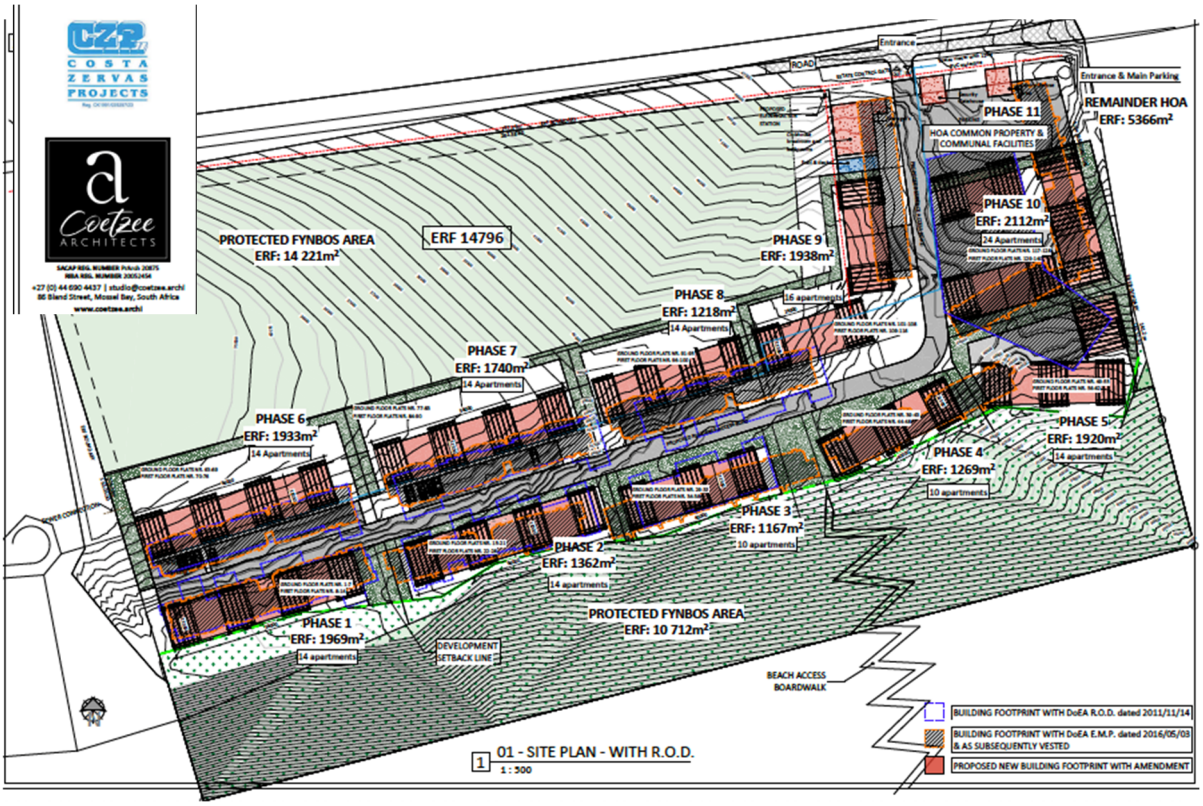
PROPOSED NEW DEVELOPMENT:

MOQUINI, ERF 14796, MOSSEL BAY



ELECTRO TECHNICAL REPORT

Submitted by:

BDE Consulting Engineers

25 Oct 2024

Reference: MOS131, Revision 0

BDE **Consulting Engineers (Pty) Ltd**
Reg No. 2004/033886/07
Directors:
DJ de Vries **Pr. Eng. | B. Eng. | GOV. CERT. | SAIEE**
BG Samson **Pr. Eng. | BSc. Eng.**

73 Meade Street
PO Box 1862
George 6530
Tel: 044 801 9700
bde@bdeconsult.co.za

21A First Avenue
Rondebosch East
Cape Town 7780
PO Box 53036
Kenilworth 7745

ISO 9001:2015 CERTIFIED
CESA
SHEQ National cert ISO 9001:2015

1 INTRODUCTION

This electrical engineering services report covers the proposed development's external bulk electricity supply and internal electrical distribution network.

The proposed development consists of the following properties:

- Phase 1 – 14 Apartments;
- Phase 2 – 14 Apartments;
- Phase 3 – 10 Apartments;
- Phase 4 – 10 Apartments;
- Phase 5 – 14 Apartments;
- Phase 6 – 14 Apartments;
- Phase 7 – 14 Apartments;
- Phase 8 – 14 Apartments;
- Phase 9 – 16 Apartments;
- Phase 10 – 24 Apartments;
- Phase 11 – Central facilities such as clubhouse and supporting areas;

2 EXISTING INFRASTRUCTURE AND LOCATION

Plan 1: Existing Medium Voltage Network and site location in red

The development is within the licensed electricity distribution area of Mossel Bay Municipality.

The development is close to the 11000V Medium-Voltage (MV) network at Heideweg RS, which has a 70 Cu supply ring.

The site can also be viewed at the following Google Maps link: https://maps.app.goo.gl/NJCexozXktzxebcq9

3 EXPECTED DEMAND

The initial demand for the phased properties is projected to be 800 kVA, calculated and categorised under High-End Living Standard (LSM) 8 in accordance with NRS 034-1 and SANS 10400 for maximum energy consumption.

The municipality has confirmed that sufficient capacity is available to meet this demand, with supply accessible at a medium voltage (MV) connection point.

4 PROPOSED ELECTRICITY DISTRIBUTION NETWORK

The electrical distribution network must adhere to the municipality's standard requirements and technical specifications up to the bulk supply point, and it will be owned by the municipality.

The electrical distribution network within the site will remain the responsibility of the homeowners' association.

Detail of the proposed electrical distribution network is summarised as follows:

4.1 Medium voltage network (11000V)

The MV network must feed from the firm 70 Cu ring network at Heideweg RS. At this point, a new 4-way bulk metering unit will be required to feed the private MV network on the property.
An internal ring network or radial feeder can be considered with the final design.

Miniature substations (11/0.4kV) will be installed for the low-voltage distribution network.

4.2 Low voltage network

The low-voltage distribution system will be supplied from the miniature substations via underground cables, which will supply strategically positioned distribution kiosks.
The supply cable to the distribution kiosks will be protected with an optimally designed feeder circuit breaker housed inside the mini-substation.

4.3 Consumption metering

The Municipality will meter the development in bulk via the new MV metering kiosk.

The homeowners' association will be responsible for individual metering of the residential and business units, which will be done via private metering companies such as https://rnm.co.za/.

4.4 Area/Streetlighting

The homeowners' association shall be responsible for the installation, consumption, operation and maintenance of streetlights.

Depending on the lighting application, luminaires will be LED bollards and/or energy-efficient post-top luminaires.

5 ENVIRONMENTAL IMPACT

5.1 Impact on existing electricity consumers

The development will have a minimal effect on the supply quality to the existing customers because it will be supplied directly from an adequate capacity miniature substation.

5.2 Impact on the operating costs

The development will not adversely affect the municipality's electrical operating costs because the developer will supply and install the complete electrical infrastructure required for the development. Maintenance of the proposed electrical network will be minimal due to the proposed underground distribution network that will be provided. Electricity sales to the development will contribute to the profits made by the municipality's electricity service.

The entire internal electrical distribution network will be carefully designed to blend with the development and the natural environment. All structures, equipment, and switchgear will be low-profile and follow natural contours.
The colours and shapes of all structures, equipment and switchgear will be selected carefully to blend in with the environment.

Services will generally be located within the road reserves to prevent additional vegetation disturbance.

The environmental management plan for the development will form an integral part of the specifications and requirements for the electrical construction work.

6 MUNICIPALITY AUGMENTATION FEES / CAPITAL CONTRIBUTIONS

A municipality charges fees for upgrading or expanding its primary electrical network to ensure local electricity infrastructure can support new projects. The municipality calculates the costs at the ruling rate, which increases every 1 July.

An electricity deposit will also be payable when the HOA opens a new account.

7 ENERGY EFFICIENCY AND RENEWABLE ENERGY

The use of cost-effective alternative energy sources, such as gas and solar, will be considered, as well as the installation of energy-efficient installations as required by the National Building regulations.

8 CONCLUSION

The existing infrastructure at the supply point is sufficient to support the proposed development. A final municipal application must be submitted before the start of construction.

For any additional information or clarification, please feel free to contact BDE.

Yours faithfully

Wicus Smit B.Eng.
On behalf of **BDE CONSULTING ENGINEERS**