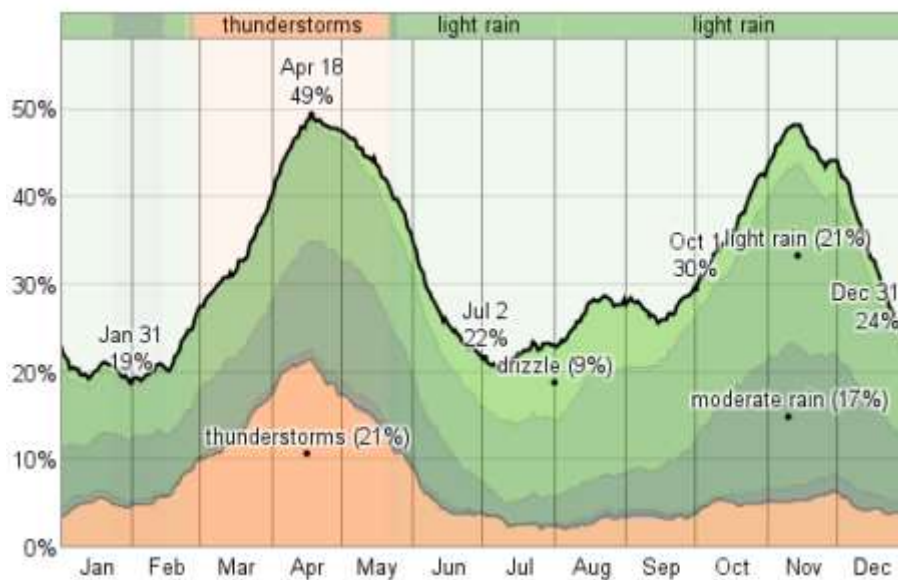
Much of this region, including the North-Eastern province (Garissa, Wajir) and the northern parts of Eastern (Marsabit) and Rift Valley provinces, has an exceptionally low annual rainfall with the rainfall in the lower inland plateau falling below 500 mm and the rainfall in the northern frontier districts falling below 250 mm.

In the lower districts, temperatures are high round the year, there is much sunshine, and the region is typical of hot desert areas like the adjoining southern parts of Somalia and Ethiopia. There is occasional excessive heat and humidity is low.

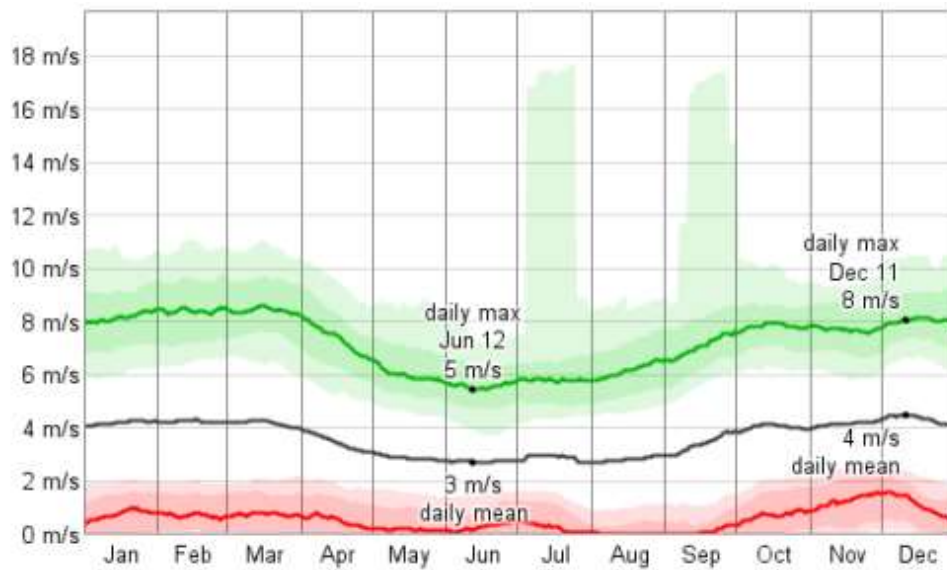
THE KENYA HIGHLANDS REGION CLIMATIC ZONE

Most of this region lies between 1,220 m and 2,150 m and occupies the centre and west of the country on either side of the eastern Great Rift Valley, extending to the Ugandan border. It is the most densely populated part of the country and contains the most productive agricultural land. There is a double rainy season, but rainfall is moderate and only exceeds 1 250 mm a year on the higher parts.

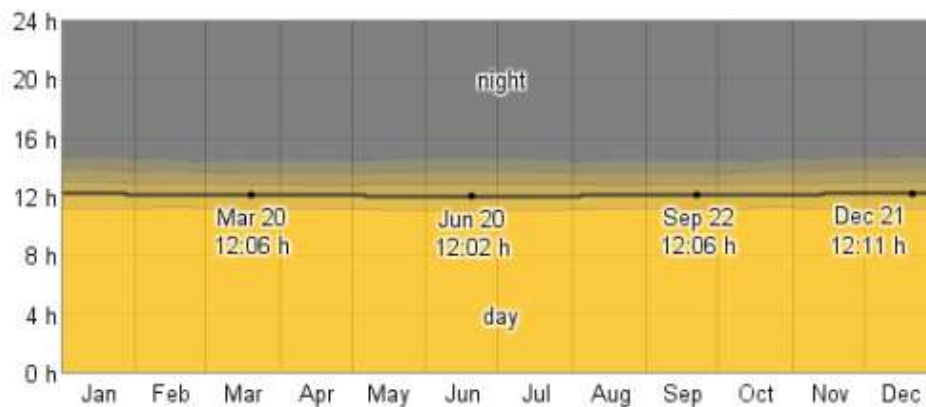
Over most of the region the sunniest time of the year is from December to March. The cloudiest period is from June to September when there is much drizzle but little heavy rain. This period is often called 'winter' in the Kenya Highlands and the evenings may feel chilly compared with the sunnier months.



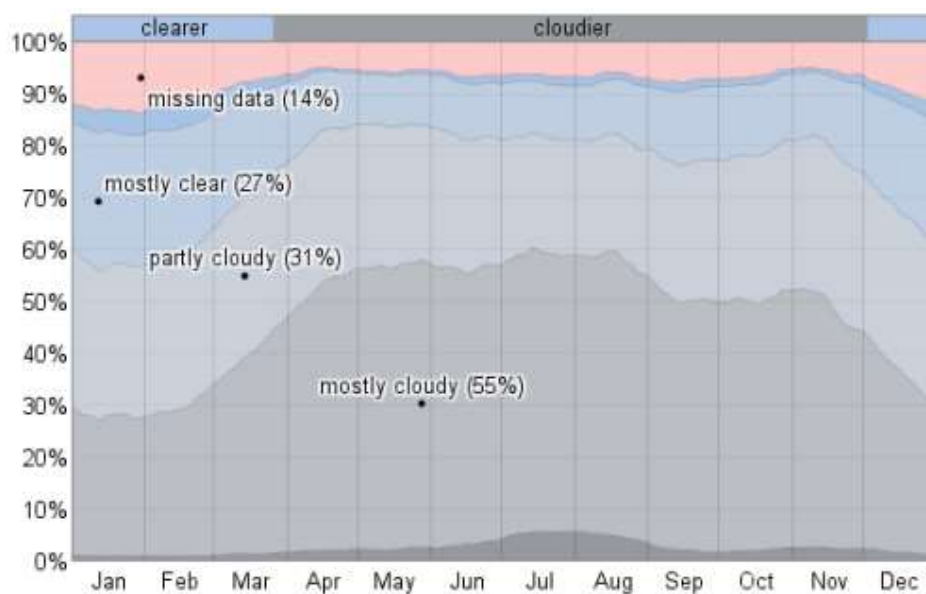
Graph 6. Kenya highlands: Probability of precipitation



Graph 7. Kenya highlands: Wind speed

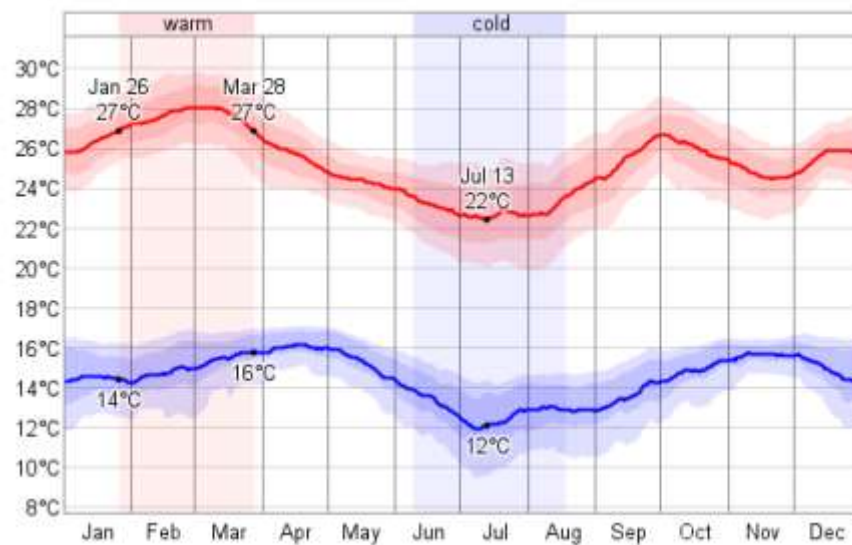


Graph 8. Kenya highlands: Daily hours of daylight and twilight

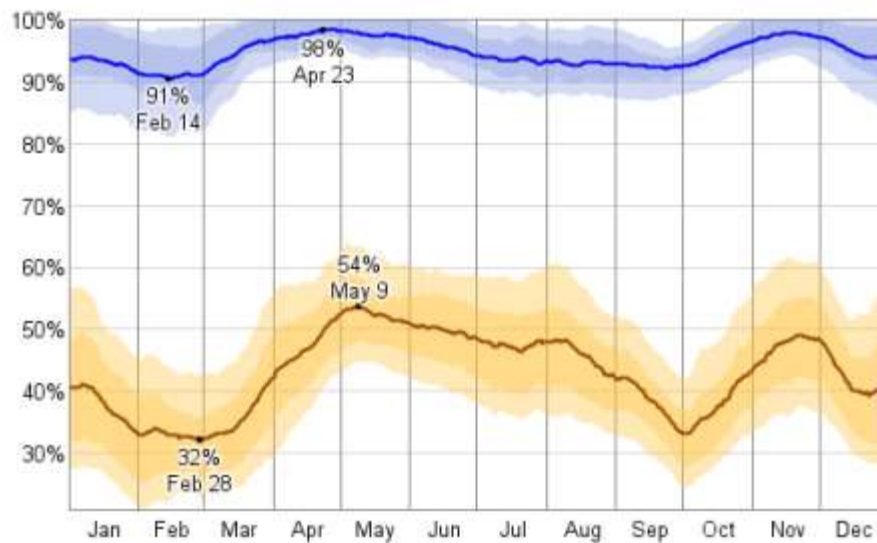


Graph 9. Kenya highlands: Cloud cover types

The climate of Nairobi is representative of much of the region. The climate for Kisumu on the shores of Lake Victoria, however, shows that there is more rainfall in each month here. This is a consequence of the greater humidity picked up by winds crossing the lake and a liability for thunderstorms to break out during the night.



Graph 10. Kenya highlands: Daily high and low temperatures



Graph 11. Kenya highlands: Relative humidity

THE HIGHER MOUNTAIN REGION CLIMATIC ZONE

These are the small regions above 2,500 m and isolated higher mountains such as Mount Elgon (on the Ugandan border) and Mount Kirinyaga. Here temperatures fall low enough for frost to occur and at higher levels some precipitation may be snow. Mount Kirinyaga has permanent snowfields.

ENVIRONMENTAL CONCERNS IN KENYA

The most prominent environmental concerns in Kenya include water pollution from urban and industrial wastes; degradation of water quality from increased use of pesticides and fertilizers; water hyacinth infestation in Lake Victoria; deforestation; soil erosion; desertification and poaching.

Table 1. Environmental statistics (UN Statistics, 2013)

Environment		
Threatened species	2012	346
Forested area (% of land area)	2010	6.0
CO2 emission estimates (000 metric tons and metric tons per capita)	2009	12340/0.3
Energy consumption per capita (kilograms oil equivalent)	2009	90.0
Rainfall in the capital city, total mean (millimetres)		1024
Temperature in the capital city, mean °C (minimum and maximum)		12.0/23.4

The total renewable water sources span 30.7 cubic kilometres. 41.9% of total installed electrical capacity is generated from fossil fuels; 44.8% of total installed electrical capacity is generated from hydroelectric plants and 13.3% of total installed electrical capacity is generated from other renewable sources.

The international environmental agreements that Kenya has signed and ratified include those related to biodiversity, climate change through the Kyoto Protocol, desertification, endangered species, hazardous wastes, law of the sea, marine dumping, marine life conservation, ozone layer protection, ship pollution, wetlands, and whaling.

Kenya has a green building council, the Kenya Green Building Society (KGBS), which is an established World Green Building Council.

3. Applying Green Star Credit by Credit

The Green Star Interiors v1 rating tool has been assessed for relevance on a credit-by-credit basis. Each credit's applicability to the Kenyan context is discussed and recommendations are made of where the project team must submit a Credit Interpretation Request (CIR) or a Technical Clarification (TC) to the GBCSA where an alternative standard may be better suited.

CREDIT BY CREDIT REVIEW

For each credit reviewed as part of this report, the credits are colour coded in accordance with the changes required for applicability to the local context:

	The credit should be kept in its current form and no adjustments need to be made.
	<ol style="list-style-type: none"> 1. The credit requires a CIR/TC only if an alternative compliance route is applied to the project; OR 2. The project requires an adaptation in the report (i.e. referencing Kenya legislation / context) where necessary with no further action required.
	The credit should be omitted and made 'not applicable' for the Kenyan application of the tool.
Credit Reviewed as shown:	Credit Number and Name are stated, and the aim of the credit is defined
	The credit's suitability to the Kenyan context is interrogated
	Recommendations for minor changes, where applicable for the purpose of application within the Kenyan context, of the Green Star tool are made

ELIGIBILITY CRITERIA

No adaptations shall be made to the Spatial Differentiation, Space Use and Timing of Certification eligibility criteria of the relevant Green Star rating tool. Recommendations for the Conditional Requirements eligibility criterion are included in the credit-by-credit review.

GREEN STAR CATEGORY WEIGHTING SYSTEM

It is to be noted that the category weighting system should remain the same as that of the Green Star rating tools, until such a time as the KGBS has the capacity to facilitate a revision of the category environmental weighting system where relevant.

4. Management

The credits within the Management Category encourage and reward the adoption of features and attributes that enable and support good environmental management practices throughout the distinct phases of a project's development and its on-going operation. The intention throughout the category is to improve the environmental performance of projects by influencing areas where decision-making is critical. It rewards the implementation of processes and strategies that minimise negative environmental impacts during fitout construction. The category also promotes practices that ensure a fitout project will be used to its maximum operational potential.

	AIM OF CREDIT	NOTES	RECOMMENDATION
	INT-MAN-1: Green Star Accredited Professional To encourage and recognise the engagement of professionals who can assist the project team with the integration of Green Star aims and processes throughout all stages of a fitout's design and construction phases.	Until KGBS has the requisite rating tools and associated course delivery systems, it is recommended that professionals be trained under the current South African system. As such, the credit in its current form is equally relevant and applicable in Kenya as it is in South Africa.	INT-MAN-1 to be kept in its current form and no adjustments are to be made.
	INT-MAN-2: Commissioning and Tuning To recognise effective commissioning and tuning processes during a project's design and construction phase that ensure all services and installations can operate to their optimal design potential.	As commissioning procedures are not legislated in Kenya (as in South Africa) CIBSE or ASHRAE commissioning codes are suitable standards for the commissioning of energy consuming systems and are in line with Green Star's aim of best practice.	INT-MAN-2 to be kept in its current form and no adjustments are to be made.
	INT-MAN-3: Occupant Users' Guide To encourage and recognise the provision of information to fitout owners and users that helps them understand a project's systems, environmental attributes, and maintenance requirements.	Unchanged	INT-MAN-3 to be kept in its current form and no adjustments are to be made.

	<p>INT-MAN-4: Environmental Management To encourage and recognise the adoption of a formal environmental management system in line with established guidelines during construction.</p>	<p>Environmental Management Plan</p> <p>Environmental management in construction should not be a region-specific practice but should be practiced across all regions to minimise the disturbance that construction activities have on the environment.</p> <p>It is therefore advised that for uniformity against a measurable benchmark as it pertains to Green Star Interiors projects that a project-specific Environmental Management Plan (EMP) is applied throughout the construction phase of the project (i.e. from construction commencement to practical completion) in accordance with Table 1 provided in the additional guidance of the Interiors Technical Manual.</p> <p>References are to be updated to include Kenyan environmental legislation as per Kenya National Environment Management Authority (NEMA) https://www.nema.go.ke/.</p> <p><u><i>NEMA Environmental Management Plan</i></u></p> <p>It is advised that when Kenya National Environment Management Authority (NEMA) is used to formulate the project specific EMP's, the project team must also meet the checklist requirements of this credit as laid out by the Additional Guidance.</p> <p>Environmental Management System (EMS) To remain as is.</p> <p>Monitoring construction impacts To remain as is.</p>	<p>INT-MAN-4 to be kept in its current Form.</p> <p>References to be adapted to include Kenyan environmental legislation as per Kenya National Environment Management Authority (NEMA) https://www.nema.go.ke/.</p> <p>No further action required.</p>
	<p>INT-MAN-5: Construction Waste Management To recognise and encourage management practises that minimise the amount of demolition and construction waste going to disposal</p>	<p>This credit is to be kept in its current form. If /where recycling is undertaken as an informal process a record of the informal recyclers' collectors must be kept including their acknowledgement of collection of such materials and quantities as per the Additional Guidance in the GS Interiors Technical Manual.</p> <p>It is believed that a waste management programme can be instated for Kenya projects to recycle at least 30% of construction waste. This credit encourages the further development and growth of recycling facilities in the country. Therefore, the credit in its current form is equally relevant and applicable in Kenya as it is in South Africa.</p>	<p>INT-MAN-5 to be kept in its current form and no adjustments are to be made.</p>

INT-MAN-6: Workspace Efficiency To recognise the design of workspaces that provide spatial efficiency and improve productivity and occupant performance.	Unchanged	INT-MAN-6 to be kept in its current form and no adjustments are to be made.
INT-MAN-7: Green Lease To recognise and encourage collaboration between the building owner and tenants to manage and operate the building along environmentally sustainable principles whilst realising mutual benefit.	Unchanged	INT-MAN-7 to be kept in its current form and no adjustments are to be made.
INT-MAN-8: Learning Resources To encourage and recognise sustainability initiatives implemented in the development as learning resources for building users and visitors	Unchanged	INT-MAN-8 to be kept in its current form and no adjustments are to be made.

5. Indoor Environmental Quality

The Indoor Environment Quality (IEQ) category aims to encourage and reward initiatives that enhance the comfort and well-being of fit-out for occupants. The credits within the category address issues including air quality, pollutants and occupant comfort and rewards project teams that achieve increased comfort and well-being and provide comfortable and healthy spaces for their occupants. Through the IEQ category, Green Star - Interiors aims to achieve environmental performance improvements in a manner that also improves occupants' experience of the space. For example, reductions in energy consumption could easily be achieved by avoiding the installation of heating and/or cooling systems, but this would potentially be at the expense of the occupant comfort and wellbeing. The IEQ category recognises that buildings are designed for people and as such improvements to sustainability should never be made at the expense of occupant health and wellbeing. By rewarding both energy efficiency and indoor environment quality, the Green Star rating system promotes and rewards a comprehensive approach to sustainability that results in multiple benefits.

AIM OF CREDIT	NOTES	RECOMMENDATION
INT-IEQ-1: Quality of Internal Air To encourage and recognise projects that provide high quality air to occupants.	Entry of outdoor pollutants Unchanged Provision of outside air Unchanged or alternative compliance path Use of CO2 control Unchanged Exhaust of pollutants Unchanged	INT-IEQ-1 to be kept in its current form and no adjustments are to be made. Note alternative compliance path option <u>Alternative Methodology/Compliance Path: Provision of outside air</u> Only where a professional team wishes to use an alternative methodology/standard (e.g. CIBSE Guide B2 to determine ventilation rates), shall a CIR be submitted to the GBCSA

			provided the alternative standard is equally or more stringent than SANS 10400-O:2011.
	INT-IEQ-2: Thermal Comfort To encourage and recognise fitouts that achieve a high level of thermal comfort	Compliance Route 1 – Modelling Unchanged Compliance Route 2 – Deemed-to-Satisfy (DTS) Criteria Unchanged	INT-IEQ-2 to be kept in its current form and no adjustments are to be made.
	INT-IEQ-3: Lighting Comfort To encourage, recognise and reward well-lit spaces that provide appropriate levels of lighting comfort to occupants.	Minimum Compliance Unchanged Light levels Unchanged or alternative compliance path Individual controls Unchanged Glare Unchanged or alternative compliance path	INT-IEQ-3 to be kept in its current form and no adjustments are to be made. Note alternative compliance path option <u><i>Alternative Compliance Path Light Levels</i></u> Only where a professional team wishes to use an alternative standard shall a CIR be submitted to the GBCSA provided the alternative standard is equally or more stringent than the standard/s given in the Technical Manual. <u><i>Alternative Compliance Path Glare</i></u> Only where a professional team wishes to use an alternative standard, shall a CIR be submitted to the GBCSA provided the alternative standard is equally or more stringent than the standard/s given in the Technical Manual.
	INT-IEQ-4: Visual Comfort To recognise the delivery of well daylit spaces that provide high levels of visual comfort and views to fit-out occupants	Unchanged	INT-IEQ-4 to be kept in its current form and no adjustments are to be made.
	INT-IEQ-5: Acoustic Quality To encourage and recognise buildings that are designed to provide appropriate acoustic qualities to enable the functionality of the space.	Unchanged	INT-IEQ-5 to be kept in its current form and no adjustments are to be made.
	INT-IEQ-6: Reduced Exposure to Pollutants To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	Unchanged	INT-IEQ-6 to be kept in its current form and no adjustments are to be made.

INT-IEQ-7: Mould Prevention To encourage and recognise the design of services that eliminates the risk of mould growth and its associated detrimental impact on occupant health.	The inclusion of dehumidifiers is standard practice as part of the indoor air quality control due to the climate.	INT-IEQ-7 to be kept in its current form and no adjustments are to be made
INT-IEQ-8: Ergonomics To recognise the choice of equipment and design of spaces that promotes wellbeing, efficiency, and effectiveness	Unchanged	INT-IEQ-8 to be kept in its current form and no adjustments are to be made.
INT-IEQ-9: Indoor Plants To encourage and recognise the installation of indoor plants that improve indoor environment quality and provides occupants with a connection to nature.	Unchanged	INT-IEQ-9 to be kept in its current form and no adjustments are to be made.

6. Energy

The Energy category aims to reward fitouts that can reduce their overall operational energy consumption below that of a comparable standard practice fitout. Such reductions help to reduce greenhouse gas (and other related) emissions, lower overall energy demand as well as maximise fitouts' operational efficiency and reduce operating costs for building owners and users.

The category aims to facilitate reductions in operational energy consumption by facilitating efficient energy usage and encouraging the utilisation of energy generated by low-emission sources. It also seeks to encourage further maximisation of efficiencies through the selection of low-energy appliances and equipment, and the implementation of good lighting design.

AIM OF CREDIT	NOTES	RECOMMENDATION
INT-ENE-1: Greenhouse Gas Emissions To encourage and recognise designs that minimise the greenhouse gas emissions associated with operational energy consumption and maximise potential operational energy efficiency of the base building.	Overall, the Green Star Interiors v1 tool requirements prescribed under ENE-1 are applicable the Kenyan Interior fit-outs. Should a project intend to use Part E.2 energy modelling (HVAC only) compliance route, either by adopting SANS 204:2011 based modelling protocol or an alternative standard, the identified approach to establish notional building must be motivated by the registered project through a mandatory CIR.	It is recommended that ENE-1 Credit Criteria for up to twelve points remains applicable to all projects in Kenya seeking certification. Note alternative compliance path option <u>Alternative Compliance Path Glare</u> Only where a professional team wishes to an alternative standard to SAN204:2011 to demonstrate compliance via Part E.2 Energy Modelling, shall a CIR be submitted to the GBCSA provided the alternative standard is equally or more stringent than the standard/s given in the Technical Manual.

ENE-2: Energy Sub-metering To encourage and recognise the installation of energy sub-metering that facilitates on-going management of energy consumption.		INT-ENE-2 to be kept in its current form and no adjustments are to be made.
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7. Transport

The Transport category aims to reward projects that can facilitate a reduction of the dependency of occupants on private car use as an important means of reducing overall greenhouse gas emissions. Motor vehicles in general and private cars in particular, are responsible for many forms of pollution. Climate change is impacted by motor vehicle use indirectly due to the high amounts of energy (and therefore emissions) required to manufacture cars and build supporting infrastructure and services, as well directly as the transport fuels combusted lead to greenhouse gas emissions within exhaust fumes. Car exhaust fumes also increase the levels of polluting particles in the air, which are a contributing cause of asthma and other respiratory illnesses.

If reliance on motor vehicle transportation is to be reduced, it is necessary to maximise alternative options. Rather than limiting access to private fossil fuel vehicles, the Transport category aims to encourage and reward initiatives that reduce the need for their use. This may include initiatives that encourage and make possible the use of mass transport like trains, buses, and minibus taxis, as well as pedestrian and cycling opportunities. Of all these alternatives, walking is the most 'sustainable,' with no associated embodied energy or pollutants; cycling similarly does not pollute the environment.

AIM OF CREDIT	NOTES	RECOMMENDATION
TRA-1: Commuting Mass Transport To encourage and recognise the selection of sites/premises that are near public transport and facilitate the use of public transport.	Unchanged	INT-TRA-1 to be kept in its current form and no adjustments are to be made.
TRA-2: Local Connectivity To encourage and recognise tenants that choose to locate their premises within walking distance of high-quality amenities such as shops and parks, thus reducing private vehicle use and the as-sociated negative environmental impacts.	Unchanged	INT-TRA-2 to be kept in its current form and no adjustments are to be made.
TRA-3: Alternative Transport To encourage and recognise developments that promote and facilitate the use of alternative modes of transport in lieu of the use of private cars.	Unchanged	INT-TRA-3 to be kept in its current form and no adjustments are to be made

8. Water

The Water category aims to encourage and reward initiatives that reduce the consumption of potable water through measures such as the incorporation of water efficient fixtures and building systems and wastewater re-use.

Reductions in operational water consumption may be achieved through maximisation of water efficiency within a project, as well as through the utilisation of reclaimed water sources. In the case of fit-outs, further water efficiencies can be gained through the selection of efficient appliances and equipment and the selection of base buildings that have already implemented efficient fixtures, fittings, and systems.

AIM OF CREDIT	NOTES	RECOMMENDATION
WAT-1: Potable Water To encourage and recognise interior fit-outs that minimise potable water consumption.	Compliance Route 1: Simulation Method The potable water calculator considers South African rainfall per region only and as such must be updated to reflect regional rainfall values in Kenya. Compliance Route 2: Deemed to satisfy methodology Unchanged	Compliance Route 1: INT-WAT-1 to be kept in its current form with a mandatory CIR to confirm applicability for Compliance Route 1 (update of regional rainfall values). No further adjustments are to be made. Compliance Route 2: INT-WAT-1 to be kept in its current form and no adjustments are to be made.
WAT-2: Water Sub-Metering To encourage and recognise the design of systems that both monitor and manage water consumption.	Metering Unchanged Metering Strategy Unchanged	INT-WAT-2 to be kept in its current form and no adjustments are to be made.

9. Materials

The credits within the Materials Category target the consumption of resources through selection and reuse of materials, and efficient management practices. The basic concepts of the category are to reduce the number of natural resources used, reuse whatever materials can be reused, and recycle whenever possible. The credits are intended to reduce the environmental impacts associated with the use of materials. This is done through credits that reward improvements across the range of fundamental considerations: responsible sourcing; embodied impacts, resource efficient design and health and safety.

AIM OF CREDIT	NOTES	RECOMMENDATION
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<p>INT-MAT-1: Operational Waste Management To encourage and recognise developments which provide a spatial allocation for recycling and an operational waste management plan to facilitate the recovery of resources used within the tenancy to reduce waste going to disposal.</p>	<p>Recycling Waste Storage Unchanged</p> <p>Operational Waste & Recycling Management Plan Unchanged</p>	<p>INT-MAT-1 to be kept in its current form and no adjustments are to be made.</p>
<p>INT-MAT-2: Furniture To encourage and recognise the selection of furniture that has a reduced environmental impact compared to available alternatives</p>	<p>Currently most furniture products are imported or otherwise if sourced from within Kenya typically does not have third party ecolabels.</p> <p>This creates the same limitations with certifications and market availability.</p> <p>This results in many fit-outs being forced to forfeit the Furniture points.</p>	<p>INT-MAT-2 to be kept in its current state and no adjustments are to be made.</p> <p><i>Note alternative compliance path option</i></p> <p>The GBCSA has a published list of third-party certifications that are currently recognised within the materials calculator, but which exclude numerous third party European and US certifications and thus that may have the same or similar standards but have not been reviewed.</p> <p><i>Alternative Compliance Route 2:</i></p> <ol style="list-style-type: none"> 1. Under the Product Stewardship category: allow projects to complete the GSSA Environmentally Preferable Products Scorecard, v1 (see Annexure 1) and assign a 30% criterion score. 2. Add a new stand-alone Category: Environmental Product Declaration and assign a criterion score of 30% for products with third party verified EPDs. <p><i>*Project Teams to highlight the 3rd Party Verification Body in the Product Declaration Sheet for easy assessment.</i></p>
<p>INT-MAT-3: Assemblies To encourage and recognise the selection of assemblies that has a reduced environmental impact compared to available alternatives.</p>	<p>Currently materials used for partitions and joinery are imported.</p> <p>This creates the same limitations with certifications and market availability.</p>	<p>INT-MAT-3 to be kept in its current state and no adjustments are to be made.</p> <p><i>Note alternative compliance path option</i></p> <p>The GBCSA has a published list of third-party certifications that are currently recognised within the materials calculator, but which exclude numerous third party European and US certifications and thus that may have the same or similar standards but have not been reviewed.</p> <p><i>Alternative Compliance Route 2:</i></p> <ol style="list-style-type: none"> 1. Under the Product Stewardship category: allow projects to complete the GSSA Environmentally Preferable Products

		<p>Scorecard, v1 (see Annexure 1) and assign a 30% criterion score.</p> <p>2. Add a new stand-alone Category: Environmental Product Declaration and assign a criterion score of 30% for products with third party verified EPDs.</p> <p><i>*Project Teams to highlight the 3rd Party Verification Body in the Product Declaration Sheet for easy assessment.</i></p>
<p>INT-MAT-4: Flooring</p> <p>To encourage and recognise the selection of flooring that has a reduced environmental impact compared to available alternatives.</p>	<p>Most flooring is imported like furniture and assemblies. The few in country suppliers have few or no certifications.</p> <p>This creates the same limitations with certifications and market availability.</p>	<p>INT-MAT-4 to be kept in its current state and no adjustments are to be made.</p> <p><i>Note alternative compliance path option</i></p> <p>The GBCSA has a published list of third-party certifications that are currently recognised within the materials calculator, but which exclude numerous third party European and US certifications and thus that may have the same or similar standards but have not been reviewed.</p> <p><i>Alternative Compliance Route 2:</i></p> <p>1. Under the Product Stewardship category: allow projects to complete the GSSA Environmentally Preferable Products Scorecard, v1 (see Annexure 1) and assign a 30% criterion score.</p> <p>2. Add a new stand-alone Category: Environmental Product Declaration and assign a criterion score of 30% for products with third party verified EPDs.</p> <p><i>*Project Teams to highlight the 3rd Party Verification Body in the Product Declaration Sheet for easy assessment.</i></p>
<p>INT-MAT-5: Wall Coverings</p> <p>To encourage and recognise the selection of wall coverings that have a reduced environmental impact compared to available alternatives</p>	<p>Most wall coverings are imported like furniture and assemblies. The few in country suppliers have few or no certifications.</p> <p>This creates the same limitations with certifications and market availability.</p>	<p>INT-MAT-5 to be kept in its current state and no adjustments are to be made.</p> <p><i>Note alternative compliance path option</i></p> <p>The GBCSA has a published list of third-party certifications that are currently recognised within the materials calculator, but which exclude numerous third party European and US certifications and thus that may have the same or similar standards but have not been reviewed.</p> <p><i>Alternative Compliance Route 2:</i></p>

		<p>1. Under the Product Stewardship category: allow projects to complete the GSSA Environmentally Preferable Products Scorecard, v1 (see Annexure 1) and assign a 30% criterion score.</p> <p>2. Add a new stand-alone Category: Environmental Product Declaration and assign a criterion score of 30% for products with third party verified EPDs.</p> <p><i>*Project Teams to highlight the 3rd Party Verification Body in the Product Declaration Sheet for easy assessment.</i></p>
<p>INT-MAT-6: Local Sourcing</p> <p>To encourage and recognise the reduction of transport emissions, by using materials and products sourced within close proximity to the site.</p>	<p>The professionals at the workshop noted that a considerable proportion of building components, materials and finishes used in Kenyan projects are imported into the country from overseas. This is despite the intra-regional availability of some of these components, materials and finishes with equivalent performance specifications in the East African Community (EAC) & Southern African Development Community (SADC).</p> <p>It is strongly encouraged that local materials manufactured within the EAC & SADC should be explored instead, and awareness should be raised of the embodied energy in materials sourced from far away distances to discourage importing from overseas.</p> <p>As such, to stimulate the growth of industry in Kenya and East Africa as well as Southern Africa, and to encourage and recognise the environmental advantages gained, in the form of reduced transportation emissions, by using materials and products that are sourced within close proximity to the site - the sourcing of products manufactured intra-regionally is viewed as both an environmental and socio-economic driver of sustainable market transformation. This promotes sourcing of materials in the East and Southern African regions which would be beneficial to the Kenyan local context by fostering intraregional economic development for Kenya, the EAC & SADC.</p>	<p>INT-MAN-4 to be kept in its current form with references to be adapted to include Kenya, EAC and SADC where relevant.</p> <p>No further action required.</p> <p>One point is awarded where:</p> <ul style="list-style-type: none"> 50% of the project contract value is represented by materials and products that have been sourced from within the member states of the East African Community (EAC) and Southern African Development Community (SADC) regions' borders as defined on http://www.eac.int and https://www.sadc.int , current at the time of project registration or more recent. Submissions shall be compiled as per the Documentation Requirements indicated in the Green Star Interiors v1 Technical Manual for Short Reports, Confirmation for supplier(s)/manufacturer(s) and Additional Guidance. <p>One point is awarded where:</p> <ul style="list-style-type: none"> 20% of the project contract value is represented by materials and products that have been extracted, harvested, processed and manufactured from within the member states of the East African Community (EAC) and Southern African Development Community (SADC) regions' borders as defined on http://www.eac.int and https://www.sadc.int , current at the time of project registration or more recent. Submissions shall be compiled as per the Documentation Requirements indicated in the Green Star Interiors v1 Technical Manual for Short Reports,

		Confirmation for supplier(s)/manufacturer(s) and Additional Guidance.
INT_MAT-7: Sundries Materials Sourcing To encourage and recognise the selection of fitout finishes that have a reduced environmental impact when compared to available alternatives through responsible manufacturing, product stewardship and resource efficient design.		INT-MAT-7 to be kept in its current form and no adjustments are to be made.

10. Land Use and Ecology

The Land Use & Ecology category aims to reduce the negative impacts on sites' ecological value because of urban development and rewards projects that minimise harm and enhance the quality of local ecologies.

AIM OF CREDIT	NOTES	RECOMMENDATION
INT_ECO-1: Site Selection To encourage and recognise interior fitouts that minimise potable water consumption.	<p>The Kenyan construction and built environment are relatively new to green building rating systems and sustainable building initiatives.</p> <p>As a result, the requirements for eco sites to be Green Star rated are limiting.</p> <p>Furthermore, Kenya now uses a variety of ratings systems including, EDGE, LEED, Green Star etc</p> <p>Environmental attributes of base building Unchanged</p> <p>Environmental performance of the base building Unchanged</p>	<p>INT-ECO-1 is to be kept in its current form with references to be adapted to reference Kenyan Green Star Certifications.</p> <p><i>Note alternative compliance path option</i></p> <p><u>Alternative Compliance Path: Alternative Ratings</u></p> <p>Projects can reference buildings that are rated under other green rating systems including LEED, EDGE, BREEAM and any other rating system that has been developed by a full member of the WGBC.</p> <p>Mandatory CIR only if an alternate rating is applied to the project.</p>

11. Emissions

The Emissions Category aims to assess the environmental impacts of emissions generated by fitouts. Negative impacts commonly associated with fitout emissions include damage to the ozone layer through refrigerant leaks or disturbances to native animals and their migratory patterns because of light pollution.

	AIM OF CREDIT	NOTES	RECOMMENDATION
	INT-EMI-1: Impacts from refrigerants and insulants To encourage and recognise the avoidance of substances that contribute to the deterioration and long-term alteration of the Earth's atmosphere.	Ozone Depletion Potential (ODP) Unchanged Refrigerants Unchanged Insulants Unchanged Global Warming Potential (GWP) Unchanged Refrigerant Fugitive Emission Management Unchanged	INT-EMI-1 to be kept in its current form and no adjustments are to be made.
	EMI-2: Light Pollution To encourage and recognize interior fitouts that minimise light pollution into the night sky.	Internal light sources Unchanged External light sources Unchanged	INT-EMI-2 to be kept in its current form and no adjustments are to be made.

12. Innovation

The Innovation category is included within Green Star – Interiors’ rating tool as a way of encouraging, recognising, and rewarding the spread of innovative practices, processes and strategies that promote sustainable communities and cities.

	AIM OF CREDIT	NOTES	RECOMMENDATION
	INT-INN-1: Innovative Strategies and Technologies To encourage and recognise pioneering initiatives, processes or strategies in sustainable building management and operations.	Reference Kenyan rather than South African context	INT-INN-1 to be kept in its current form but reference to made instead to the Kenya context, rather than the South African context. No further adjustments to be made.
	INT-INN-2: Exceeding Green Star Benchmarks To encourage and recognise projects that achieve environmental benefits in excess of the current Green Star benchmarks.		INT-INN-2 to be kept in its current form and no adjustments are to be made.
	INT-INN-3: Environmental Design Initiatives To encourage and recognise sustainable building initiatives that are currently outside of the scope of this Green Star-Kenya rating tool, but which have a substantial or significant environmental benefit.		INT-INN-3 to be kept in its current form and no adjustments are to be made.

13. Annexure 1

Product Stewardship: Environmentally Preferable Products

For the Materials Category there is an alternative Compliance Route for the following credits:


INT-MAT-2: Furniture, MAT-3: Assemblies, MAT-4: Flooring & MAT-5: Wall Coverings.

Alternative Compliance Route 2:

Under the Product Stewardship category: allow projects to complete the GSSA Environmentally Preferable Products Scorecard, v1 and assign a 30% criterion score.

The Scorecard for “Product Stewardship: Environmentally Preferable Products”, can be downloaded here <https://gbcsa.zendesk.com/hc/en-us> under the Africa tab. Follow the instructions located on the “Introduction” tab of the scorecard.

<https://gbcsa.zendesk.com/hc/en-us/articles/360014504000-African-alternative-Compliance-Route-2-for-Product-Stewardship-Environmentally-Preferable-Products>

GREEN BUILDING COUNCIL SOUTH AFRICA		Product Stewardship: Environmentally Preferable Products		Points awarded	Guidance for completion of supporting documentation:
Sponsored by: 		Supplier Company Name: XYZ SUPPLIER	Product Category: Furniture		
Date: _____	Product Name: product name 1	Product description: (insert)	Product unit: (insert unit of mass or volume)		
Only complete black boxes					
1 Product Material Sourcing and Manufacturing		Maximum	Assessment Notes		
a	Does the product contain or has been manufactured from refurbished/ reused components and/or reused timber, post-consumer recycled timber and/or FSC Certified Timber?	3			3 points for content by mass >75%; 2 points for content by mass >50%; 1 point for content by mass >25%; please provide evidence
b	Does the product contain recycled materials?	2			2 points for >50% mix of post- and pre-consumer recycled content by mass; 1 point for >25% mix of post- and pre-consumer recycled content by mass. Please provide evidence recycled content to be
c	Has the manufacturer taken steps to avoid/minimise waste generation during manufacturing?	1			list actions and provide evidence
d	Has the manufacturer taken steps to minimise energy use during manufacturing?	1			list actions and provide evidence
e	Has the manufacturer taken steps to minimise emissions of air pollutants during manufacturing?	1			list actions and provide evidence
f	Product Disclosure: Does the product contain hazardous materials, which are fully disclosed in the product documentation?	2			For products containing hazardous materials: Please provide full disclosure of any hazardous materials by means of an MSDS or similar. For products not containing hazardous materials: Please provide evidence by means of an MSDS or similar. Full points will then be awarded.
		10		0	
2 Use Phase		Maximum			
a	Does the product have any Type 1 Ecolabels?	6			provide a copy of the valid Ecolabel.
b	Product Disclosure: Does the product have an emissions certificate?	3			Please provide the emissions certificate. Where a product is inert, please provide the technical data sheet. Please note list of qualifying inert products in the Environmentally Preferable Products Questionnaire and Guidelines document.
c	Does the product come with a minimum 5-Year Supplier guarantee?	1			provide a copy of the guarantee
		10		0	
3 Disposal Phase		Maximum			
a	Can the product be recycled? In parts or in its entirety?	2.5			100% recyclable: 2.5 points; >50% recyclable: 1.5 points; >25% recyclable: 1 point; please provide the necessary supporting documentation
b	Does the supplier provide a disposal plan for end of life use?	1			plan to be provided as supporting documentation, listing disposal options
c	Where the supplier has provided a disposal plan for end of life use, are environmentally friendly options considered for disposal?	2			plan to be provided as supporting documentation, listing disposal options
d	Where the product contains hazardous materials, has the supplier provided a comprehensive disposal plan?	1.5			plan to be provided as supporting documentation, listing disposal options; full points where product does not contain hazardous materials
		7		0	
4 Packaging & Distribution		Maximum			
a	Is product packaging recyclable and/or contains recycled content (either post industrial or post consumer)?	2			recyclable with post consumer content: 2 points; recyclable with pre-consumer content: 1 point; no recycled content but readily recycled throughout South Africa: 0.5 points. Please provide documentation to support the
b	Does the supplier offer a take-back of any type of resulting (bulk) packaging or product waste?	1			provide supporting documentation, eg written supplier commitment.
		3		0	
Total		30		0	

Example of Environmentally Preferable Products Scorecard

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