



**Project Report in Respect of  
Prince Buthelezi Shopping Mall, Empangeni**

**Monday, 6 October 2025**

**STANDBY SYSTEM IMPLEMENTATION  
(Subject to Approval)**

**Prepared for:**

**Moolman Group  
1st Floor, Baobab House, Eastwood Office Park  
290 Lynnwood Service Road, Lynnwood Ridge  
PRETORIA  
0081**

**Attention:** Mr. Hermann Stassen  
Tel.: (012) 361 7970 ext 235  
E-mail: hermann@moolmangroup.co.za

**Prepared by:**

**WATSON MATTHEUS CONSULTING  
ELECTRICAL ENGINEERS (PTY) LTD**  
141 Witch Hazel Avenue  
Building 1A, Highveld Techno Park  
Centurion, Gauteng  
Tel.: (012) 665 3487  
www.wmeng.co.za



**Enquiries:** **Project Manager**  
Mr. Arno Mattheus  
Tel.: (012) 665 3487  
E-mail: arno@wmeng.co.za

Document No.	Revision	Regulation	Creation date	Print date
636/7/001	4	Confidential	30/03/2025 22:24	

Document No.	Revision	Regulation	Creation date	Print date
636/7/001	4	Confidential	30/03/2025 22:24	



## Moolman Group

### Project Report in Respect of Prince Buthelezi Shopping Centre, Empangeni Standby System Implementation

#### LIST OF TERMS

The following terms and abbreviations are listed in the order as they appear in the text:

VA/m <sup>2</sup>	Volt-amperes per square metre.
BO	Beneficial occupation.
kWh	Kilowatt-hours.
%	Percentage.



## Moolman Group

### Project Report in Respect of Prince Buthelezi Shopping Centre, Empangeni Standby System Implementation

#### CONTENTS

<b>1. INTRODUCTION AND BACKGROUND</b>	<b>1</b>
1.1. Approval	1
<b>2. LOAD PROVISION</b>	<b>1</b>
<b>3. DISTRIBUTION BOARDS AND CIRCUIT VERIFICATION</b>	<b>1</b>
3.1. Tenants whose distribution boards will be supplied by the landlord	1
3.2. Tenants who opt to supply their own distribution boards	2
<b>4. DISTRIBUTION BOARDS AND CONTROL</b>	<b>2</b>
<b>5. TENANT TRACKING SCHEDULE</b>	<b>2</b>
5.1. Billing	2
<b>6. APPENDICES</b>	<b>3</b>
6.1. Appendix A: Forecast cash outlay	3
6.2. Appendix B: Forecast capital recovery	3
6.3. Appendix C: Load allocation	3



## Moolman Group

### Project Report in Respect of Prince Buthelezi Shopping Centre, Empangeni Standby System Implementation

#### 1. INTRODUCTION AND BACKGROUND

Prince Buthelezi Mall will need to be supplied with standby plants, sized to cater for essential services (that include essential small power and lighting) and for any extra allowances in the event of a mains power failure so that the tenants can continue operating their vital business functions.

Tenants who will be supplying their own standby plants based on their individual specifications will be excluded from this system.

##### 1.1. Approval

Enclosed with, and forming part of this report is the Form of Report Document Approval. Acceptance is confirmed by signature of approval thereto by Moolman Group.

#### 2. LOAD PROVISION

The emergency supply made available to each tenant will be limited. These supplies will be predominantly single phase, however the option for three phase power will be available upon request.

A standard single-phase load of 30VA/m<sup>2</sup> per shop tenant and of 45VA/m<sup>2</sup> per restaurant tenant will be supplied which has been determined to be sufficient for the supply of till points as well as for general trade lighting.

No provision has been made to cater for air-conditioning; however, fresh air will be allowed for.

Additionally, the supply allocated to each tenant will be reviewed and customised, if necessary, to account for any specific exceptions that may be required.

#### 3. DISTRIBUTION BOARDS AND CIRCUIT VERIFICATION

Each tenant would be required to issue an electrical circuit layout that clearly reflects what supplies would be required to remain active in the event of a mains power failure. These layouts need to be circulated for approval prior to the fit-out of the shop for clear record keeping and tracking purposes.

The electrical installation and circuit details for each individual tenant unit will need to be verified, upon beneficial occupation (BO), between the electrical contractor, the tenants themselves and the tenant coordinator when all are present. Based upon these verified configuration requirements for each tenant, specific circuit breakers will be tested and then set to remain switched on or off after the relevant witnessing of test requirements with all the parties present.

Tenants undertaking their own internal electrical installations will need to inform the tenant coordinator upon completion of their work for final inspection and sign off based on the layouts to be carried out.

Each tenant will be required to sign an acceptance and confirmation form for their required wiring/circuit configuration which will be placed on record. This form will be part of the beneficial occupation handover pack.

##### 3.1. Tenants whose distribution boards will be supplied by the landlord

Distribution boards supplied by the landlord will have all the required control systems in place. Each board will also be split into two sections, namely into non-essential and essential sections. These sections will define which circuits will receive standby power in the event of a power failure.

### **3.2. Tenants who opt to supply their own distribution boards**

Tenants opting to supply their own distribution boards will be supplied with a connection panel in their shop that houses the required control wiring. These connection panels will make provision for the non-essential supplies and essential supplies to be connected. Supply cabling from this connection panel to the tenant's board will also be provided and terminations will be made by the landlord's electrical contractor. Furthermore, the tenant's boards will be visually inspected to ensure compliance.

Tenants opting to supply their own distribution boards will need to circulate a detailed line diagram of their boards which ties back to their circuited power and lighting drawings. These line diagrams in conjunction with the layouts will need to be approved prior to the manufacturing process of these boards. Failing to have these approved prior to installation will result in the equipment being rejected and any costs thereof will be for the tenant's account.

Line diagram layouts will need to clearly reflect the following to be approved:

- a. Main supply isolator size for the non-essential section: relevant circuits are to be connected to this section based on the layouts, and
- b. Main supply isolator size for the essential section: relevant circuits are to be connected to this section based on the layouts.

## **4. DISTRIBUTION BOARDS AND CONTROL**

Each distribution board will have control wiring which will disconnect non-essential loads in the event of a power failure. In the event of any tampering with this control wiring the following will result:

- a. Control and verification switching will be turned off preventing any emergency power from being received in the event of a power failure.
- b. Tenants will be billed based on the approved increased tariff for kilowatt-hours (kWh) consumed from the standby plant. This will take place should any of the other measures taken fail to be executed.

The above will remain in place until such time the wiring has been corrected and verified by the landlord's engineer.

## **5. TENANT TRACKING SCHEDULE**

Tenants who elect to be connected to the system will be placed on a tracking schedule. This tracking schedule will allow the landlord to do the necessary switching and verifications of each tenant. This verification process will take place 30 days prior to the opening of the centre.

Photographic record will be kept in terms of switching control per tenant which will be managed by the tenant coordinator for record keeping purposes. The foregoing will be circulated to all relevant parties after the completion of the verification.

### **5.1. Billing**

The required annexures and agreements will be circulated by the landlord's leasing team detailing rates and tariffs.

Upon acceptance by the tenants, these shop names and numbers will be circulated and added to the tracking schedule.

## **6. APPENDICES**

The following describe the system hereby proposed in terms of the above requirements concerning the standby generator banks and their sizes:

### **6.1. Appendix A: Forecast cash outlay**

An amount of R3.54 million has been forecast as the total capital cost for the implementation of four generators of size of 250kVA each, that are to be organised as two generator banks (being two generators per bank).

### **6.2. Appendix B: Forecast capital recovery**

A capital recovery forecast showing illustrative figures over a ten-year period provides a general view of the monthly repayments envisaged. As shown, it is estimated that a monthly amount of R46,545 would need to be paid back at an interest rate of 12.00% over the ten years so that the initial capital outlay stated in Appendix A would be fully redeemed.

### **6.3. Appendix C: Load allocation**

As indicated therein there are two generator banks proposed for the Scheme (i.e., one bank supplying Sector 1 and the other supplying Sector 2). A pro-rata breakdown of the total monthly payback amount of the said R53,009 has been determined for each tenant, in terms of their respective floor area sizes and whether they are shops or restaurants. The contributions ascribed to each tenant as shown would be included as part of the monthly rental costs of their premises.



## Moolman Group

### Project Report in Respect of Prince Buthelezi Shopping Centre, Empangeni Standby System Implementation

#### **Appendices**

#### **Financial and Load Allocation Data**



Date: 2025/10/06

Revision: 4

Project: Prince Buthelezi Mall, Empangeni

1	TOTAL CAPITAL COST			R3 594 200,00
2	GENERATOR 1	250	kVA	R824 300,00
3	GENERATOR 2	250	kVA	R824 300,00
4	GENERATOR 3	250	kVA	R824 300,00
5	GENERATOR 4	250	kVA	R824 300,00
6	Cabling			R55 000,00
7	Board Modifications			R176 000,00
8	Control wiring			R66 000,00
	Diesel cost	RAND		R23,00
	Running Hours	ESTIMATION		100
	Monthly Capital Repayment	CALC		R53 009,71
	DIESEL RECOVERY	RAND		
	GENERATOR 1			R4,51

DIESEL CONSUMPTION COST		STANDBY PLANT 1
Running Load (Correction already made in sizing)		75%
Net energy generated (usable kVA)		1200
Convert kVA to kWh		0,95
Net total energy generated (usable kWh)		1 140,00
FUEL CONSULPTION		
Assumed running load on generators		75%
Fuel Consumption @ 75%		200,55
Cost of diesel per litre	R	23,00
Total cost of diesel per hour	R	4 612,65
Monthly diesel cost /kWh		R 4,05
MAINTENACE COST		
Cost of servicing units per year	R	18 800,00
Months		12,00
<b>Cost of servicing units per month</b>	<b>R</b>	<b>1 566,67</b>
Cost of Servicing units per 250 hours	R	18 800,00
Expected hours per Month		100,00
<b>Cost of servicing units per month</b>	<b>R</b>	<b>7 520,00</b>
Additional Cost of Servicing - above Annual Cost	R	5 953,33
Total Services cost per kWh(Excluding Annual Service)		R 0,05
Total Cost per kWh		
TOTAL FUEL COST		R4,05
TOTAL MAINTENANCE COST		R0,05
TOTAL TARIFF FOR USE KWH		R4,10
MAINTENANCE CONTINGENCY		R0,41
TOTAL TARIFF FOR USE KWH		R4,51

ALLOWANCES PER GENERATOR SECTOR:			
Total reserved for small power and lighting (kVA)	310,71	396,36	
Common area allowances (kVA)	0,00	0,00	
Total expected generator usage (kVA)	310,71	396,36	
Step load and power factor adjustments (kVA)	20,00	20,00	
Total expected demand at each bank (kVA)	330,71	416,36	
TOTAL EXPECTED STANDBY SYSTEM DEMAND:			
Total demand (for all generator banks) (kVA)	747,07		
ASSUMED STANDBY CONSUMPTION RATES:			
Unit consumption per shop (VA/m <sup>2</sup> )	30		
Unit consumption per restaurant (VA/m <sup>2</sup> )	45		
PROVISION FOR COMMON AREA AND ADJUSTMENT ALLOWANCES:			
Total for common area and adjustments (kVA)	40		(See Note 1)
Forecast total monthly capital recovery expenses	R53 009,71		
For common area and adjustments	5,35%	R2 838,27	(See Note 2)
Small power and lighting of total demand	93,52%	R49 574,33	(See Note 3)
Check totals	98,87%	R52 412,61	(See Note 4)

Note 4: Total overall consumption confirmed to be 100% and the total calculated monthly cost agrees with the forecast total monthly capital recovery cost.