

GREEN STAR Zambia

LOCAL CONTEXT REPORT

for Green Star New Building in Zambia

This LCR applies to Office v1.1, as well as the rating tools for Green Star - Retail Centre v1, Green Star – Multi- Unit Residential v1 & Green Star - Public & Education Building v1.



Revision 3 – 07 June 2022





Report Acknowledgement

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EXECUTIVE SUMMARY

Overview of the Zambia Local Context Report

This report applies to the Green Star – Office (V1.1) tool and considers the applicability of the tool in Zambia.

Included in the report is a background analysis of Zambia, as well as a credit by credit analysis. This considers the applicability of each credit to the local context.

This report has been updated to account for changes made to the Office v1 technical manual within the v1.1 technical manual.

The Green Building Council South Africa (GBCSA) is currently licensed by the Green Building Council of Australia (GBCA) to allow certification using the Green Star rating tools (Office v1.1, Retail Centre v1, Multi Unit Residential v1 & Public & Education Building v1) only in South Africa, Ghana, Nigeria, Uganda, Nigeria, Kenya, Mauritius, Botswana and Rwanda. Through this local context assessment, the GBCSA will allow for certification in Zambia using all the Green Star rating tools (Office v1.1) (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 - Zambia. The GBCSA will then use the opportunity to allow capacity to grow in Zambia through the prospective Zambia GBA, by allowing selected Zambian professionals to be trained as Green Star - Zambian assessors who would join the GBCSA assessor teams on Zambian projects. In addition, the GBCSA would deliver the Green Star Accredited Professional – New Buildings course in Zambia, in collaboration with the Zambia Green Building Council, which would allow professionals in Zambia to take the Green Star Accredited Professional online examination. The details would be agreed upon in a Green Star license agreement between the GBCSA and the Zambia GBC.

Where projects wish to apply other standards than those in the Green Star tool, a CIR must be submitted to the GBCSA.



RECOMMENDATIONS

A summary of recommended credits requiring Credit Interpretation Requests (CIR's), Technical Clarifications (TC's) 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):

	CREDIT	REQUIREMENT
IEQ-02 Air Change Effectiveness	OMITTED	This credit is omitted
IEQ-06 High Frequency Ballasts	OMITTED	This credit is omitted
IEQ-11 Hazardous Materials	ADAPTATION	 Credit adapted in the following way – 1 point is awarded where: A comprehensive hazardous materials survey has been carried out on the project site, as defined by the South African Occupational Health and Safety Act (OH&S) and/or other relevant, comparable, legislation; and Whenever asbestos, lead or polychlorinated biphenyls (PCBs) are found, they are to be removed in accordance with the Zambian Environmental Management Act (No.12 of 2011)
ENE-00 Conditional Requirement	MANDATORY CIR	Conditional Requirement, therefore all projects must submit a CIR and receive a final ruling before Round 1 can be submitted to the GBCSA. Office v1.1 rating tool be applied to all other credits, calculations and protocols except the Energy modelling protocol for the ENE-0 and ENE-1: Greenhouse Gas Emissions credit, where the Office v1 Energy modelling protocol will be applicable to Zambian projects. Changes to the Green Star – Office v1 Energy Modelling protocol should be motivated by the registered project via the mandatory CIR.
ENE-01: Greenhouse Gas Emissions	MANDATORY CIR	Office v1.1 rating tool be applied to all other credits, calculations and protocols except the Energy modelling protocol for the ENE-0 and ENE-1: Greenhouse Gas Emissions credit, where the Office v1 Energy modelling protocol will be applicable to Zambian projects. Changes to the Green Star – Office v1 Energy Modelling protocol should be motivated by the registered project via the mandatory CIR.
ENE-07	MANDATORY CIR	ENE-07 should be kept in its current form with a mandatory CIR to confirm applicability.
TRA-01	ADAPTATION	TRA-01 should be adapted to refer to the Zambian local, provincial, or national authority planning allowances for the minimum or maximum values of car parking spaces provided for the project.



		For projects where the mandatory local parking requirements do not exist or are optional (or recommended), the technical manual refers to a set of 'alternative requirements' in the Additional Guidance which would be applicable to the project.
TRA-02	ADAPTATION	Credit adapted to the following – 1 point is awarded where: A minimum of 5% of all parking spaces are dedicated solely for use by car-pool vehicles, car share vehicles, hybrid or other alternative fuel vehicles. All qualifying spaces must be located in preferred parking locations and be designed and labelled for the intended vehicle types. 1 point is awarded where: A minimum of 5% or 5 parking spaces (whichever is the greater) are designed and labelled for mopeds, scooters and/or motorbikes, and all of these must be located in preferred parking locations.
WAT-01: Occupant Amenity Water	MANDATORY CIR	As the Green Star Potable Water Calculator takes into account South African rainfall per region, the Green Star Potable Water Calculator would need to be adapted to reflect the rainfall values in the different regions in Zambia.
		WAT-1 should be kept in its current form with a mandatory CIR to confirm applicability.
		The mandatory CIR is only required if the project requires adaption of the rainfall data.
MAT-07: PVC Minimisation	OMITTED	MAT-07 is omitted as per Office v1.1.
MAT-11: Local Sourcing	ADAPTATION	Credit adapted to the following -
		 One point is awarded where 20% of the total contract value is represented by materials or products (used in the construction of the project) that have been sourced from within the member states of the SADC region borders as defined by SADC respectively, current at the time of project registration or more recent. An additional point is awarded where 10% of the total contract value is represented by materials or products (used in the construction of the project) that have been sourced from within the Zambian borders.
		This promotes sourcing of materials in the Southern African regions which would be beneficial to the Zambian local context.
ECO-00: Conditional Requirement	MANDATORY CIR	ECO-00 should be kept in its current form. A mandatory CIR will be required.
ECO-04: Change of Ecological Value	MANDATORY CIR	ECO-04 should be kept in its current form but adaptions to the bio- regions in the calculator are required to correctly represent the Zambian environment. A mandatory CIR is required.



		The CIR is only required if this credit is targeted on the project
INN-1	ADAPTATION	 Credit adapted to the following - Up to two points are awarded for an innovation initiative where: The initiative improving environmental performance is a technology or process that is considered a 'first' or 'early adopter' in 'Zambia' or in the World; OR The initiative substantially contributes to the broader market transformation towards sustainable development in Zambia or in the World. Points are awarded as follows: One point is awarded when either of the above is true for the Zambian market; OR Two points are awarded when either of the above is true for the Global market
INN-2	ADAPTATION	INN-2 should be kept in its current form with reference being made instead to awarding points to an innovative initiative where there has been a substantial improvement on an existing Green Star / Green Star - Zambia credit
INN-3	ADAPTATION	INN-3 should be kept in its current form with the applicable adaptations made to incorporate the minor changes made in the Green Star - Zambia rating tool.

 Table 1: Credits requiring Credit Interpretation Requests (CIR's), Technical Clarifications (TC's) or adaptations

The weighting system should remain the same as Green Star – Tools with further adaption and discussion in the future with the Green Building Association of Zambia.



ACRONYMS

ACRONYM	TERM
RS	Pritich Standard
	Dillish Stanuaru
	Chartered Institute of Building Services Engineers
	Credit Interpretation Request
FCO	Land Use and Ecology category
EMI	Emissions category
EMP	Environmental management Plan
ENF	
FPA	Environmental Protection Agency
FTC	Environmental Tobacco Smoke
FSC	Forest Stewardship Council
GBCA	Green Building Council of Australia
GBAZ	Green Building Association of Zambia
GBCSA	Green Building Council South Africa
GS	Green Star
GSAP	Green Star Accredited Professional
GWP	Global Warming Potential
IEQ	Indoor Environmental Quality category
INN	Innovation category
LEED	Leadership Energy and Environmental Design
MAN	Management
MAT	Material category
NGO	Non-Government Organisation
ODP	Ozone Depleting Potential
OH+S	Occupational Health and Safety
PVC	Polychlorinated Vinyl Chloride
SANS	South African National Standards
TRA	Transport category
VOC	Volatile Organic Compounds
WAT	Water category
WMP	Waste Management Plan



INTRODUCTION



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1 INTRODUCTION

1.1 Overview of the Creation of a Zambia Green Building Association

The Zambia Green Building Association was launched in February 2015 with the goal of being active role player in 'greening' the property and construction industry and providing new decent job opportunities for Zambians. The Zambia Green Building Association has not yet developed a green building rating tool for office, retail, multi-unit residential, public and education building projects in Zambia. The Zambia Green Building Association is currently not a member of the World Green Building Council.

1.2 Overview of the Development of the Green Star - Zambia Environmental Rating Tool

As a member of the World Green Building Council and its Africa Network of Green Building Councils (ANGBC), the Green Building Council South Africa (GBCSA) allows the rating of Zambian buildings under the Green Star rating system.

The Green Star rating system is a natural touch point for green building movements and councils in other parts of Africa. The Green Building Council South Africa works in collaboration with emerging green building councils throughout Africa and allows the adaptation of the Green Star tools for certification in the respective countries. To date, Local Context Reports have been developed for Namibia, Mauritius, Kenya, Uganda, Ghana, Rwanda, Tanzania, Nigeria and Botswana.

It is important that the environmental rating tool best reflects the local context of the country therefore, as intellectual property owners of the Green Star brand, it is a prerequisite that consent from the Green Building Council South Africa (GBCSA) be obtained for the use of Green Star in Zambia through contextualisation.

1.3 Objective of the Zambia Local Context Report – New Buildings

This report applies to the Green Star – Office v1.1 tool, as well as rating tools for Green Star - Retail Centre v1, Green Star – Multi- Unit Residential v1 & Green Star - Public & Education Building v1, I and considers the applicability of the tool in Zambia. Included in the report is a background analysis of Zambia, as well as a credit by credit analysis. This considers the applicability of each credit to the local context.



1.4 Methodology

The context report addresses climatic conditions and ecology, water, and energy patterns, building regulations and any other Zambia -specific circumstances which may conflict with certain Green Star requirements. The context report also analyses the Green Star Design and As Built rating tools creditby-credit, identifying any ramifications that may result from the application of the Green Star rating tools to the Zambia context.



BACKGROUND



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2 BACKGROUND

2.1 Overview of Zambia

The Republic of Zambia is a landlocked country in Southern Africa, surrounded by 8 countries: the Democratic Republic of Congo to the north; Tanzania to the north-east; Malawi to the east; Mozambique, Zimbabwe, Botswana and Namibia to the south; and Angola to the west. The population is concentrated mainly around Lusaka, south-eastern, the Copperbelt to the northwest and the main highway to the south-west all the way to Livingstone. The population of Zambia, which is mostly urban, is estimated at about 17.9 million according to World Bank country data.



Figure 2: Zambia (The World Factbook, 2014)



Figure 3: Regional context of Zambia (The World Factbook, 2014)



2.2 Local Environment

2.2.1 Topography

Zambia is located on the plateau of Central Africa, between 1000 and 1600m above sea level. The average altitude of 1200 metres generally has a moderate climate. The climate of Zambia is tropical, modified by elevation.

The lowest point is the Zambezi river, at 329 metres above sea level, with the highest being Mafinga Central in the Mafinga Hills, at 2,339m above sea level.



Figure 4. Topographical map of Zambia

2.2.2 Climate

Most of the country is classified as humid subtropical or tropical wet and dry, with small stretches of semi-arid steppe climate in the south-west and along the Zambezi valley. Zambia lies between 8- and 18-degrees South of the Equator and has three seasons: the warm-wet season (December to April), the cool dry season (May to August) and the hot dry season (September to November). Humidity is low except during the rainy season.



Sub-Climate Zones in Zambia

Tropical Savanna Climate	Found along the western, northern, and eastern borders of Zambia.
Hot Semi- Arid Climate	Along the southern and southwestern region of Zambia
Monsoon -Influenced Humid tropical Climate	Predominant climate zone in Zambia, and spreads across the central region of the country.

Rainfall

Rainfall varies over a range of 500 to 1400mm per year (most areas fall into a range of 700mm to 1200mm). The distinction between rainy and dry seasons is marked, with no rain falling between June, July, and August. The rains are brought by the Intertropical Convergence Zone (ITCZ) and are characterised by thunderstorms with much lightning. The ICTZ is located north of Zambia in the dry season. It moves southwards in the second half of the year, and northwards in the first half of the year.

The highest rainfall is in the north, especially north-west and the north-east, decreasing towards the south; the driest areas are in far southwest and Luangwa River and middle Zambezi River valleys, parts of which are considered semi-arid. None of the country is considered arid to be desert.

Temperature

The average temperature in Zambia in the summer is 30°C and in the winter it can get as low as 5°C. Temperatures are higher between September and March, which is part associated with the rainy season over the region. Low temperatures are observed during June and July. Temperature is higher in the Southern part than the northern region, where the seasonal rainfall is low.

Wind

When the North-west rain-bearing winds and the northeast monsoons blow from the equatorial region into the northern part of the country, they contain more moisture and bring more rain to the northern part of the country. As the wind moves southwards, it becomes drier and loses moisture as it moves. This makes the southern part of the country receive less rainfall.





Graph 1. Monthly Climatology of Min-Temperate, Mean- Temperature, Max-Temperature & Precipitation 1991-2020, Zambia



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Graph 2. Relative Humidity, Zambia





Hours of sunshine average from six hours a day during the rainy season to as many as ten in the dry season.

Environmental concerns in Zambia

Historically, Zambia is frequently inundated with seasonal floods and flash floods, extreme temperatures and droughts, with increased severity and frequency in recent decades.



LOCAL CONTEXT REPORT



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3 LOCAL CONTEXT REPORT

3.1 Applying Green Star to Zambia

3.1.1 General

This section outlines the application of Green Star to Zambia from a general perspective.

It considers the typical project delivery, relevant building codes and standards, the eligibility requirements in Green Star, the conditional requirements and the environmental weightings of the tool

3.1.2 Eligibility Requirements

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

3.1.3 Conditional Requirements

There are currently two conditional requirements in Green Star South Africa. If projects do not achieve these conditional requirements then they cannot achieve a Green Star rating. These are Eco-0, which prescribes the minimum ecological constraints for the building and Ene-0, which prescribes the minimum energy efficiency which the building must achieve.

These two requirements are considered appropriate for the Zambian context, however both will require adaptations to adapt to the Zambian context.

The category weighting system should remain the same as that of the Green Star rating tools, until such a time as the Zambia Green Building Association has the capacity to facilitate a revision of the category environmental weighting system.

3.2 Applying GREEN STAR – Credit by Credit

This report applies to the Green Star – Office v1.1 tool and considers the applicability of the tool in Zambia. Each credit's applicability to the Zambian context is discussed and recommendations are made of where the project team must submit a Credit Interpretation Request (CIR) to the GBCSA where an alternative standard may be better suited.

3.3 Credit by Credit Review

Zambian projects would also be required to use the latest Green Star TCs, CIRs and Errata relevant to rating tools, published on the GBCSA's website, which represent the current version of that specific tool.

Each credit is reviewed in the following way:

- Aim of the credit,
- Discussion, which outlines the views of the Zambian professionals contacted as part of this research,
- Requirements for the adoption of the Green Star tool,



 Resources, which includes changes to the references listed in the technical manual as well as relevant Zambian manufacturers, suppliers and consultants.

The details of each credit have not been provided. This section must be read in conjunction with the Green Star Technical Manuals (available from www.gbcsa.org.za.)

The Green Star rating tools have been assessed for relevance on a credit by credit basis. Each credit's applicability to the Zambian context is discussed and requirements are made of where the project team must submit a Credit Interpretation Request (CIR) to the GBCSA where an alternative standard may be better suited.

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.
The credit requires a mandatory CIR or TC or adaptation to ensure relevance to the Zambian context.
The credit should be omitted and made 'not applicable' for the Zambian application of the tool.

All credits for new building tool credits have been included within the table below.

Zambian projects would also be required to use the latest Green Star TCs, CIRs and Errata relevant to rating tools, published on the GBCSA's website, which represent the current version of that specific tool.



3.3.1 MANAGEMENT

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
MAN-01: 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 design and construction phases.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-01 should be kept in its current form and no adjustments need to be made.
MAN-02: Commissioning Clauses To encourage and recognise commissioning and handover initiatives that ensure that all building services can operate to optimal design potential.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-02 should be kept in its current form and no adjustments need to be made.
MAN-03: Building Tuning To encourage and recognise commissioning initiatives that ensure optimum occupant comfort and energy efficient services performance throughout the year.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-03 should be kept in its current form and no adjustments need to be made.
MAN-04: Independent CommissioningAgentTo ensure buildings are designed withregard to future maintenance and arecorrectly commissioned before	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-04 should be kept in its current form and no adjustments need to be made.



MAN-05: Building User's Guide	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-05 should be kept in its
To encourage and recognise information	Africa.	current form and no
management that enables building users to		adjustments need to be made.
optimise the building's environmental		
performance.		
MAN-06: Environmental Management	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-6 should be kept in its
To encourage and recognise the adoption	Africa.	current form and no
of a formal environmental management		adjustments need to be made.
system in line with established guidelines		
during construction.		
Man-07: Waste Management	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-07 should be kept in its
To encourage and recognise management	Africa.	current form and no
practices that minimise the amount of		adjustments need to be made.
construction waste going to disposal.		
MAN-8: Airtightness Testing	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-08 should be kept in its
To encourage and recognise measures to	Africa.	current form and no
reduce uncontrolled air leakage in		adjustments need to be made.
buildings, and reward the testing and		
achievement of good air tightness testing		
levels.		
MAN-9: Waste Recycling Management	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-9 should be kept in its
<u>Plan - RETAIL</u>	Africa.	current form and no
To encourage and recognise management		adjustments need to be made.
systems and building infrastructure that		
facilitate the reduction of the overall		
operational waste generation and disposal.		1



MAN-10: Building Management System – <u>RETAIL & PEB</u> To encourage and recognise the incorporation of Building Management Systems to actively control and maximise the effectiveness of building services.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-10 should be kept in its current form and no adjustments need to be made.
MAN-11: Green Lease - RETAIL To encourage and recognise initiatives taken by the building owner to encourage improved environmental behaviour by tenants of the retail centre	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-11 should be kept in its current form and no adjustments need to be made.
MAN-12: Common Property Rules – MULTI UNIT RES To encourage and recognise developers who embed legal and contractual environmental management initiatives within the formal management structures of the development.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-12 should be kept in its current form and no adjustments need to be made.
MAN-13: Learning Resources - PEB To encourage and recognise sustainability initiatives implemented in the development as learning resources for building users and visitors.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAN-13 should be kept in its current form and no adjustments need to be made.



MAN-14: Life Cycle Costing - PEB	The credit in its current form is equally relevant and applicable in Zambia as it is in South	MAN-14 should be kept in its
To recognise and encourage the	Africa.	current form and no
development of a Life Cycle Cost (LCC)		adjustments need to be made.
analysis to consider environmentally		
sustainable attributes in assessing		
improved design, specification and		
through-life maintenance and operation.		



3.3.2 INDOOR ENVIRONMENTAL QUALITY

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
IEQ-01: Ventilation Rates To encourage and recognise designs that provide ample amounts of outside air to counteract build-up of indoor pollutants.	Zambia does not have a local standard to facilitate or regulate ventilation parameters. Both the SANS 10400 and ASHRAE Ventilation Standard 62.1-2019 are adopted by Zambian projects. The SANS 10400 is however more commonly used. Therefore, the credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-01 should be kept in current form and no adjustments need to be made.
IEQ-02: Air Change Effectiveness To encourage and recognise systems that effectively deliver optimum air quality to any occupant throughout the occupied area.	IEQ-02: Air Change Effectiveness credit omitted from Office v1.1.	IEQ-02 credit is omitted.
IEQ-03: Carbon Dioxide Monitoring and Control To encourage and recognise the provision of response monitoring of Carbon Dioxide levels to ensure delivery of optimum quantities of outside air.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-03 should be kept in its current form and no adjustments need to be made.
IEQ-04: Daylight To encourage and recognise designs that provide good levels of daylight for building users.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-04 to be kept in its current form and no adjustments need to be made.
IEQ-05: Daylight Glare Control To encourage and recognise buildings that are designed to reduce the discomfort of glare from natural light.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-05 to be kept in its current form and no adjustments need to be made.



IEQ-06: High Frequency Ballasts To encourage and recognise buildings that increase workplace amenity by avoiding low frequency flicker that may be associated with fluorescent lighting.	IEQ-06 High Frequency Ballasts credit omitted from Office v1.1	IEQ-06 credit is omitted.
IEQ-07: Electric Lighting Levels To encourage and recognise base building provided office lighting that is not over designed.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-07 to be kept in its current form and no adjustments need to be made.
IEQ-08: External Views To encourage and recognise designs that provide occupants with a visual connection to the external environment.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-08 to be kept in its current form and no adjustments need to be made.
IEQ-09: Thermal Comfort To encourage and recognise buildings that achieve a high level of thermal comfort.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-09 to be kept in its current form and no adjustments need to be made.
IEQ-10: Individual Comfort Control To encourage and recognise designs that facilitate individual control of thermal comfort.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-10 to be kept in its current form and no adjustments need to be made.
IEQ-11: Hazardous Materials To encourage and recognise actions taken to reduce health risks to occupants from the presence of hazardous materials.	The effects on the health of human beings that hazardous materials have can be irreversible. The correct disposal of such materials can save lives and should not be compromised in any regional context. The Zambian Environmental Management Act (No.12 of 2011) details the requirements for the handling, transportation and disposal of hazardous materials.	IEQ-11, comprehensive hazardous material survey is to follow the South African Occupational Health and Safety (OH&S) Act. If



 These are contained in, sections 19-24 of Part IV and the relevant schedules of The Environmental Management (Licensing) Regulation 2013: METAL OR METAL BEARING WASTES: Lead WASTE CONTAINING IN-ORGANIC CONSTITUTENTS- Asbestos ORGANIC- Polychlorinated Biphenyls (PCBs) The Act however does not cover what a "comprehensive hazardous material survey" should entail. Projects are therefore to undertake the 'comprehensive hazardous material survey' in accordance with the South African Occupational Health and Safety (OH&S) Act.	If asbestos, lead or PCBs are found they are to be removed in accordance with the Zambian Environmental Management Act (No.12 of 2011), The Environmental Management (Licensing) Regulations, 2013
It is therefore recommended that where project teams target this credit, the guidance for the comprehensive hazardous material survey follows the South African Occupational Health and Safety (OH&S) Act and where Asbestos, Lead or PCBs are found they are to be removed and disposed of in accordance with the Zambian Environmental Management Act (No.12 of 2011). A CIR is to be submitted for approval to the GBCSA if a deviation to the above is proposed.	
One point is awarded where: A comprehensive hazardous materials survey has been carried out on the project site, as defined by the South African Occupational Health and Safety Act (OH&S) and/or other relevant legislation; and Whenever asbestos, lead or polychlorinated biphenyls (PCBs) are found, they are to be removed in accordance with the Zambian Environmental Management Act (No.12 of 2011)	



IEQ-12: Internal Noise Levels To encourage and recognise buildings that are designed to maintain internal noise levels at an appropriate level.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-12 to be kept in its current form.
IEQ-13: Volatile Organic Compounds To encourage and recognise specification of interior finishes that minimise the contribution and levels of Volatile Organic Compounds (VOCs) in buildings.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-13 to be kept in its current form and no adjustments need to be made.
IEQ-14: Formaldehyde Minimisation To encourage and recognise the specification of products with low formaldehyde emission levels.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-14 to be kept in its current form and no adjustments need to be made.
IEQ-15: Mould Prevention To encourage and recognise the design of services that eliminate the risk of mould growth and its associated detrimental impact on occupant health.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-15 to be kept in its current form and no adjustments need to be made.
IEQ-16: Tenant Exhaust Riser To encourage and recognise the design of buildings with a general exhaust riser that can be used by tenants to remove indoor pollutants from printing and photocopy areas	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-16 to be kept in its current form and no adjustments need to be made.
IEQ-17: Environmental Tobacco Smoke (ETS) Avoidance To encourage and recognise the air quality benefits to occupants by prohibiting smoking inside the building.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-17 to be kept in its current form and no adjustments need to be made.



IEQ-18: Places of Respite and Connection to Nature – RETAIL To encourage and recognise developments that create approximately designed areas where retail centre staff and visitors can relax in a place of respite which has a connection to nature.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-18 should be kept in its current form and no adjustments need to be made.
IEQ-19: Private Outdoor Space - MULTI UNIT RES To encourage and recognize dwelling designs which improve the health and wellbeing of the occupants by providing private outdoor space.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	IEQ-19 should be kept in its current form and no adjustments need to be made.
IEQ-22: Universal Access - MULTI UNIT RES To recognize design that provides universal access, to and within dwellings, to meet the changing needs of occupants.	Facilities for persons with disabilities within multi-unit residential developments are often neglected resulting in difficulties for occupants within the developments who have differing needs.The current building code standards used in Zambia for facilities for persons with disabilities is not more stringent than SANS 10400-S, therefore IEQ-22 should be kept in its current form and no adjustments need to be made.	IEQ-22 should be kept in its current form and no adjustments need to be made.
IEQ-23: Stairs- PEB To encourage and recognise designs that promote the wellbeing of occupants by encouraging the use of stairs as an alternative to vertical transportation by lift.	Lifts in multi-storey buildings are often the main form of vertical transport. This can largely be attributed to the that stairs are 'hidden' away and used for emergencies only. By making stairs more prominent, their use could be more attractive with added health benefits.	IEQ-23 should be kept in its current form and no adjustments need to be made.



3.3.3 ENERGY

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
ENE-0: Conditional Requirement 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.	This credit is equally relevant and applicable in Zambia as it is in South Africa, however certain adaptations will be required, and a mandatory CIR is therefore required to ensure the modelling protocol is relevant to the climatic context of the project.	Conditional Requirement, therefore all projects must submit a CIR and receive a final ruling before Round 1 can be submitted to the GBCSA. Office v1.1 rating tool be applied to all other credits, calculations and protocols except the Energy modelling protocol for the ENE-0 and ENE-1: Greenhouse Gas Emissions credit, where the Office v1 Energy modelling protocol will be applicable to Zambian projects. Changes to the Green Star – Office v1 Energy Modelling protocol should be motivated by the registered project via the mandatory CIR.
ENE-01: Greenhouse Gas Emissions To encourage and recognise designs that minimise the greenhouse gas emissions associated with operational energy consumption	See above (Ene-00).	Refer to ENE 0.



ENE-02: Energy Sub-metering To encourage and recognise the installation of energy sub-metering to facilitate on-going management of energy consumption.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-02 to be kept in its current form and no adjustments need to be made.
ENE-03: Lighting Power Density To encourage and recognise designs that provide artificial lighting with minimal energy consumption.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-03 to be kept in its current form and no adjustments need to be made.
ENE-04: Lighting Zoning To encourage and recognise lighting design practices that offer greater flexibility for light switching, making it easier to light only occupied areas.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-04 to be kept in its current form and no adjustments need to be made.
ENE-05: Peak Energy Demand Reduction To encourage and recognise designs that reduce peak demand on energy supply infrastructure.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-05 to be kept in its current form and no adjustments need to be made.
ENE-06: Thermal Energy Sub-Metering - RETAIL To encourage and recognise the installation of thermal energy sub metering to facilitate ongoing management of thermal energy consumption .	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-06 should be kept in its current form and no adjustments need to be made.
ENE-07: Hot Water Energy Use - MULTI UNIT RES To encourage and recognise dwelling designs that reduce greenhouse gas emissions associated with domestic hot water production.	Several designs within multi-unit residential developments can be incorporated to reduce greenhouse gas emissions associated with domestic hot water production. This could include the use of more efficient domestic hot water fixtures and fittings, the installation of solar or other forms of renewable energy hot water geysers or heat recovery plants. The reduction of greenhouse gas emissions associated with domestic hot	ENE-07 should be kept in its current form with a mandatory CIR to confirm applicability.



	credit in its current form is equally relevant and applicable in Zambia as it is in South Africa. The Green Star Multi Unit Residential v1 Hot Water Calculator would however need to be adapted to reflect the relevant fuel factors in Zambia. This would be project specific and a mandatory CIR would need to be submitted to confirm applicability.	
ENE-08: Common Property Energy Use - MULTI UNIT RES To encourage and recognise designs that reduce energy use associated with common property lifts, car park ventilation and lighting.	It is important that the energy use associated with common property lifts, car park ventilation and common property lighting in multi-unit residential developments is reduced. The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa, therefore ENE-8 should be kept in its current form and no adjustments need to be made.	ENE-08 should be kept in its current form and no adjustments need to be made.
ENE-09: Low Emission Energy Generation - MULTI UNIT RES To encourage and recognise designs that incorporate on-site energy generation systems utilising renewable or low emission energy sources.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-09 should be kept in its current form and no adjustments need to be made.
ENE-10: Energy Efficient Appliances - MULTI UNIT RES To encourage and recognise initiatives which reduce energy consumption associated with major appliances.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ENE-10 should be kept in its current form and no adjustments need to be made.



ENE-11: Unoccupied Spaces - PEB	Depending on the climate of the location, HVAC systems use between	ENE-11 should be kept in its current
To encourage and recognise designs that minimise or	10% and 30% of the total electricity used in buildings. Therefore, by	form and no adjustments need to be
eliminate energy use for spaces when unoccupied.	reducing the amount of energy spent on heating and cooling in a	made.
	building, users can reduce both greenhouse gas emissions and	
	operational costs significantly.	
	For natural ventilation, it is noted that there is currently no local building	
	code standard in Zambia for naturally and mechanically ventilated spaces,	
	and the SANS 10400-O is commonly adopted by projects.	
	The credit in its current form is equally relevant and applicable in Zambia	
	as it is in South Africa.	



3.3.4 TRANSPORT

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
TRA-01: Provision of Car Parking	This credit refers to South African local, provincial or national authority planning	TRA-01 should be adapted
To encourage and recognise developments that	allowances for the minimum or maximum values of car parking spaces provided for	to refer to the Zambian
facilitate the use of alternative modes of transportation	the project. In the context of Zambia, this credit would refer to the Zambian local,	local, provincial or national
for commuting to work.	provincial or national authority planning allowances for car parking spaces. However,	authority planning
	for projects where such guidelines are not available, the technical manual refers to a	allowances for the
	set of 'alternative requirements'.	minimum or maximum
		values of car parking
	These alternative requirements state that when the mandatory requirements do not exist or are optional (or recommended), the project has the following two options:	spaces provided for the project.
	 Clearly demonstrate that car parking is not provided in excess of one car parking space per 100 m2 of net lettable area (NLA) to achieve one point or one parking space per 200 m2 to achieve two points; or Submit a CIR to substantiate an argument for equivalent yet alternative compliance with the Credit Criteria. As such, TRA-01 should remain in its current form with emphasis on the 'alternative requirements' section of the Additional Guidance for projects where the mandatory local parking requirements do not exist or are optional (or recommended). 	For projects where the mandatory local parking requirements do not exist or are optional (or recommended), the technical manual refers to a set of 'alternative requirements' in the Additional Guidance which would be applicable to the project.
TRA-02: Fuel-Efficient Transport	The credit in its current form is equally relevant and applicable in Zambia as it is in	TRA-02 credit should be
To encourage and recognise developments that	South Africa.	adjusted as per comments
facilitate the use of more fuel efficient vehicles for		in the "Discussion" column.
work commuting.		



	The points allocation for this credit should be split to enable points to be gained for each parking provision. 1 point is awarded where: A minimum of 5% of all parking spaces are dedicated solely for use by car-pool vehicles, car share vehicles, hybrid or other alternative fuel vehicles. All qualifying spaces must be located in preferred parking locations and be designed and labelled for the intended vehicle types. 1 point is awarded where: A minimum of 5% or 5 parking spaces (whichever is the greater) are designed and labelled for mopeds, scooters and/or motorbikes, and all of these must be located in preferred parking locations.	
TRA-03: Cyclist Facilities To encourage and recognise developments that facilitate the use of bicycles by occupants and visitors.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	TRA-03 should remain in its current form and no adjustments need to be made.
TRA-04: Commuting Mass Transport To encourage and recognise developments that facilitate the use of mass transport for work commuting.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	Tra-04 to be kept in its current form and no adjustments need to be made.
TRA-05: Local Connectivity To encourage and recognise office buildings that are integrated with or built adjacent to community amenities and/or dwellings in order to reduce the overall number of automobile trips taken by building	The choice of site often depends on the availability of a suitable site. When faced with multiple options for a site, projects should be encouraged to choose sites that contribute to greater local connectivity by being located in close proximity to amenities thus allowing the tenants the option to walk instead of drive.	Tra-05 to be kept in its current form and no adjustments need to be made.
users.	The current building code standard used in Zambia for pedestrian facilities is not more stringent than SANS 10246, therefore TRA-05 should be kept in its current form and no adjustments need to be made.	



TRA-06: Trip Reduction – Mixed Use – RETAIL To encourage & recognise retail centres that are built in mixed use areas in order to reduce the overall number of car trips taken by patrons.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	TRA-06 should remain in its current form and no adjustments need to be made.
TRA-07: Vehicle Operating Emissions – RETAIL &PEBTo encourage & recognise retail centres that reducevehicular emissions resulting from traffic congestion byupgrading road infrastructure around the centre.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	TRA-07 should remain in its current form and no adjustments need to be made.



3.3.5 WATER

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
WAT-01: Occupant Amenity Water / WAT-1: Potable Water – PEB	Water-efficient fixtures and fittings are available in the market place and have been installed in some buildings in Zambia.	WAT-01 to be kept in its current form.
potable water consumption by building occupants.	In addition, there are some buildings which include rainwater harvesting and blackwater treatment for reuse within the building, typically for irrigation. Due to water supply infrastructure issues, some buildings also include holding tanks for potable water and sewerage.	The project team should submit a CIR with rainfall values relevant to their site to the GBCSA such that
	At present there is no national certification system which would allow different fixtures and fittings to be rated. Therefore, this credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	these values can be entered in the potable water calculator, if applicable.
	However, as the potable water calculator takes into account South African rainfall per region, this calculator may need to be adapted to reflect Zambian rainfall values. The project team should therefore submit rainfall values relevant to their site to the GBCSA such that these values can be entered in the potable water calculator.	A CIR is only required if adjusted rainfall data is required by the project team
<u>WAT-02: Water Meters</u> To encourage and recognise the design of systems that both monitors and manages water consumption	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-02 to be kept in its current form and no adjustments need to be made.



WAT-03: Landscape Irrigation To encourage and recognise the design of systems that aim to reduce the consumption of potable water for landscape irrigation.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-03 should remain in its current form and no adjustments need to be made.
WAT-04: Heat Rejection Water To encourage and recognise design that reduces potable water consumption from heat rejection systems.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-04 should remain in its current form and no adjustments need to be made.
WAT-05: Fire System Water Consumption To encourage and recognise building design which reduces consumption of potable water for the building's fire protection and essential water storage systems.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-05 to be kept in its current form and no adjustments need to be made.
WAT-07: Potable Water Efficient Appliances - MULTI UNIT RES To encourage and recognise initiatives which reduce water consumption associated with major appliances.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-07 should remain in its current form and no adjustments need to be made.
WAT-08: Swimming Pool / Spa Water Efficiency - MULTI UNIT RES To encourage and recognise designs that reduce potable water consumption associated with swimming pools and spas.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	WAT-08 should remain in its current form and no adjustments need to be made.



4.1.1 MATERIALS

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
MAT-01: Recycling Waste Storage To encourage and recognise the inclusion of storage space that facilitates the recycling of resources used within buildings to reduce waste going to disposal.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-1 should remain in its current form and no adjustments need to be made.
MAT-02: Building Reuse To encourage and recognise developments that reuse existing buildings to minimise materials consumption.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-2 should remain in its current form and no adjustments need to be made.
MAT-03: Reused Materials To encourage and recognise designs that prolong the useful life of existing products and materials.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-3 should remain in its current form and no adjustments need to be made.
MAT-04: Shell and Core or Integrated Fit-out To encourage and recognise base building delivery mechanisms that eliminate the need for immediate tenant refits.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-4 should remain in its current form and no adjustments need to be made.
MAT-05: Concrete To encourage and recognise the reduction of embodied energy and resource depletion occurring through use of concrete.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-5 should remain in its current form and no adjustments need to be made.
MAT-06: Steel To encourage and recognise the reduction in embodied energy and resource depletion associated with reduced use of virgin steel.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-06 to be kept in its current form and no adjustments need to be made.



MAT-07: PVC Minimisation To encourage and recognise the reduction in use of Poly Vinyl Chloride (PVC) products in buildings.	MAT-7: PVC Minimisation credit omitted from Office v1.1	Mat-07 credit is omitted.
MAT-8: Sustainable Timber To encourage and recognise the specification of reused timber products or timber that has certified environmentally-responsible forest management practices.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-08 to be kept in its current form and no adjustments need to be made.
MAT-9: Design for Disassembly To encourage and recognise designs that minimise the embodied energy and resources associated with demolition.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-09 to be kept in its current form and no adjustments need to be made.
MAT-10: Dematerialisation To encourage and recognise designs that produce a net reduction in the total amount of material used.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-10 be kept in its current form and no adjustments need to be made.
MAT-11: Local Sourcing 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.	Many of the building components, materials and finishes used in Zambia are imported from South Africa. Local materials should be explored and awareness be raised of the embodied energy in materials sourced from far away. To encourage growth of industry in Zambia, the sourcing of products made locally should be encouraged. It is recommended to amend the credit so that One point is awarded where 20% of the total contract value is represented by materials or products (used in construction) that have been sourced from within the member states of the SADC regions as defined by the SADC respectively.	 It is recommended to adapt the credit so that: One point is awarded where 20% of the total contract value is represented by materials or products (used in construction) that have been sourced from within the member states of the SADC regions as defined by the SADC respectively.



	An additional point is awarded where 10% of the total contract value is represented by materials or products (used in construction) that have been sourced from within Zambian borders.	• An additional point is awarded where 10% of the total contract value is represented by materials or products (used in construction) that have been sourced from
		within Zambian borders.
MAT-12: Efficient Dwelling Size - MULTI UNIT RES To encourage and recognise multi-unit residential developments with efficiently sized dwelling units and reduced material consumption.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-12 should remain in its current form and no adjustments need to be made.
MAT-13: Masonry - MULTI UNIT RES & PEB To encourage and recognise designs that minimise the embodied energy and resources associated with a reduction of virgin material in masonry units.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	MAT-13 should remain in its current form and no adjustments need to be made.



4.1.2 LAND USE AND ECOLOGY

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
ECO-: Conditional Requirement To encourage and recognise development on land that has limited ecological value and to discourage development on ecologically valuable sites.	This credit is equally relevant and applicable in Zambia as it is in South Africa, however certain adaptations will be required and a mandatory CIR is therefore required to ensure adaption to local requirements	ECO-00 should be kept in its current form. A mandatory CIR will be required for adaption to local requirements.
ECO-01: Topsoil To encourage and recognise construction practices that preserve the ecological integrity of topsoil.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ECO-01 to be kept in its current form and no adjustments need to be made.
ECO-02: Reuse of Land To encourage and recognise the reuse of land that has previously been developed and where the site is within an existing municipally approved urban edge.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	ECO-02 should be kept in its current form and no adjustments need to be made.
ECO-03: Reclaimed Contaminated Land To encourage and recognise developments that reclaim contaminated land that otherwise would not have been developed.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa. It is however recommended that for ECO-3, projects teams targeting this credit are aware of the definitions contained in the Additional Guidance of the Green Star technical manual.	ECO-03 to be kept in its current form and no adjustments need to be made.
	Contamination is defined in the National Environmental Management: Waste Act as: the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration which is normally present in or under that land which substances directly or indirectly affect or may affect the quality of soil or the environment adversely. Existing building contamination is addressed	



in credit IEQ-11 Hazardous Materials while this credit deals with reclaimed contaminated land only.	
It is noted that minor local contamination will occur on most previously used sites and such minor decontamination is not addressed by this credit. For the purpose of this credit, existing contamination must be 'significant'. This means that there must be substantial recommendations for containment and/or removal in the site contamination report.	
Encapsulation is only an acceptable form of remediation if there are technically no other remediation options.	
Remediation of the environment refers to the clean-up or making safe of a site or water body that is contaminated by toxic substances, whether they are natural or man-made.	
Treatment as defined in the National Environmental Management: Waste Act means any method, technique or process that is designed to change the physical, biological or chemical character or composition of a waste, or to remove, separate, concentrate or recover a hazardous or toxic component of a waste or to destroy or reduce the toxicity of the waste in order to minimise the impact of the waste on the environment.	
To be deemed 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 level.	



	Please note the contamination resulting from this development (e.g. with asbestos from demolition of the existing buildings) cannot contribute to this credit.	
	construction of actual building structures, not to the beginning of any construction works on the project (e.g. land clearing). Therefore, if remediation occurs during earthworks or any other stages during the construction phase of a project prior to the building of any structure, it is still considered as 'prior to construction'.	
	The submission must clearly demonstrate that:	
	 The site was designated as significantly contaminated at the time of purchase, where 'significant contamination' is defined as any contamination (regardless of extent, concentration, toxicity or otherwise) requiring remediation as determined by the relevant national or local authorities; The site was correctly and appropriately decontaminated prior to the beginning of the construction phase of the project in accordance with the relevant national 	
	 legislation and standards, including but not limited to the National Environmental Management: Waste Act (2008); and As a result of decontamination, the site was certified as uncontaminated and satisfactory for use. 	
ECO-04: Change of Ecological Value	The credit should be updated to adequately reflect the various bioregions in Zambia	ECO-04 to be kept in its
maintain or enhance the ecological value of their sites.		A mandatory CIR must be submitted to the GBCSA by



		projects to determine which South African bio-region is most applicable to the project.
		The mandatory CIR is only required if this credit is targeted.
ECO-5: Urban Heat Island – RETAIL	The credit in its current form is equally relevant and applicable in Zambia as it is in	ECO-5 should be kept in its
To recognise and reward initiatives taken to reduce the	South Africa.	current form and no
neat Island effect of the buildings which impact on		adjustments need to be
FCO-6: Outdoor Communal Eacilities - MULTI UNIT	The credit in its current form is equally relevant and applicable in Zambia as it is in	FCO-6 should be kept in its
RES	South Africa	current form and no
To encourage and recognise designs which enable		adjustments need to be
residents to engage in a broad range of outdoor		made.
activities in common areas.		
ECO-7: Urban Consolidation - MULTI UNIT RES	The credit in its current form is equally relevant and applicable in Zambia as it is in	ECO-7 should be kept in its
To encourage and recognise designs which make use	South Africa.	current form and no
of compact development patterns to increase land		adjustments need to be
utilisation efficiency.		made.
ECO-8: Community Facilities - PEB	The credit in its current form is equally relevant and applicable in Zambia as it is in	ECO-8 should be kept in its
To encourage and recognise integrated planning	South Africa.	current form and no
through the provision of on site outdoor facilities for		adjustments need to be
use by the local community		



4.1.3 EMISSIONS

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
EMI-01: Refrigerants/Gaseous Ozone Depleting Potential (ODP) To encourage and recognise the selection of refrigerants and other gases that do not contribute to long-term damage to the Earth's stratospheric ozone layer.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-01 to be kept in its current form and no adjustments need to be made.
EMI-02: Refrigerants/Gaseous Global Warming Potential (GWP) To encourage and recognise the selection of refrigerants that reduce the potential for increased global warming from the emission of refrigerants to the atmosphere.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-02 to be kept in its current form and no adjustments need to be made.
EMI-03: Refrigerant Leaks To encourage and recognise building systems design that minimises environmental damage from refrigerant leaks.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-03 to be kept in its current form and no adjustments need to be made.
EMI-04: Insulant ODP To encourage and recognise the selection of insulants that do not contribute to long-term damage to the Earth's stratospheric ozone layer.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-04 to be kept in its current form and no adjustments need to be made.
EMI-05: Watercourse Pollution To encourage and recognise developments that minimise storm water run-off to, and the pollution of the natural watercourses.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-05 to be kept in its current form and no adjustments need to be made.



EMI-06: Discharge to Sewer To encourage and recognise developments that minimise discharge to the municipal sewerage system.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-06 to be kept in its current form and no adjustments need to be made.
EMI-07: Light Pollution To encourage and recognise developments that minimise light pollution into the night sky.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-07 to be kept in its current form and no adjustments need to be made.
<u>EMI-8: Legionella</u> To encourage and recognise building systems design that eliminates the risk of Legionnaires' disease (Legionellosis).	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-08 to be kept in its current form and no adjustments need to be made.
EMI-9: Boiler and Generator Emissions To encourage and recognise the use of boilers and generators that minimise harmful emissions.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-09 to be kept in its current form and no adjustments need to be made.
EMI-10: Kitchen Exhaust Emissions - RETAIL To encourage and reward designs that avoid kitchen exhaust fumes being expelled directly into the adjacent spaces that people occupy.	The credit in its current form is equally relevant and applicable in Zambia as it is in South Africa.	EMI-10 should be kept in its current form and no adjustments need to be made.



4.1.4 INNOVATION

AIM OF CREDIT	DISCUSSION	RECOMMENDATION
INN-1: Innovative Strategies and Technologies To encourage and recognise pioneering initiatives in sustainable design, process or advocacy.	This credit should be kept in its current form with reference being made instead to the Zambian context, as opposed to the South African context.	INN-1 should be kept in its current form with reference being made instead to the Zambian context, as opposed to the
	Therefore, up to two points are awarded for an innovation initiative where:	South African context.
	 The initiative improving environmental performance is a technology or process that is considered a 'first' or 'early adopter' in Zambia or in the World; 	
	 OR The initiative substantially contributes to the broader market transformation towards sustainable development in Zambia or in the World. 	
	Points are awarded as follows: One point is awarded when either of the above is true for the Zambian market; OR	
	Two points are awarded when either of the above is true for the Global market.	



INN-2: Exceeding Green Star Benchmarks	This credit should be kept in its current form with the applicable	INN-2 should be kept in its current form
To encourage and recognise projects that achieve	adaptations made to incorporate the minor changes made in the Green	with the applicable adaptations made to
environmental benefits in excess of the current Green	Star - Zambia rating tool.	incorporate the minor changes made in
Star benchmarks.		Green Star - Zambia rating tool.
INN-3: Environmental Design Initiatives	This credit should be kept in its current form with the applicable	INN-3 should be kept in its current form
To encourage and recognise sustainable building	adaptations made to incorporate the minor changes made in the Green	with the applicable adaptations made to
initiatives that are currently outside of the scope of	Star - Zambia rating tool.	incorporate the minor changes made in
this Green Star rating tool but which have a		Green Star - Zambia rating tool.
substantial or significant environmental benefit.		



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