# THE PROPOSED RESIDENTIAL DEVELOPEMNT OF FARM 205/79, KNYSNA MUNICIPALITY, WESTERN CAPE PROVINCE, SOUTH AFRICA

# **Visual Impact Assessment: Site Sensitivity Report**

**Draft V1** 

DATE: 24 Oct 2024

Document prepared for Eco-Route (Pty) Ltd On behalf of Daniel Sevenster (Owner)



Visual Resource Management Africa cc P O Box 7233, George, 6531 Cell: +27 (83) 560 9911

E-Mail: steve@vrma.co.za Web: <u>www.vrma.co.za</u>



# TABLE OF CONTENTS

| 1   | DFFE SPECIALIST REPORTING REQUIREMENTS  | 5  |
|-----|---|----|
| 1.1 | SPECIALIST DECLARATION OF INDEPENDENCE  | 5  |
| 2   | EXECUTIVE SUMMARY   | 6  |
| 3   | INTRODUCTION  | 12 |
| 3.1 | TERMS OF REFERENCE  | 12 |
| 3.2 | STUDY TEAM  |    |
| 3.3 | VISUAL ASSESSMENT APPROACH  |    |
| 3.4 | VIA PROCESS OUTLINE   |    |
| 3.5 | IMPACT ASSESSMENT METHODOLOGY   |    |
| 3.6 | ASSUMPTIONS AND UNCERTAINTIES   |    |
| 4   | PROJECT DESCRIPTION   |    |
| 5   | LEGAL FRAMEWORK   |    |
| 5.1 | INTERNATIONAL GOOD PRACTICE   |    |
|     | 5.1.1 Guidelines for Landscape and Visual Impact Assessment, Second Edition . |    |
| 5.2 | NATIONAL AND REGIONAL LEGISLATION AND POLICIES                                |    |
|     | 5.2.1 DEA&DP Visual and Aesthetic Guidelines                                  |    |
| 5.3 | 5.2.2 Local and Regional Planning   |    |
| 6   | BIBLIOGRAPHY  |    |
| _   |   |    |
| 7   | ANNEXURE A: SITE VISIT PHOTOGRAPHS AND COMMENTS                               | 28 |
| 8   | ANNEXURE B: SPECIALIST INFORMATION  |    |
| 8.1 | PROFESSIONAL REGISTRATION CERTIFICATE   |    |
| 8.2 | CURRICULUM VITAE (CV)   | 40 |
| 9   | ANNEXURE C: METHODOLOGY DETAIL  | 42 |
| 9.1 | BASELINE ANALYSIS STAGE   |    |
|     | 9.1.1 Scenic Quality  |    |
|     | 9.1.2 Receptor Sensitivity  |    |
|     | 9.1.3 Exposure  |    |
| 9.2 | 9.1.4 Key Observation Points  |    |
| y.Z | 9.2.1 Contrast Rating   |    |
|     | 3. L. 1 - OUHH GALINGHIU  | 77 |
|     | 9.2.2 Photomontages   |    |

# **TABLE OF FIGURES**

|                 | DSCAPE AND VISUAL CONSTRAINTS MAP (PRELIMINARY AND EXCLUDING 30M RURAL     |       |
|-----------------|--|-------|
|                 | RY BUFFER)   |       |
|                 | -CLIFF EROSIONAL LOCALITY MAP 1  |       |
|                 | -CLIFF EROSIONAL LOCALITY MAP 2  |       |
|                 | IONAL AND REGIONAL LOCALITY MAP.   |       |
|                 | PERTY CADASTRAL AS REFLECTED IN THE KNYSNA MUNICIPALITY PUBLIC VIEWER WITH |       |
|                 | RE DEPICTED BY THE ARROW.  |       |
| FIGURE 7: SITE  | PLAN AND CONCEPT DESIGN PROVIDED BY OLIVIER ARCHITECTS                     | 19    |
| FIGURE 8: ZOC   | MED VIEW OF SITE PLAN AND CONCEPT DESIGN PROVIDED BY OLIVIER ARCHITECTS    | 20    |
|                 | RLAY OF PROPOSED SITE PLAN ON TO ESRI OPENSOURCE SATELLITE IMAGERY         |       |
|                 | ANNING LOCALITY MAP DEPICTING THE LOCAL, DISTRICT AND NATIONAL PLANNING ZO |       |
|                 | RVEY POINT AND PROJECT LOCALITY MAP.                                       |       |
|                 | <u>LIST OF TABLES</u>  |       |
| TARIE 1 SDECL   | ALIST DECLARATION OF INDEPENDENCE  | 5     |
|                 | ORS AND CONTRIBUTORS TO THIS REPORT.                                       |       |
|                 | CLASS MATRIX TABLE   |       |
| TABLE 4: METH   | ODOLOGY SUMMARY TABLE  | 15    |
|                 | DP VISUAL AND AESTHETIC GUIDELINE IMPACT ASSESSMENT CRITERIA TABLE         |       |
|                 | ECT INFORMATION TABLE  |       |
|                 | F KEY PLANNING INFORMANTS TO THE PROJECT                                   |       |
|                 | L PLANNING REFERENCE TABLE RELEVANT TO THE PROJECT                         |       |
|                 | DSCAPE AND VISUAL RISK TABLE   |       |
|                 | AFRICA PROJECTS ASSESSMENTS TABLE  |       |
|                 | LIST OF ACRONYMS   |       |
|                 | <u> </u>   |       |
| APHP            | Association of Professional Heritage Practitioners                         |       |
| BLM             | Bureau of Land Management (United States)                                  |       |
| BPEO            | Best Practicable Environmental Option                                      |       |
| CALP            | Collaborative for Advanced Landscape Planning                              |       |
| DEM             | Digital Elevation Model  |       |
| DoC             | Degree of Contrast   |       |
| EIA             | Environmental Impact Assessment  |       |
| <i>EMPr</i>     | Environmental Management Plan  |       |
| GIS             | Geographic Information System  |       |
| GPS             | Global Positioning System  |       |
| IDP             | Integrated Development Plan  |       |
| IEMA            | Institute of Environmental Management and Assessment (United King          | idom) |
| KOP             | Key Observation Point  | ,     |
| LVIA            | Landscape and Visual Impact Assessment                                     |       |
| MAMSL           | Metres above mean sea level  |       |
| NELPAG          | New England Light Pollution Advisory Group                                 |       |
| PNR             | Private Nature Reserve   |       |
| SDF             | Spatial Development Framework  |       |
| SEA             | Strategic Environmental Assessment   |       |
| $\cup$ L $\cap$ | Otratoulo ETIVII OTITI ETITA (733033111011)                                |       |

VACVisual Absorption CapacityVIAVisual Impact AssessmentVRMVisual Resource ManagementVRMAVisual Resource Management Africa

ZVI Zone of Visual Influence

#### **GLOSSARY OF TECHNICAL TERMS**

#### **Technical Terms Definition** (Oberholzer, 2005)

Degree of The measure in terms of the form, line, colour and texture of the Contrast existing landscape in relation to the proposed landscape

existing landscape in relation to the proposed landscape modification in relation to the defined visual resource management

objectives.

Visual intrusion Issues are concerns related to the proposed development,

generally phrased as questions, taking the form of "what will the impact of some activity be on some element of the visual, aesthetic

or scenic environment".

Receptors Individuals, groups or communities who would be subject to the

visual influence of a particular project.

Sense of place The unique quality or character of a place, whether natural, rural

or urban.

Scenic corridor A linear geographic area that contains scenic resources, usually,

but not necessarily, defined by a route.

Viewshed The outer boundary defining a view catchment area, usually along

crests and ridgelines. Similar to a watershed. This reflects the area, or the extent thereof, where the landscape modification

would probably be seen.

Visual Absorption The potential of the landscape to conceal the proposed project.

Capacity

# **Technical Term Definition** (USDI., 2004)

Key Observation

**Point** 

Receptors refer to the people located in the most critical locations, or key observation points, surrounding the landscape modification, who make consistent use of the views associated with the site where the landscape modifications are proposed. KOPs can git the proposed of the view that an absence (evaluates used to

either be a single point of view that an observer/evaluator uses to rate an area or panorama, or a linear view along a roadway, trail,

or river corridor.

Visual Resource Management

Resource A map-based landscape and visual impact assessment method

development by the Bureau of Land Management (USA).

Zone of Visual

The ZVI is defined as 'the area within which a proposed

Influence

development may have an influence or effect on visual amenity.'

# 1 DFFE Specialist Reporting Requirements

# 1.1 Specialist declaration of independence

#### Table 1. Specialist declaration of independence

All intellectual property rights and copyright associated with VRM Africa's services are reserved, and project deliverables, including electronic copies of reports, maps, data, shape files and photographs, may not be modified or incorporated into subsequent reports in any form, or by any means, without the written consent of the author. Reference must be made to this report, should the results, recommendations or conclusions in this report be used in subsequent documentation. Any comments on the draft copy of the Visual Impact Assessment (VIA) must be put in writing. Any recommendations, statements or conclusions drawn from, or based upon, this report, must refer to it.

This document was completed by Silver Solutions 887 cc trading as VRM Africa, a Visual Impact Study and Mapping organisation located in George, South Africa. VRM Africa cc was appointed as an independent professional visual impact practitioner to facilitate this VIA. I, Stephen Stead, hereby declare that VRM Africa, an independent consulting firm, has no interest or personal gains in this project whatsoever, except receiving fair payment for rendering an independent professional service.

Stephen Stead

APHP accredited VIA Specialist

# 2 EXECUTIVE SUMMARY

Visual Resource Management Africa CC (VRMA) was appointed to conduct a Visual Impact Assessment for the proposed development residential development and three cottages on Farm 205/79 in the Knysna Municipality.

The preliminary findings of this site sensitivity report is that the proposed development in its current layout would be a Fatal Flaw as mitigation would not be able to significantly reduce the very high levels of visual intrusion. Twelve High Risk issues were identified during the site visit as tabled in Table 10. The following reasons are provided as motivation and mapped in Figure 1:

- The proposed structures are situated in a highly prominent location on the edge of sea cliffs, an area currently devoid of man-made visual disturbances, and characterized by exceptional scenic quality. The sensitivity of receptors to manmade changes in this coastal region is likely to be very high.
- The proposed dwellings would be clearly visible from the beach, establishing a
  negative precedent for future structural developments along the sea cliffs.
  Additionally, these structures would disrupt the skyline as viewed from the beach
  below.
- The sites are located on steep slopes with gradients exceeding 1 in 4, necessitating significant cut and fill operations and pole foundations that would require the development platform to be raised off the ground.
- There is clear evidence of erosion affecting the sandstone cliffs, with the erosional cut-back exceeding 60 meters above ground level, coinciding with the elevation of the proposed main residential building's base. With anticipated sea level rise, this erosion is expected to worsen (subject to geotechnical specialist findings). This concern is explicitly addressed in the DEA&DP Western Cape Climate Change Response Strategy and the Garden Route District Climate Change Adaptation Response Implementation Plan. While the proposed dwellings are positioned 100 meters above the high water level (HWL), the DEA&DP is currently reviewing the HWL based on climate change risks.

"For instance, an erosion setback line established as safe under current coastal conditions (i.e., present seawater levels and storm intensities) cannot be assumed to remain safe under more extreme climate change scenarios (i.e., elevated seawater levels and increased storm severity). The identification of long-term safe coastal management lines requires a thorough understanding and quantification of risks, resource mobilization, solid policy guidelines, planning, and appropriate legislation (Department of Science and Technology, 2010)" (p. 67).

• The potential destabilization of the sea cliffs due to structural development could lead to slippage, resulting in visual scarring and property loss.

In conclusion, while the proposed sites present significant landscape and visual impact concerns, there exists a local precedent for residential development on the adjacent property. Utilizing a similar topographic positioning, there is potential for development with sea views; however, this opportunity is primarily restricted to the southeastern section of the property near the proposed vehicle parking area. Depending on the size of the main

residence in this area, there may also be sufficient space for two cottages to the west of the site. It is recommended that parking and garage facilities be located behind the dune.

Additionally, the straight design of the road represents a critical flaw, as a strong linear clear-cut through the Goukamma Dune Thicket (CBA rating) would set a negative precedent for development in this ecologically significant area. The final recommendation is to relocate the garage and workshop closer to the main development area, and ensuring they are situated behind the dune near the garage and parking areas to minimize landscape fragmentation.

Further requirements for the completion of the VIA are:

- 1. Botanical sensitivity mapping.
- 2. Concept architectural design and 3D block model for the main residence and the cottages.



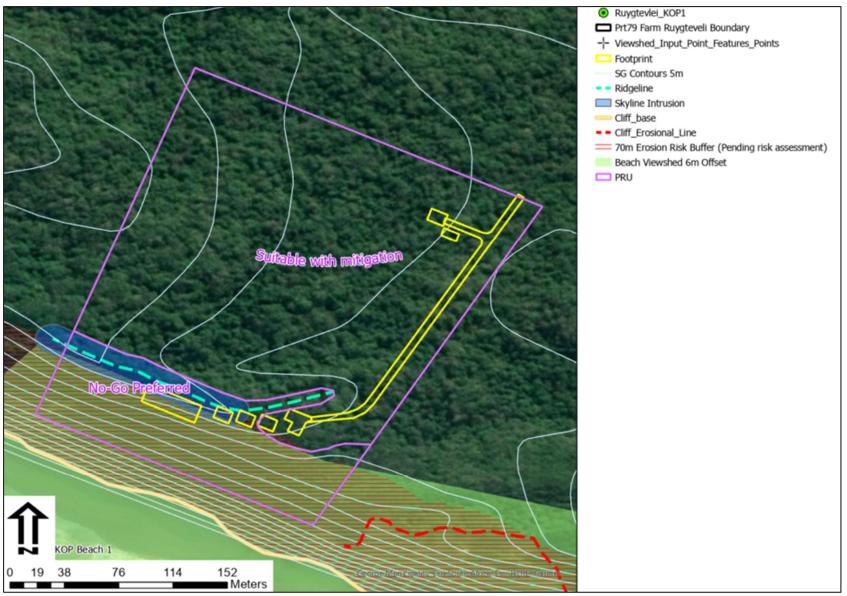


Figure 1: Landscape and visual constraints map (PRELIMINARY and excluding 30m rural boundary buffer).



Figure 2: Sea-cliff erosional locality Map 1.



Figure 3: Sea-cliff erosional locality Map 2.

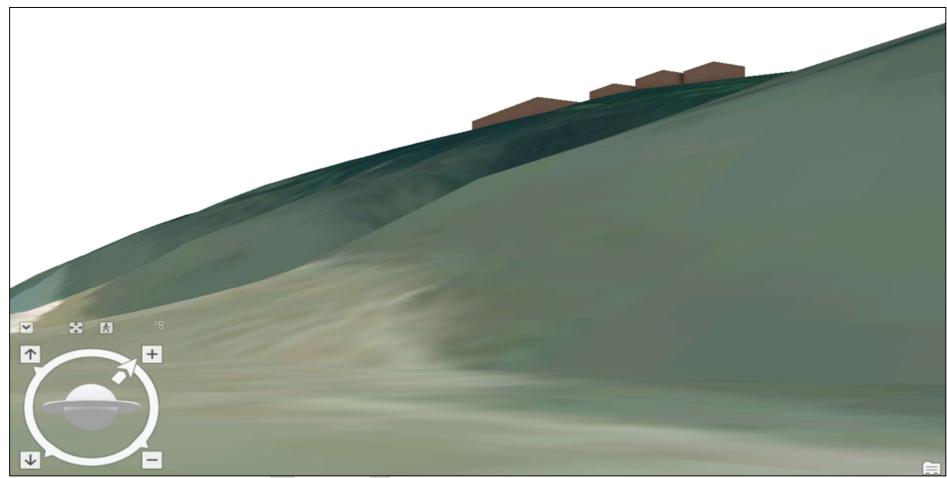


Figure 4: 3D GIS extrude model with 6m offset using minimum height (full cut).

# 3 Introduction

Visual Resource Management Africa CC (VRMA) was appointed by Mr Sevenster to conduct a Level 4 Landscape and Visual Impact Assessment for the proposed development on Farm 205/79, located within the Knysna Municipality, Western Cape Province.

The Proponent intends to construct a main residence, three cottages, a vehicle parking area and a garage/ storeroom. An access road would also need to be cut through the thicket vegetation. The property is situated in Knysna Municipality Ward 1, to the east of the town of Sedgefield and is zoned as Agriculture 1.

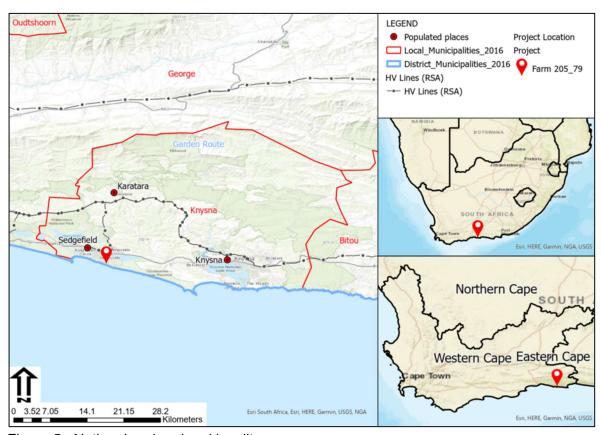


Figure 5: National and regional locality map.

#### 3.1 Terms of Reference

The following actions informed the visual statement scope of work:

- Planning literature review to assess if any amendments to landscape based planning for the area have taken place subsequent to the previous EIAs.
- Site visit to confirm site sensitivity to landscape change.
- Generate a slopes analysis to determine slope sensitivity.
- Make preliminary recommendations as to the suitability of the proposed landscape and possible mitigation measures that could be introduced to reduce the visual intrusion if necessary.

# 3.2 Study Team

Contributors to this study are summarised in the table below.

Table 2: Authors and contributors to this report.

| Aspect          | Person            | Organisation | Qualifications                       |
|-----------------|-------------------|--------------|--------------------------------------|
|                 |                   | / Company    |                                      |
| Landscape and   | Stephen Stead     | VRMA         | 20 years of experience in visual     |
| Visual          | MSc Geography,    |              | assessments including 230 large      |
| Assessment      | 2023 (UKZN,       |              | scale landscape changes in five sub- |
| (author of this | Pietermaritzburg) |              | Saharan African countries.           |
| report)         |                   |              | Registered with the Association of   |
|                 |                   |              | Professional Heritage Practitioners  |
|                 |                   |              | since 2014.                          |

# 3.3 Visual Assessment Approach

The full methodology used in the assessment can be found in Annexure B, with this section outlining the key elements of the assessment process. The process that VRM Africa follows when undertaking a VIA is based on the United States Bureau of Land Management's (BLM) Visual Resource Management method (USDI., 2004). This mapping and GIS-based method of assessing landscape modifications allows for increased objectivity and consistency by using standard assessment criteria.

- "Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, and management of an area with little scenic value might allow for major modifications to the landscape. Determining how an area should be managed first requires an assessment of the area's scenic values".
- "Assessing scenic values and determining visual impacts can be a subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, colour, and texture, which have often been used to describe and evaluate landscapes, to also describe proposed projects. Projects that repeat these design elements are usually in harmony with their surroundings; those that don't create contrast. By adjusting project designs so the elements are repeated, visual impacts can be minimized" (USDI., 2004).

#### **Baseline Phase Summary**

The VRM process involves the systematic classification of the broad-brush landscape types within the receiving environment into one of four VRM Classes. Each VRM Class is associated with management objectives that serve to guide the degree of modification of the proposed site. The Classes are derived by means of a simple matrix with the three variables being the scenic quality, the expected receptor sensitivity to landscape change, and the distance of the proposed landscape modification from key receptor points. The Classes are not prescriptive and are utilised as a guideline to determine visual carrying capacity, where they represent the relative value of the visual resources of an area. Classes I and II are the most valued, Class III represents a moderate value; and Class IV is of least value. The VRM Classes are not prescriptive and are used as a guideline to determine the carrying capacity of a visually preferred landscape as a basis for assessing the suitability of the landscape change associated with the proposed project.

Table 3: VRM Class Matrix table

|                   |               | VISUAL SENSITIVITY LEVELS |            |                 |                    |            |             |                    |            |             |
|-------------------|---------------|---------------------------|------------|-----------------|--------------------|------------|-------------|--------------------|------------|-------------|
|                   | High          |                           |            | Mediun          | n                  |            | Low         |                    |            |             |
|                   | A<br>(High)   | II                        | II         | П               | II                 | П          | П           | II                 | II         | II          |
| SCENIC<br>QUALITY | B<br>(Medium) | II                        | Ш          | III/<br>IV<br>* | III                | IV         | IV          | IV                 | IV         | IV          |
|                   | C<br>(Low)    | III                       | IV         | IV              | IV                 | IV         | IV          | IV                 | IV         | IV          |
| DISTANCE ZONES    |               | Fore/middle ground        | Background | Seldom seen     | Fore/middle ground | Background | Seldom seen | Fore/middle ground | Background | Seldom seen |

<sup>\*</sup> If adjacent areas are Class III or lower, assign Class III, if higher, assign Class IV

The visual objectives of each of the classes are listed below:

- The Class I objective is to preserve the existing character of the landscape and the level of change to the characteristic landscape should be very low and must not attract attention. Class I is assigned when a decision is made to maintain a natural landscape.
- The Class II objective is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low. The proposed development may be seen but should not attract the attention of the casual observer, and should repeat the basic elements of form, line, colour and texture found in the predominant natural features of the characteristic landscape.
- The Class III objective is to partially retain the existing character of the landscape, where the level of change to the characteristic landscape should be moderate. The proposed development may attract attention, but should not dominate the view of the casual observer, and changes should repeat the basic elements found in the predominant natural features of the characteristic landscape; and
- The Class IV objective is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the landscape can be high, and the proposed development may dominate the view and be the major focus of the viewer's (s') attention without significantly degrading the local landscape character.

# **Impact Phase Summary**

To determine impacts, a degree of contrast exercise is undertaken. This is an assessment of the expected change to the receiving environment in terms of the form, line, colour and texture, as seen from the surrounding Key Observation Points. This determines if the proposed project meets the visual objectives defined for each of the Classes. If the expected visual contrast is strong, mitigation recommendations are to be made to assist in meeting the visual objectives. To assist in the understanding of the proposed landscape modifications, visual representation, such as photomontages or photos depicting the impacted areas, can be generated. There is an ethical obligation in the visualisation process, as visualisation can be misleading if not undertaken ethically.

#### 3.4 VIA Process Outline

The following approach was used in understanding the landscape processes and informing the magnitude of the impacts of the proposed landscape modification. The table below lists a number of standardised procedures recommended as a component of best international practice. The work undertaken is highlighted in red in the table below.

Table 4: Methodology Summary table

| Action              | Description   |
|---------------------|---|
| Site Survey & Site  | The identification of existing scenic resources and sensitive         |
| Sensitivity         | receptors in and around the study area to understand the context      |
| Verification.       | of the proposed development within its surroundings to ensure         |
|                     | that the intactness of the landscape and the prevailing sense of      |
|                     | place are taken into consideration.                                   |
| Project Description | Provide a description of the expected project, and the                |
|                     | components that will make up the landscape modification.              |
| Reviewing the       | The legal, policy and planning framework may have implications        |
| Legal Framework     | for visual aspects of the proposed development. The heritage          |
|                     | legislation tends to be pertinent in relation to natural and cultural |
|                     | landscapes, while Strategic Environmental Assessments (SEAs)          |
|                     | for renewable energy provide a guideline at the regional scale.       |
| Identifying Visual  | Visual issues are identified during the public participation          |
| Issues and Visual   | process, which is being carried out by others. The visual, social     |
| Resources           | or heritage specialists may also identify visual issues. The          |
|                     | significance and proposed mitigation of the visual issues are         |
|                     | addressed as part of the visual assessment.                           |
| Determining the     | This includes mapping of viewsheds and view corridors in              |
| Zone of Visual      | relation to the proposed project elements, in order to assess the     |
| Influence           | zone of visual influence of the proposed project. Based on the        |
|                     | topography of the landscape as represented by a Digital               |
|                     | Elevation Model, an approximate area is defined which provides        |
|                     | an expected area where the landscape modification has the             |
|                     | potential to influence landscapes (or landscape processes) or         |
|                     | receptor viewpoints.  |
| Assessing Potential | An assessment is made of the significance of potential visual         |
| Visual Impacts      | impacts resulting from the proposed project for the construction,     |
|                     | operational and decommissioning phases of the project. The            |
|                     | rating of visual significance is based on the methodology             |
|                     | provided by the Environmental Assessment Practitioner (EAP).          |
| Formulating         | Possible mitigation measures are identified to avoid or minimise      |
| Mitigation Measures | negative visual impacts of the proposed project. The intention is     |
|                     | that these would be included in the project design, the               |
|                     | Environmental Management Programme report (EMPr) and the              |
|                     | authorisation conditions.   |

# 3.5 Impact Assessment Methodology

The following impact criteria were used to assess visual impacts. The criteria were defined by the Western Cape *DEA&DP Guideline for involving Visual and Aesthetic Specialists in EIA Processes* (Oberholzer, 2005).

Table 5. DEA&DP Visual and Aesthetic Guideline Impact Assessment Criteria table

| Criteria        | Definition  |
|-----------------|---|
| Extent          | <ul> <li>The spatial or geographic area of influence of the visual impact, i.e.:</li> <li>site-related: extending only as far as the activity.</li> <li>local: limited to the immediate surroundings.</li> <li>regional: affecting a larger metropolitan or regional area.</li> <li>national: affecting large parts of the country.</li> <li>international: affecting areas across international boundaries.</li> </ul>   |
| <u>Duration</u> | <ul> <li>The predicted life-span of the visual impact:</li> <li>short term, (e.g., duration of the construction phase).</li> <li>medium term, (e.g., duration for screening vegetation to mature).</li> <li>long term, (e.g., lifespan of the project).</li> <li>permanent, where time will not mitigate the visual impact.</li> </ul>  |
| Intensity       | <ul> <li>The magnitude of the impact on views, scenic or cultural resources.</li> <li>low, where visual and scenic resources are not affected.</li> <li>medium, where visual and scenic resources are affected to a limited extent.</li> <li>high, where scenic and cultural resources are significantly affected.</li> </ul>   |
| Probability     | <ul> <li>The degree of possibility of the visual impact occurring:</li> <li>improbable, where the possibility of the impact occurring is very low.</li> <li>probable, where there is a distinct possibility that the impact will occur.</li> <li>highly probable, where it is most likely that the impact will occur.</li> <li>definite, where the impact will occur regardless of any prevention measures.</li> </ul>  |
| Significance    | <ul> <li>The significance of impacts can be determined through a synthesis of the aspects produced in terms of their nature, duration, intensity, extent and probability, and be described as: <ul> <li>low, where it will not have an influence on the decision.</li> <li>medium, where it should have an influence on the decision unless it is mitigated.</li> <li>high, where it would influence the decision regardless of any possible mitigation.</li> </ul> </li> </ul> |

#### 3.6 Assumptions and Uncertainties

- Digital Elevation Models (DEM) and viewsheds were generated using ASTER elevation data (NASA, 2009). Although every effort to maintain accuracy was undertaken, as a result of the DEM being generated from satellite imagery and not being a true representation of the earth's surface, the viewshed mapping is approximate and may not represent an exact visibility incidence. Thus, specific features identified from the DEM and derive contours (such as peaks and conical hills) would need to be verified once a detailed survey of the project area has taken place.
- The use of open-source satellite imagery was utilised for base maps in the report.
- Some of the mapping in this document was created using Bing Maps, Open-Source Map, ArcGIS Online and Google Earth Satellite imagery.
- The project deliverables, including electronic copies of reports, maps, data, shape files and photographs are based on the author's professional knowledge, as well as available information.
- VRM Africa reserves the right to modify aspects of the project deliverables if and when new/additional information may become available from research or further work in the applicable field of practice or pertaining to this study.
- As access to farms and private property is often limited due to security reasons, limiting access to private property in order that photographs from specific locations are taken. 3D modelling is used to reflect the expected landscape change area where applicable.
- Mapping makes use of the SANBI BGIS webmap (SANBI, 2018)
- As the proposed development would be constructed on an existing development footprint without requiring further cut and fills, a slopes analysis was not undertaken.

#### 4 PROJECT DESCRIPTION

The following project information of the proposed infrastructure relating to the project was provided by the client that will be incorporated into the assessment and. The following table outlines the scope of the project, with reference to the extent, heights, and expects landscape change depiction as provide by the proponent/ architects involved in the project design and development.

Table 6: Project Information table

| PROPONENT SPECIFICATIONS |              |  |  |
|--------------------------|--------------|--|--|
| Applicant Details        | Description  |  |  |
| Applicant Name:          | Mr Sevenster |  |  |
| Property Details:        | Farm 205/79  |  |  |

The following plans reflect the nature of the landscape change, with the architect's concept drawing on the flowing pages:

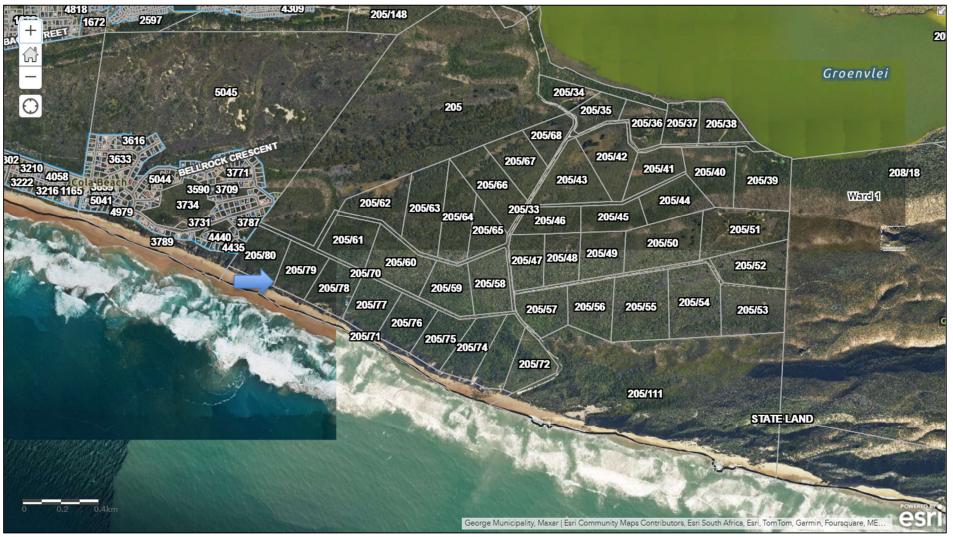


Figure 6: Property cadastral as reflected in the Knysna Municipality public viewer with the structure depicted by the arrow.

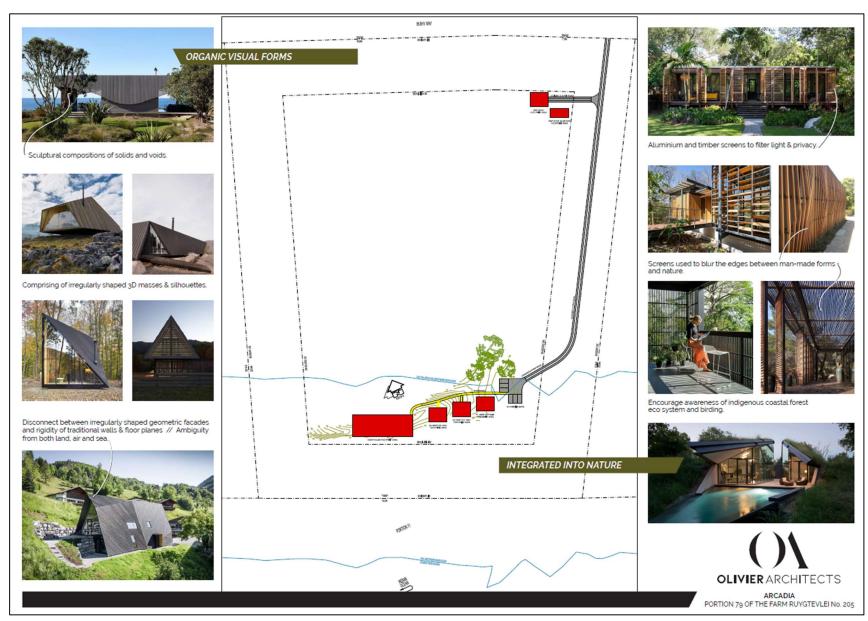


Figure 7: Site Plan and concept design provided by Olivier Architects.

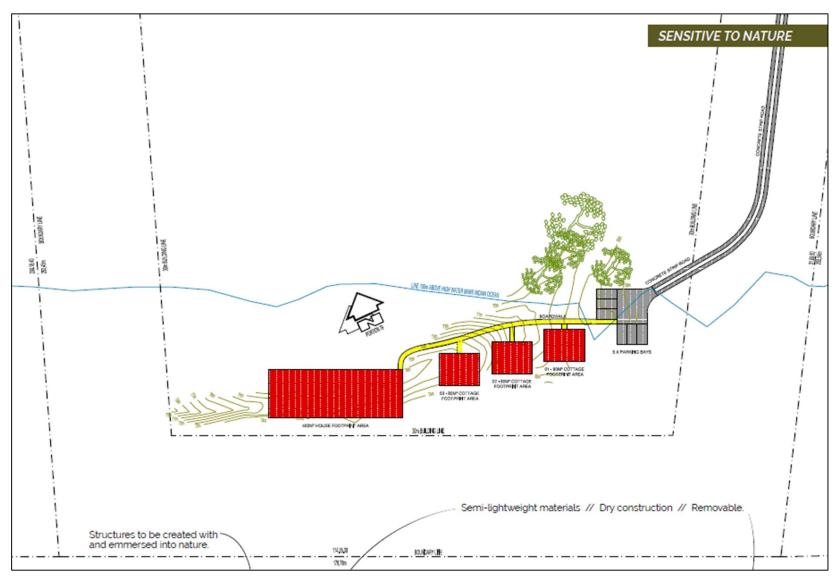


Figure 8: Zoomed view of Site Plan and concept design provided by Olivier Architects.

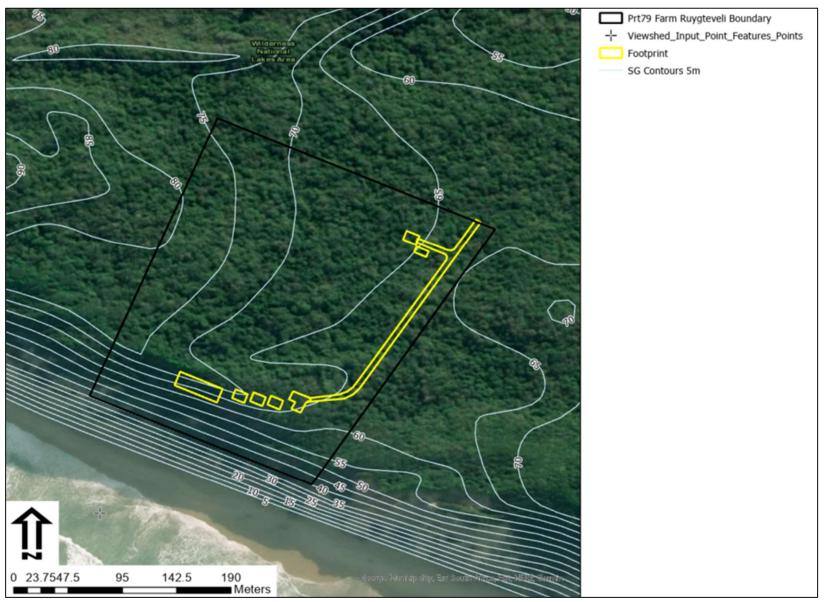


Figure 9: Overlay of proposed Site Plan on to ESRI Opensource satellite imagery.

# 5 LEGAL FRAMEWORK

In order to comply with the Visual Resource Management requirements, it is necessary to relate the proposed landscape modification in terms of international best practice in understanding landscapes and landscape processes. The proposed project also needs to be evaluated in terms of 'policy fit'. This requires a review of International, National and Regional best practice, policy and planning for the area to ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the planned sense of place and character of the area.

#### 5.1 International Good Practice

For international good practice in assessment of landscapes, the following documentation is relevant, specifically:

Guidelines for Landscape and Visual Impact Assessment (GLVIA), Second Edition.

#### 5.1.1 Guidelines for Landscape and Visual Impact Assessment, Second Edition

The Landscape Institute and the Institute of Environmental Management and Assessment (United Kingdom) have compiled a book outlining best practice in landscape and visual impact assessment. This has become a key guideline for LVIA in the United Kingdom. "The principal aim of the guideline is to encourage high standards for the scope and context of landscape and visual impact assessments, based on the collegiate opinion and practice of the members of the Landscape Institute and the Institute of Environmental Management and Assessment. The guidelines also seek to establish certain principles and will help to achieve consistency, credibility and effectiveness in landscape and visual impact assessment, when carried out as part of an EIA" (The Landscape Institute, 2003);

In the introduction, the guideline states that 'Landscape encompasses the whole of our external environment, whether within village, towns, cities or in the countryside. The nature and pattern of buildings, streets, open spaces and trees – and their interrelationships within the built environment – are an equally important part of our landscape heritage" (The Landscape Institute, 2003: Pg. 9). The guideline identifies the following reasons why landscape is important in both urban and rural contexts, in that it is:

- An essential part of our natural resource base.
- A reservoir of archaeological and historical evidence.
- An environment for plants and animals (including humans).
- A resource that evokes sensual, cultural and spiritual responses and contributes to our urban and rural quality of life; and
- Valuable recreation resources. (The Landscape Institute, 2003).

In terms of international best practice for Landscape and Visual Impact Assessment, the Garden Route regional landscape should be considered an essential component of the cultural landscape that does create valuable landscape resources.

# 5.2 National and Regional Legislation and Policies

In order to comply with the Visual Resource Management requirements, it is necessary to clarify which National and Regional planning policies govern the proposed development area to ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the sense of place and character of the area as mapped in Figure 10 below.

- DEA&DP Visual and Aesthetic Guidelines.
- Regional and Local Municipality Planning and Guidelines.

Table 7: List of key planning informants to the project

| Theme                 | Requirements |
|-----------------------|--------------|
| Province              | Western Cape |
| District Municipality | Garden Route |
| Local Municipality    | Knysna       |

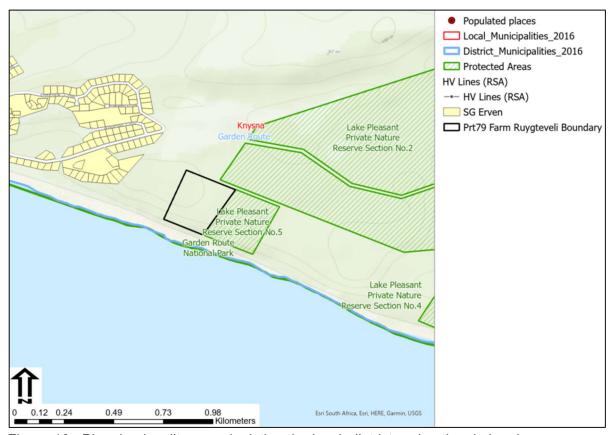


Figure 10: Planning locality map depicting the local, district and national planning zones.

#### 5.2.1 DEA&DP Visual and Aesthetic Guidelines

Reference to the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) Guideline for involving visual and aesthetic specialists in Environmental Impact Assessment (EIA) processes is provided in terms of southern African best practice in Visual Impact Assessment. The report compiled by Oberholzer states that the Best Practicable Environmental Option (BPEO) should address the following:

Ensure that the scale, density and nature of activities or developments are harmonious and
in keeping with the sense of place and character of the area. The BPEO must also ensure
that development must be located to prevent structures from being a visual intrusion (i.e.,
to retain open views and vistas).

- Long term protection of important scenic resources and heritage sites.
- Minimisation of visual intrusion in scenic areas.
- Retention of wilderness or special areas intact as far as possible.
- Responsiveness to the area's uniqueness, or sense of place." (Oberholzer, 2005)

The proposed development is located adjacent to the Lake Pleasant Private Nature portions with the northern portion of the property located within a Critical Biodiversity Area. To the south of the property are the sand-stone sea cliffs that are above 80m high that do create a significant landscape features. Due to the sea cliffs and the critical biodiversity, the site should be considered wilderness special area, and any development would need to be in alignment with the existing unique wilderness sense of place.

#### 5.2.2 Local and Regional Planning

The following tables list key regional and local planning that has relevance to the project pertaining to landscape-based tourism, and renewable energy projects.

Table 8: District Planning reference table relevant to the project

|   | Garden Route District Municipality SDF   |      |  |  |  |  |
|---|--|------|--|--|--|--|
| (Garden Route District Municipality, 2017)            |  |      |  |  |  |  |
| Theme   | Requirements   | Page |  |  |  |  |
| Tourism   | The Southern Cape region is identified as being a provincial leisure and tourism coastal belt and priority urban functional region, with the abovementioned towns as regional centres (of different function and hierarchy) providing clustered facilities and services. The PSDF directs that these towns should be prioritised for growing the provincial economy through regionally planned and co-ordinated infrastructure investment.   |      |  |  |  |  |
| Scenic<br>Resources<br>Garden Route D<br>(GRDM, 2024) | The significant scenic and cultural assets that drive growth of the service sectors have been identified for protection. These include agricultural landscapes and landscape features such as mountains, valleys, passes, estuaries, rivers and plains. Important natural landscape: Knysna Lagoon District Climate Change Adaptation Response Implementation Plan   | 114  |  |  |  |  |
| Climate<br>Change                                     | The development of future coastal management line will demarcate safe coastal areas as well as those that are at risk of being eroded, and infrastructure or areas that are vulnerable to the effects of sea-level rise. For example, an erosion setback line determined to be safe from present coastal conditions (i.e. present seawater levels and storm intensities) cannot be expected to remain safe under more extreme climate-changed conditions (i.e. raised seawater levels and/or more stormy sea conditions). The determination of coastal management lines that are safe in the long term needs an acknowledgement and quantification of risks, mobilisation of resources, solid policy guidelines and planning, as well as appropriate legislation (Department of Science and Technology, 2010). | 67   |  |  |  |  |

Table 9: Local Planning reference table relevant to the project

| Knysna Municipa  | ality SDF  |    |
|------------------|--|----|
| (Knysna Municipa | lity, 2020)  |    |
| Environmental    | <ul> <li>Manage land use and development along the coastline in a<br/>sustainable and precautionary manner:</li> </ul>   | 30 |
|                  | <ul> <li>Infill development of coastal settlements where there are existing land use rights should be carefully managed to ensure that roads and utility infrastructure are able to adequately meet the demand and performance standards in order not to compromise the sensitive host environment.</li> </ul>   | 31 |
| Sense of Place   | In all of the settlements in the KMA but in particular, Knysna town, this MSDF promotes linking the public coastal recreational destinations and biodiversity corridors with the non-motorised transport network and formal and informal (active and passive), hard and soft recreation spaces, to form a public open space system that knits the surrounding natural environment with an urban green network that flows through the town linking it to its surroundings. This will contribute to Knysna town's sense of place.  | 55 |
| Visual Impact    | <ul> <li>Maintain the integrity of the Garden Route landscape. View sheds over scenic landscapes and features must be safeguarded.</li> <li>Valuable view corridors and vistas, undeveloped ridge lines and cultural landscapes should not be compromised by development or the cumulative impact of development that detracts from the public experience of viewing these assets</li> <li>Employ the guidelines for managing visually sensitive landscapes set-out in the Garden Route Environmental Management Framework (EMF)</li> <li>Scenic routes provide public access to the enjoyment of these landscapes. The routes and the land use alongside these routes should be managed in such a way as to not compromise the views offered but to mark and celebrate the landscapes and the origins or nature of their significance. Significant scenic routes in the Knysna Municipal Area are as follows: George Rex Drive</li> </ul> | 32 |
| Economy          | Attracting economic investment that creates job opportunities for existing residents should be the focus of public sector attention in these villages. Potential for tourism attractions linked to agricultural activity and surrounding natural landscape should be explored.   | 47 |

# 5.3 Landscape Planning Policy Fit

The finding of this SSVR is that the planning fit for landscape is rated Low Negative. The proposed structures are situated in a highly prominent location on the edge of sea cliffs, an area currently devoid of man-made visual disturbances, and characterized by exceptional scenic quality. The sensitivity of receptors to man-made changes in this coastal region is likely to be very high. The proposed dwellings would be clearly visible from the beach, establishing a negative precedent for future structural developments along the sea cliffs. Additionally, these structures would disrupt the skyline as viewed from the beach below. The sites are located on

steep slopes with gradients exceeding 1 in 4, necessitating significant cut and fill operations and pole foundations that would require the development platform to be raised off the ground.

IN terms of new climate change related legislation, coastal erosion from sea level rise is highlighted as a significant risk. There is clear evidence of erosion affecting the sandstone cliffs, with the erosional cut-back exceeding 60 meters above ground level, coinciding with the elevation of the proposed main residential building's base. With anticipated sea level rise, this erosion is expected to worsen (subject to geotechnical specialist findings). This concern is explicitly addressed in the DEA&DP Western Cape Climate Change Response Strategy and the Garden Route District Climate Change Adaptation Response Implementation Plan. While the proposed dwellings are positioned 100 meters above the high water level (HWL), the DEA&DP is currently reviewing the HWL based on climate change risks.

While the proposed sites present significant landscape and visual impact concerns, there exists a local precedent for rural residential development on the adjacent property. Utilizing a similar topographic positioning, there is potential for development with sea views; however, this opportunity is primarily restricted to the southeastern section of the property near the proposed vehicle parking area. Depending on the size of the main residence in this area, there may also be sufficient space for two cottages to the west of the site. It is recommended that parking and garage facilities be located behind the dune.

# 6 BIBLIOGRAPHY

- Garden Route District Municipality. (2017). Eden District Municipality SDF.
- GRDM. (2024). Garden Route District Climate Change Adaptation Response Implementation Plan.
- Knysna Municipality. (2020). Knysna Municipality SDF Version 3 2020.
- NASA, A. G. (2009). Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model Version 2 (GDEM V2 2011). Ministry of Economy, Trade, and Industry (METI) of Japan and United States National Aeronauti.
- NELPAG. (n.d.). New England Light Pollution Advisory Group (NELPAG) http://cfa/www.harvard.edu/cfa/ps/nelpag.html) and Sky & Telescope http://SkyandTelescope.com/). NELPAG and Sky & Telescope support the International Dark-Sky Association (IDA) (http://www.darksky.o.
- Oberholzer, B. (2005). Guideline for involving visual and aesthetic specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Deve.
- SANBI. (2018). www.sanbi.org. Retrieved from 2018 National Biodiversity Assessment (NBA): https://www.sanbi.org/link/bgis-biodiversity-gis/
- Sheppard, D. S. (2000). Guidance for crystal ball gazers: Developing a code of ethics for landscape visualization. Department of Forest Resources Management and Landscape Architecture Program, University of British Columbia, Vancouver, Canada
- The Landscape Institute. (2003). *Guidelines for Landscape and Visual Impact Assessment* (Second ed.). Spon Press.
- USDI., B. (2004). Bureau of Land Management, U.S. Department of Interior. 2004. Visual Resource Management Manual 8400.

# 7 ANNEXURE A: SITE VISIT PHOTOGRAPHS AND COMMENTS

The following photographs were taken during the field survey as mapped below.

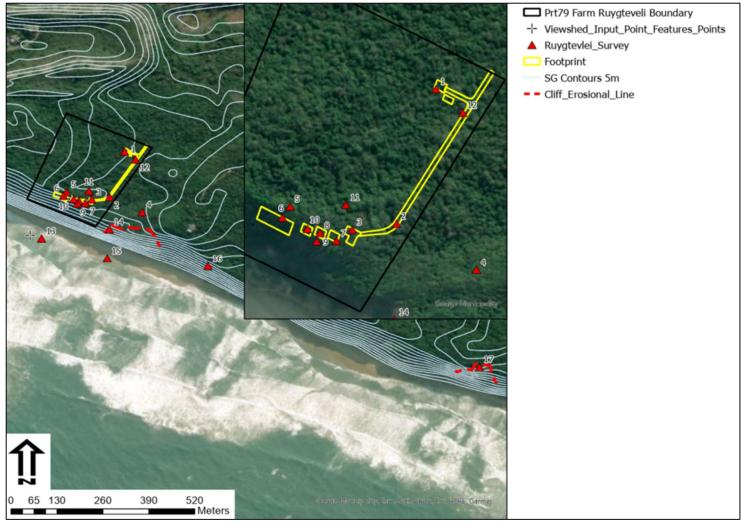


Figure 11: Survey point and project locality map.

Table 10. Landscape and visual risk table.

| ID | Remarks                                     | Context  | Risk   | Motivation   |
|----|---|----------|--------|--|
| 1  | Proposed garage                             | Site     | High   | High visual impact pending botanical specialists' findings due to thicket vegetation significance. agricultural zoning does allow for garage development. Not recomm3nded as will set precedent for landscape fragmentation in current position. Visual preference is to move closer to the visual preferred vehicle parking area closer to the proposed development node. |
| 2  | Poad access                                 | Site     | High   | Clear cut though High value thicket veg. Straight line of road creates dominant lines from clear cut vegetation. This should be viewed as a fatal flaw. The road needs to take terrain into account, not be in a straight line, and retain all medium to large trees (plus 4m).  |
| 3  | Parking area                                | Site     | High   | Proposed parking area is located on foredune in an area directly in front of adjacent residential receptor. Fatal flaw for vehicle parking and this should be moved off high ground to north where vegetation screening can take place.  |
| 4  | KOP residential receptor                    | Receptor | Medium | High visual exposure to parking areas where vehicles will become visually intrusive in the natural landscape. Not recommended for parking but could accommodate a low profile main residence development working on the same visual context as the KOP has set in the landscape.   |
| 5  | Visual preference for car park              | Site     | Medium | Pref for car park behind the fore dune as can be screened by trees.  |
| 6  | Proposed main residence                     | Site     | High   | Not suitable due to steep slopes, skyline intrusion and possible sea cliff collapse.   |
| 7  | Site cottage 1                              | Site     | Medium | not located on prominent terrain. existing veg provides visual screening and slopes med low. suitable with mitigation 4m above average ground level. wooden structure. no garden. fwc3 SE.   |
| 8  | Site cottage 2                              | Site     | High   | Steep slope area that will require cut fill or high pole platform extending the structure above the tree line. Not recommended.  |
| 10 | Site cottage 3                              | Site     | High   | Not recommended due to steep slopes and skyline intrusion.   |
| 11 | Visual preferred vehicle parking and garage | Site     | Low    | Low prominence and well veg screened, with space for consolidation of garage (subject to botanical specialist findings). Mitigate with retaining of significant indigenous trees.  |

| 12 | Site road access                           | Site      | High | Straight line clear cut will generate high visual intrusion that should be considered a fatal flaw. The road access can be accommodated and should be redesigned to meander in alignment with the natural contours such that long linear feature is not created. Subject to botanical specialist significance findings. Retain all trees larger than 5m in height. |
|----|--|-----------|------|--|
| 13 | KOP Beach 1                                | Receptor  | High | Class II with possible skyline intrusion. Not suitable due to skyline intrusion.   |
| 14 | possible visual risk<br>geological failure | Site      | High | Possible evidence of geological slippage to east of site. Close proximity to the cliff face could result in local landscape degradation if rubble from structure falls to the beach (Subject to geotechnical specialists' findings)  |
| 15 | KOP beach 2                                | Site      | High | Class II. Not suitable due to skyline intrusion.   |
| 16 | no skyline intrusion ls context            | Landscape | High | Existing precedent for no skyline intrusion on the top of the sea cliff that should be retained.   |
| 17 | evid3nce of geological slippage            | Site      | High | possible risk subject to Geotechnical ocean rise spec findings   |

| ID       | 1   |
|----------|---|
| Remarks  | Proposed garage                           |
| Time     | 10/22/2024 09:42:31.999 GMT+02:00         |
| Geometry | POINT Z (22,82557105 -34,03947892 98,197) |
| PhotoDir | SE  |
| Photo    | Ruygtevleu_20241022_094449265.jpg         |



| ID       | 2   |
|----------|---|
| Remarks  | Proposed road access                      |
| Time     | 10/22/2024 09:52:27.999 GMT+02:00         |
| Geometry | POINT Z (22,82519209 -34,04063267 96,666) |
| PhotoDir | N   |
| Photo    | Ruygtevleu_20241022_095520850.jpg         |



| ID       | 3  |
|----------|--|
| Remarks  | Proposed vehicle parking area.             |
| Time     | 10/22/2024 09:58:05.000 GMT+02:00          |
| Geometry | POINT Z (22,82473990 -34,04069085 104,188) |
| PhotoDir | E  |
| Photo    | Ruygtevleu_20241022_100022129.jpg          |



| ID       | 4  |
|----------|--|
| Remarks  | KOP residential receptor                 |
| Time     | 10/22/2024 10:01:10.055 GMT+02:00        |
| Geometry | POINT Z (22,82571808 -34,04092418 0,000) |
| PhotoDir | E  |
| Photo    | Ruygtevleu_20241022_100305365.jpg        |



| ID       | 5  |
|----------|--|
| Remarks  | visual preference for car park on flatter terrain north of the fore dune (pending botanical suitability statement) |
| Time     | 10/22/2024 10:10:06.999 GMT+02:00  |
| Geometry | POINT Z (22,82409860 -34,04050311 107,127)   |
| PhotoDir | NW   |
| Photo    | Ruygtevleu_20241022_101117953.jpg  |



| ID       | 6  |
|----------|--|
| Remarks  | site proposed main residence with clear views to the beach |
| Time     | 10/22/2024 10:20:50.000 GMT+02:00                          |
| Geometry | POINT Z (22,82402167 -34,04059820 106,459)                 |
| PhotoDir | SW   |
| Photo    | Ruygtevleu_20241022_102448963.jpg                          |



| ID       | 7  |
|----------|--|
| Remarks  | Site cottage 1 steep slopes and thicket vegetation |
| Time     | 10/22/2024 10:34:17.999 GMT+02:00                  |
| Geometry | POINT Z (22,82457953 -34,04078913 96,882)          |
| PhotoDir | SW   |
| Photo    | Ruygtevleu_20241022_103603959.jpg                  |



| ID       | 8  |
|----------|--|
| Remarks  | site cottage 2 steep slopes and thicket vegetation |
| Time     | 10/22/2024 10:47:02.597 GMT+02:00                  |
| Geometry | POINT Z (22,82440983 -34,04072331 0,000)           |
| PhotoDir | N  |
| Photo    | Ruygtevleu_20241022_104854563.jpg                  |



| ID       | 10   |
|----------|--|
| Remarks  | site cottage 3 steep slopes and thicket vegetation |
| Time     | 10/22/2024 10:59:07.000 GMT+02:00                  |
| Geometry | POINT Z (22,82428006 -34,04069075 103,841)         |
| PhotoDir | SW   |
| Photo    | Ruygtevleu_20241022_110135622.jpg                  |



| ID       | 11   |
|----------|--|
| Remarks  | vis preference parking and garage behind fore dune (pending botanical suitability statement) |
| Time     | 10/22/2024 11:08:44.999 GMT+02:00  |
| Geometry | POINT Z (22,82466857 -34,04048056 97,960)  |
| PhotoDir | NW   |
| Photo    | Ruygtevleu_20241022_110935765.jpg  |



| ID        | 12  |
|-----------|---|
| Remarks   | site road access                          |
| Time      | 10/22/2024 11:20:48.999 GMT+02:00         |
| Geometry  | POINT Z (22,82585122 -34,03967730 91,675) |
| Elevation | 91.675                                    |
| PhotoDir  | w   |
| Photo     | Ruygtevleu_20241022_112311426.jpg         |



| ID       | 13  |
|----------|---|
| Remarks  | KOP Beach 1 – Visual intrusion possible   |
| Time     | 10/22/2024 12:00:43.999 GMT+02:00         |
| Geometry | POINT Z (22,82318371 -34,04160241 34,806) |
| PhotoDir | NE  |
| Photo    | Ruygtevleu_20241022_120107258.jpg         |



| ID       | 14  |  |  |  |
|----------|---|--|--|--|
| Remarks  | possible visual risk geological failure   |  |  |  |
| Time     | 10/22/2024 12:04:39.999 GMT+02:00         |  |  |  |
| Geometry | POINT Z (22,82518800 -34,04145454 36,197) |  |  |  |
| PhotoDir | S   |  |  |  |
| Photo    | Ruygtevleu_20241022_120701553.jpg         |  |  |  |



| ID       | 15   |  |  |
|----------|--|--|--|
| Remarks  | KOP beach 2 visual intrusion highly likely |  |  |
| Time     | 10/22/2024 12:08:34.999 GMT+02:00          |  |  |
| Geometry | POINT Z (22,82513189 -34,04219157 35,053)  |  |  |
| PhotoDir | NW   |  |  |
| Photo    | Ruygtevleu_20241022_120914554.jpg          |  |  |



| ID       | 16   |  |  |  |
|----------|--|--|--|--|
| Remarks  | no skyline intrusion context on the sea cliffs that should be maintained |  |  |  |
| Time     | 10/22/2024 12:10:28.150 GMT+02:00  |  |  |  |
| Geometry | POINT Z (22,82769453 -34,04239384 0,000)                                 |  |  |  |
| PhotoDir | NE   |  |  |  |
| Photo    | Ruygtevleu_20241022_121112759.jpg  |  |  |  |



| ID       | 17                                       |  |  |
|----------|--|--|--|
| Remarks  | evid3nce of geological slippage          |  |  |
| Time     | 10/22/2024 12:23:36.576 GMT+02:00        |  |  |
| Geometry | POINT Z (22,83459920 -34,04496223 0,000) |  |  |
| PhotoDir | N  |  |  |
| Photo    | Ruygtevleu_20241022_122432224.jpg        |  |  |



# 8 ANNEXURE B: SPECIALIST INFORMATION

# 8.1 Professional Registration Certificate



#### 8.2 Curriculum Vitae (CV)

**1. Position**: Owner / Director

2. Name of Firm: Visual Resource Management Africa cc (www.vrma.co.za)

3. Name of Staff: Stephen Stead

**4. Date of Birth**: 9 June 1967

**5. Nationality:** South African

6. Contact Details: Cell: +27 (0) 83 560 9911

Email: steve@vrma.co.za

# 7. Educational qualifications:

University of Natal (Pietermaritzburg):

- Bachelor of Arts: Psychology and Geography
- Bachelor of Arts (Hons): Human Geography and Geographic Information Management Systems
- MSc Geography, University of KwaZulu, Natal: Land use and land-use change (2023)

#### 8. Professional Accreditation

- Association of Professional Heritage Practitioners (APHP) Western Cape
  - o Accredited VIA practitioner member of the Association (2011)

#### 9. Association involvement:

- International Association of Impact Assessment (IAIA) South African Affiliate
  - o Past President (2012 2013)
  - o President (2012)
  - o President-Elect (2011)
  - o Conference Co-ordinator (2010)
  - National Executive Committee member (2009)
  - o Southern Cape Chairperson (2008)

#### 10. Conferences Attended:

- International Geographical Congress, Lisbon (2017)
- IAIAsa 2012
- IAIAsa 2011
- IAIA International 2011 (Mexico)
- IAIAsa 2010
- IAIAsa 2009
- IAIAsa 2007

# 11. Continued Professional Development:

 Integrating Sustainability with Environment Assessment in South Africa (IAIAsa Conference, 1 day)

- Achieving the full potential of SIA (Mexico, IAIA Conference, 2 days 2011)
- Researching and Assessing Heritage Resources Course (University of Cape Town, 5 days, 2009)

#### 12. Countries of Work Experience:

South Africa, Mozambique, Malawi, Lesotho, Kenya, and Namibia

#### 13. Relevant Experience:

Stephen gained six years of experience in the field of Geographic Information Systems mapping and spatial analysis working as a consultant for the KwaZulu-Natal Department of Health and then with an Environmental Impact Assessment company based in the Western Cape. In 2004 he set up the company Visual Resource Management Africa that specializes in visual resource management and visual impact assessments in Africa. The company makes use of the well-documented Visual Resource Management methodology developed by the Bureau of Land Management (USA) for assessing the suitability of landscape modifications. Stephen has assessed of over 150 major landscape modifications throughout southern and eastern Africa. The business has been operating for eighteen years and has successfully established and retained a large client base throughout Southern Africa which include amongst other, Rio Tinto (Pty) Ltd, Bannerman (Pty) Ltd, Anglo Coal (Pty) Ltd, Eskom (Pty) Ltd, NamSolar and Vale (Pty) Ltd, Ariva (Pty) Ltd, Harmony Gold (Pty) Ltd, Millennium Challenge Account (USA), Pretoria Portland Cement (Pty) Ltd

#### 14. Languages:

- English First Language
- Afrikaans fair in speaking, reading and writing.

#### 15. Projects:

Table 11: VRM Africa Projects Assessments Table

| DESCRIPTION         | COUNT | DESCRIPTION     | COUNT |
|---------------------|-------|-----------------|-------|
| Dam                 | 1     | UISP            | 8     |
| Mari-culture        | 1     | Structure       | 8     |
| Port                | 1     | OHPL            | 12    |
| Railway             | 1     | Industrial      | 12    |
| Power Station       | 3     | Wind Energy     | 22    |
| Hydroelectric       | 4     | Battery Storage | 14    |
| Resort              | 4     | Mine            | 20    |
| Golf/Residential    | 1     | Residential     | 45    |
| Road Infrastructure | 5     | Solar Energy    | 62    |
| Substation          | 5     | TOTAL           | 237   |

#### 9 ANNEXURE C: METHODOLOGY DETAIL

# 9.1 Baseline Analysis Stage

In terms of VRM methodology, landscape character is derived from a combination of **scenic quality**, **receptor sensitivity** to landscape change and **distance** from the proposed landscape change. The objective of the analysis is to compile a mapped inventory of the visual resources found in the receiving landscape, and to derive a mapped Visual Resource sensitivity layer from which to evaluate the suitability of the landscape change.

#### 9.1.1 Scenic Quality

The scenic quality is determined making use of the VRM Scenic Quality Checklist that identifies seven scenic quality criteria which are rated with 1 (low) to 5 (high) scale. The scores are totalled and assigned an A (High), B (Moderate) or C (low) based on the following split:

A= scenic quality rating of ≥19;

 $B = rating \ of \ 12 - 18,$ 

C= rating of ≤11

The seven scenic quality criteria are defined below:

- Land Form: Topography becomes more of a factor as it becomes steeper, or more severely sculptured.
- **Vegetation**: Primary consideration given to the variety of patterns, forms, and textures created by plant life.
- **Water**: That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration.
- **Colour**: The overall colour(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) are considered as they appear during seasons or periods of high use.
- **Scarcity**: This factor provides an opportunity to give added importance to one, or all, of the scenic features that appear to be relatively unique or rare within one physiographic region.
- Adjacent Land Use: Degree to which scenery and distance enhance, or start to influence, the overall impression of the scenery within the rating unit.
- **Cultural Modifications**: Cultural modifications should be considered and may detract from the scenery or complement or improve the scenic quality of an area.

#### 9.1.2 Receptor Sensitivity

Receptor sensitivity to landscape change is determined by rating the following factors in terms of Low to High:

- **Type of Users**: Visual sensitivity will vary with the type of users, e.g. recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change.
- **Amount of Use**: Areas seen or used by large numbers of people are potentially more sensitive.
- **Public Interest**: The visual quality of an area may be of concern to local, or regional, groups. Indicators of this concern are usually expressed via public controversy created in response to proposed activities.
- Adjacent Land Uses: The interrelationship with land uses in adjacent lands. For example, an area within the viewshed of a residential area may be very sensitive, whereas an area surrounded by commercially developed lands may not be as visually sensitive.

- **Special Areas**: Management objectives for special areas such as Natural Areas, Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, Scenic Areas, Scenic Roads or Trails, and Critical Biodiversity Areas frequently require special consideration for the protection of their visual values.
- Other Factors: Consider any other information such as research or studies that include indicators of visual sensitivity.

#### 9.1.3 Exposure

The area where a landscape modification starts to influence the landscape character is termed the Zone of Visual Influence (ZVI) and is defined by the U.K. Institute of Environmental Management and Assessment's (IEMA) 'Guidelines for Landscape and Visual Impact Assessment' as 'the area within which a proposed development may have an influence or effect on visual amenity (of the surrounding areas).'

The inverse relationship of distance and visual impact is well recognised in visual analysis literature (*Hull, R.B. and Bishop, I.E., 1988*). According to Hull and Bishop, exposure, or visual impact, tends to diminish exponentially with distance. The areas where most landscape modifications would be visible are located within 2 km from the site of the landscape modification. Thus, the potential visual impact of an object diminishes at an exponential rate as the distance between the observer and the object increases due to atmospheric conditions prevalent at a location, which causes the air to appear greyer, thereby diminishing detail. For example, viewed from 1000 m from a landscape modification, the impact would be 25% of the impact as viewed from 500 m from a landscape modification. At 2000m it would be 10% of the impact at 500 m.

<u>Distance</u> from a landscape modification influences the size and clarity of the landscape modification viewing. The Bureau of Land Management defines three distance categories:

- i. **Foreground / Middle ground**, up to approximately 6km, which is where there is potential for the sense of place to change;
- ii. **Background areas**, from 6km to 24km, where there is some potential for change in the sense of place, but where change would only occur in the case of very large landscape modifications; and
- iii. **Seldom seen areas**, which fall within the Foreground / Middle ground area but, as a result of no receptors, are not viewed or are seldom viewed.

#### 9.1.4 Key Observation Points

During the Baseline Inventory Stage, Key Observation Points (KOPs) are identified. KOPs are defined by the Bureau of Land Management as the people (receptors) located in strategic locations surrounding the property that make consistent use of the views associated with the site where the landscape modifications are proposed. These locations are important in terms of the VRM methodology, which requires that the Degree of Contrast (DoC) that the proposed landscape modifications will make to the existing landscape be measured from these most critical locations, or receptors, surrounding the property. To define the KOPs, potential receptor locations were identified in the viewshed analysis, and screened, based on the following criteria:

- Angle of observation.
- Number of viewers.
- Length of time the project is in view.
- Relative project size.

- Season of use.
- Critical viewpoints, e.g., views from communities, road crossings; and
- Distance from property.

#### 9.2 Assessment and Impact Stage

The analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments will meet the management objectives established for the area, or whether design adjustments will be required. This requires a contrast rating to assess the expected DoC the proposed landscape modifications would generate within the receiving landscape in order to define the Magnitude of the impact.

#### 9.2.1 Contrast Rating

The contrast rating is undertaken to determine if the VRM Class Objectives are met. The suitability of landscape modification is assessed by comparing and contrasting existing receiving landscape to the expected contrast that the proposed landscape change will generate. This is done by evaluating the level of change to the existing landscape by assessing the line, colour, texture and form, in relation to the visual objectives defined for the area. The following criteria are utilised in defining the DoC:

- None: The element contrast is not visible or perceived.
- **Weak**: The element contrast can be seen but does not attract attention.
- **Moderate**: The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- **Strong**: The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

As an example, in a Class I area, the visual objective is to preserve the existing character of the landscape, and the resultant contrast to the existing landscape should not be notable to the casual observer and cannot attract attention. In a Class IV area example, the objective is to provide for proposed landscape activities that allow for major modifications of the existing character of the landscape. Based on whether the VRM objectives are met, mitigations, if required, are defined to avoid, reduce or mitigate the proposed landscape modifications so that the visual impact does not detract from the surrounding landscape sense of place.

Based on the findings of the contrast rating, the Magnitude of the Landscape and Visual Impact Assessment is determined.

#### 9.2.2 Photomontages

As a component in this contrast rating process, visual representation, such as photo montages are vital in large-scale modifications, as this serves to inform Interested & Affected Parties and decision-making authorities of the nature and extent of the impact associated with the proposed project/development. There is an ethical obligation in this process, as visualisation can be misleading if not undertaken ethically. In terms of adhering to standards for ethical representation of landscape modifications, VRMA subscribes to the Proposed Interim Code of Ethics for Landscape Visualisation developed by the Collaborative for Advanced Landscape Planning (CALP) (Sheppard, 2000). This code states that professional presenters of realistic landscape visualisations are responsible for promoting full understanding of proposed landscape changes, providing an honest and neutral visual representation of the expected

landscape, by seeking to avoid bias in responses and demonstrating the legitimacy of the visualisation process. Presenters of landscape visualisations should adhere to the principles of:

- Access to Information
- Accuracy
- Legitimacy
- Representativeness
- Visual Clarity and Interest

#### The Code of Ethical Conduct states that the presenter should:

- Demonstrate an appropriate level of qualification and experience.
- Use visualisation tools and media that are appropriate to the purpose.
- Choose the appropriate level of realism.
- Identify, collect and document supporting visual data available for, or used in, the visualisation process.
- Conduct an on-site visual analysis to determine important issues and views.
- Seek community input on viewpoints and landscape issues to address in the visualisations.
- Provide the viewer with a reasonable choice of viewpoints, view directions, view angles, viewing conditions and timeframes appropriate to the area being visualised.
- Estimate and disclose the expected degree of uncertainty, indicating areas and possible visual consequences of the uncertainties.
- Use more than one appropriate presentation mode and means of access for the affected public.
- Present important non-visual information at the same time as the visual presentation, using a neutral delivery.
- Avoid the use, or the appearance of, 'sales' techniques or special effects.
- Avoid seeking a particular response from the audience.
- Provide information describing how the visualisation process was conducted and how key decisions were taken (Sheppard, 2000).