

Our Reference : RDV2247\A\Z01

Date : 20 November 2015

The Project Manager  
Messrs Richter & Malan Architects and Project Manager  
Postnet Suite 52  
Private Bag x7297  
**EMALAHLENI**  
1035

**FOR ATTENTION : MRS MARNIE MALAN**

Dear Madam

**REMAINDER OF PORTION 12 OF THE FARM WEMMERSHUIS 379 AND  
REMAINDER OF THE FARM BERGENDAL 981. REGISTRATION DIVISION J.T PROVINCE  
MPUMALANGA : ELECTRICAL SERVICES REPORT**

**1. INTRODUCTION**

**1.1. Background**

RDV Consulting Electrical Engineers have been appointed as the Consulting Electrical Engineers on the Project as mentioned above.

**1.2. Locality of site**

The Developer intends to develop the remainder of portion 12 of the farm Wemmershuis 379 and the remainder of the farm Bergendal 981.



### **1.3. Guideline Documents and Standards**

The following guidelines and documentations will be used as design standards and as technical references for the project :

- 1.3.1 The code of practice of the wiring of premises, SABS 0142 where applicable.
- 1.3.2 The Occupational Health and Safety Act, act 85 of 1993, as amended.
- 1.3.3 The Municipal by-laws and special requirement of the supply authorities of the area or district concerned.
- 1.3.4 The regulation of the local Fire Department.
- 1.3.5 The regulation of the Post Office and Telkom.
- 1.3.6 The National Building Regulations and Building Standards Act, Act 103 of 1977 and SABS 0400 of 1990.

### **2. MUNICIPAL BULK CONNECTION CONTRIBUTION :**

No Electrical bulk connection contribution will be payable to the Local Municipality as the development falls within the Eskom distribution area.

### **3. POWER REQUIREMENTS OF THE DEVELOPMENT :**

RDV submitted an application to Eskom for the intrim MV load of 1200kVA, which is currently available on the Eskom distribution network in the area.

If additional load is required, it would require the upgrade of the Eskom substation in Belfast. Therefore RDV Consulting discussed this with Eskom and accepted the offer to take the available 1200kVA until such time that additional capacity is required.

If and when additional capacity is required, an additional application will be lodged to Eskom.

### **4. ESKOM AS SUPPLY AUTHORITY :**

Eskom shall provide the bulk electricity connection point, which is an existing point on the development land (Eskom Pole BELW 45/36/14). Should it be required, the electrical point shall have to be upgraded in the future as the demand of the development increases.

Eskom's responsibility shall only consist of the electrical supply up to and including the metering installed at the supply point. The Mlangeni Family Trust home owners association shall be responsible for maintenance and upkeep of the electrical reticulation system.

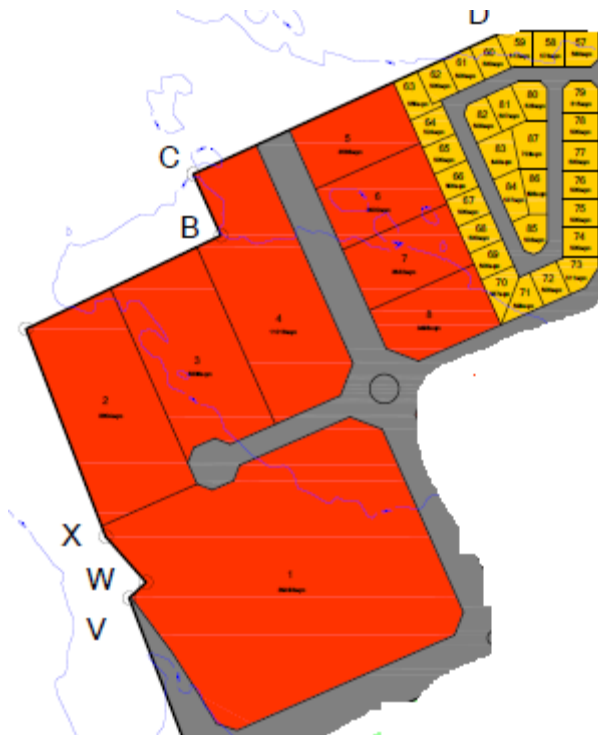
Although this development falls within the Municipal Electrical supply area, Emakhazeni Local Municipality recommended that we apply to Eskom for a connection from their existing network as the Municipality has no electrical services within the Development areas.

## 5. ESTIMATED MAXIMUM DEMAND :

The estimated demand of Phase 1 the development is calculated as follows :

ITEM	DESCRIPTION	ESTIMATED REQUIRED	CAPACITY
1	Shopping centre (Mall)	500kVA	
2	Mixed use (7 stands x 50kVA)	350kVA	
3.	Residential 1 stands (31 stands x 5kVA)	155kVA	
4.	<b>TOTAL</b>	<b>1005kVA</b>	

The capacity can be utilized to serve the following areas :



## 6. MAXIMUM DEMAND :

The maximum demand for the development is estimated at 1005kVA, assuming that each residential stand is supplied with an ADMD of 5kVA. In order to attain this low power consumption target, electrical energy saving equipment must be part of this development. This includes gas stoves, gas or solar geysers, fireplaces instead of underfloor heating, and photovoltaic panels/wind turbines to charge inverters.

## **7. DESIGN METHODOLOGY AND VARIABLES**

### **7.1 Supply Voltage**

The supply voltage to the Development will be 11kV.

### **7.2 Reticulation Methodology**

The medium voltage (11kV) reticulation to the development will be done by means of underground 11kV, XLPE copper cables and a suitably rated miniature substation..

The low voltage reticulation (400V/231V) will be done by means of underground copper cables to distribution kiosks in the street, and 16mm<sup>2</sup> x 3 core cables to the site boundary of residential stand\unit.

Each residential service connection shall be protected with a single pole, 63 Amp, 5kA standard curve circuit breaker in the distribution kiosks.

### **7.3 Area Lighting**

The streetlighting on the main street will be done by means of 10.5m galvanized steel poles with an 1,5m outreach and 250W HPS luminaire. Secondary street will be done by means standard post top luminaries 70W HPS on galvanized steel poles and\or black powder coated poles with a mounting height of 5m are specified.

## **8. LOAD BALANCING :**

Load balancing of the development will be carried out at each kiosk as well as at the transformer during peak periods.

## **9. PROVISION OF TELKOM INSTALLATION**

An application will have to be lodged with Telkom to confirm availability to the Telkom network in the vicinity of the development. RDV will take this responsibility by submitting the application on behalf of the developer.

We trust that you will find the above in order. Please do not hesitate to contact us with any questions.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Swarts', written in a cursive style.

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**Z.A. SWARTS**  
**PROJECT MANAGER**  
UCS CONSULTING ENGINEERS

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