

# Local Context Report | June 2015

**Emcon Consulting Group**

4 Bassingthwaigthe Street  
Klein Windhoek, Windhoek  
Namibia



## LOCAL CONTEXT REPORT

GREEN STAR SA – EXISTING BUILDING PERFORMANCE RATING TOOL FOR USE IN NAMIBIA  
(Green Star SA EBP - Namibia)

**Revision 2.2 – June 2015**

Prepared on behalf of



For



Authored by:

Emcon Consulting Engineers  
contact@emcongroup.com  
+264 61 224 725

## Executive Summary

This document serves as a local context assessment to allow eligible existing buildings in Namibia to be rated and certified using the Green Star SA Existing Building Performance v1 rating tool. The Green Building Council of South Africa would manage and allow the certification through its existing established processes.

Namibia adopts many of South Africa's policies and legislative frameworks due to that fact that Namibia fell under South African rule and only gained independence in 1990. For this reason, few credits need adaptation and the Green Star SA EBP v1 rating tool can be used largely in its current form.

A summary of recommended credit changes as well as required Credit-Interpretation-Requests and/or Technical Clarifications are tabulated below where other credits are proposed to remain the same.

<b>CREDIT</b>	<b>RECOMMENDATION</b>	<b>DISCUSSION</b>
MAN-02: Certified Buildings	change	It is recommended that MAN-02 be made "Not Applicable" until there is a building that has been certified using any of the GBCSA rating tools and eligible to be rated under the GBCSA EBP v1 tool. At that time this credit can be applied like in South-Africa.
ENE-01: Energy Consumption (GHGE)	CIR	ENE-01 should be kept in its current form. A mandatory CIR should be submitted to determine which South African climatic region is similar to that of the project in question.
TRA-01: Alternative Transportation	CIR	TRA-01 should remain as is for Namibia as a whole to encourage mass public transport as well as alternative transportation. A CIR however, should be submitted to include shared taxis as a form of public transport.
WAT-01: Potable Water	CIR	WAT-01 should be kept in its current form. A mandatory CIR should be submitted to determine which South African climatic region is similar to that of the project in question as well as to account for sources of potable water (e.g. treatment of black water, etc.).
MAT-02: Solid Waste Management	change	MAT-02 should be kept in its current form with adaptation that Namibian waste contractors should be registered with RNF instead of SAWIS.
INN-01: Innovative Strategies & Technologies	change	INN-1 should be kept in its current form with reference being made instead to the Namibian context, as opposed to the South African context.

Furthermore, it was agreed to keep the number of points available for each credit the same until the Green Building Council of Namibia is better established after which further discussions can take place.

## Table of Contents

Executive Summary .....	2
Table of Contents.....	3
Abbreviations .....	4
1 Introduction.....	5
2 Background .....	6
3 Applying Green Star SA to Namibia.....	9
4 Applying Green Star SA Credit-by-Credit .....	10
4.1 Management Category .....	11
4.2 Indoor Environment Quality Category .....	12
4.3 Energy Category .....	14
4.4 Transport Category .....	15
4.5 Water Category .....	15
4.6 Materials Category .....	16
4.7 Land Use & Ecology Category .....	16
4.8 Emissions Category.....	17
4.9 Innovation Category .....	18

## Abbreviations

<b>ACRONYM/INITIALISM</b>	<b>TERM</b>
CIR	Credit Interpretation Request
ECO	Land Use and Ecology category
EBP	Existing Building Performance
EMI	Emissions category
EMP	Environmental management Plan
ENE	Energy category
FSC	Forest Stewardship Council
GBCA	Green Building Council of Australia
GBCNA	Green Building Council of Namibia
GBCSA	Green Building Council of South Africa
GLA	Gross Lettable Area
GS	Green Star
GWP	Global Warming Potential
IEQ	Indoor Environmental Quality category
INN	Innovation category
MAN	Management
MAT	Material category
NAM	Namibia
ODP	Ozone Depleting Potential
SA	South Africa
TC	Technical Clarification
TRA	Transport category
WAT	Water category
WMP	Waste Management Plan

## 1 Introduction

Namibia is in the process of establishing its own Green Building Council of Namibia (GBCNA), duly registered with the World Green Building Council. The GBCNA, still in its infancy, has no Existing Building Performance (EBP) rating tool of its own and has consequently reached out to the Green Building Council of South Africa (GBCSA) to allow buildings in Namibia to be rated under the Green Star SA EBP rating tool with permission from the Green Building Council of Australia (GBCA). GBCSA would manage and provide certification through its already established processes.

The process to adapt a Green Star SA rating tool for local use is in line with both Ghana Green Building Council's as well as the Green Building Council of Mauritius's process to apply Green Star SA Office Design/As-built rating tool in their respective countries. Similarly, GBCNA embarked on this process to use the Green Star SA Office Design/As-built rating tool specifically for the new First National Bank building in Windhoek, Namibia.

The timing of this local context report is such to enable Emcon Consulting Engineers' office building situated in Windhoek, Namibia to be certified under the Green Star SA EBP v1 rating tool. The two level office building as classified under SANS 10400-NBR as "G1-Offices" consists of 394m<sup>2</sup> of Gross Lettable area (GLA) on a 1145m<sup>2</sup> size ERF situated in Klein Windhoek suburb as shown below.



**Figure 1: Aerial image of site location (Google Maps, 2014)**

This report includes a brief background description of the conditions relevant to the Green Star SA EBP v1 rating tool for use in Namibia. Credit-by-credit analysis are also done to assess the applicability of each credit followed by credit adaptation recommendations.

This report is largely similar in content and format to that used for the context report generated for the use of Green Star SA – Office v1 for use in Namibia, specifically for the new FNB building in Windhoek, Namibia by WSP Consulting Engineers.

## 2 Background

The Republic of Namibia gained independence from South Africa in 1990 however, still remains greatly dependent on South Africa for many of its imported goods and resources. Namibia is considered one of the most arid and driest countries in southern Africa covering a surface area of 824,268 km<sup>2</sup> and borders on countries such as South Africa in the south, Angola in the north and Botswana in the east. Namibia is sparsely populated with only 2.1 million inhabitants of which an estimated 250,000 to 400,000 are living in Windhoek, the capital of Namibia.

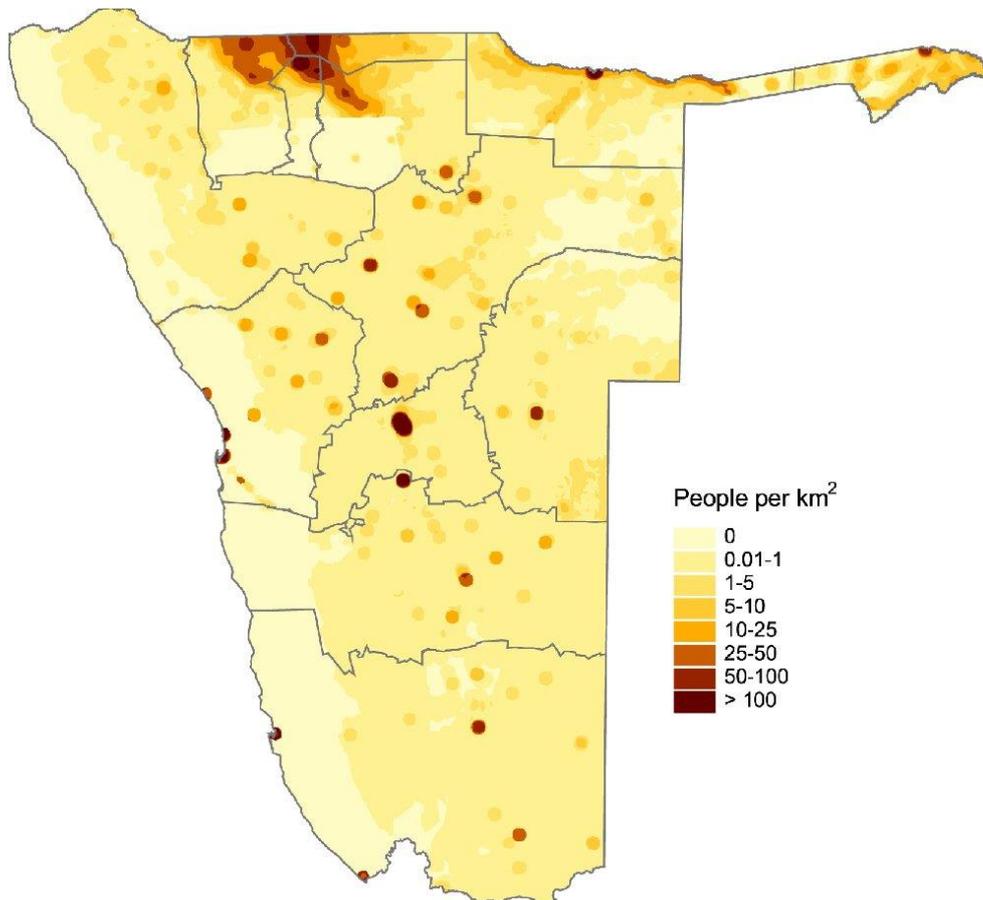


Figure 2: Namibian Population Density (Namibia Nature Foundation, 2014)

## 2.1 Climate

Namibian climate is typically hot and dry with sparse and erratic rainfall. More than 90% of the land area is defined as hyper-arid, arid or semi-arid. Namibia is ranked second in aridity after the Sahara Desert (NPCCN, 2010).

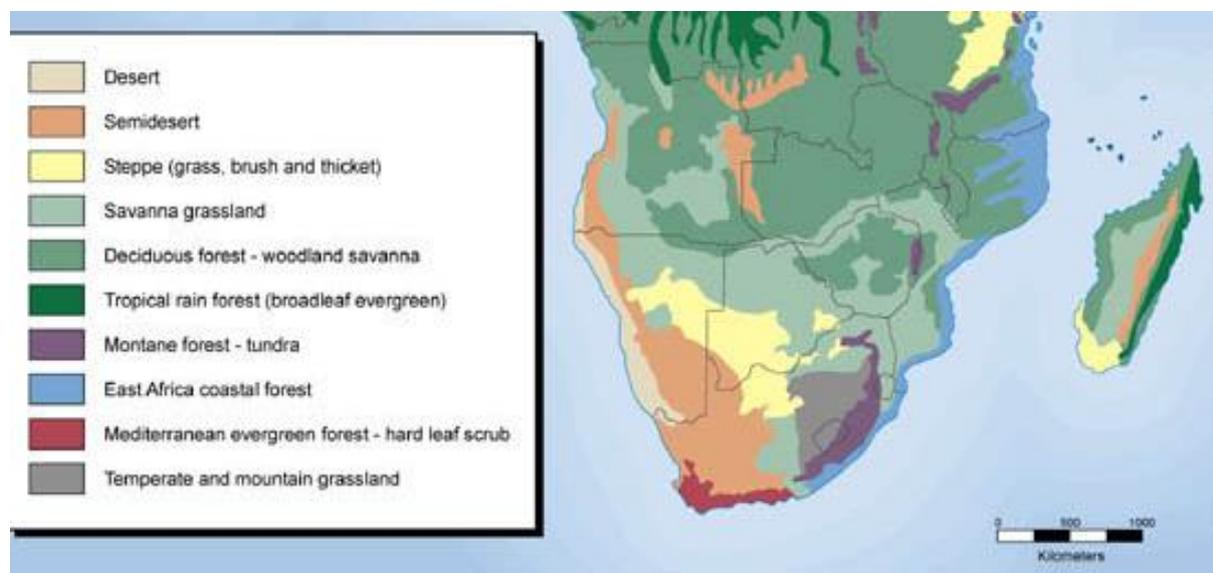


Figure 3: Southern Africa Vegetation Map (Exploring Africa, 2014)

Mean annual precipitation ranges between values of less than 250mm to about 600mm per year. Mean annual temperatures are typically between 20°C and 22°C in large parts of the country's interior, 16°C or less along the southern coast, and 22°C or higher in the northern regions. Temperatures are moderated by the cold Benguela Current along the coast (NPCCN, 2010).

Windhoek specifically is situated at a mean altitude of 1657m in a semi-desert, arid climate, with mostly warm days and generally cool nights. Days being usually warm and hot range from an average maximum of 22°C in June to 31°C in January where average minimum temperatures range from 7°C in June to 18°C in January. The annual average temperature is 19.47°C with record highs being 36°C and record lows of -4°C. The mean annual rainfall is around 360mm with the wettest months being January through March and driest being June through August. Refer to summary below.

Climate data for Windhoek, Namibia													[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	36 (97)	34 (93)	34 (93)	31 (88)	32 (90)	26 (79)	25 (77)	29 (84)	33 (91)	34 (93)	36 (97)	36 (97)	36 (97)
Average high °C (°F)	30.5 (86.9)	29.1 (84.4)	27.8 (82)	26.2 (79.2)	23.7 (74.7)	21.0 (69.8)	21.3 (70.3)	23.9 (75)	27.6 (81.7)	29.7 (85.5)	30.4 (86.7)	31.6 (88.9)	26.9 (80.43)
Average low °C (°F)	17.8 (64)	17.2 (63)	16.1 (61)	13.2 (55.8)	10 (50)	7.1 (44.8)	7.0 (44.6)	9.0 (48.2)	12.6 (54.7)	15.0 (59)	16.2 (61.2)	17.3 (63.1)	13.21 (55.78)
Record low °C (°F)	9 (48)	7 (45)	4 (39)	2 (36)	-2 (28)	-3 (27)	-3 (27)	-4 (25)	-1 (30)	2 (36)	1 (34)	3 (37)	-4 (25)
Precipitation mm (inches)	91.3 (3.594)	87.0 (3.425)	69.5 (2.736)	32.3 (1.272)	6.2 (0.244)	1.2 (0.047)	0.4 (0.016)	0.8 (0.031)	3.8 (0.15)	11.4 (0.449)	25.7 (1.012)	33.2 (1.307)	362.8 (14.283)
% humidity	45	53	58	54	45	43	38	30	26	28	31	36	40.6

Figure 4: Climatic data for Windhoek, Namibia (Wikipedia, 2014)

## 2.2 Property Mix

Records of local authorities show only improved erven in the various towns giving an indication of the urban area zone distribution of the total land area. This is shown in the table below in m<sup>2</sup> (NEEP, 2011).

Zoning Group	Windhoek	Walvis Bay	Swakopmund	Oshakati	Ongwediva	Ondangwa	Rundu	Katima Mulilo	Keetmanshoop	Total m <sup>2</sup>	Percent
Business	2 761 839	481 782	485 547	668 309	8 567	307 595	700 823	350 583	631 781	6 396 825	5%
Industrial	3 207 545	2 193 399	550 372	428 458	375 600	331 125	396 294	514 033	407 422	8 404 248	6%
Office	471 352	-	-	285 377	-	33 763	24 981	23 034	-	838 507	0.6%
Residential	57 851 687	4 769 812	4 078 465	5 097 062	1 217 988	2 302 137	5 774 368	3 191 616	2 484 668	86 767 803	65%
Government	1 676 286	244 418	229 447	503 453	53 170	515 788	213 441	612 363	138 115	4 186 481	3.1%
Other	11 309 595	3 031 758	2 621 583	1 328 009	357 406	1 386 135	1 739 635	2 298 087	2 402 536	26 474 744	20%
<b>Totals</b>	<b>77 278 304</b>	<b>10 721 169</b>	<b>7 965 414</b>	<b>8 310 668</b>	<b>2 012 731</b>	<b>4 876 543</b>	<b>8 849 542</b>	<b>6 989 714</b>	<b>6 064 522</b>	<b>133 068 607</b>	<b>100%</b>

Developed commercial (including business, office and industrial) land area in Windhoek comprises 8.3% where Government (including central, regional and local) comprises 2.2%. Local authorities presently do not include the approved improvement floor area and it is thus not possible to determine the total m<sup>2</sup> area of improvements on urban erven.

Private properties are generally operated by the owners themselves and in few cases by property management companies such as Broll Namibia or JHI Properties to name a few. Maintenance is generally sub-contracted, often with no formal agreement or guidelines in place for the various parts and equipment of the building. Public property on the other hand is operated and maintained by the Department of Works who either use an internal or sub-contracted maintenance team depending on the equipment. Often the internal or sub-contracted team have little competence or guidelines of how to operate and/or maintain the equipment.

## 2.3 Relevant Government Bodies

The following bodies are identified to have a significant role to play in the built environment.

### **Ministry of Mines and Energy (MME):**

The MME's responsibilities include the provision of affordable energy supply whilst taking advantage of Namibia's Natural Resources and the promotional of sustainable, competitive and efficient energy generation strategies (NEEP, 2011)

### **Ministry of Environment and Tourism**

Address issues involving the reduction of Greenhouse gas emissions, climate change adaption and sustainable development (NEEP, 2011)

### **Legislation**

Namibia currently follows the South African SANS 10400 building code and has adopted SANS 204 which focuses on energy efficiency in buildings (NEEP, 2011). These codes and standards are currently under review and adaption by the Namibian Standards council but are not expected to change in the near future.

The fact that Namibia uses the same building code as South Africa makes it easy to apply the Green Star SA - EBP v1 rating tool to the Namibian context. Namibian professionals follow South African-based legislation and will consequently not have difficulty adopting Green Star SA rating tools in general.

### 3 Applying Green Star SA to Namibia

This section explains how the Existing Building Performance tool can be implemented in the Namibian context.

#### 3.1 **Building Codes and Standards**

Namibia in general uses the same SANS 10400 codes as in South Africa making the adoption of the Green Star SA – Existing Building Performance rating tool relatively simple. Namibian professionals operating within the related sector(s) typically follow South African-based legislated standards and consequently will have little difficulty in using the EBP rating tool for Namibian buildings (NEEP, 2011).

#### 3.2 **Eligibility requirements**

In order to be eligible to be rated under the Green Star SA – EBP tool it is required that the building be in operation for at least 12 months after final completion with a minimum of 70% occupancy throughout the performance period. The building should be an existing building in its entirety. Furthermore, the building classified under SANS 10400-NRS in accordance to its use should be part of those types eligible to be rated under the current EBP rating tool. In order to achieve a Green Star SA rating the MAN-01 credit should be targeted and achieved. Continued Energy and Water consumption information should be submitted annually.

Namibia imports over 50% of its electricity from South Africa where the remainder is sources from both coal and hydro plants from within and bordering countries to Namibia (NEEP, 2011). Water, even though sewage is purified into potable water and in other cases reused for irrigation purposes, remains a scarce resource similar as is the case in South Africa. Water sources in Namibia are sparse and generally piped over long distances requiring much capital intensive infrastructure to provide water to the widely spread consumers.

As electricity and water are largely the same and in part dependant on South Africa it is recommended that these credits remain the same. Annual submission will be required for energy and water consumption data during the 3 year period during which the certification is valid.

## 4 Applying Green Star SA Credit-by-Credit

The Green Star SA – Existing Building Performance tool was assessed credit by credit. Each credit's applicability to the Namibian context was examined and recommendations were made as shown in the table below.

The published Green Star SA TCs/CIRs/Errata relevant to the rating tool in question should remain applicable as part of the tool.

For each credit reviewed as part of this local context report:

- the credits are colour coded in accordance with the changes required for applicability to the Namibian context.
  -  The credit can remain as is.
  -  The credit requires a compulsory CIR or TC or adaption to ensure relevance to the Namibian context.
  -  The credit should be made omitted and made 'not applicable' for the Namibian application of the tool.
- the aim of the credit is defined
- the credit's suitability to the Namibian context is interrogated
- recommendations for changes or no changes of the Green Star SA tool are made

#### 4.1 Management Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b>MAN-1: Accredited Professional</b> To ensure the involvement of qualified individuals who will direct and assist the owner/ facilities management team with the integration of Green Star SA aims and processes throughout the performance period.</p>	<p>The project team should be familiar with and understand the criteria of each credit in order to achieve the outcomes set out in the Green Star SA EBP tool.</p> <p>Accredited Professionals are specifically trained in the use of the Green Star SA rating system and are therefore in a position to assist and advise accordingly to ensure certification.</p> <p>Few Namibian professionals have already received training through the Green Star SA training system.</p>	<p>MAN-1 should remain as is.</p>
	<p><b>MAN-2: Certified Buildings</b> To reward buildings that have shown previous environmental achievement through Green Star SA Design/As Built or Interiors certification.</p>	<p>The Green Building Council of Namibia was formed in February 2012 and is still in its infancy.</p> <p>No buildings have been rated and certified to date under the Green Star SA Design/As Built rating tool.</p>	<p>It is recommended that MAN-2 be made "Not Applicable" until there is a building that has been certified using any of the GBCSA rating tools and eligible to be rated under the GBCSA EBP v1 tool.</p> <p>At that time this credit can be applied like in South-Africa.</p>
	<p><b>MAN-3: Building Management</b> To recognise management and operating processes and procedures used to optimise building environmental performance.</p>	<p>Buildings in general are poorly operated and maintained in Namibia resulting in equipment operating inefficiently and eventually lead to premature failures.</p> <p>Lack of understanding of how the building operates as well as how and why to maintain various parts/equipment in the building.</p> <p>Building operating manuals, User's guides as well as Maintenance manuals therefore provide a valuable resource for operating and maintaining a building to perform optimally and prevent premature equipment failure.</p>	<p>MAN-3 should remain as is.</p>

	<p><b>MAN-4: Green Cleaning Performance</b> To encourage high performance cleaning practices, which reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemicals, biological and particulate contaminants that compromise indoor environmental quality, human health, building fabric and the natural environment.</p>	<p>Larger buildings in general make use of cleaning services who use locally available cleaning products which are mostly harmful to their users and the occupants of the building.</p> <p>Green cleaning products are not readily accessible in Namibia however, as was the case in South Africa, market transformation is needed in this regard.</p> <p>At present, green cleaning consumables are available through South Africa.</p>	<p>It is recommended that this credit remains the same.</p>
	<p><b>MAN-5: Green Leasing</b> To recognise and encourage collaboration between the building owner and tenants in order to manage and operate the building along environmentally sustainable principles whilst realising mutual benefit.</p>	<p>Green leasing is not common practice in Namibia.</p> <p>As in South Africa, market transformation is required in Namibia and can be partially achieved through this credit.</p>	<p>It is recommended that this credit be kept in its current form and no adjustments made.</p>
	<p><b>MAN-6: Ongoing Monitoring and Management</b> To recognize operational practices which facilitate effective ongoing monitoring and metering of water and energy consumption.</p>	<p>Few buildings exercise sub-metering practices for energy as well as for water in Namibia.</p> <p>Sub-metering is relevant to help manage the use of water and energy as well as early notification of issues such as burst pipes.</p>	<p>MAN-6 should be kept in its current form to encourage responsible consumption.</p>
	<p><b>MAN-7: Learning Resources</b> To encourage and recognise initiatives undertaken to facilitate sustainability awareness and education amongst building occupants and visitors.</p>	<p>This credit is as applicable in the Namibian context as it is in South Africa.</p>	<p>MAN-7 should be kept in its current form and no adjustment need be made.</p>

#### 4.2 Indoor Environment Quality Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b>IEQ-1: Indoor Air Quality</b> To recognize the monitoring and control of indoor pollutants and thus help sustain the comfort and well-being of building occupants.</p>	<p>The credit is equally relevant in the Namibian context as it is in South Africa.</p> <p>Standards used in Namibia are mainly adopted from South African.</p> <p>Namibia has access to similar if not the same technologies available in South Africa.</p>	<p>IEQ-1 should remain as is.</p>

	<p><b>IEQ-2: Lighting Comfort</b>                  To recognize operational practices that provide occupants with a high degree of lighting comfort by addressing discomfort caused by lighting flicker as well as excessive lighting levels</p>	<p>Electronic ballast is widely used in newer buildings however, in existing older buildings magnetic ballast is still common place.</p> <p>Electronic ballast are flicker-free, energy efficient and are rated to have a prolonged lifespan in comparison to magnetic ballasts.</p> <p>Lighting levels, similar to South Africa, are generally designed in accordance to SANS 10114-1 and the Occupational Health and Safety Act (OHS Act 1993).</p> <p>Namibia has access to similar if not the same technologies available in South Africa.</p>	<p>IEQ-2 should be kept in its current form and no adjustment need be made.</p>
	<p><b>IEQ-3: Thermal Comfort</b>                  To recognize operational practices that monitor and maintain a high level of thermal comfort for building occupants.</p>	<p>Thermal comfort is equally important in Namibia as it is in South Africa.</p> <p>Is generally well known in Namibia due to the typically high ambient temperatures across the country.</p> <p>Namibia has access to similar if not the same technologies available in South Africa.</p>	<p>IEQ-3 should remain as is.</p>
	<p><b>IEQ-4: Occupant Survey</b>                  To encourage the assessment of building occupants' satisfaction as it relates to comfort</p>	<p>Occupant satisfaction surveys are typically used to gauge overall building comfort levels and performance of the building.</p> <p>The credit is as applicable in the Namibian context as it is in South Africa.</p>	<p>This credit should remain as is with no adjustments</p>
	<p><b>IEQ-5: Acoustic Quality</b>                  To encourage operational practices that monitor acoustic comfort factors and strive to improve performance to ensure acoustic comfort for building occupants and minimize impact on surrounding buildings.</p>	<p>Acoustic quality and comfort is equally important in Namibia as it is in South Africa.</p> <p>All parts of the credit are reasonably obtainable within Namibia with access to acoustic specialists through South Africa.</p>	<p>This credit should be used and implemented as is.</p>

	<p><b>IEQ-6: Daylight and Views</b>                  To recognize the introduction of naturally lit spaces which provide occupants in regular occupied spaces with access to appropriate daylight and quality views for the activities being performed during the performance period.</p>	<p>Namibian daylight requirements within buildings are typically in accordance to the SANS 10400-O which is also used in South Africa. These are not particularly stringent requirements however, equally as relevant to Namibia as is to South Africa.</p> <p>External views are equally as important in the Namibian context as it is in South Africa.</p>	<p>This credit should be used and implemented as is.</p>
--	---	--	--

**4.3 Energy Category**

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b>ENE-00: Conditional Requirement</b>                  12 months of energy data must be provided</p>		
	<p><b>ENE-1: Energy Consumption (GHGE)</b>                  To encourage the reduction of greenhouse gas emissions associated with the use of energy in building operations.</p>	<p>Namibian professionals typically use the South African standards for their designs and currently use the SANS 204 with which compliance is achievable through compliance path 4.</p> <p>On-site energy generation and passive design systems exist however, not readily used to reduce energy consumption.</p> <p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>ENE-1 should be kept in its current form.</p> <p>A mandatory CIR should be submitted to determine which South African climatic region is similar to that of the project in question.</p>
	<p><b>ENE-2: Peak Electricity Demand</b>                  To recognize operational practices that reduce peak demand on electricity supply infrastructure.</p>	<p>Standby generator sets are commonly used for back-up power in case of power outages.</p> <p>On-site energy generation (e.g. Solar PV) is also being used.</p> <p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>ENE-2 should be kept in its current form and no adjustments need to be made.</p>

#### 4.4 Transport Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b><u>TRA-1: Alternative Transportation</u></b> To measure and assess transportation modes of regular building occupants and promote/ encourage green travel plans for commuting and as a result reduce pollution and land development impacts from automobile use.</p>	<p>Public transport, in the form of bus services, is limited to the City of Windhoek and Swakopmund.</p> <p>Informal taxis largely make up the remainder of the public transport and can be considered as public transport as they operate as shared taxis.</p> <p>Public transport throughout the rest of Namibia is limited to non-existent.</p> <p>Few Namibians cycle to work with little to no infrastructure encouraging it however, the aim is to provide fuel-efficient alternatives and consequently remains relevant and applicable.</p>	<p>TRA-1 should remain as is for Namibia as a whole to encourage mass public transport as well as alternative transportation.</p> <p>A CIR however, should be submitted to include shared taxis as a form of public transport.</p>

#### 4.5 Water Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b><u>WAT-00: Conditional Requirement</u></b> 12 months of water data must be provided</p>		
	<p><b><u>WAT-1: Potable Water</u></b> To recognise efficient potable water use associated with building operations thus reducing the burden on potable water supply and wastewater systems</p>	<p>Namibia is mostly made up of dry arid regions and experiences regular water shortages, especially in the central and southern parts of the country.</p> <p>Water is generally sparsely located across the country and consequently piped over long distances at great expense to the various towns and cities.</p> <p>City of Windhoek and Swakopmund treat black water to reintroduce into water network as potable water or greywater. Other water sources are nearby dams and aquifer water.</p>	<p>WAT-1 should be kept in its current form.</p> <p>A mandatory CIR should be submitted to determine which South African climatic region is similar to that of the project in question as well as to account for sources of potable water (e.g. treatment of black water).</p>

#### 4.6 Materials Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b><u>MAT-1: Procurement and Purchasing</u></b> To recognize procurement and purchasing practices which encourage use of products that is environmentally preferable.</p>	<p>Globally, all projects should strive towards using environmentally friendly materials and products by considering the complete life cycle including the extraction, fabrication and manufacturing, and distribution to the usage, disposal and recycling of all materials and/or each product.</p> <p>Environmentally friendly replacements are not readily available for all products in Namibia however, as was the case in South Africa, market transformation is needed in this regard.</p> <p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>It is recommended that MAT-1 should remain as is to stimulate market transformation from the "cradle-to-grave" way of thinking to "cradle-to-cradle".</p>
	<p><b><u>MAT-2: Solid Waste Management</u></b> To reward operational practices which reduce the amount of solid waste going to landfill. Such waste may be from typical building operations, including ongoing and durable goods, and from refurbishments, construction or demolition works.</p>	<p>In Namibia recycling is encouraged by legislation but not enforced. As such recycling is completely voluntary at this stage. Namibian waste contractor(s) do not need to be registered on the SAWIS (South African Waste Information System) like South African waste contractor(s).</p> <p>The Recycle Namibia Forum (RNF) is a forum of which Namibian waste contractors can become members. The RNF is a non-political and non-profit organization with the purpose to promote the 3R's (Reduce, Reuse, Recycle) through projects and networking with all relevant stakeholders.</p>	<p>MAT-2 should be kept in its current form with adaptation that Namibian waste contractors should be registered with RNF instead of SAWIS.</p>

#### 4.7 Land Use & Ecology Category

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b><u>ECO-1: Grounds-Keeping Practices</u></b> To encourage environmentally sensitive maintenance and landscaping management practices for landscapes, hard surfaces and building exterior that reduce the environmental impact and improve ecological value and services.</p>	<p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>ECO-1 should be kept in its current form and no adjustments needs to be made.</p>

	<p><b>ECO-2: Community Facilities</b> To encourage and recognise integrated and shared land use and community development through the provision of on-site facilities for use by the local community.</p>	<p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>ECO-2 should be kept in its current form and no adjustments needs to be made.</p>
--	---	---	--

**4.8 Emissions Category**

	AIM OF CREDIT	DISCUSSION	RECOMMENDATION
	<p><b>EMI-1: Refrigerants</b> To encourage operational practices that minimise the environmental impacts of refrigeration equipment.</p>	<p>Many of the Namibian mechanical engineers are familiar with the types of refrigerants available however, are not necessarily aware of their impact on the environment such as ozone depletion potential (ODP) and global warming potential (GWP). Clients often also consider costs related to the initial capital investment rather than long term consequences to the environment.</p> <p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>EMI-1 should be kept in its current form and no adjustments needs to be made.</p>
	<p><b>EMI-2: Legionella</b> To recognise and encourage implementation and utilisation of a water management process with intention to minimize risks associated with Legionnaires' disease.</p>	<p>Evaporative cooling systems are commonly used in Namibian buildings for cooling as in South Africa consequently making the management of Legionella vital to occupant health and wellbeing.</p> <p>The credit is equally relevant and applicable in Namibia as it is in South Africa in its current form.</p>	<p>EMI-2 should be kept in its current form and no adjustments needs to be made.</p>
	<p><b>EMI-3: Storm Water</b> To recognize site-related practices which limit the disruption of natural hydrology, minimize pollution and site deterioration.</p>	<p>This credit should apply equally to Namibia as it does in South Africa.</p>	<p>EMI-3 should be kept in its current form and no adjustments needs to be made.</p>

**4.9 Innovation Category**

	<b>AIM OF CREDIT</b>	<b>DISCUSSION</b>	<b>RECOMMENDATION</b>
	<p><b><u>INN-1: Innovative Strategies &amp; Technologies</u></b>                      This credit is to encourage and recognise pioneering initiatives, processes or strategies in sustainable building management and operations.</p>	<p>Innovation is a very important driver of sustainable buildings. This is of great importance in Namibia, as in South-Africa.</p> <p>This credit should be kept in its current form with reference being made instead to the Namibian context, as opposed to the South African context.</p> <p>Therefore, up to two points are awarded for an innovation initiative where:</p> <ul style="list-style-type: none"> <li>• The initiative is a technology or process that is considered a 'first' in Namibia or in the World; or the project substantially contributes to the broader market transformation towards sustainable development in Namibia or in the World.</li> </ul> <p>Points are awarded as follows:</p> <ul style="list-style-type: none"> <li>• One point is awarded when either of the above is true for the Namibian market;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Two points are awarded when either of the above is true for the Global market</li> </ul>	<p>INN-1 should be kept in its current form with reference being made instead to the Namibian context, as opposed to the South African context.</p>
	<p><b><u>INN-2: Exceeding Green Star SA Benchmarks</u></b>                      To encourage and recognise projects which achieve environmental benefits in excess of the current Green Star SA benchmarks.</p>	<p>This credit should apply equally to Namibia as it does in South-Africa.</p>	<p>INN-2 should be kept in its current form and no adjustments needs to be made.</p>
	<p><b><u>INN-3: Environmental Initiatives</u></b>                      To encourage and recognise sustainable initiatives, processes or strategies that are currently outside of the scope of this Green Star SA rating tool but which have a substantial or significant environmental benefit.</p>	<p>This credit should apply equally to Namibia as it does in South-Africa.</p>	<p>INN-3 should be kept in its current form and no adjustments needs to be made.</p>

NEEP, 2011. Baseline Study on Energy Efficiency in Buildings in Namibia

NPCCN, 2010. National Policy on Climate Change for Namibia

Wikipedia, 2014. Wikipedia. The free Encyclopaedia [Online]  
Available at: <http://en.wikipedia.org/wiki/Windhoek>

Google Maps, 2014. Google Maps [Online]  
Available at: <https://www.google.com/maps/place/22°34'07.8%22S+17°06'15.0%22E>

Namibia Nature Foundation, 2014. Namibia Nature Foundation [Online]  
Available at: [http://www.nnf.org.na/SKEP/skep\\_pges/maps.htm](http://www.nnf.org.na/SKEP/skep_pges/maps.htm)

Exploring Africa, 2014. Exploring Africa [Online]  
Available at: <http://exploringafrica.matrix.msu.edu/students/curriculum/m20/activity2.php>