

Inspection Report Date: 03 November 2022  
 RMS EPC Inspector: Nikhil Naidoo

Certification Name: University of Johannesburg\_Library

**Client Information**

Company Name: University of Johannesburg  
 Building Name: Library

**Building Location**

Address 1: 326 Chris Hani Road, Soweto  
 City: Johannesburg  
 Province: Gauteng

**Client Representative**

Name: Masala Mbambeleli  
 Contact Number: (078) 667 1760  
 E-mail Address: mmasala@uj.ac.za

**Building Information (from SANS 10400-XA:2021)**

Energy Zone: 1  
 Occupancy Class: G1  
 Reference Energy Consumption: 110 \*  
 \*from SANS10400-XA : 2021

**Building Assessment Planning**

**Name and Surname of the person who represented the property owner during the site inspection:**

Masala Mbambeleli

Has the Inspector identified the person who will assist the Inspector during the assessment? Yes

Has the Inspector phoned the inspection assistant to inspection arrangements? Yes

Did the Inspector share the Building Assessment Method Statement with the Building Representative? Yes

Has the Inspector confirmed the site Health & Safety arrangements? No

**Details on when and how Building Assessment Method Statement was shared**

Shared by Nikhil Naidoo to the client rep

**Details on Health and Safety considerations**

General H&S considerations apply

**Confirmation by Building Representative:**

Year of Assessment Start: 2021/01/01  
 Year of Assessment End: 2021/12/31

**Building Operations**

During the Year of Assessment:

Single or Multiple Tenants? Single  
 Confirm Building Occupancy (%) 100%

**Energy Carriers**

During the Year of Assessment:

Did the building use grid supplied electricity? Yes  
 Did the building use solar PV electricity? No  
 Did the building use diesel fuel? Yes  
 Did the building use gas? No  
 Did the building use any solid fuel for energy? No  
 Was energy exported from the building? No

**Building Operating Hours**

	Start	End	hours/day	hours/week
Mon to Thurs	07:00:00	18:00:00	11	44
Fridays	07:00:00	18:00:00	11	11
Saturdays	00:00:00	00:00:00	0	0
Sundays	00:00:00	00:00:00	0	0
			<b>Total</b>	<b>55</b>

**Net Floor Area (are these on the plans?)**

Building layout during the year of assessment: Yes  
 Store rooms? Yes  
 Parking areas and basements? No  
 Outside areas? No  
 Vertical building elements? Yes

**Any further actions regarding floor plans?**

No further action required



Report Date	03 November 2022
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Energy Carrier: Grid Supplied Electricity

Consumption Source Data Bulk check meter data

Validations Checks		
Confirm meter location with reticulation diagram		Yes
Confirm meter existence and purpose with building rep		Yes
Compare Serial numbers (data file vs reticulation)		Yes
Check that data time-period is for Year of Assessment		Yes
Check data completeness (identify estimates)		Yes
Compare data with another data source		Yes
Visually inspect meter on site		Yes
Compare meter serial number (on meter) with other S/N		Yes

Results	
Consumption Unit of Measure	kWh
Annual Consumption Value	556 958
kWh per Annum	556 958

**Describe any other validation methods used**

A sensitivity analysis was done to check the impact of deviating the figure by 2% on the building EPC grade. This was found to have no impact on the EPC grade.

**Inspector comments from site assessment**

**List any further actions that may be needed:**

No further action required

Report Date	03 November 2022
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**Energy Carrier:** Solar PV Supplied Electricity

**Consumption Source Data** Energy source not in building

**Validations Checks**

Confirm meter location with reticulation diagram
Confirm meter existence and purpose with building representative
Compare Serial numbers (data file vs reticulation)
Check that data time-period is for Year of Assessment
Check data completeness (identify estimates)
Compare data with another data source
Visually inspect meter on site
Compare meter serial number (on meter) with other S/N

**Results**

Consumption Unit of Measure	kWh
Annual Consumption Value (Raw)	0
kWh per Annum	0

**Describe any other validation methods used**

Assumption used that the diesel footprint is 4% of the total energy footprint, tested in the sensitivity analysis to have no impact on the building grade.

**Inspector comments from site assessment**

Diesel genset had a built-in 1000 litre tank, refill rule at 20% capacity confirmed by client rep.

**List any further actions that may be needed:**

No further action required

Report Date	03 November 2022
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**Energy Carrier:** Diesel Fuel

<b>Consumption Source Data</b>	Another source
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Validations Checks	
Confirm invoices/delivery notes are for this building location	No
Confirm invoices/delivery notes are for the Year of Assessment	No
Inspect generator or other diesel consuming equipment	Yes
Inspect diesel storage facilities	Yes
Confirm diesel refilling rules	Yes

Results	
Consumption Unit of Measure	<i>kWh</i>
Annual Consumption Value (Raw)	-
MI/ per unit of measure	39
GJ per annum	-
kWh per Annum	-

**Describe any other validation methods used**

**Inspector comments from site assessment**

No diesel genset found by site

**List any further actions that may be needed:**

No further action required

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**Energy Carrier:** Gas

**Consumption Source Data** Energy source not in building

**Validations Checks**

Confirm invoices/delivery notes are for this building location
Confirm invoices/delivery notes are for the Year of Assessment
Inspect gas consuming equipment
Inspect gas storage facilities
Confirm gas refilling rules

**Results**

Consumption Unit of Measure	kWH
Annual Consumption Value (Raw)	0
MI/ per unit of measure	46.1
GJ per annum	0
kWh per Annum	0

**Describe any other validation methods used**

[Empty green box for validation methods]

**Inspector comments from site assessment**

[Empty green box for inspector comments]

**List any further actions that may be needed:**

No further action required

[Empty green box for further actions]

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**Energy Carrier: Solid Fuel**

<b>Consumption Source Data</b>	Energy source not in building
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**Validations Checks**

Confirm invoices/delivery notes are for this building location	
Confirm invoices/delivery notes are for the Year of Assessment	
Inspect generator or other diesel consuming equipment	
Inspect storage facilities	
Confirm refilling rules	

**Results**

Consumption Unit of Measure	kg
Annual Consumption Value (Raw)	0
MI/ per unit of measure	0.0
GI per annum	0
kWh per Annum	0

**Describe any other validation methods used**

**Inspector comments from site assessment**

**List any further actions that may be needed:**

No further action required

Report Date	03 November 2022
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**Energy Carrier:** Export Energy

**Consumption Source Data** Energy source not in building

**Validations Checks**

Confirm invoices/delivery notes are for this building location
Confirm invoices/delivery notes are for the Year of Assessment
Check whether readings are actual and not estimates
Inspect storage facilities
Check data against another source

**Results**

Consumption Unit of Measure	kg
Annual Consumption Value (Raw)	0
MI/ per unit of measure	0.0
GJ per annum	0
kWh per Annum	0

**Describe any other validation methods used**

**Inspector comments from site assessment**

**List any further actions that may be needed:**

No further action required





Report Date **03 November 2022**  
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**Building Details**

<b>Building Name</b>	Library
<b>Energy Zone</b>	1
<b>Reference Energy Consumption (kWh/m2.annum)</b>	110
<b>Year of Assessment Start</b>	01 January 2021
<b>Year of Assessment End</b>	31 December 2021
<b>Occupancy Class</b>	G1
<b>Occupancy Rate</b>	100%

**Energy Carriers**

<b>Total Energy Consumption (kWh)</b>	556 958
<b>Grid Electricity (kWh):</b>	556 958
<b>Solar PV Electricity (kWh):</b>	0
<b>Diesel Fuel (kWh):</b>	0
<b>Gas (kWh):</b>	0
<b>Solid Fuel (kWh):</b>	0
<b>Export Energy (kWh):</b>	0

**Building Energy Performance**

<b>Energy per Unadjusted Net Floor Area (kWh/m2.annum):</b>	116
<b>Energy per Adjusted Net Floor Area (kWh/m2.annum):</b>	116

**Building Performance**

Building Performance Scale (from SANS 1544)  
 Rating A: energy performance < 0.3Ereference  
 Rating B: 0.3Ereference <= energy performance < 0.6Ereference  
 Rating C: 0.6Ereference <= energy performance < 0.9Ereference  
 Rating D: 0.9Ereference <= energy performance < 1.1Ereference  
 Rating E: 1.1Ereference <= energy performance < 1.4Ereference  
 Rating F: 1.4Ereference <= energy performance < 1.7Ereference  
 Rating G: energy performance >= 1.7Ereference

**Additional Information**

<b>No of floors (excl parking):</b>	2
<b>Year of Construction:</b>	>2 years
<b>Year of Renovation:</b>	Within the past 2 years
<b>Date of Approved Plans:</b>	>2 years
<b>Cadastral (Erf no) Info:</b>	MANOR MP1&2 11KV WOODLANDS DRIVE

Signature: Inspector

**Net Floor Area**

<b>Total Net Floor Area</b>	4 760
<b>Excluded Area</b>	0
<b>Excluded Area % of Total</b>	0%

**Excluded Area Energy Consumption**

<b>Total Excluded Area Energy Consumption (kWh)</b>	2 988
<b>Net Energy = Total Energy - Exclusions = 556 958 - 2 988</b>	
<b>Equals (kWh)</b>	553 970
<b>Excluded Area Energy as % of Total</b>	1%

**Building EPC Calculation**

<b>Reference Energy (kWh/m2.annum):</b>	110
(from SANS 10400-XA:2021)	
<b>Variance = 116 - 110</b>	
<b>Equals (kWh/m2.annum):</b>	6
<b>Actual/Reference Energy = 116 / 110</b>	
<b>Equals:</b>	1.06
<b>Provisional Building Rating:</b>	<b>D</b>

Signature: Client

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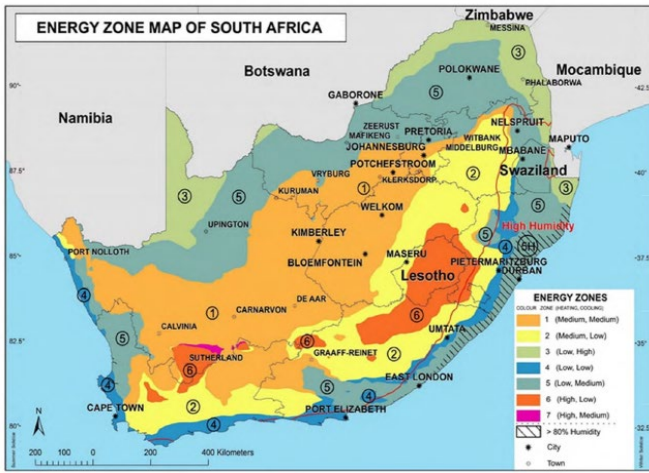


Table 1 — Maximum annual energy consumption per building classification for each energy zone (kWh/m<sup>2</sup>/a) (Energy zones as shown in figure 1 and annex C)

1 Class of occupancy	2 Energy zones							
	1	2	3	4	5	5H	6	7
<b>A1</b> <b>Entertainment and public assembly</b> Occupancy where persons gather to eat, drink, dance or participate in other recreation.	75	75	95	70	95	95	80	80
<b>A2</b> <b>Theatrical and indoor sport</b> Occupancy where persons gather for the viewing of theatrical, operatic, orchestral, choral, cinematographical or sport performances.	95	95	110	90	110	110	105	105
<b>A3</b> <b>Places of instruction</b> Occupancy other than primary or secondary schools, where students or other persons assemble for the purpose of tuition or learning.	110	155	110	125	140	140	120	120
<b>A3</b> <b>Places of instruction</b> Occupancy where school children assemble for the purpose of tuition or learning	60	65	65	60	65	60	65	65
<b>A4</b> <b>Worship</b> Occupancy where persons assemble for the purpose of worshipping.	70	45	45	40	50	40	70	70
<b>E2</b> <b>Hospital</b> Occupancy where people are cared for or treated because of physical or mental disabilities and where they are generally bed-ridden.	325	335	225	295	295	230	345	345
<b>E3</b> <b>Other institutional (residential)</b> Occupancy where groups of people who either are not fully fit, or who are restricted in their movements or their ability to make decisions, reside and are cared for	120	95	90	90	100	80	130	130
<b>F1</b> <b>Large shop</b> Occupancy where merchandise is displayed and offered for sale to the public and the floor area exceeds 250 m <sup>2</sup> .	125	200	155	180	185	150	125	125
<b>F2</b> <b>Small shop</b> Occupancy where merchandise is displayed and offered for sale to the public and the floor area does not exceed 250 m <sup>2</sup> .	75	150	100	125	130	95	80	80

Table 1 (concluded)

1 Class of occupancy	2 Energy zones							
	1	2	3	4	5	5H	6	7
<b>F3</b> <b>Wholesaler's store</b> Occupancy where goods are displayed and stored and where only a limited selected group of persons is present at any one time.	125	200	155	180	185	150	125	125
<b>G1</b> <b>Offices</b> Large multi-storey office buildings, banks, consulting rooms and similar uses with lifts and energy consuming services that operate on a typical daytime occupancy.	90	105	110	95	110	95	100	100
<b>G1</b> <b>Offices</b> Stand-alone blocks and / or campus of buildings that form an office park but operate separately	70	150	190	145	180	165	75	75
<b>H1</b> <b>Hotel</b> Occupancy where persons rent furnished rooms, not being dwelling units.	125	130	100	115	125	95	140	140
<b>H2</b> <b>Dormitory</b> Occupancy where groups of people are accommodated in one room	155	170	160	175	160	160	180	180
<b>H3</b> <b>Domestic residence</b> Occupancy consisting of two or more dwelling units on a single site.	90	100	50	80	85	60	110	110
<b>H4</b> <b>Dwelling house</b> Occupancy consisting of a dwelling unit on its own site, including a garage and other domestic outbuilding, if any.	95	100	50	80	85	60	110	110
<b>H5</b> <b>Hospitality</b> Occupancy where unrelated persons rent furnished rooms on a transient basis within a dwelling house or domestic residence with sleeping accommodation for not more than 10 persons within a dwelling unit	120	130	110	120	115	135	135	135