

**ELECTRICAL ENGINEERING  
SERVICES REPORT**  
for  
**NEWINBOSCH DEVELOPMENT  
STELLENBOSCH MUNICIPALITY**



Compiled by:

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engineers & project managers

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## TERMS OF REFERENCE

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**Table 1: Abbreviations**

ABBREVIATION	REMARK
kVA	kilo Volt Ampere
kV	kilo Volt
kA	kilo Ampere
MV	Medium Voltage
Stellenbosch	Stellenbosch Municipality

## 1. INTRODUCTION

### 1.1 Developer

Similian is a development company with the mandate of building affordable homes and helping to create communities with access to a full range of facilities and services.

### 1.2 Consulting Engineers

Raubicon Engineers are the Electrical Consulting Engineers for this project.

### 1.3 Project Location

The site consists of the Farm 33/81 measuring 48ha. It is located west of the R44 route next to Steyn's nursery and north of Kayamandi in the Stellenbosch Municipal area. Refer to Fig. 1.

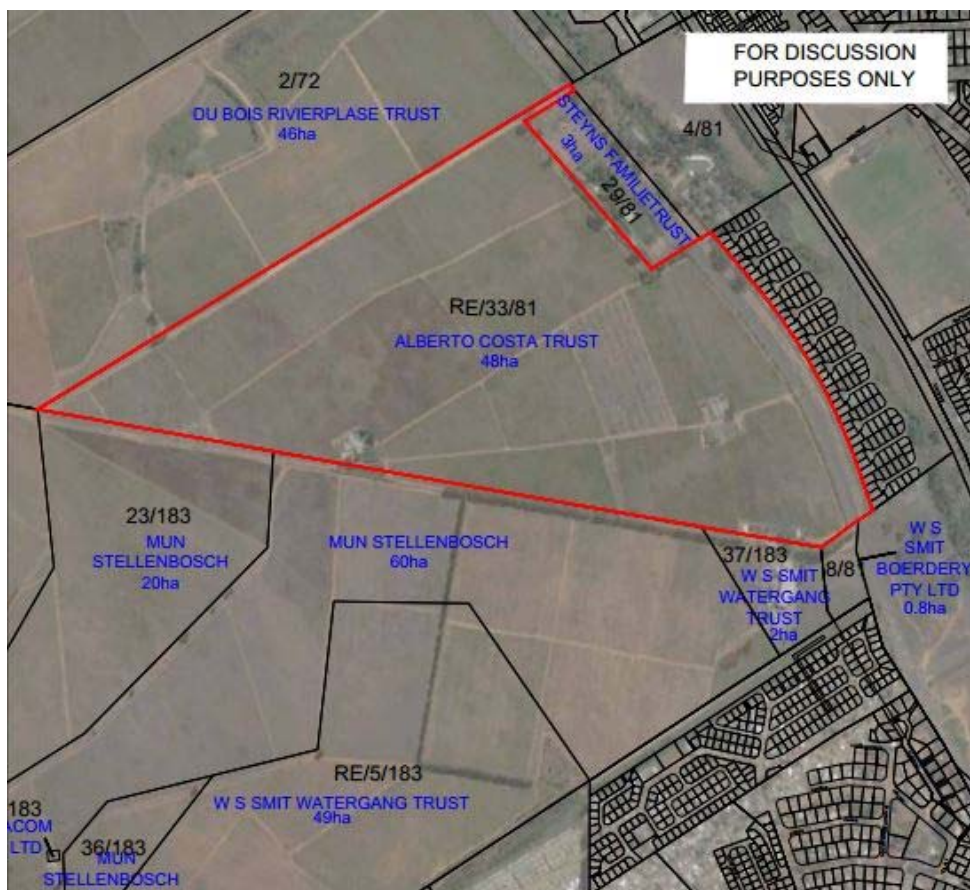


Fig. 1 Site Location

## 1.4 Development proposal

The above site is close to Stellenbosch and well connected via the R44 route.

The overall size of the site is 48ha which must be divided between residential and a minor portion of retail. The residential portion is planned to be within a security estate. A school and church are planned on the site.

There will be approximately 1000 residential opportunities of various typologies. The mix of consumers has not been finally determined.

## 2. REQUIRED ELECTRICAL CAPACITY

The total demand is estimated to be between 4MVA and 6MVA based town planning estimates.

## 3. SOURCE OF SUPPLY

### 3.1 Supply authority and service provider

Eskom supplies currently a number of rural customers on and around the site (Fig. 2). The Stellenbosch Municipality has indicated that they will exercise their legal right to supply the new development in their area. Eskom did not object to this decision. See Eskom HV servitude requirements in Annexure B.

Stellenbosch Municipality will therefore be the supply authority and the electrical service provider in the area.



Fig 2. Existing Eskom Networks



## 3.2 The source of supply

Stellenbosch indicated that they have enough capacity available in the area. They are currently busy with the MV master planning in the area that will include this development.

There is an existing Eskom 66kV substation (Cloetesville) east of the site that supply the municipality. It can be seen in Fig. 3.

A new MV protected sub-station will be required on the site as part of the master plan. This will provide for the internal MV supply networks.



Fig. 3. Location of Cloetesville S/S (red dot)

## 4. SUPPLY PHILOSOPHY

### 4.1 Metering

The units will be metered based on the following principles.

- Gated complexes will be supplied with a bulk supply. Sub-metering will be private and done by the corporate body.
- Properties / erven that requires more than a 2 MVA connection must be supplied from a metered panel at one of the protected sub-station.
- Individual erven will be supplied with split meters in the Stellenbosch kiosk on the roadside.
- Businesses will be supplied with conventional meter

## **5. ELECTRICAL NETWORKS**

### **5.1 Primary Networks**

The primary networks will consist of 185mm<sup>2</sup> Cu 11kV cables (Table 18) between the protected substations. The developer will be responsible to provide a site for the protected substation. Stellenbosch will provide all primary supply cables.

### **5.2 Secondary Networks**

The reticulation of the secondary networks will be done with underground cables, minisubstations and kiosks. The networks outside the gated villages will be handed over to the Stellenbosch. Networks inside the gated villages will be owned and maintained by the Corporate Body.

Stellenbosch indicated that they will could supply a metered MV ring-feed into the gated village to enable the developer a more secure supply option.

### **5.3 General**

- No Stellenbosch cables will be installed in Eskom servitudes.
- All Stellenbosch cables must be installed in public road reserves where possible.
- Stellenbosch will require 24-hour access to their networks

## **6. OTHER SERVICES**

### **6.1 Area Lighting**

Area lighting will be installed along all internal roads. The streetlights next to the public roads will be handed over to the local authority and the lighting along private roads will be supplied from a bulk supply and belong to the local corporate body.

### **6.2 Pump Stations**

Pump stations and other services will be supplied from the secondary networks via a metered supply kiosk.

### **6.3 Solar Power**

Solar power is allowed to be connected to the grid on the condition that not more than 25% of the consumed power is exported to the network.

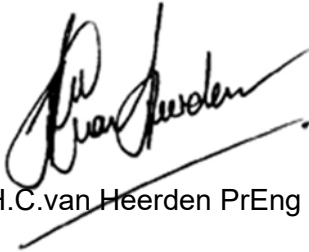
## 7. ANNEXURES

**Annexure A**

**Stellenbosch Correspondence**

**Annexure B**

**Eskom HV Servitude requirements**



H.C. van Heerden PrEng

Date 29 November 2019



**Annexure A**  
**Stellenbosch Correspondence**

## Herman van Heerden

---

**From:** Johannes Coetzee <Johannes.Coetzee@stellenbosch.gov.za>  
**Sent:** 22 August 2018 12:52  
**To:** 'herman@raubicon.co.za'  
**Cc:** Nombulelo Zwane; 'Pieter du Toit'; Michael Duke ; Robbie Rijnsburger  
**Subject:** RE: [EX] Cloetesdal Development Farm RE/33/81 - Electrical Service Provider

Good day,

This area is part of the Northern extension plans of the municipality and electrical Supply will be from the municipal network.

Regards,  
Jan Coetzee



**STELLENBOSCH**  
STELLENBOSCH • FMSL • ERANSCHOEK  
MILNERSTRAAT • WILHELMIA • BUNDESTRASIE



### About Stellenbosch Municipality

Our mission is to deliver cost-effective services that will provide the most enabling environment for civil and corporate citizens.

Our head office is at Town House Complex, Plein Street, Stellenbosch, 7600, South Africa. For more information about Stellenbosch Municipality, please call +2721-808-8111, or visit [www.stellenbosch.gov.za](http://www.stellenbosch.gov.za)

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**From:** Herman van Heerden [mailto:herman@raubicon.co.za]  
**Sent:** 22 August 2018 11:57 AM  
**To:** Johannes Coetzee  
**Cc:** Nombulelo Zwane; 'Pieter du Toit'; Michael Duke ; Robbie Rijnsburger  
**Subject:** [EX] Cloetesdal Development Farm RE/33/81 - Electrical Service Provider

Our client wants to develop the property RE/33/81 north of Kayamandi. The estimated electrical load would be in the order of 4MVA based the current town planning model.

The area is currently supplied by Eskom with their rural network.

Do you know who would be the Electrical Service Provider for this development in future?

Regards

Herman van Heerden

## RAUBICON

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**Annexure B**  
**Eskom HV Servitude Requirements**

## ATTACHMENT 2

## ANNEXURE "A"

# OVERHEAD POWER LINES, CABLES AND TELECOMMUNICATION (AREA SERVITUDE)

## GENERAL

1. In this document, capitalised words and "Self-builder" are as defined in the attached "Option to Grant a Servitude".
2. The Grantors grants a servitude to Eskom over Erf .....on..... side of the centre line, for the distribution and transmission of electric energy and for infrastructure, telecommunication (including but not limited to radio-/microwave equipment) and other related purposes, substantially within the servitude area that is represented by the figure XXX on the sketch attached hereto. (the "Servitude Area").
3. Eskom may convey electricity and telecommunication across the Property by means of overhead power line/s consisting of conductors mounted on poles and/or other structures, with such structure-supporting mechanisms as may be necessary or convenient and/or by way of underground cables, and telecommunication infrastructure.

## THE RIGHTS

4. These rights include:
  - 4.1 the right to erect such structures, conductors, cables, appliances or, without limitation, everything else as may be necessary or convenient in exercising the right of servitude (the "Goods") and the Grantors agree that structure-supporting mechanisms may reasonably extend beyond the Servitude Area where it is necessary to safely secure the Goods;
  - 4.2 the right to enter and be upon the Property at any time in order to construct, erect, operate, use, maintain, repair, re-erect, alter or inspect the Goods or in order to gain access to any adjacent property in the exercise of similar rights;
  - 4.3 the right to use existing roads and gates giving access to and running across the Property and to erect in any fence such gates as may be necessary or convenient to gain access to or exit from the Property and to the Goods or in order to gain access to any adjacent property in the exercise of similar rights;
  - 4.4 the right to remove any trees, bush, material, grass or structures and the right to cut or trim any tree, bush or grass within the Servitude- or Restricted Area in order to comply with the restrictions referred to in paragraph 6 hereof; and

- 4.5 every ancillary right necessary or convenient for the proper exercise of the servitudinal rights granted to Eskom.
5. Eskom, or the Self-builder where it is exercising the rights Eskom has, will:
  - 5.1 that any gates it uses are kept closed;
  - 5.2 pay compensation where damage or injury is caused by any negligent act or omission on the part of Eskom or its employees or agents on the understanding that no compensation is payable for damage to natural vegetation within the Servitude Area.
6. The Grantors will ensure that:
  - 6.1 no building or structure is erected or installed above or below the surface of the ground within the Servitude Area and no tree or bush planted within the Servitude Area or within 6 (six) metres from any structure-supporting mechanism (the "Restricted Area");
  - 6.2 no trees are planted in the Servitude Area;
  - 6.3 no tree which will grow to a height in excess of the horizontal distance of that tree from the nearest conductor of any power line shall be planted within the vicinity of the power line, irrespective of whether it may be outside of the Servitude- or Restricted Area;
  - 6.4 no material which may in the opinion of Eskom endanger any power line is placed within the Servitude Area;
  - 6.5 no mining activities or blasting operations shall be carried out within or below or above 500 (five hundred) metres of the centre line of any power line without the prior written permission of Eskom.
7. Eskom may:
  - 7.1 let any portion of the Goods to any third party on such conditions as Eskom may deem fit;
  - 7.2 cede all or any of the rights granted in terms of the Option to any third party, be it before or after exercising of the Option or before or after registration of the servitude in the relevant deeds' office.