



Client:

public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

Department of Public Works

MOTOR LICENCING BUREAU (MLB BUILDING)

ELECTRICAL CONDITIONAL ASSESSMENT REPORT

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First Issue

Prepared by:



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**Department of Public Works &
Infrastructure**

CONTENTS

1. INTRODUCTION	2
2. PROJECT Location	2
3. ASSESSMENT criteria	3
4. SCOPE OF WORKS.....	3
5. Design Standards	4
6. ELECTRICAL INSTALLATION	4
6.3.1 LV Distribution	4
6.3.2 Generator	5
6.3.3 Lighting	6
6.3.4 Emergency Lighting:	7
6.3.5 Switched socket outlets	7
7. TELEPHONE and data	7
8. CCTV	7
9. FIRE DETECTION	8
10. UPS System.....	8
11. RISK REPORT	9
12. ESTIMATED costs.....	10

1. INTRODUCTION

Matla Consulting (Pty) Ltd were appointed by The Department of Public Works & Infrastructure to perform Electrical Engineering services for Motor Licencing Bureau (MLB)

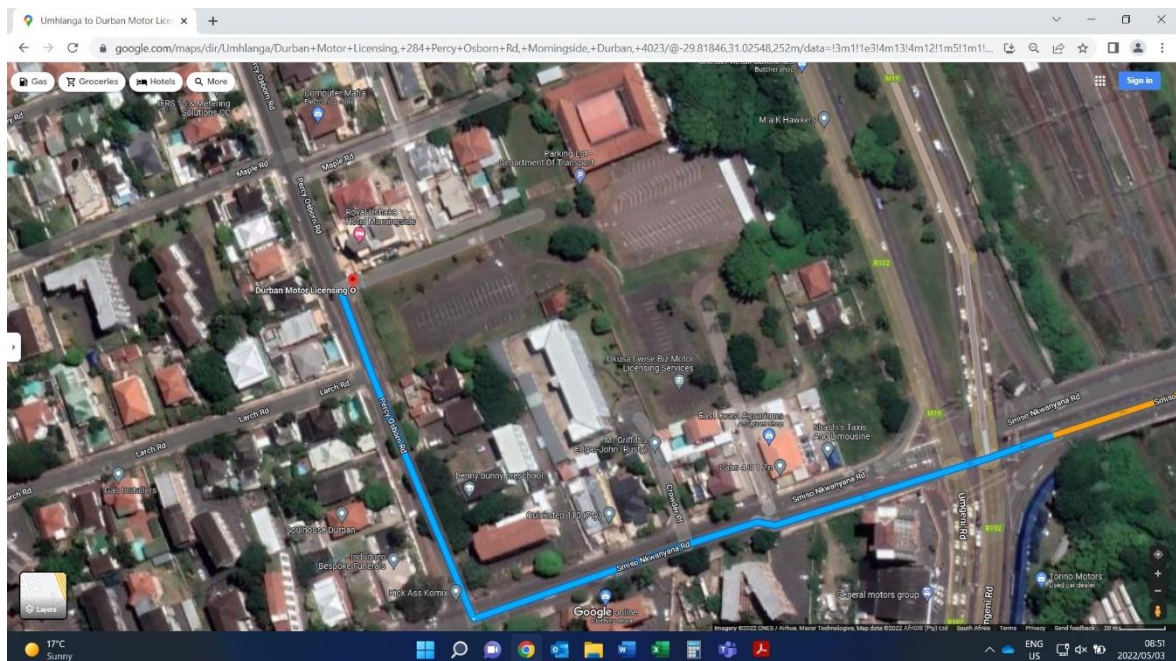
The purpose of this Report is to establish / confirm the Client's requirements, establish the project brief and objectives, methodology, budget and to highlight the status of the design considerations.

In essence the report will form the basis of the Scope of Work and Services required on the project.

This Design Report is a record of all the technical aspects, alternatives and decisions made during the design process for this project.

2. PROJECT LOCATION

The proposed site is located withinteh Kwa-zulu Natal, Durban area and falls under the eThekwini Municipality.



Local Municipality	eThekwini Municipality	
City/Town	Durban	
Site Co-ordinates	Latitude	Longitude
	29°49'04.5"S	31°01'32.3"E

3. ASSESSMENT CRITERIA

The information to compile this report was obtained as follows:

- Sketch for buildings as received from the Architect.
- Discussions held with Department of Public Works.

4. SCOPE OF WORKS

The following sections of work are included as per the original appointment letter:

- Repairs and renovations to the roof that will ultimately affect electrical infrastructure

The following sections of work are included as per the on-site meeting held with DPW representative:

➤ Refurbishment of the Motor licencing bureau building to include the following:

- Conditional assessment of the Electrical connection
- Removal of existing electrical infrastructure
- New LV switchboards, distribution boards and electrical supply cables.
- General Power and lighting installations
- Lightning protection and earthing
- Conditional assessment of the current Generator installation
- Power supply to mechanical equipment
- Wireways for ancillary systems i.e., telephone and data, CCTV and Fire Detection
- CCTV & Access Control
- Fire Detection & Evacuation System
- Car Park Lighting
- Telephone and data

The following sections of work are **not** included:

- Printers, Computers, and fax machines
- Public address system
- TV Aerials
- Solar installation
- Ceiling fans
- Hydro-boils & Geysers
- Electric Fencing
- Intruder alarm system
- Ticketing system

5. DESIGN STANDARDS

Design of the electrical system/s and associated ancillary systems will be conducted in accordance with the requirements of the relevant SABS Codes of Practice and National Building Regulations.

All equipment chosen or recommended in the design will comply with the current SABS or other international standards, if applicable and will be suitable for use under the conditions applicable to the site.

The lighting design will comply with the current OSH ACT requirements.

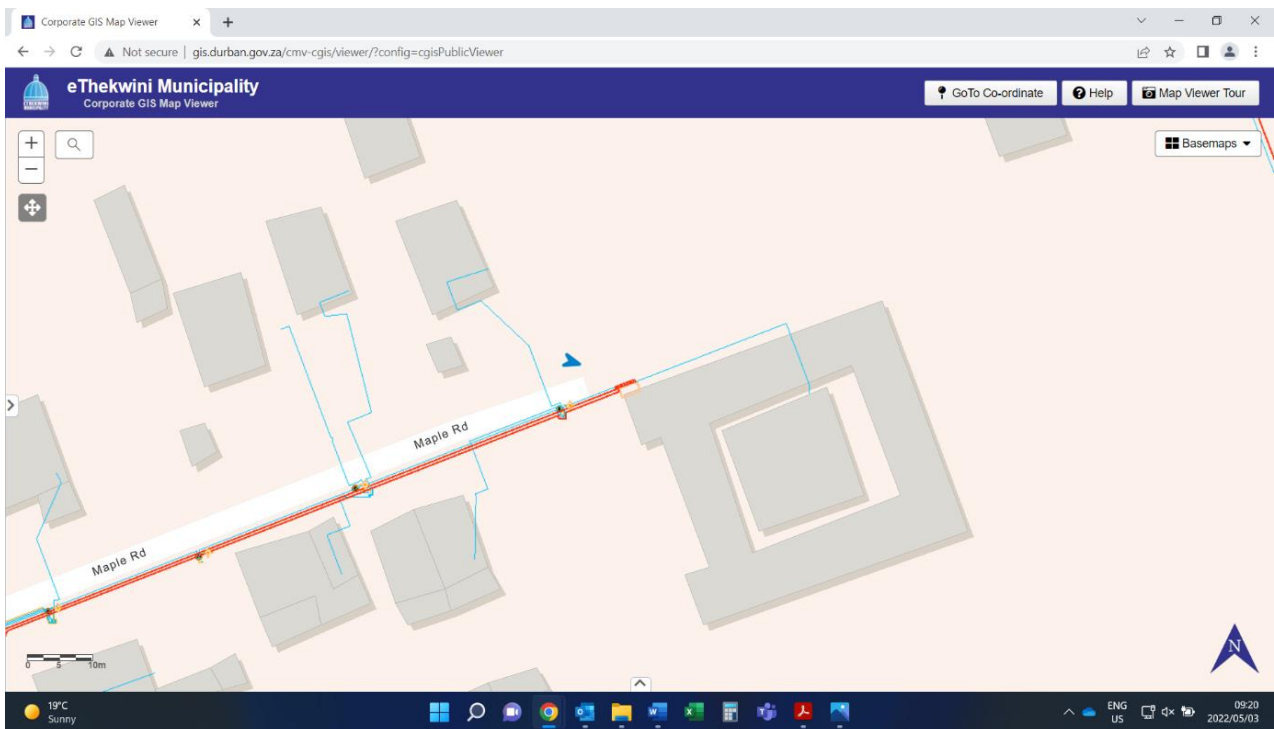
6. ELECTRICAL INSTALLATION

6.3.1 LV Distribution

The facility is currently fed from the local municipality via an existing mini sub (PICTURE A) located in proximity of the MLB Building and from the site inspection deems to have a 400 Amp, 400 V, three phase supply. The mini sub appears to supply adjacent buildings and not only dedicated to the MLB building (PICTURE B).



PICTURE A

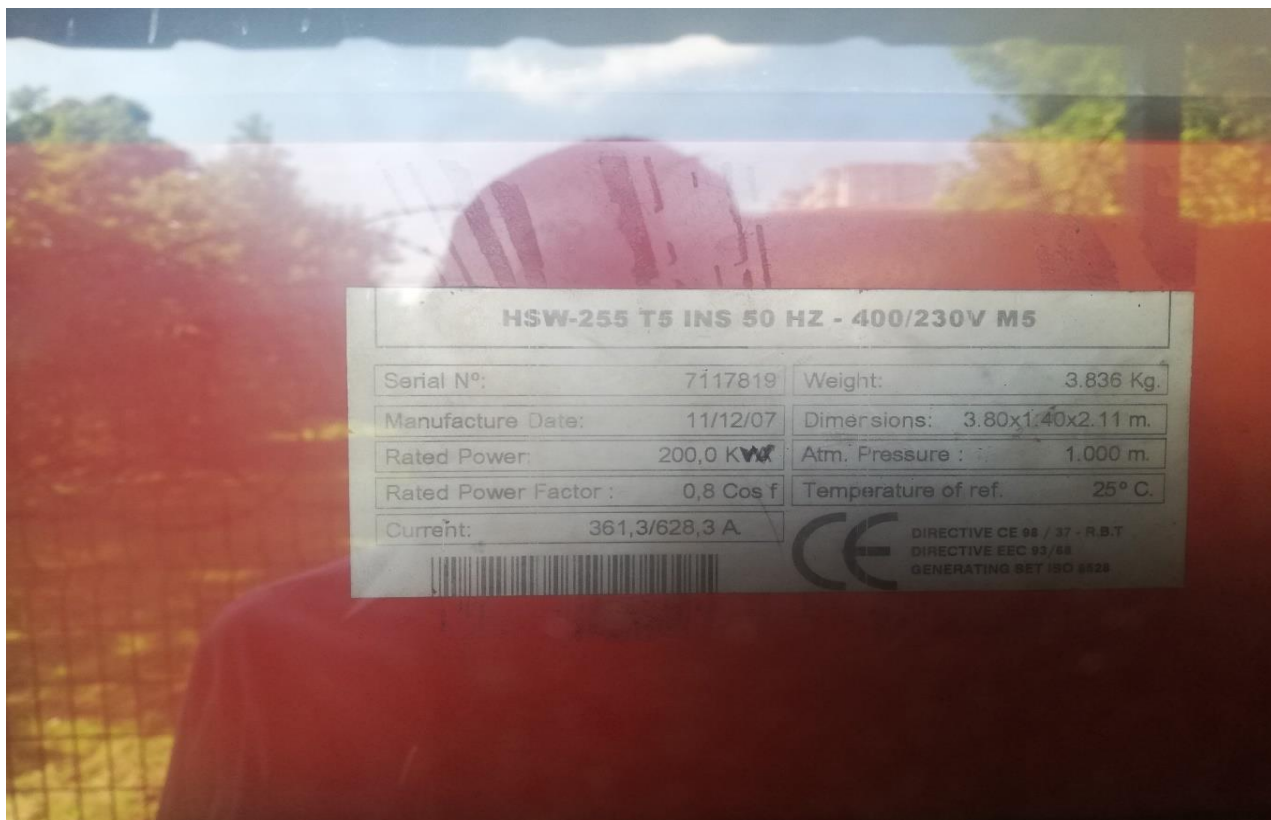


PICTURE B

6.3.2 Generator

Important to note that there is an outdoor existing generator on site and the assumption is that the entire facility is currently on back-up power with no differentiation between normal power and emergency power. The generator has been serviced regularly.





The main cable from the generator change-over switch enters the main dB located on the ground floor thereafter the main board supplies various sub-boards. The boards are currently in a dilapidated state. The mains cable would need to be tested to ensure that it is in satisfactory working condition.

6.3.3 Lighting

The lighting within the building is of the fluorescent type with some not operational. Currently it is the assumption that had the building been occupied the lighting would not meet lux level requirements. The requirements are indicated below.

The lighting levels in typical areas will be as follows:

Office areas	-	500 lux
Computer rooms	-	300 to 500 lux
Active storage areas	-	200 lux
Toilet W/C areas	-	200 lux
Kitchen	-	300 to 500 lux
Staff Room	-	300 lux
Passages	-	100 to 200 lux
Filing areas	-	300 lux

6.3.4 Emergency Lighting:

There are no luminaires present for emergency escape lighting in the case of fires or total loss of power.



6.3.5 Switched socket outlets

There are plug points and power skirtings to which some are currently being utilised. There are no new regulation plug points installed.

7. TELEPHONE AND DATA

The system is currently operational at the time of inspection and will need to be tested. The equipment is in a dilapidated state and would need to be replaced.

8. CCTV

There is evidence of an CCTV installation however the system is non-operational. The monitors and equipment could not be located.



PICTURE INDICATING CCTV CAMERA

9. FIRE DETECTION

There is no evidence of a fire detection system being installed.

10. UPS SYSTEM

There is currently a UPS system installed which supplies power to limited plug points and to the ancillary equipment. The system would have to be tested to ensure proper working condition.

11.RISK REPORT

Risk Cat.	Item	Cause	Effect	Impact	Response Actions	Resp. Entity
UNKNOWN	The building does meet current regulatory standards in terms of energy efficiency and lighting levels	Lack of Maintenance	Impact on working conditions	HIGH	All lighting to be replaced with energy efficient lighting	DPW
Maintenance	dBs in dilapidated state	UNKNOWN	Impact on working operations	MED	Ensure maintenance knows the proper procedure	DPW
Design	Fire Detection	Not installed	Injury/Death in the case of a fire	HIGH	Install a fire detection system	PSP, DPW
Maintenance	Generator	No bund wall to contain any spillage of diesel	Environmental impact	HIGH	Install a bund wall to contain the full volume of diesel	DPW
Maintenance	No labels to indicate dB being fed from generator	UNKNOWN	Electrocution of personal working on the dB's if they are unaware that the building is being fed from a generator	HIGH	Ensure maintenance knows the proper procedure. Labels to be placed in dB's	DPW
Maintenance	Plug points need to be tested for earthing	Prolonged usage. Some of the plug points come loose from the power skirting	Exposed live wiring	HIGH	Replace all power skirting and plug points	DPW

12. ESTIMATED COSTS

The costs indicated below are to undertake the following scope of work

- Test all existing cabling and distribution boards
- Strip all existing electrical infrastructure
- Install new electrical infrastructure
- Ancillary Equipment i.e., Telephone & Data, CCTV and Fire Detection
 - Remove Existing Infrastructure
 - Install new infrastructure
- Excludes any changes to interiors which will necessitate a change to electrical infrastructure

No.	Description	Base Installation				Accumulative
		Unit	Qty	Rate	Total	
Ground Floor						
1	LV INFRASTRUCTURE					
2	Test Main Cable	No.	1	R 15 000,00	R 15 000,00	
3	Test Ancillary Cables	No.	1	R 15 000,00	R 15 000,00	
4	Test existing dB's	No.	4	R 3 500,00	R 14 000,00	
5	Strip Equipment	Sum	1	R 35 000,00	R 35 000,00	
6	Provide Report	Sum	1	R 15 000,00	R 15 000,00	
7	As-Builts	No.	1	R 10 000,00	R 10 000,00	
8						
9	LV INFRASTRUCTURE TOTAL				R 104 000,00	R 104 000,00
10						
11	SMALL POWER & LIGHTING					
12						
13	Distribution Board					
14	- Emergency	No.	2	R 10 000,00	R 20 000,00	
15	- UPS	No.	2	R 5 000,00	R 10 000,00	
16	- Inverters and Batteries	No.	2	R 5 000,00	R 10 000,00	
17	Cable Trays	No.	152	R 550,00	R 83 600,00	
18	Conduit	no.	50	R 15,00	R 750,00	
19	Power Skirting	No.	200	R 450,00	R 90 000,00	
20	House wiring	m	1206	R 20,00	R 24 120,00	
21	Light switches	No.	40	R 250,00	R 10 000,00	
22	Plug Points					
23	- Dedicated	No.	40	R 350,00	R 14 000,00	
24	- Normal	No.	40	R 250,00	R 10 000,00	
25	- UPS	No.	20	R 230,00	R 4 600,00	
26	Lighitng	Sum	1	R 80 000,00	R 80 000,00	
27	Certificate of Compliance (CoC's)	Sum	1	R 1 500,00	R 1 500,00	
28	Earthing & Bonding	Sum	1	R 2 500,00	R 2 500,00	
29	As-Builts	Sum	1	R 2 500,00	R 2 500,00	
30	SMALL POWER & LIGHTING - TOTAL	No.			R 571 570,00	R 675 570,00
31						
32	ADDITIONAL ITEMS TOTAL					
33						
34	ELECTRONIC/SECURITY SYSTEMS					
35	Fire Detection	Sum	1	R 80 000,00	R 80 000,00	
36						
37	Telephone & Data	Sum	1	R 120 000,00	R 120 000,00	
38						
39	CCTV	Sum	1	R 55 000,00	R 55 000,00	
40						
41	ELECTRONIC/SECURITY SYSTEMS TOTAL				R 255 000,00	R 930 570,00
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57	TOTAL					R 930 570,00

Notes

- 1 **Costs exclude the following:**
 - 1.1 VAT
 - 1.2 Professional Fees
 - 1.3 Any upgrade to power supplies
 - 1.4 Any upgrade to the generator
 - 1.5 Escalation
 - 1.6 Connection Costs
 - 1.7 P&G's

No.	Description	Base Installation				Accumulative
		Unit	Qty	Rate	Total	
First Floor						
1	LV INFRASTRUCTURE					
2	Test Ancillary Cables	No.	1	R 15 000,00	R 15 000,00	
3	Test existing dB's	No.	2	R 3 500,00	R 7 000,00	
4	Strip Equipment	Sum	1	R 35 000,00	R 35 000,00	
5	Provide Report	Sum	1	R 15 000,00	R 15 000,00	
6	As-Builts	No.	1	R 10 000,00	R 10 000,00	
7						
8						
9	LV INFRASTRUCTURE TOTAL				R 82 000,00	R 82 000,00
10						
11	SMALL POWER & LIGHTING					
12						
13	Distribution Board					
14	- Emergency	No.	2	R 10 000,00	R 20 000,00	
15	- UPS	No.	2	R 5 000,00	R 10 000,00	
16	- Inverters and Batteries	No.	2	R 5 000,00	R 10 000,00	
17	Cable Trays	No.	152	R 550,00	R 83 600,00	
18	Conduit	no.	50	R 15,00	R 750,00	
19	Power Skirting	No.	250	R 450,00	R 112 500,00	
20	House wiring	m	1356	R 20,00	R 27 120,00	
21	Light switches	No.	27	R 250,00	R 6 750,00	
22	Plug Points					
23	- Dedicated	No.	27	R 350,00	R 9 450,00	
24	- Normal	No.	27	R 250,00	R 6 750,00	
25	- UPS	No.	15	R 230,00	R 3 450,00	
26	Lighitng	Sum	1	R 80 000,00	R 80 000,00	
27	Certificate of Compliance (CoC's)	Sum	1	R 1 500,00	R 1 500,00	
28	Earthing & Bonding	Sum	1	R 2 500,00	R 2 500,00	
29	As-Builts	Sum	1	R 2 500,00	R 2 500,00	
30	SMALL POWER & LIGHTING - TOTAL	No.			R 540 870,00	R 622 870,00
31						
32	ADDITIONAL ITEMS TOTAL					
33						
34	ELECTRONIC/SECURITY SYSTEMS					
35	Fire Detection	Sum	1	R 35 000,00	R 35 000,00	
36						
37	Telephone & Data	Sum	1	R 65 000,00	R 65 000,00	
38						
39	CCTV	Sum	1	R 35 000,00	R 35 000,00	
40						
41	ELECTRONIC/SECURITY SYSTEMS TOTAL				R 135 000,00	R 757 870,00
42						
43						
44						
45						
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56						
57	TOTAL					R 757 870,00

Notes

- 1 **Costs exclude the following:**
 - 1.1 VAT
 - 1.2 Professional Fees
 - 1.3 Any upgrade to power supplies
 - 1.4 Any upgrade to the generator
 - 1.5 Escalation
 - 1.6 Connection Costs
 - 1.7 P&G's

