HEFMA Workshop: Energy Management: Energy Performance Certificates: Status Update

Date: 29 May 2025

Presenter: Songo Didiza

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Sustainability Services

Green Building Design Group

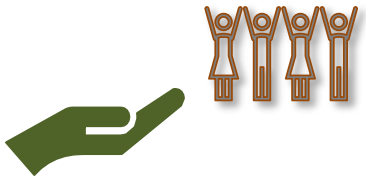
Sustainability Strategy

We employ an integrated sustainability strategy into the planning of infrastructure projects.

Energy Performance

We employ hardware and software tools to assist clients meet their energy performance goals.

OARUMP



Training

We offer sustainability training to professionals in various industries.

ISO Management System Implementation

We design and implement end-to-end ISO Performance Tracking

Level 1 B-BBBE Value Adding Supplier and 100% black women owned entity

Presenter

Managing Partner

Songo Didiza (Accredited EPC Practioner)

- BEconSci (Economics, Applied Mathematics)
- BPHil Honours Sustainable Development and Energy
- GIBS Business School: Green Economy Business Accelerator
- ESG Expert (CFI ®, EDGE)
- African Energy Innovator of the Year 2019 (Association of Energy Engineers)
- Certified Project Manager (CPM)
- Generative AI for Project Managers (PMI)
- Founder of Green Buildings Design Group (GreenBDG)
- 2023 ESG Leader of the Year Finalist (South African Chamber of Commerce UK)

Alex Mithileni (SHERQ & Environmental Management Expert)

- BAHons (Environmental Management, Geography)
- MBA (Project Management)
- SHERQ

Green Building Design Group

Clients and Partners

South African Reserve Bank

IDC
Industrial Development Corporation

OLDMUTUAL INSURE

FMCE
FACILITIES MANAGEMENT CONFERENCE|EXHIBITION

RED FOX GROUP

BDO

AMPATH LABORATORIES

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

IFC International Finance Corporation
Creating Markets, Creating Opportunities

BUSHVELD ENERGY

Ford

dipula INCOME FUND
Sustainable Property Returns

SA CORPORATE REAL ESTATE

Bertha House

broll

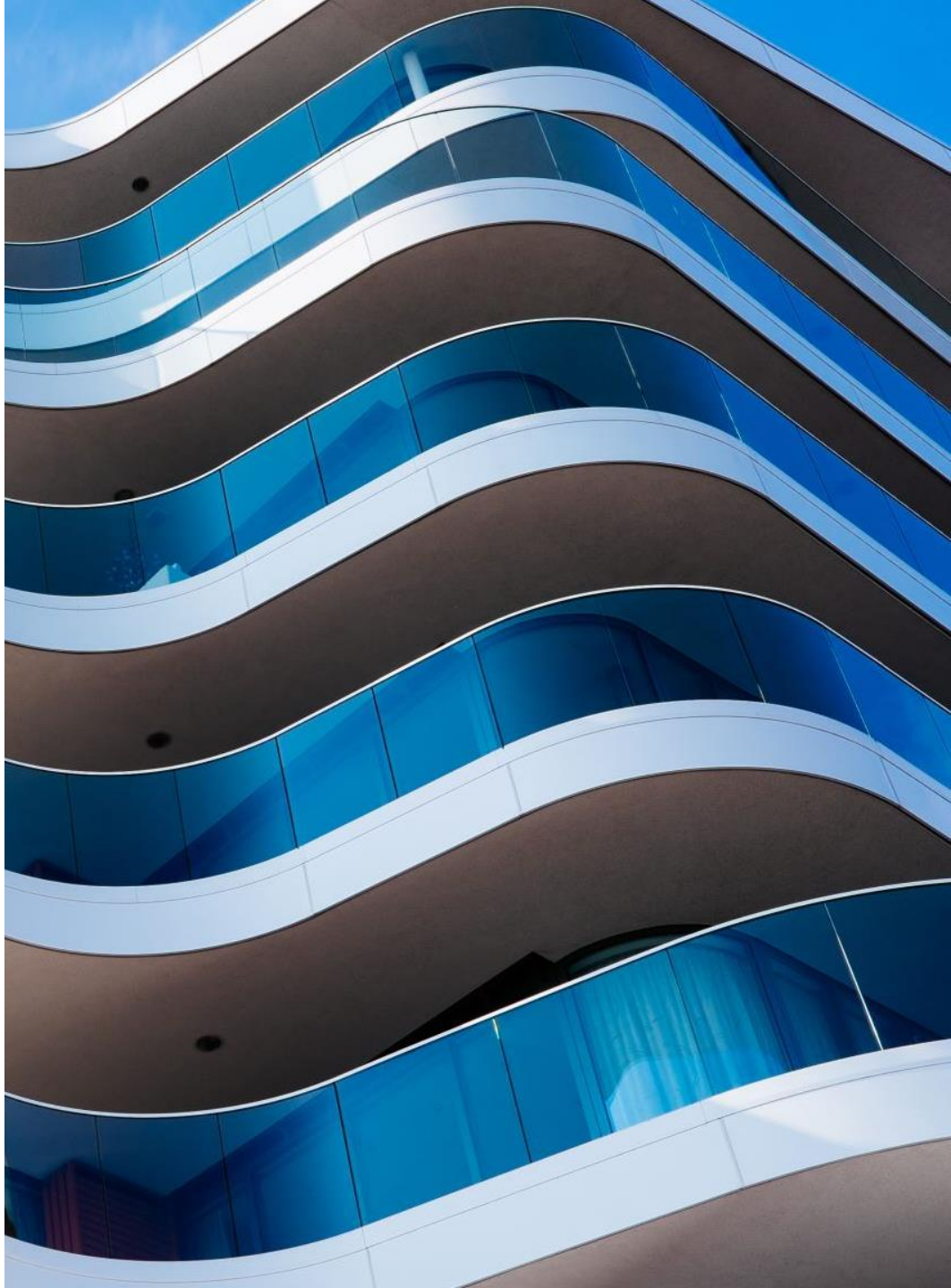
AIRLINK

GCX
Making business better

servest

HEFMA
southern africa

ÖLINGA



Energy Performance Certificates Overview

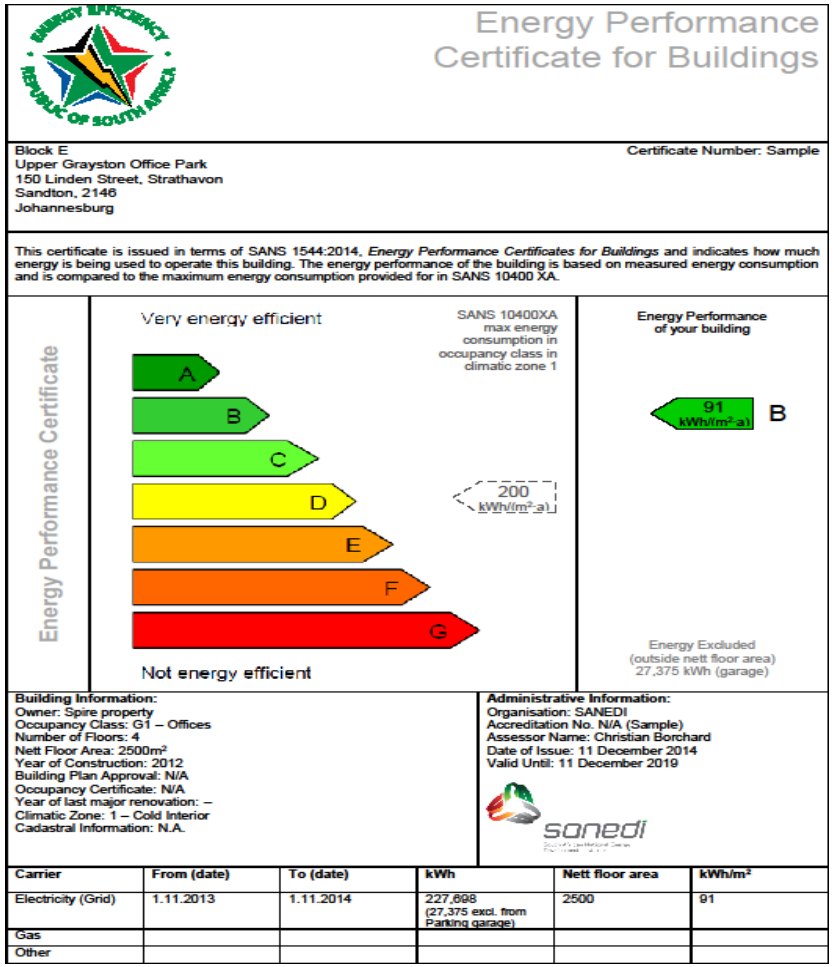
EPC Regulation Overview

Objectives of these Regulations are to:

requirements for the **display** of EPC's in **non-residential** buildings and

Provide for the submission of

owners of buildings



Energy Performance Certificate for Buildings

Block E
Upper Grayston Office Park
150 Linden Street, Strathavon
Sandton, 2146
Johannesburg

Certificate Number: Sample

This certificate is issued in terms of SANS 1544:2014, *Energy Performance Certificates for Buildings* and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy consumption and is compared to the maximum energy consumption provided for in SANS 10400 XA.

Energy Performance Certificate

Very energy efficient

SANS 10400XA max energy consumption in occupancy class in climatic zone 1

A
B
C
D
E
F
G

200 kWh/(m²·a)

Not energy efficient

Energy Performance of your building

91 kWh/(m²·a) B

Energy Excluded (outside nett floor area) 27,375 kWh (garage)

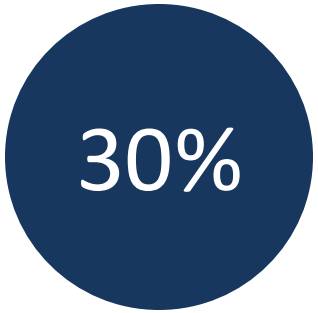
Building Information:
Owner: Spire property
Occupancy Class: G1 – Offices
Number of Floors: 4
Nett Floor Area: 2500m²
Year of Construction: 2012
Building Plan Approval: N/A
Occupancy Certificate: N/A
Year of last major renovation: –
Climatic Zone: 1 – Cold Interior
Cadastral Information: N.A.

Administrative Information:
Organisation: SANEDI
Accreditation No. N/A (Sample)
Assessor Name: Christian Borchard
Date of Issue: 11 December 2014
Valid Until: 11 December 2019

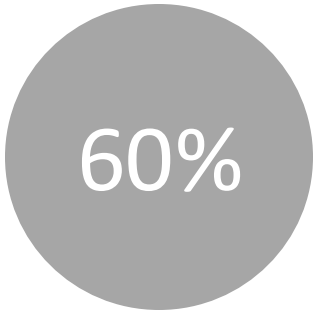
sanedi

Carrier	From (date)	To (date)	kWh	Nett floor area	kWh/m²
Electricity (Grid)	1.11.2013	1.11.2014	227,698 (27,375 excl. from Parking garage)	2500	91
Gas					
Other					

Energy Efficiency – National Context



Estimated Energy Consumption of the Commercial and Public Building Sectors



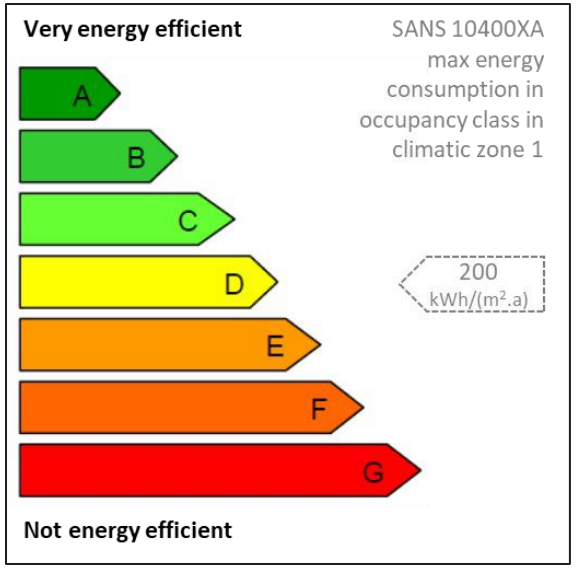
Estimated Energy Consumption of HVAC Systems in Buildings

Potential Energy Efficiency Savings in the Commercial and Public Building Sector

Source: DMRE 2024

EPC Overview

A regulation that requires the mandatory display of Energy Performance Certificates (EPC) in qualifying buildings



Private buildings with a net floor area greater than 2000 m²

Government buildings with a net floor area greater than 1000 m²

Failure to comply will be met by prosecution with fines of up to 5 million rand and imprisonment for up to 5 years (accounting officer or building owner)

Section 19(1)(b) of the National Energy Act of 1998 (act no. 34 of 2008) and SANS 1544

Issued by a SANEDI Accredited EPC Professional (GreenBDG Africa is accredited to issue EPCs) and administered by SANEDI

For buildings older than two years and without major renovations within the last two years

Deadline:
7 December 2025

Renewal:
Every 5 years

Source: DMRE 2024

EPC Details

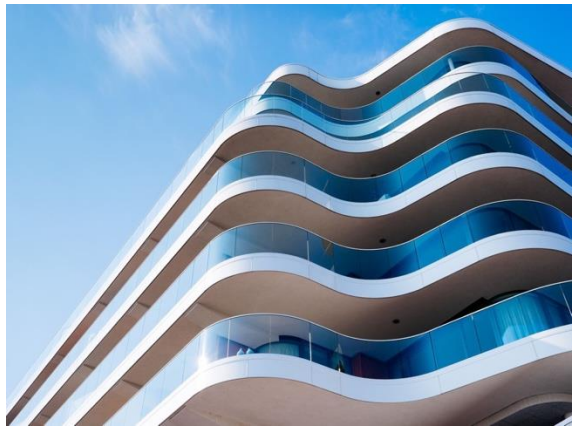
01
What is an EPC Rating?

This is a rating from A (most efficient) to G (least efficient) given to a building indicating its energy efficiency measured in kWh/m^2.a. This rating is contained in a certificate to be prominently displayed at the entrance of qualifying buildings

02
Eligible Buildings

The following building are eligible for an EPC according to the regulations and standard SANS 10400-XA:

- A1 – Entertainment and Public Assembly
- A2 – Theatrical and Indoor Sport
- A3 – Universities, colleges and schools
- **G1 – Offices and Office Blocks**



sanedi
South African National Energy Development Institute

03
The Process

We have SANEDI accredited EPC team to perform building inspections and compile inspection reports that have to be sent to SANEDI who evaluate the reports and issue a unique building certificate number. Our Inspection team then issues an EPC certificate that building owners display

Source: GreenBDG Africa Pty Ltd 2025

EPC: Eligibility

A1 – Entertainment and Public Assembly

Theaters, conference venues, gaming centers, etc

A2 – Theatrical and Indoor Sport

Gyms, sports centers, Movie theaters, etc

A3 – Places of Instruction

Universities, colleges, schools, etc

G1 - Offices

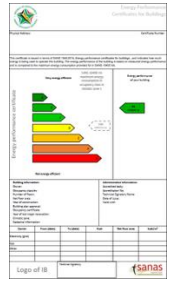
Multi story offices, office blocks, office parks, etc

EXCLUSIONS

Garages, car parks, storerooms, balconies, streetlights, security lights and land scaping equipment

Source: DMRE 2024

Roles and Responsibilities: EPC Practitioners



Inspect the Buildings

- Evaluate net floor area accuracy
- Evaluate exclusions
- Confirm accuracy of the energy sources and energy data
- Evaluate the buildings occupancy type and occupancy rate

Compile Inspection Report

- Calculate the energy performance
- Calculate the EPC grade
- Submit the report to SANEDI
- SANEDI evaluate the report and issue a unique certificate number

Issue the EPC Certificate

- Compile the certificate with the required data and information
- Issue the certificate to the building owner/manager
- Building owner has to submit the certificate to SANEDI once they are happy with it….the inspection body can also help with this.

Source: GreenBDG Africa Pty Ltd 2025

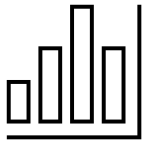
Roles and Responsibilities: Building Owners (Pre EPC Phase)

Identify if the building is subject to EPC

Confirm that the building falls under the mandatory EPC scope:

- **Government buildings > 1000 m²**
- **Privately owned buildings > 2000 m²** (e.g., offices, schools, public venues)

•Ensure the building has been **in operation for at least 2 years** with no major refurbishments during that period.

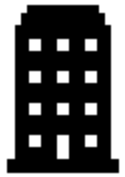


Compile Energy Consumption Data

- Collect 12 months of energy usage records (electricity, diesel, gas)
- Include information on energy from other sources (generators, solar)

Source: GreenBDG Africa Pty Ltd 2025

Roles and Responsibilities: Building Owners (Pre EPC Phase)

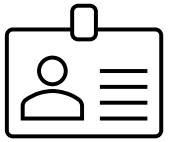


Gather Building Information

- A diagram showing different zones within a building, indicating areas included or excluded from the EPC assessment.

Ensure Availability of Supporting Documentation

- A checklist or folder containing documents like maintenance logs, utility bills, and architectural plans.



Assign a Contact Person

- Contact details of a facilities manager or a team meeting discussing EPC compliance.

Source: GreenBDG Africa Pty Ltd 2025

Building Data Example

Building Details	
Building Owner (Company Legal Name)	
Company Registration Number	
Building Name	
Building Physical Address	
Building GPS Coordinates	
Number of Floors	
Year of Construction	
Building Plan Approval Date	
Occupancy Certificate	
Year of Last Major Renovation	
Cadastral information (Erf)	
Building Management	
Ownership Contact	
Job Description	
Address	
Telephone	
Email	
Building Manager	
Address	
Telephone	
Email	

Source: GreenBDG Africa Pty Ltd 2025

Floor Area Data Example

No.	Area/Floor	Floor Area (m^2)	Percentage Occupancy	Occupancy Class	Qualifies [Yes/No]	Net Floor Area (m^2)
1				G1	Yes	
2				G1	Yes	
3				G1	Yes	
4				G1	Yes	
5				G1	Yes	
6				G1	Yes	
7				G1	Yes	
8				G1	Yes	
9						
10						
11						
12						
13						
14				G1	No	
15				G1	No	
16				G1	No	
17				G1	No	
18				G1	No	
	Total Area					**0**

Source: GreenBDG Africa Pty Ltd 2025

Annual Energy Data Example

Period	Electricity Grid (kWh)	Diesel Generator (kWh)	Electricity-Renewable (kWh)	Other (kWh)	Total Energy (kWh)
Jan-21					0
Feb-21					0
Mar-21					0
Apr-21					0
May-21					0
Jun-21					0
Jul-21					0
Aug-21					0
Sep-21					0
Oct-21					0
Nov-21					
Dec-21					0
Total Annual Energy					

Source: GreenBDG Africa Pty Ltd 2025

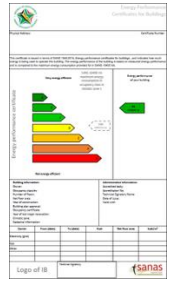
ROLES AND RESPONSIBILITIES: Building Owners (During the EPC)

Provide Information and Data

- Electricity consumption for a year (invoices or meter)
- Diesel/ Gas consumption for a
  year
- Solar power for a year
- Building plans
- Building occupancy certificate
- All energy carriers

Provide Access to the Buildings

- Require about 3 to 4 hours to walk the building
- Might need to view meters
- Need to confirm exclusions

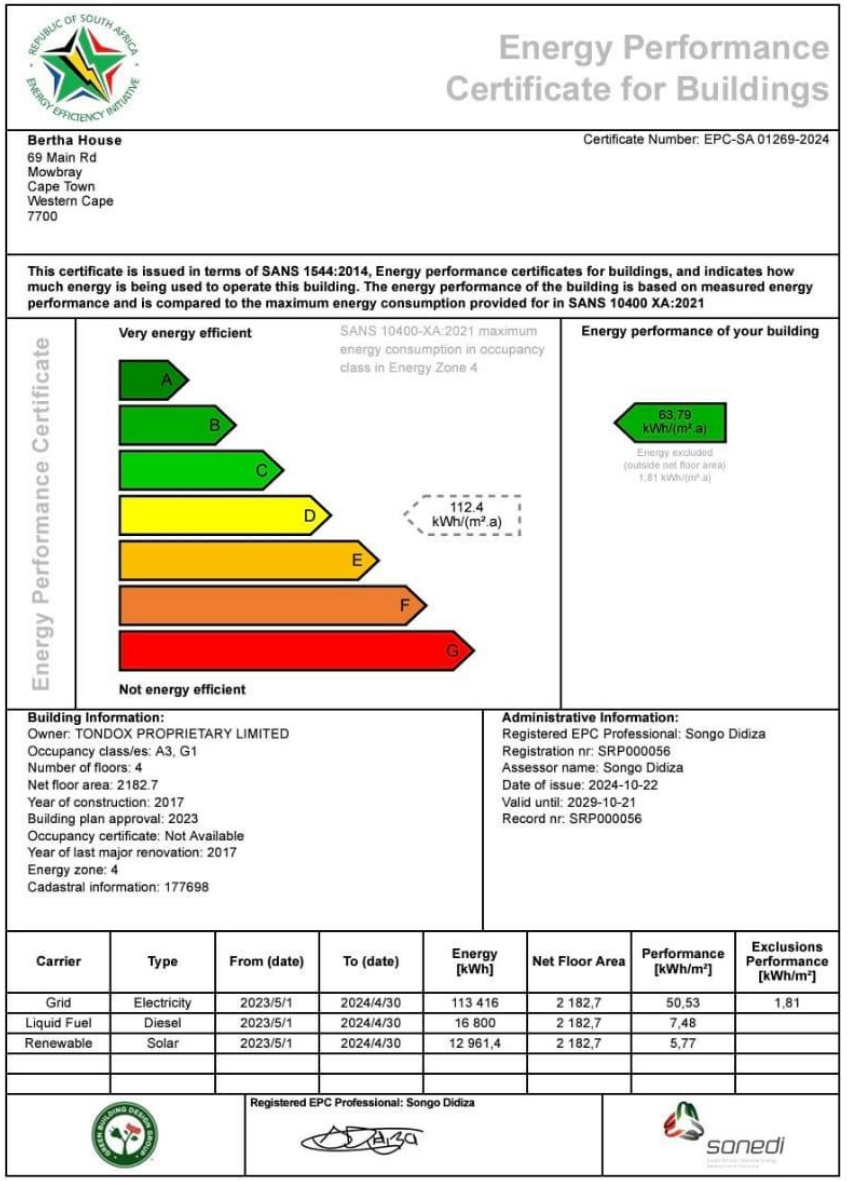


Display the EPC Certificate

- Display prominently
- Valid for 5 years
- You should get it reassessed after year 4

Source: GreenBDG Pty Ltd 2024

EPC Example



Energy Performance Certificate for Buildings

Bertha House
69 Main Rd
Mowbray
Cape Town
Western Cape
7700

Certificate Number: EPC-SA 01269-2024

This certificate is issued in terms of SANS 1544:2014, Energy performance certificates for buildings, and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy performance and is compared to the maximum energy consumption provided for in SANS 10400 XA:2021

Energy Performance Certificate

Very energy efficient

SANS 10400-XA:2021 maximum energy consumption in occupancy class in Energy Zone 4

A
B
C
D
E
F
G

112.4 kWh/(m².a)

Not energy efficient

Energy performance of your building

63.79 kWh/(m².a)

Energy excluded (outside net floor area) 1.81 kWh/(m².a)

Building Information:
Owner: TONDOX PROPRIETARY LIMITED
Occupancy class/es: A3, G1
Number of floors: 4
Net floor area: 2182.7
Year of construction: 2017
Building plan approval: 2023
Occupancy certificate: Not Available
Year of last major renovation: 2017
Energy zone: 4
Cadastral information: 177698

Administrative Information:
Registered EPC Professional: Songo Didiza
Registration nr: SRP000056
Assessor name: Songo Didiza
Date of issue: 2024-10-22
Valid until: 2029-10-21
Record nr: SRP000056

Carrier	Type	From (date)	To (date)	Energy [kWh]	Net Floor Area	Performance [kWh/m²]	Exclusions Performance [kWh/m²]
Grid	Electricity	2023/5/1	2024/4/30	113 416	2 182,7	50,53	1,81
Liquid Fuel	Diesel	2023/5/1	2024/4/30	16 800	2 182,7	7,48	
Renewable	Solar	2023/5/1	2024/4/30	12 961,4	2 182,7	5,77	

Registered EPC Professional: Songo Didiza

sonedi

EPC: Information and Data Requirements (Summary)

1. Building Ownership Information

2. Building Floor Plans (including basement parking if applicable)

3. Occupancy Certificate

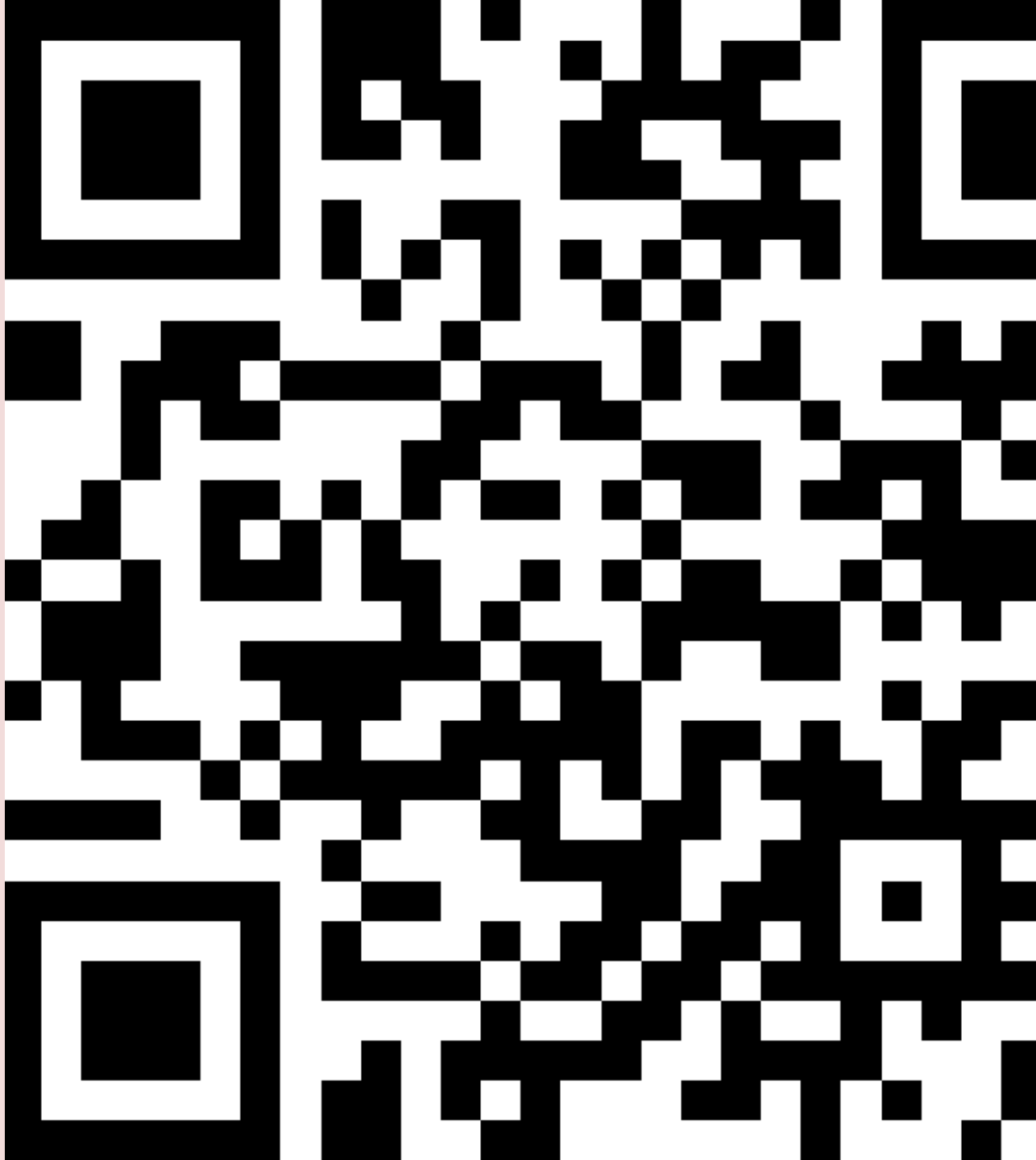
4. Energy Consumption for 12 consecutive months per building
    - Electricity - Metered data or invoices (kWh)
    - Diesel Generator - Metered data or invoices (kWh/L)
    - Solar Power - Metered data (kWh)

5. Energy Exclusions Related to the Building
    - Security lights (wattage rating, quantity, operating schedule)
    - Landscaping lights (wattage rating, quantity, operating schedule)
    - Water pumps used for landscaping (ratings, operating schedule)
    - Basement parking lights (wattage rating, quantity, operating schedule)

6. Occupancy Estimates Per Floor

Source: GreenBDG Africa Pty Ltd 2025

Lets test your knowledge…



Audience Q&A

Achieving EPC Compliance in Higher Education and TVET Institutions

EPC Compliance in Higher Institution and TVET Colleges

The Importance

- Universities and TVET colleges often operate in large, aging facilities with high energy demand.
- EPC compliance ensures improved energy efficiency, cost savings, and alignment with national sustainability goals.
- Helps institutions demonstrate environmental leadership and secure green certifications or funding.

Applicable Building Types

- Lecture halls (A3)
- Admin buildings or Office Blocks (G1)
- Libraries (A3)
- Laboratories (A3)
- Student accommodation (if qualifying)

Common Challenges in HET

- Old buildings often lack insulation or efficient HVAC systems.
- Varied schedules (lecture vs. dorm use) complicate occupancy data collection.
- Mixed-use spaces may require tailored EPC assessments.
- Facilities teams may need support with metering, data consolidation, and technical compliance steps.
- Competing priorities can delay energy upgrades needed to improve EPC ratings (Budget Constraints)

Source: Oelinga Pty Ltd 2024

Who Carries EPC complaince responsibility in HET?

EPC Compliance Strategy for Higher Education Institution

Approaches to HET Campuses

1.Map All Eligible Buildings

- Identify A3-classified buildings >2000 m² and over 2 years old.

2.Train Facilities Staff

- Build awareness on EPC processes, data requirements, and ongoing monitoring.

3.Engage Energy Experts

- Partner with accredited professionals for energy efficiency assessment (SANEDI-accredited EPC Practioner)

4.Prioritise Quick Wins

1. LED lighting, HVAC maintenance, and solar integration often improve ratings cost-effectively.

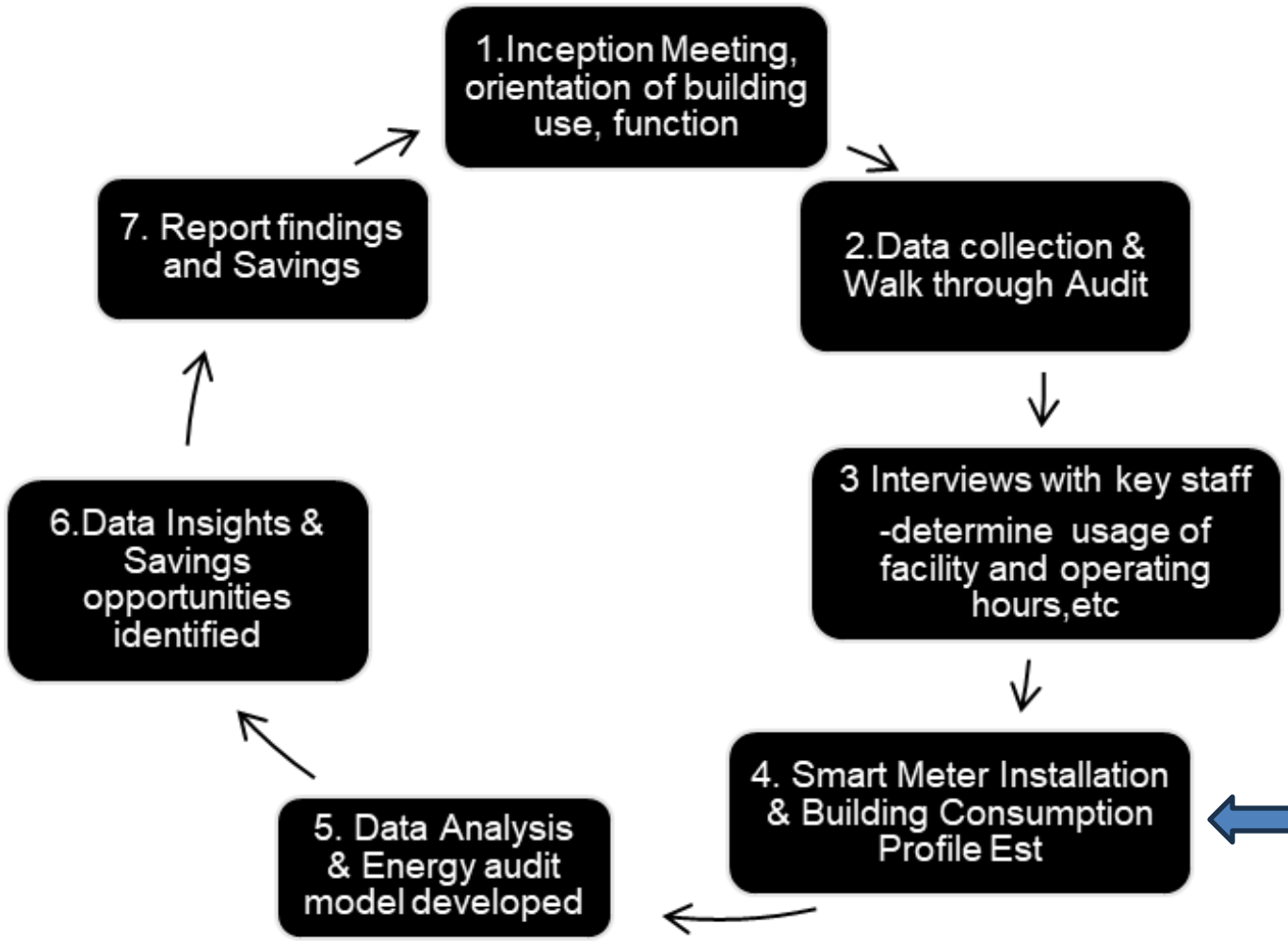
5.Develop an Energy Management Plan (EMP)

1. Invest in smart metering infrastructure to ensure accurate energy data monitoring
2. Use audit results to structure longer-term upgrades.

Source: Oelinga Pty Ltd 2024

Energy and Water Auditing Process

Level 1 Energy Audit (ASHRAE)



EPCs can be implemented once 12 months of energy data has been collated

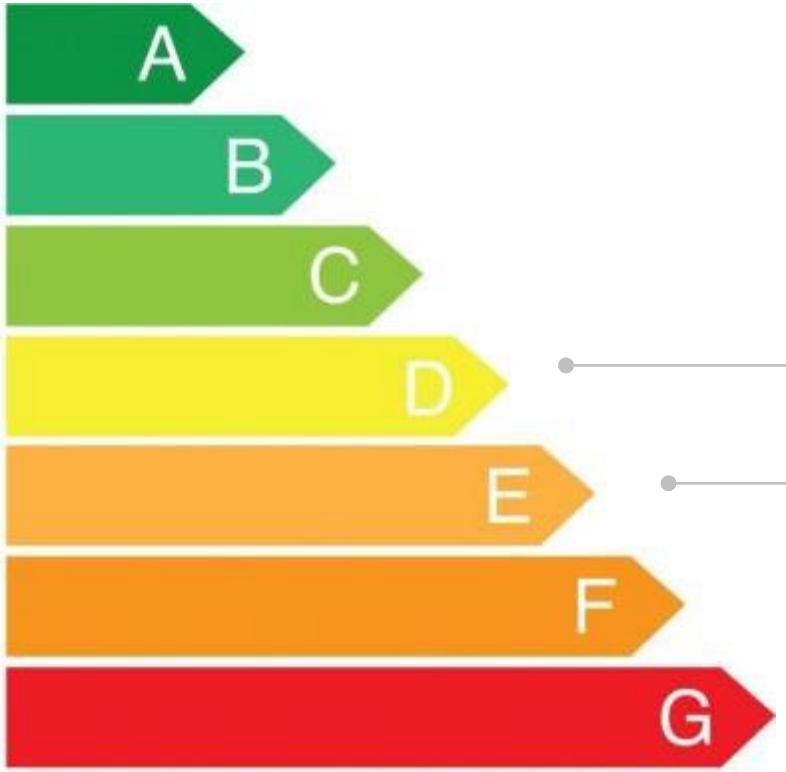
EPC Opportunities for Improvement in Higher Education Institution

- **Use Students in Audits/Research**: Involve engineering or environmental management students in data collection or audits.
- **Integrate EPC into Campus Sustainability Goals**: Link compliance to existing green campus initiatives or ISO 14001 frameworks.
- **Explore External Funding**: Consider government incentives, green bonds, or donor-funded sustainability projects.
- **Awards**: Environmental Leadership

Source: Oelinga Pty Ltd 2024

ESG Performance Benchmarking

Beyond the EPC = Energy Management



RATING AFTER ENERGY EFFICIENCY INTERVENTIONS

200 kWh/m²

Money & Technology

INITIAL RATING **BAD**

256 kWh/m²

Roles and Responsibilities: Building Owners and Facilities Managers (Post EPC Phase)

Training

- Educate staff and occupants about EPC relevance.
- Engage maintenance teams to support energy-saving

Strategies for Improvement

- Conduct detailed energy audits.
- Upgrade lighting to LEDs, modernise HVAC, insulate.
- Install Building Management Systems (BMS).
- Shift to renewables: solar PV, heat pumps.
- Create a structured Energy Management Plan (EMP).

Source: Oelinga Pty Ltd 2024

ESG Benefits for Higher Education Institution with EPC

Environmental

- Cuts energy use and carbon emissions
- Supports climate action goals
- Encourages use of renewable energy
- Improves overall building efficiency

Social

- Enhances comfort in learning spaces
- Promotes health through better air and lighting
- Engages students in sustainability efforts
- Builds reputation as a responsible institution

Governance

- Cuts energy use and carbon emissions
- Supports climate action goals
- Encourages use of renewable energy
- Improves overall building efficiency

Source: GreenBDG Africa Pty Ltd 2024

Energy Performance Certificates Compliance: Safety Requirements for Higher Education Facilities Managers

Definition of SHERQ- Safety Health Environmental and Quality (EPC Perspective)

Unified Approach to Managing safety, health, environment, risk, and quality in an integrated manner.
It is aimed at optimising performance and safeguarding individuals and the environment

Importance in Energy Management

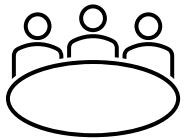
- Reduces energy-related risks to health and safety.
- Improves energy efficiency and system performance.
- Ensures compliance and supports sustainability.
- Drives continuous improvement and quality control.

Overview of Benefits

- Lower energy costs (regular audits helps in identifying and fix energy leaks in HVAC systems)
- Fewer accidents and down time (Safety protocols prevent electrical fires or equipment failures)
- Better Legal Compliance (Meeting ISO 50001 and environmental regulations to avoid fines)
- Improved environmental performance (Reduced carbon emissions from energy-efficient lighting upgrades).
- Enhanced company reputation (Demonstrating responsible energy use attracts investors and clients.)

SHERQ Requirements

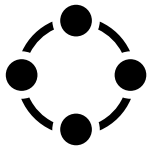
Safety Induction (Site Specific)



Safety Plan for Emergencies

Risk Assessment

Emergency Procedure and Response Plan



Safe Work Procedures

Training and Awareness on SHERQ (Toolbox talks, Workshops)

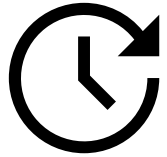
CHALLENGES,OPPORTUNITIES,AND FUTURE OUTLOOK FOR FACILITY MANAGERS AND BUILDING OWNERS

Challenges

- Low awareness of EPC process and requirements.
- Budget constraints for retrofits and upgrades.
- Limited internal capacity for data and technical input.

Opportunities

- Take lead in sustainability and ESG initiatives.
- Access green building certifications or incentives.
- Reduce carbon footprint and enhance tenant satisfaction.



Future Outlook

- Possible expansion of EPC scope to other sectors.
- Growing enforcement and integration with national energy targets (NDP 2030).

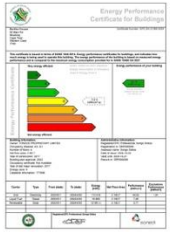
Source: Oelinga Pty Ltd 2024

EPC’s and Energy Management– Ordered Steps (Summary)

01
Energy Management Policy

In order to achieve optimal and sustainable energy savings it is important to have a energy management policy supported by upper management.

ISO 50001 is an effective standard to adopt



02
Energy Audit

“You cannot know where you are going if you do not know where you are”

An audit is necessary to understand your energy consumption and identify energy efficiency interventions

03
Software Support

To effectively implement and main a energy management policy for large building portfolio owners, a software platform connected to smart meters is necessary for Monitoring, Measurement and Reporting (MMR)

03
Financing

Energy efficiency requires financing like all capital projects, therefore making it part of the annual financial planning is key.

Note that energy efficiency projects tend to have a good return on investment (ROI)

Do you still need support in implementing an EPC in your facility?

<u>Please include the discount code in the company details to receive the 20% EPC discount: HEFepc25.</u> To complete the EPC registration please complete this form

https://docs.google.com/forms/d/e/1FAIpQLSc9svCG8dQmvQ9XQNAFVf2To_17_Kf4KSmn1B1pOYFp1-mvMg/viewform

Contact Us

Registration No.	2014 / 148784 / 07
Vat:	4290308594
CEO:	Songo Didiza
For enquiries please email:	Songo Didiza; songo@greenbdgafrica.com; Cell: +27 79 137 7931 Office: +27100126063
Location:	61 Katherine Street, Sandton South Africa
Website	www.greenbdgafrica.com