Eco Route
Environmental Consultancy
REGISTRATION NO. 1998/031976/23

46 President Steyn, The Island, Sedgefield
Western Cape, South Africa

Mobile: 082 557 7122
Email: admin@ecoroute.co.za
Website: www.ecoroute.co.za

# THE PROPOSED RESIDENTIAL AND 3 COTTAGES DEVELOPMENT OF PORTION 79 OF FARM 205 RUYGTE VALLEY, SEDGEFIELD, KNYSNA MUNICIPALITY, WESTERN CAPE PROVINCE, SOUTH AFRICA

## ENVIRONMENTAL MANAGEMENT PROGRAMME

**Locality Map: Portion 79/205**


Date: January 2026

Compiled by: Ms Bianca Gilfillan (2023/7929)
DFFE Reference: 14/12/16/3/3/1/3235

EAP Signature: B. G

**CONDITIONS OF USE OF THE REPORT**

This report is the property of **Eco Route Environmental Consultancy**, who may publish it, in whole, provided that:

1. Eco Route Environmental Consultancy are indemnified against any claim for damages that may result from publication.
2. Eco Route Environmental Consultancy accepts no responsibility by the Applicant/Client for failure to follow or comply with the recommended programme, specifications or recommendations contained in this report.
3. Eco Route Environmental Consultancy accepts no responsibility for deviation or non-compliance of any specifications or guidelines provided in the report.
4. This document remains the confidential and proprietary information of Eco Route Environmental Consultancy and is protected by copyright in favour of Eco Route Environmental Consultancy and may not be reproduced or used without the written consent from Eco Route Environmental Consultancy, which has been obtained beforehand.
5. This document is prepared exclusively for **Knysna Local Municipality** and is subject to all confidentiality, copyright and trade secrets, rules, intellectual property law and practices of South Africa.

**STATEMENT OF INDEPENDENCE**

I, **Bianca Gilfillan** of Eco Route Environmental Consultancy, in terms of section 33 of the NEMA, 1998 (Act No. 107 of 1998), as amended, hereby declare that I provide services as an independent Environmental Assessment Practitioner (EAPASA Reg: **2023/7929**) and receive remuneration for services rendered for undertaking tasks required in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 (as amended). I have no financial or other vested interest in the project.

# Contents

# 1. INTRODUCTION

**Environmental Management Programme Requirements**

The National Environmental Management Act, 1998 (ACT NO. 107 OF 1998), regulation no.326 as amended, Appendix 4 stipulates the required information that must be incorporated within an Environmental Management Programme (EMPr). The checklist below serves as a summary of how these requirements were incorporated into this EMPr.

**Objectives of EMPr**

The purpose of this EMPr is to provide an easily interpreted reference document that ensures that the project environmental commitments, safeguards and mitigation measures from the environmental planning documents, project approvals, and scope of work are implemented.

The objectives for the EMPr are:

- To develop, implement and maintain effective management systems for the environmental aspects.
- To document details of environmental protection infrastructure and controls so that they can provide long-term protection for the natural environment.
- To ensure compliance with relevant legislation (National, Provincial and Local), regulatory requirements and environmental documents.
- To maximise the value and outcomes of environmental monitoring activities so that the information can be applied to the planning and implementation of future projects.
- To ensure that all Environmental Management considerations are implemented during the planning, operational and maintenance phases of the project.

All the environmental specifications and the procedures discussed in this document were also developed in accordance with the relevant legislation applicable to the development

The proposed development requires an EMPr during the construction and operation phase. Therefore, the EMPr will guide the implementation of the mitigation measures against various environmental impacts which have been identified during the impact assessment process.

The EMPr further provides a mechanism for monitoring the effectiveness of the mitigation measures throughout the construction and operation phase of the activity. This EMPr includes, among others:

- Details of the applicant and the EAP.
- Location of the proposed activity in the context of the local and regional environment.
- Detailed description of all components of the proposed activity.
- Detailed identification of environmental issues and associated risks.
- Mitigation measures for the construction and operation of the activity.
- Clear roles and responsibilities of parties during the implementation phase.
- Monitoring and auditing process during all phases of activity; and
- Specific timeframe for implementation of certain mitigation measures as well as clarity on the submission of audit reports.

**Scope of the EMPr**

In accordance with the requirements of the Environmental Impact Assessment (EIA) Regulations, 2014, the EMPr is to be implemented by the Developer/applicant as well as any employee, contractor, agent or sub-contractor appointed to act on behalf of the Developer in the development of the activity. Thus, the specifications outlined in this EMPr are applicable to all activities undertaken by the Developer as well as appointed contractors and all persons involved in the undertaking of the activities on the site.

An Environmental Code of Conduct has been established to outline a simplified set of regulations that all personnel engaged in the project must adhere to consistently. This code is to be prominently displayed at key locations to ensure ongoing environmental consciousness. The effectiveness of the EMPr hinges on the applicant's strict adherence to the stipulated conditions and measures within the EMPr, coupled with the vigilant monitoring of the EMPr.

**EMPr as a dynamic document**

The approach used for this EMPr is derived from the Deming Cycle of continuous improvement that entails the reiterative actions of the plan, do, check, act, and back to the planning phase.

1. **Plan**

Project-specific planning involves consideration of the legal requirements, development details, and the nature of the receiving environment on the proposed development site as well as the existing socio-economic characteristics of the region. This is a starting point for targeted environmental impact management outcomes. Environmental performance indicators are then determined with measurable targets prescribed to monitor the environmental performance of the project.

**a. Commencement of works**

The site project contractors must timeously receive a copy of the EMPr and any other additional information that pertains to site conditions/amendments or deviations from the original site plan.

- This EMPr must be included to form part of the contractor's site specification documentation.
- A copy of the EMPr must be on-site at all times and available for presentation to any authority requesting to see such document.

**b. No work on site may take place until**

- The Declaration of Understanding/Environmental Contract is signed between the relevant parties.
- One week's seven (7) days] written notice given to the Department before the commencement of any construction activity (As per EA).
- On-Site Start-Up Meeting has been held.
- Site and No-Go areas have been identified and demarcated.
- Contractors are in possession of the EMPr and other relevant documentation.
- Contractors/Subcontractors have signed the Declaration of Understanding.
- All mandatory site equipment is in place.
- On-site Environmental Education & Awareness training sessions must take place with all relevant construction personnel.

NB: Work refers to Camp Establishment, Earthmoving activities and any preliminary construction activities.

2. **Do**

Throughout the development's life span, the developer will be required to develop and maintain a Quality Management System (QMS) designed to ensure that best management practices are implemented on a day-to-day. The QMS should at least include the following information:

- Location and extent of development components and associated infrastructure (footprint).
- Associated activities such as the transportation of people and equipment where necessary.
- Resources and experience required (staffing).
- Materials and equipment to be used.
- Management actions.
- Human resources required.

**a. Construction-monitoring activities**

- Emergency/disaster incident and reaction procedures; and
- Rehabilitation procedures for the impacted environment. These topics will be cross-linked into the contracts related to the development of the project.

**b. Check**

A system of assessing monitoring results has been developed to check the environmental management performance. Continuous assessment facilitates proactive management of environmental issues so that mitigation measures can successfully be implemented on an ongoing basis to keep environmental indicators within their target thresholds. Regular auditing of environmental performance is prescribed to prove and preserve accountability.

**c. Implement**

The assessments and monitoring of the results and findings of the regular audits must be documented within a reporting system. Precautionary mitigation measures and corrective actions will be prescribed, and instructions given for implementation. The findings of monitoring and auditing programmes can also be used to update the EMPr. The EMPr is a dynamic project-specific document, which can be updated regularly to address potential changes in the receiving environment.

**Content of environmental management programme (EMPr):**

**1.** (1) An EMPr must comply with Section 24N of the Act and include –

| | |
|---|---|
| (a) details of –<br>i. The EAP who prepared the EMPr; and<br>ii. The expertise of that EAP to prepare the EMPr, including a curriculum vitae. | This EMPr was prepared by Ms Bianca Gilfillan of Eco Route Environmental Consultancy. Bianca has more than 20 years of experience as an Environmental Assessment Practitioner. Please see the attached CV of the EAP. |
| (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description; | This EMPr encompasses all aspects related to the proposed development of a residential dwelling on Portion 79 of 205, Ruygte Valley, Sedgefield, Western Cape. Sections 2 to 4. - Detailed information regarding the proposed project. |
| (c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on environmental sensitivities of the preferred site, indicating any areas that should be avoided including buffers; | Section 5 contains the Site Development Plan, which is attached as Appendix B. The accompanying Geographic Information System (GIS) maps delineate the sensitive areas present within the site. |
| (d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including –<br>i. Planning and design<br>ii. Pre-construction activities<br>iii. Construction activities<br>iv. Rehabilitation of the environment after construction and where applicable post-closure; and<br>v. Where relevant, operation activities | Addressed in Section 7 |
| (f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to –<br>i. Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;<br>ii. Comply with any prescribed environmental management standards and practises;<br>iii. Comply with any applicable provisions of the Act regarding closure, where applicable; and<br>iv. Comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable; | Addressed throughout the EMPr, specifically Section 14 |
| (g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f); | Addressed throughout the EMPr, specifically Section 16. |

| | |
|---|---|
| (h) the frequency and monitoring of the implementation of the impact management actions contemplated in paragraph (f); | Section 11. |
| (i) an indication of the persons who will be responsible for the implementation of the impact management actions; | Section 9 – 11. |
| (j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented; | Sections 9-11, 14. |
| (k) the mechanism for monitoring compliance with the impact management contemplated in paragraph (f) | Section 14. |
| (l) a program for reporting on compliance, taking into account the requirements as prescribed by the regulations; | Section 14. |
| (m) an environmental awareness plan describing the manner in which –<br>i. The applicant intends to inform his or her employees of any environmental risk which may result from their work; and<br>ii. Risks must be dealt with in order to avoid pollution or the degradation of the environment; and | Sections 13 & 14. |
| (n) any specific information that may be required by the competent authority | All required information has been addressed. |

In accordance with the Integrated Environmental Management Guidelines published by the Department of Environmental Affairs & Tourism (DEAT) in 1992, the purpose of an Environmental Management Programme (EMPr) is "*to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised*".

**National Environmental Management Act, (Act 107 of 1998)**

(i) Section 28 of NEMA (National Environmental Management Act, Act 107 of 1998) states that:

Duty of care and remediation of environmental damage

"*(1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment*"

The Environmental Management Plan (EMPr) shall be considered an integral component of the contract documents, as it delineates the methodologies and responsibilities necessary to achieve the project objectives in an environmentally sustainable manner. This plan specifically focuses on the prevention and mitigation of environmental impacts that may arise from the construction activities associated with this project.

These requirements will have a financial impact on the project's costs.

This Environmental Management Plan (EMPr) is intended to be a dynamic document that may require modification during its implementation period. It is essential that the plan adapts to recognise emerging issues or changes in the parameters of identified issues. Furthermore, it must address these challenges with the appropriate or revised mitigation measures.

**The Polluter-Pays Principle**

This principle provides that "*the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.*" The Polluter Pays Principle will be meticulously implemented throughout both the construction and operational phases of this project.

**The EMPr will address the environmental impacts during the:**

i. Planning and design phase
ii. Pre-construction activities
iii. Construction activities
iv. Rehabilitation of the environment after construction
v. Where relevant, operation activities

The principal objective of the EMPr is to ensure the protection of the environment throughout the entire lifespan of the project in relation to the surrounding ecosystem.
The EMPr encompasses a series of environmental specifications and recommendations designed to mitigate negative impacts on the surrounding environment. The programme will delineate the measures that must be implemented to facilitate the appropriate restoration of areas affected by the proposed project and to avert long-term environmental degradation.

The contractor must be informed of the environmental responsibilities outlined in the EMPr. Furthermore, the contractor is required to affirm their familiarity with all pertinent environmental legislation, as well as the conditions stipulated in the Environmental Authorisation (EA) and the EMPr itself.

## 2. PROJECT DETAILS

Portion 79 of Farm Ruygte Valley No. 205 is situated east of Cola Beach within the Groenvlei rural area of Sedgefield, Western Cape, and measures approximately 5.1576 hectares. The property is bounded to the south by Coastal Public Property, adjoins Portion 78 of Farm Ruygte Valley No. 205 — a privately managed nature reserve zoned Agriculture Zone I — and lies adjacent to the Lake Pleasant Private Nature Reserve to the east.

According to the Western Cape Biodiversity Spatial Plan (WCBSP, 2025), the northern portion of the property is classified as a Critical Biodiversity Area 1 (CBA1), while the southern portion is mapped as a degraded Critical Biodiversity Area 2 (CBA2). The site supports Goukamma Strandveld, classified as Vulnerable in the SANBI Vegetation Map (2025), with patches of Western Cape Milkwood Forest occurring within the CBA1 area. The degraded CBA2 portion is dominated by Acacia cyclops. The southern coastal boundary is characterised by steep sandstone sea cliffs exceeding 80 metres in height, forming a visually prominent and environmentally sensitive geological feature. The site is therefore situated on elevated terrain approximately 80 metres above mean sea level, well above the active shoreline.

The property forms part of a smallholding area subdivided in 1961 from Portion 70 (originally Portion 38 of Lake Pleasant Estate). The site remains undeveloped and is zoned Agriculture Zone I in terms of the Knysna Zoning Scheme By-Law (1992), which permits one dwelling house as a primary right. Title deed conditions imposed by Lake Pleasant Estate (Pty) Ltd require written consent for the establishment of additional dwellings and approval of building plans, which will be sought from the relevant authorities.

Access to the site is provided via Groenvlei Beach Road, a gravel road leading toward the western beach of the Goukamma Nature Reserve, as well as a Public Servitude Road (Bushy Way, SG Diagram 6532/61) that connects to the N2 via the Groenvlei Divisional Road (DR 1594). Bushy Way is currently overgrown and will require limited clearing strictly along existing disturbed tracks to enable vehicular access, thereby minimising vegetation loss.

Figure 1 illustrates the Updated Site Constraints Map, indicating vegetation types (CBA1 and CBA2), slope contours, access routes, the indicative 100 m High Water Mark (HWM) buffer, and the proposed amended development area on Portion 79 of Farm Ruygte Valley No. 205 (Appendix B1).

Coastal Context and High Water Mark (HWM)

Portions of the property fall within the broader 100-metre High Water Mark (HWM) inland zone, as defined for coastal management purposes under the National Environmental Management: Integrated Coastal Management Act, 2008 (ICMA). The HWM, as depicted on available mapping products, represents an indicative planning and risk-screening tool, rather than a gazetted or legislatively fixed development setback line. Its purpose is to identify areas potentially influenced by coastal processes such as storm surge, wave run-up, erosion, and long-term sea-level rise.

Importantly, development within the HWM requires careful risk-based assessment and mitigation, provided that site-specific coastal risk has been assessed and appropriate mitigation measures are implemented. The HWM, therefore, functions as a trigger for environmental assessment and precautionary planning rather than an absolute exclusion area.

This constraint has been explicitly considered during the site planning and layout process. While complete avoidance of the 100 m HWM zone is not feasible due to the configuration of the property and the presence of other environmental constraints — including CBA1 areas and Milkwood Forest — the amended preferred development footprint has been positioned to avoid the most sensitive coastal features. These include the active shoreline, coastal cliffs, and areas of elevated erosion, flooding, and instability risk.

The revised layout further avoids the geotechnically constrained D7 zone, thereby reducing long-term structural and erosion risk. Specialist geotechnical and engineering assessments confirm that the selected footprint represents the least constrained and lowest-risk development option within a highly sensitive coastal environment.

Proposed Development

The amended preferred development comprises a main dwelling and three small self-contained accommodation units clustered within a single compact development node, together with associated access, parking, and pedestrian boardwalk infrastructure. The landowners intend to utilise the additional units for private family and guest accommodation within a conservation-compatible land-use framework.

The total building footprint associated with the preferred alternative is approximately ±1 375 m², inclusive of buildings, access infrastructure, and associated disturbed areas. This represents approximately 2.7% of the total property area (±5.16 ha), ensuring that more than 97% of the site remains in a natural or rehabilitated state. The updated Constraints Map confirms that the preferred layout is confined to degraded portions of the site, avoids CBA1 and indigenous forest areas, and excludes mapped high-risk coastal erosion and flood zones. The limited and clustered footprint supports long-term biodiversity protection, dune stability, and preservation of the scenic coastal landscape.

All service infrastructure will operate off-grid and will comprise rainwater harvesting tanks, sealed conservancy tanks for wastewater management, solar power generation, and off-site waste disposal via municipal collection services. The architectural design adopts an environmentally sensitive approach, utilising lightweight materials such as timber, steel, glass, and natural stone to blend with the surrounding landscape and minimise excavation and visual intrusion.

Although zoned Agriculture Zone I, the site is unsuitable for commercial agriculture due to its ecological sensitivity, steep slopes, and the presence of Critical Biodiversity Areas. The proposed development supports private conservation use consistent with the findings of the Terrestrial Biodiversity Assessment and Town Planning Report and reinforces long-term ecological stewardship of the property.

Geotechnical and Physical Context

The site forms part of a coastal dune system underlain by fossilised sandstone formations dipping southwards at approximately 45 degrees. According to the Preliminary Geotechnical Report (Rock Hounds, 2024) and the Civil and Structural Engineering Confirmation (2025), subsurface conditions comprise loose to medium-dense sandy loam and fine sand with organic-rich top layers. These soils are highly permeable but structurally weak, necessitating careful foundation and stormwater design to prevent erosion and instability.

Key engineering recommendations include:

- use of reinforced raft or piled foundations suitable for low-bearing soils (G7–G9).
- avoidance of deep box cuts, with structures following natural contours to maintain slope stability.
- natural dispersion of stormwater in accordance with Sustainable Urban Drainage System (SUDS) principles; and
- immediate rehabilitation of disturbed dune areas using locally indigenous vegetation.

Vegetation within the upper 65 m contour comprises coastal forest and thicket, transitioning to shrubland toward the coast. Analysis of historical satellite imagery indicates long-term stability of the dune system, with consistent vegetation cover recorded between 2005 and 2024.

Climatic modelling indicates a marginal projected increase in seasonal rainfall and no indication of unacceptable coastal flooding risk in the short to medium term, subject to appropriate design and stormwater management. While portions of the property fall within the 100 m HWM trigger area, the amended preferred development footprint is located

outside mapped high-risk erosion and flood zones and represents the lowest practicable risk position within a constrained coastal environment.


Figure 1: Locality Map

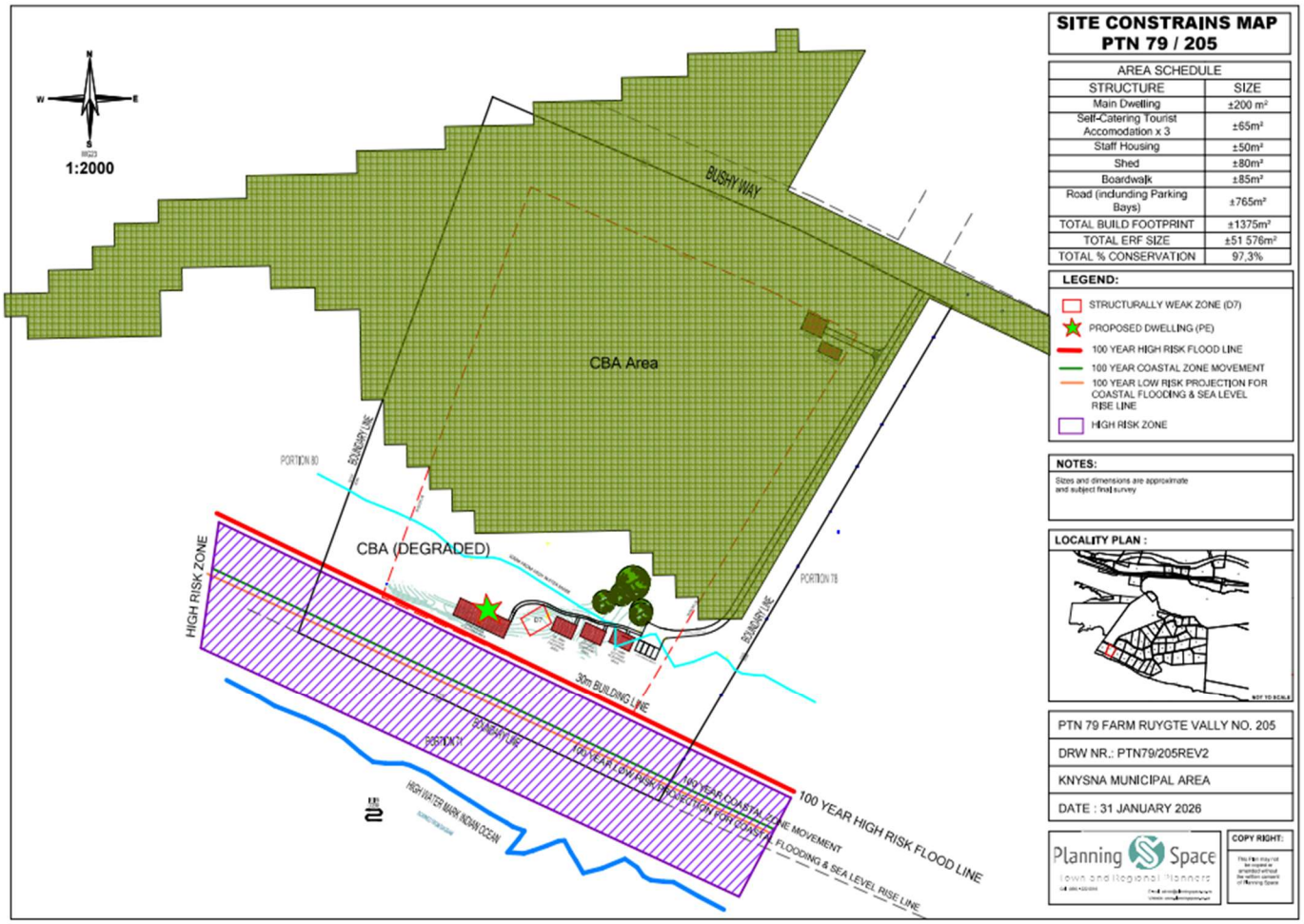



Figure 2: Updated Site Constraints Map showing vegetation types (CBA1, CBA2), slope contours, access routes, and proposed development area on Portion 79 of Farm Ruygte Valley No. 205, Sedgefield. Source: Appendix B1 – Site Constraints Map (2026).

**Preferred Development**

Portion 79 of Farm Ruygte Valley No. 205, situated east of Cola Beach within the Groenvlei rural area of Sedgefield, Western Cape, measures approximately 5.1576 hectares. The property is bounded to the south by Coastal Public Property, adjoins Portion 78 of Farm Ruygte Valley No. 205—a private nature reserve zoned Agriculture Zone I—and lies adjacent to the Lake Pleasant Private Nature Reserve to the east. According to the Western Cape Biodiversity Spatial Plan (WCBSP, 2025), the northern portion of the property is classified as a Critical Biodiversity Area 1 (CBA1), while the southern portion is designated as a degraded Critical Biodiversity Area 2 (CBA2). The site supports Goukamma Strandveld (classified as Vulnerable in the SANBI Vegetation Map, 2025), with patches of Western Cape Milkwood Forest occurring within the CBA1 area. The degraded CBA2 portion is dominated by Acacia cyclops.

The southern coastal boundary is characterised by steep sandstone cliffs exceeding 80 metres in height, forming a visually prominent and environmentally sensitive geological feature. The property forms part of a smallholding area subdivided in 1961 from Portion 70 (originally Portion 38 of Lake Pleasant Estate). The site remains undeveloped and is zoned Agriculture Zone I in terms of the Knysna Zoning Scheme By-Law (1992), which permits one dwelling house as a primary land-use right. Title deed conditions imposed by Lake Pleasant Estate (Pty) Ltd require written consent for the establishment of additional dwellings and approval of building plans, which will be sought from the relevant authorities. Access to the site is provided via Groenvlei Beach Road, a gravel road leading toward the western beach of the Goukamma Nature Reserve, as well as a Public Servitude Road (Bushy Way, SG Diagram 6532/61) that connects to the N2 via the Groenvlei Divisional Road (DR 1594). Bushy Way is currently overgrown and will require limited clearing along existing disturbed tracks only, in order to enable vehicular access while minimising vegetation loss.

Portions of the property fall within the 100-metre High Water Mark (HWM) buffer, as defined under the National Environmental Management: Integrated Coastal Management Act, 2008. The presence of the HWM represents a significant spatial and environmental constraint on development within the southern portion of the site. This constraint has been explicitly considered during the site planning and layout process. While complete avoidance of the HWM buffer is not feasible due to the configuration of the property and the presence of other environmental constraints, the proposed development footprint has been positioned to avoid the most sensitive coastal features, including the active shoreline, steep coastal cliffs, and areas associated with higher-risk coastal hazard projections.

The preferred layout represents the least constrained and lowest-risk development option available, as informed by the Site Constraints Map (Figure 1; Appendix B1) and supported by the engineering and geotechnical assessments.

The Applicant proposes the development of a primary residence, three additional self-contained accommodation units, a parking area, and a garage/storeroom on Portion 79 of Farm Ruygte Valley No. 205. Vehicular access to the site will be provided via a gravel access road less than 3 metres wide, routed through existing disturbed areas within dense vegetation, as illustrated on the Site Constraints Map (Figure 1; Appendix B1).

The proposed development comprises a main dwelling (±200 m²), three small self-contained units (±65 m² each), staff accommodation (±50 m²), an equipment shed (±80 m²), and associated parking and access infrastructure. The landowners currently plan to utilise the additional units for private family and guest accommodation. From a planning perspective, the proposed rezoning provides a tourism-compatible land-use framework required for multiple accommodation units on agriculturally zoned land and is aligned with long-term conservation and land-management objectives.

Vehicular access will lead to a parking area of approximately 660 m², from which pedestrian access to the main dwelling and accommodation units will be provided via elevated timber boardwalks, reducing soil compaction and disturbance to underlying vegetation. The development concept is to establish a low-impact private retreat within a natural coastal landscape. The architectural design will utilise lightweight, environmentally sensitive materials, including timber, steel, glass, and natural stone, enabling the structures to blend visually with the surrounding environment and minimising excavation. The total development footprint is approximately 1 375 m², representing less than 2.7% of the property. Approximately 97.3% of the site remains protected under conservation-compatible land use.

As a result, approximately 97.3% of the site will remain in a natural or near-natural state. According to the Preliminary Geotechnical and Geomatic Report (Rock Hounds, 2024) and the Civil and Structural Engineering Confirmation (Marius van Coller, Pr Eng, 2025), the proposed development area (located at approximately 75 m above mean sea level) lies above the 100-year high-risk coastal erosion line and within a geotechnically feasible zone, provided that appropriate slope-stabilisation and stormwater-management measures are implemented. The preferred development footprint avoids structurally weak zones and areas of elevated erosion risk identified on the Site Constraints Map. The Western Cape Biodiversity Spatial Plan (2025) identifies the northern portion of the property as CBA 1 (Critical Biodiversity Area – Maintain) and the southern portion as CBA 2 (Critical Biodiversity Area – Restore). The proposed development footprint is located

entirely within the degraded CBA 2 area, thereby avoiding intact forest and higher-value biodiversity within the CBA 1 zone.

The Terrestrial Biodiversity Assessment (2025) confirms that the property supports Goukamma Strandveld (Vulnerable, SANBI VegMap 2025). The coastal margin comprises parabolic dunes with Knysna Sand Fynbos on inland ridges, transitioning into Mesic Dune Thicket and Milkwood Forest within protected areas. All proposed infrastructure is located outside the steep southern slopes and within areas of previous disturbance and degraded vegetation, consistent with the mitigation hierarchy. Given the existing agricultural zoning, the small development footprint, and the Applicant's commitment to rehabilitation and long-term conservation management of the undeveloped portions of the property, the proposal represents a balanced and conservation-compatible land use.

The development aligns with the Western Cape Biodiversity Spatial Plan, the Knysna Spatial Development Framework (2020), and the principles of NEMA, which promote sustainable rural development and private stewardship of environmentally sensitive land. Subject to the implementation of appropriate fire-management measures, stormwater controls, and coastal forest protection measures, the proposed development is considered supportable from an environmental and planning perspective (refer to Section F: Fire Management).

Electricity

There is currently no electrical infrastructure present on the property or in the adjacent road reserve. It is advisable to consider the installation of a solar power facility in this location.

Solar plant Type and system

The solar plant will be developed as an off-grid installation, utilising solar energy to supply the load during daylight hours while recharging the batteries at night. Furthermore, grid-tied photovoltaic inverters may be integrated into this micro-grid configuration through AC coupling, should the energy demand surpass the generation capacity.

Plant location

It is advisable to consider the installation of a roof-mounted solar power system on the roofs of both the main residence and the three small self-catering tourist accommodation units, should there be a requirement for increased energy generation capacity.

Plant capacity

The proposed system is designed with a capacity of 15 kWh, while the anticipated peak consumption is estimated to reach 30 kWh per day. Energy Storage: A sealed Lithium Iron Phosphate battery system is proposed, which is expected to provide a lifespan exceeding 10 years at a depth of discharge of 70%. Additionally, this system offers an expedited charging time, enhancing its operational efficiency.

Area/Street lighting

The road lighting system will utilise low-intensity, low-level bollard luminaires. Each luminaire will be powered by an individual small solar cell and will activate solely upon detecting motion.

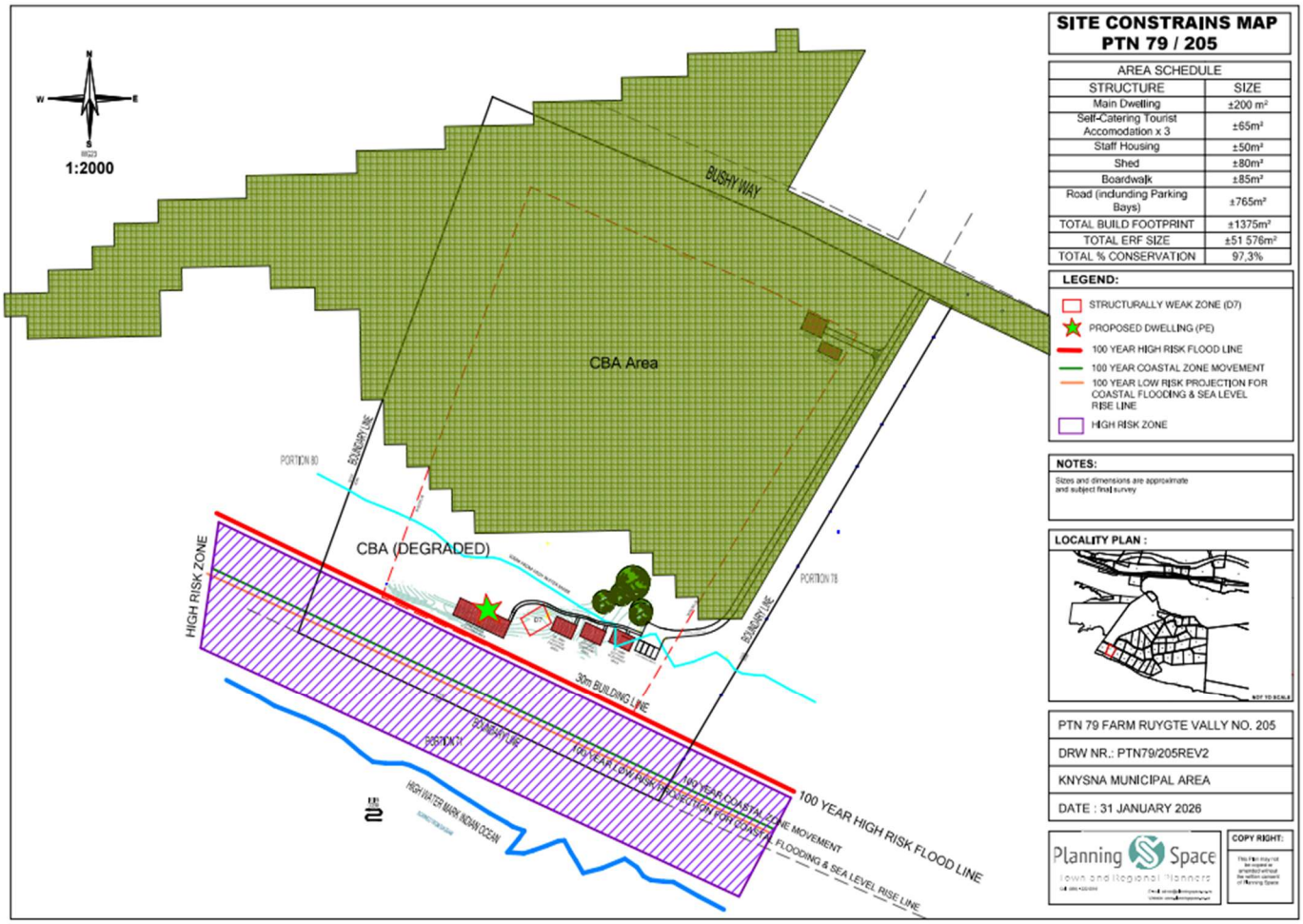



Figure 3: Preferred Alternative - Site Development Plan

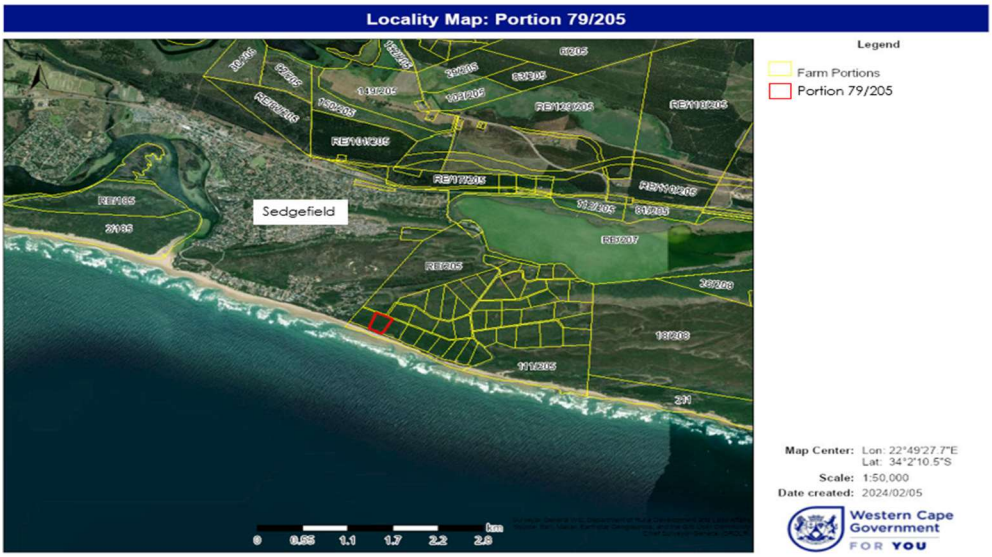



Figure 5: Aerial Map of the proposed development

*Entrance to Lake Pleasant Resort*

*Groenvlei Road from N2 leading to the site*

*View towards Groenvlei*

*Narrow one-track access road towards site*


*End of existing road, that will be extended to site*

*View towards site, dense thicket vegetation*

*Large indigenous trees with dense undergrowth*

*Large trees near highest point of the site*

*View towards north from highest point of the site*

*View across the ocean from highest point*

*View to the east*

*View to the west and Gericke's Point*

**Description of the Alternative 1 Development**

Alternative 1 represents the original development layout as reflected on the previous Site Constraints Map. This alternative was considered feasible from a basic engineering and access perspective but was subsequently refined following updated specialist input and constraints verification. It is therefore presented as a reasonable alternative that has been assessed but is not preferred.

The Applicant intends to reside permanently on Portion 79 of Farm Ruygte Valley No. 205 and proposes the construction of a single primary dwelling house of approximately 200 m², which constitutes a primary land-use right in terms of the Knysna Zoning Scheme Regulations (1992) under Agriculture Zone I.

In addition to the main residence, Alternative 1 includes three small self-contained units of approximately 65 m² each. For land-use planning and rezoning purposes only, these units are described as tourist accommodation units, as required under the Knysna Zoning Scheme and Open Space III (Nature Conservation Area) zoning provisions. The Applicant's stated intention remains private residential occupation and the use of the additional units for private family and guest accommodation. The development further includes staff accommodation (±50 m²) and a storage shed (±80 m²) to support land management, conservation activities, and property maintenance.

Access under Alternative 1 would be provided via a gravel access road approximately 200 m in length and not exceeding 3 m in width, located along the eastern boundary of the property. The access road would terminate at a parking area of approximately 660 m², from which a timber boardwalk would provide pedestrian access to the dwelling and associated units. This design minimises soil compaction relative to conventional access but results in a slightly less efficient circulation arrangement compared to the preferred alternative.

All structures under Alternative 1 are clustered within the southern portion of the property and positioned to avoid CBA1 areas, indigenous forest, steep slopes, and coastal risk zones, as identified in the original Site Constraints Map and supporting specialist studies. However, subsequent refinement of the constraints mapping identified the presence of a D7 structurally weak zone partially intersecting the original layout envelope. While development within this zone could potentially be engineered, it introduces a higher degree of geotechnical risk and a greater reliance on structural intervention.

Specialist assessments confirm that the site has limited agricultural potential and that its primary value lies in its ecological, scenic, and conservation attributes. As with the preferred alternative, the remainder of the property would be conserved and rehabilitated in accordance with the Terrestrial Biodiversity Assessment, Geotechnical Report, and Environmental Management Programme.

The total development footprint under Alternative 1 is approximately 1 175 m², comprising approximately 525 m² of building coverage and approximately 660 m² for access and parking infrastructure. This represents a very small proportion of the 5.1576 ha property, ensuring that the vast majority of the site remains in a natural or rehabilitated state.

Reasons Alternative 1 is Not Preferred

Alternative 1 is not preferred for the following reasons:

- It partially overlaps with a structurally weak D7 zone identified through updated geotechnical verification.
- It relies more heavily on engineering mitigation to achieve stability.
- It provides a less optimal spatial relationship between access, parking, and the building cluster.
- It offers a lower margin of environmental and geotechnical avoidance than the refined preferred alternative.

While Alternative 1 remains technically feasible, the updated preferred alternative achieves improved avoidance of geotechnical constraints, reduces long-term risk, and represents a more precautionary, risk-averse outcome consistent with NEMA principles.

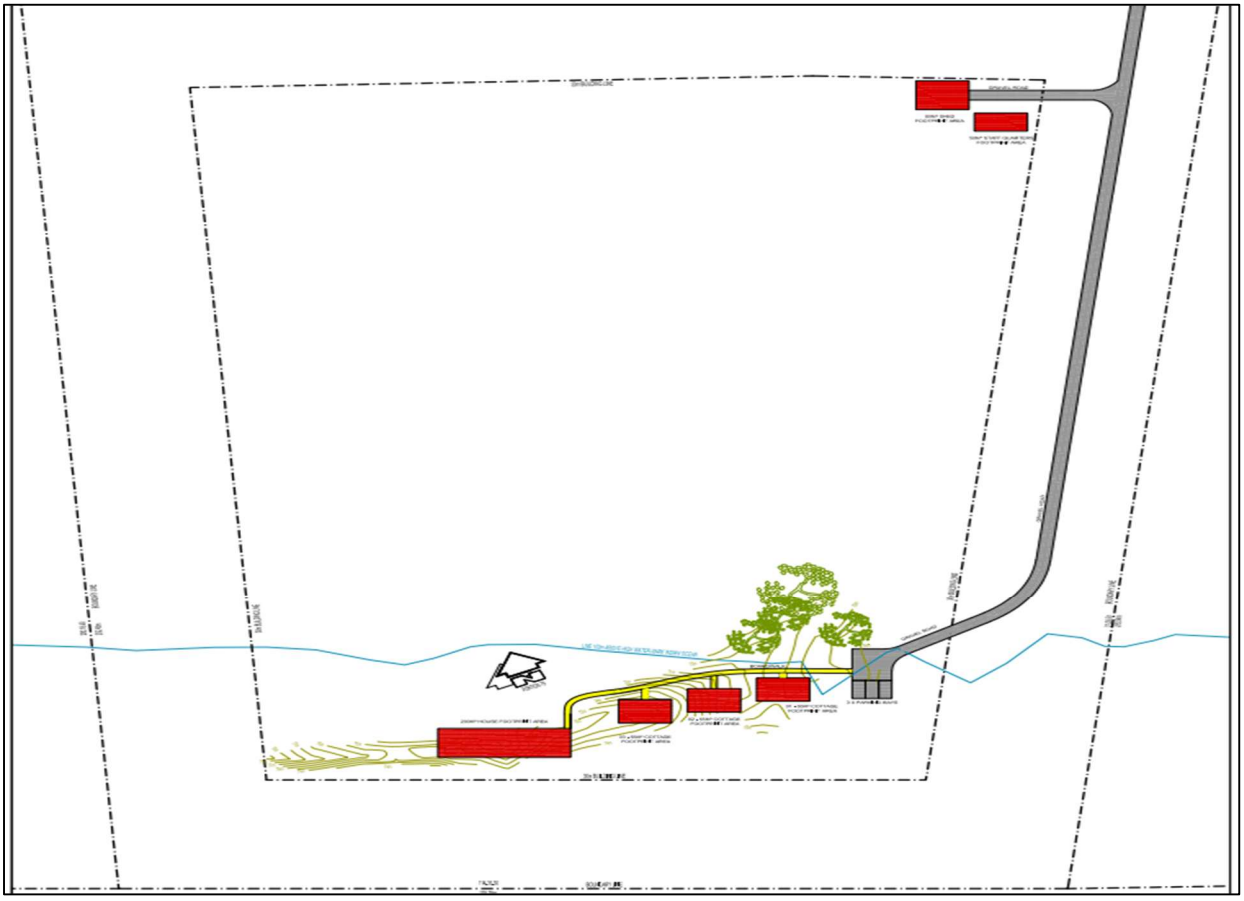


Figure 4: Alternative 2 SDP

Electricity (Applicable to Alternative 1)

There is currently no electrical infrastructure present on the property or within the adjacent road reserve. Under Alternative 1, the development would similarly operate entirely off-grid, utilising a stand-alone solar power system to meet on-site electrical requirements. No demand would be placed on municipal electrical infrastructure.

The electricity system configuration, plant capacity, battery storage, and lighting approach would be identical to the preferred alternative, comprising:

- roof-mounted solar photovoltaic panels
- Lithium Iron Phosphate ($LiFePO_4$) battery storage
- off-grid microgrid operation
- motion-activated low-intensity solar lighting

Accordingly, Alternative 1 does not differ materially from the preferred alternative in terms of energy infrastructure or operational sustainability.

**Comparative Assessment of Alternatives and Identification of the Preferred Alternative**

Both the preferred alternative and Alternative 1 represent low-impact, clustered residential development options within the same degraded portion of Portion 79 of Farm Ruygte Valley No. 205. In both cases, the development footprint is extremely limited relative to the total site area, and the majority of the property remains conserved. The alternatives are therefore similar in intent, scale, and conservation outcome. The key distinction lies in their relative avoidance of geotechnical constraints and long-term environmental risk. The amended preferred layout increases the footprint from ±1 175 m² (previous layout) to ±1 375 m² in order to avoid the D7 geotechnical constraint while remaining within a compact clustered development envelope.

Alternative 1 reflects the original layout configuration informed by the initial constraints mapping. While this option avoided Critical Biodiversity Area 1 (CBA1), the indigenous forest, and steep coastal slopes, updated specialist verification identified that a portion of the Alternative 1 footprint overlapped with a structurally weak geotechnical zone (D7). Although development within this zone may technically be engineered, it would introduce avoidable long-term stability

risks and increase the need for structural intervention, slope reinforcement, and maintenance over the life of the development.

The preferred alternative represents a refinement of the original layout following updated constraints mapping and specialist input. The revised footprint has been repositioned to fully avoid the D7 structurally weak zone while maintaining the same clustered, low-impact development philosophy. This adjustment improves geotechnical stability, reduces long-term erosion and maintenance risk, and strengthens alignment with the risk-averse and precautionary principles of the National Environmental Management Act (NEMA).

Importantly, the preferred alternative does not increase the intensity of development. Although the updated disturbance calculations result in a slightly larger total footprint (approximately 1 375 m²), this remains less than 3% of the total 5.1576 ha property. Approximately 97% of the site will remain in a natural or rehabilitated state. The development remains fully confined to degraded CBA2 areas and continues to avoid CBA1, forest, and coastal hazard zones.

From an environmental perspective, the preferred alternative achieves:

- improved avoidance of geotechnical risk areas;
- reduced long-term erosion and structural vulnerability;
- better alignment with specialist recommendations;
- strengthened application of the mitigation hierarchy (avoid → minimise → rehabilitate); and
- enhanced precaution in a sensitive coastal dune system.

From a planning perspective, both alternatives are policy-compliant; however, the preferred alternative represents a more responsible and defensible environmental outcome because it proactively removes a known risk rather than attempting to engineer around it.

Accordingly, the preferred alternative is identified as the Best Practicable Environmental Option (BPEO). It delivers the same conservation-led development outcome as Alternative 1 while achieving superior geotechnical safety, long-term resilience, and environmental precaution. The preferred alternative, therefore, represents the most sustainable balance between lawful land use, conservation stewardship, and risk-averse planning.

**The No-Go Alternative**

The No-Go Alternative entails maintaining Portion 79 of Farm Ruygte Valley No. 205 in its current undeveloped state, with no construction or formal land-use change taking place. Under this option, no residential dwelling or associated infrastructure would be established, and the property would remain vacant and unmanaged in its present condition.
While the No-Go Alternative would avoid short-term construction-related impacts, it does not align with the landowner's existing lawful development rights under the Agriculture Zone I zoning, which permits the construction of a single dwelling house as a primary land-use right. The property is privately owned, and the applicant seeks to exercise these rights in a manner that is consistent with applicable spatial planning frameworks, environmental legislation, and the prevailing conservation-oriented land-use pattern in the area.

From a socio-economic perspective, the No-Go Alternative would result in the loss of modest but meaningful local benefits, including short-term employment during construction and the use of local contractors and service providers. Although the additional accommodation units are intended primarily for private family and guest use, their construction and ongoing maintenance will still contribute to small-scale local economic activity without placing pressure on municipal infrastructure.

From an agricultural perspective, the No-Go Alternative offers no tangible benefit. The Agricultural Compliance Statement (2025) confirms that the property has limited to negligible agricultural potential due to its small size (±5.16 ha), steep coastal slopes, sandy and erodible soils, and significant ecological constraints. Retaining the land in its current zoning without rezoning or appropriate land-use adjustment would not contribute to agricultural productivity, food security, or viable rural livelihoods.

The No-Go alternative would maintain the legal obligation to clear alien vegetation but would not provide a funding or management mechanism to ensure sustained long-term rehabilitation. The proposed development creates a permanent stewardship framework and conservation zoning that institutionalises environmental management beyond the minimum legal requirement. Portions of the property are degraded and dominated by invasive alien vegetation, particularly Acacia cyclops. Without a structured management framework, these conditions are likely to persist or worsen over time. In contrast, the proposed development is coupled with formal conservation measures, including alien invasive vegetation

clearing, rehabilitation of degraded areas, and long-term stewardship secured through rezoning to Open Space III (Nature Conservation Area). This framework protects approximately 97% of the property in a natural or rehabilitated state and strengthens ecological connectivity within the surrounding conservation landscape.

In summary, although the No-Go Alternative avoids development, it fails to promote active ecological restoration, long-term conservation security, or responsible exercise of lawful land-use rights. It maintains the status quo but does not deliver measurable environmental or socio-economic improvement.

The preferred development alternative—characterised by a tightly confined footprint, avoidance of sensitive areas, off-grid servicing, and binding conservation commitments—represents the Best Practicable Environmental Option (BPEO) for the site. It achieves an appropriate balance between ecological protection, sustainable rural land use, and lawful occupation within a sensitive coastal conservation corridor.

## 3. LOCATION INFORMATION

| | |
|---|---|
| **Province:** | Western Cape |
| **District Municipality:** | Eden Municipality |
| **Local Municipality:** | Knysna Municipality |
| **Ward number(s):** | Ward 1 |
| **Nearest town(s):** | Knysna |
| **Farm name(s) and number(s):** | Portion 79 of Farm 205 |
| **Portion number(s):** | Portion 79 |

## 4. PROPERTY INFORMATION

| | |
|---|---|
| **Farm Name** | Portion 79 of Farm 205 |
| **Surveyor General 21-digit code:** | C03900000000 020500079 |
| **Zoning:** | Agriculture I |
| **Urban Edge:** | Property located outside urban edge |
| **Applicant name:** | Daniel Sevenster and Partners Inc. |
| **Registration number (if applicant is a company):** | 2008/004690/21 |
| **Trading name (if any):** | The Optical Center Sandton |
| **Responsible person name:** | Mr Daniel Sevenster |
| **Responsible position, e.g. Director, CEO, etc.:** | Director |
| **Physical address of applicant:** | Shop L14D lower-level ENTRANCE 4 Sandton City Shopping Center 83 Rivonia Rd, Sandhurst, Sandton |
| **Postal code:** | 2196 |
| **Telephone:** | 083 271 9532 |
| **E-mail:** | Daniel.Sevenster@gmail.com |
| **GPS point middle of property:** | Lat: - 34° 2' 23.85"<br>Lon: 22° 49' 28.57" |

## 5. SITE DEVELOPMENT PLAN

The map presented below illustrates the proposed activity, including its associated structures, infrastructure, and areas designated as environmentally sensitive (no-go zones) within the site. A detailed map can be found in **Appendix B** of this document for further examination.

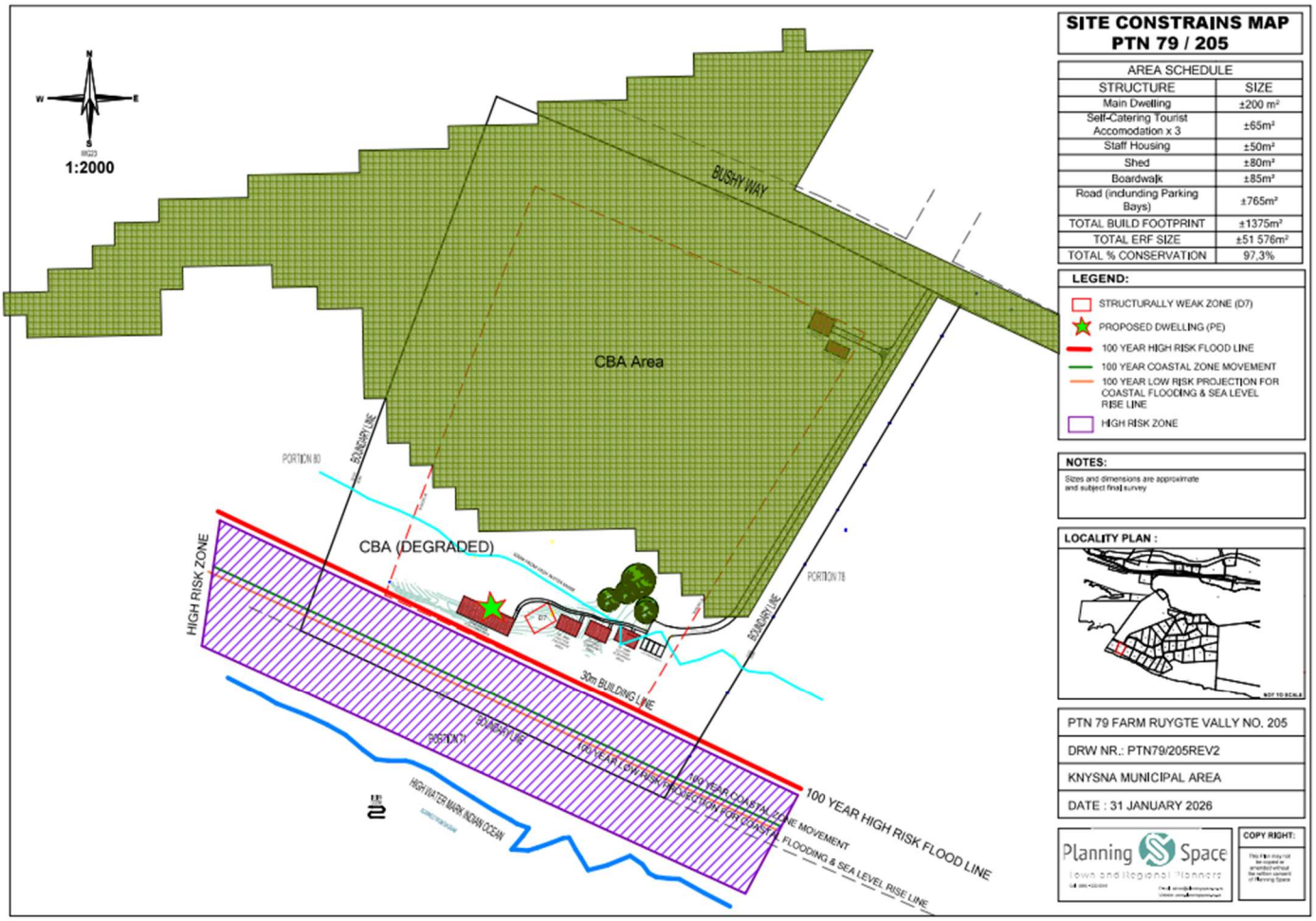



Figure 6: Preferred Alternative - Site Development Plan - Updated Site Constraints Map showing vegetation types (CBA1, CBA2), slope contours, access routes, and proposed development area on Portion 79 of Farm Ruygte Valley No. 205, Sedgefield. Source: Appendix B1 – Site Constraints Map (2026).

## 6. ENVIRONMENTAL SENSITIVITY MAPS


**Figure 7: SANBI Ecosystem – Portion 79 is within the SANBI Remaining Ecosystem Status, which includes Goukamma Dune Thicket**


**Figure 8: Western Cape Biodiversity Spatial Plan (2017) Protected Areas (CBA 1 and CBA 2)**

## 7. MITIGATION AND MANAGEMENT MEASURES

**Impacts foreseen during the construction phase:**

**Impact 1 – Biodiversity**

**The site occurs within a landscape mapped as Critical Biodiversity Areas (CBA1 and CBA2) and Ecological Support Areas (ESA2). The amended layout avoids direct transformation of intact CBA1 vegetation and confines disturbance to previously degraded or invaded areas, thereby limiting fragmentation and edge effects.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Permanent | Permanent | Permanent | Permanent | On-going |
| **Extent** | Site boundary | Site boundary | Site boundary | Site boundary | Limited |
| **Intensity** | Medium | Low | Medium | Low | Negligible |
| **Probability** | Probable | Probable | Probable | Probable | Likely |
| **Confidence** | High | High | High | High | High |
| **Reversibility** | Reversable | Reversable | Reversable | Reversable | Low |
| **Resource irreplaceability** | Medium | Low | Medium | Medium | Low |
| **Significance** | **Medium (negative before mitigation; Low after mitigation)** | **Medium (negative before mitigation; Low after mitigation)** | **Medium (negative before mitigation; Low after mitigation)** | **Medium (negative before mitigation; Low after mitigation)** | **Low** |
| **Cumulative impacts** | Potential impacts include construction damage to vegetation, edge effects (trampling, erosion, runoff, pollution), and spread of alien invasive species (e.g., Acacia cyclops). The development affects a small proportion of the biodiversity resource, but cumulative fragmentation risks exist due to potential future developments. Portions of the ecosystem along the regional coastline have already experienced degradation due to historic disturbance and invasive species spread. | | | | |

**Mitigation:**

- **Permits for Protected Forests and Trees**:
  a. Obtain permits from the Department of Forestry, Fisheries and the Environment (DFFE) for any impacts on Western Cape Milkwood Forest and protected trees (*Sideroxylon inerme*) prior to construction. The permit application must be submitted prior to site clearance.
  b. Responsibility: Developer; Timing: Pre-construction.
- **Rezoning for Conservation**:
  a. Apply to rezone undeveloped portions of the site (outside the development footprint) as "Open Space III" (Nature conservation area) through an application to the Knysna Municipality, in consultation with CapeNature, to ensure long-term protection of CBA1/CBA2 areas.
  b. Responsibility: Developer; Timing: Within 6 months of Environmental Authorisation.
- **Strict Footprint Adherence**:
  a. Limit vegetation clearance and construction activities to the approved development footprint (1,375 m²). No entry beyond the footprint by construction personnel is permitted.
  b. Demarcate no-go areas (e.g., forest, cliff edges) with high-visibility fencing and signage.
  c. Responsibility: Contractor, Environmental Control Officer (ECO); Timing: Pre-construction and ongoing.
- **Alien Invasive Management Plan**:
  a. Develop and implement an Alien Invasive Management Plan, approved by the ECO, to eradicate Acacia cyclops and other invasive species. The plan must include:
    i. Mechanical removal and herbicide application (cut-stump method) by a qualified ecologist.
    ii. Simultaneous rehabilitation with indigenous species to prevent slope failure.
    iii. Annual monitoring for 5 years post-construction to ensure no regrowth.
  b. Responsibility: Developer, ECO; Timing: Pre-construction (plan development), construction, and post-construction.

- **Plant Search and Rescue**:
    a. Conduct a search-and-rescue operation where feasible for indigenous plants prior to construction, supervised by a botanical specialist. Rescued plants must be relocated to an onsite nursery for use in post-construction rehabilitation.
    b. Responsibility: Developer, Botanical Specialist; Timing: Pre-construction.
- **Downslope Cliff Protection**:
    a. Implement erosion control measures (e.g., silt fences, revegetation with wind-cropped thicket species) to protect downslope cliff areas. No informal pathways to the beach will be created as part of the development; only public access routes (e.g., Groenvlei Beach) may be used.
    b. Manage water flow, diffuse pollutants, and material slip during construction and operation through stormwater management systems.
    c. Responsibility: Contractor, ECO; Timing: Construction and operational phases.
- **Ecological Management Plan**:
    a. Compile an Ecological Management Plan to maintain the integrity of remaining natural areas, including fire management, erosion control, and restoration of degraded thicket patches. Submit the plan to CapeNature within 6 months of project approval.
    b. Responsibility: Developer, ECO; Timing: Pre-construction and ongoing.
- **Access Road Design**:
    a. Curve the proposed gravel access road to avoid protected trees, using materials and methods consistent with the neighbouring road (e.g., compacted gravel). Existing access roads must be used for construction and operation.
    b. Responsibility: Contractor, ECO; Timing: Pre-construction and construction.
- **Environmental Control Officer**:
    a. Appoint an ECO to monitor compliance with the EMPr and Terrestrial Biodiversity Assessment recommendations, including monthly site inspections and reporting to DFFE.
    b. Responsibility: Developer; Timing: Pre-construction and ongoing.

**Impact 2 – Aesthetic impact**

**Construction and operational activities associated with the proposed development may result in visual disturbance to neighbouring properties and transient viewers within the broader landscape. The site is accessed via Groenvlei Road off the N2. The development is located on an elevated portion of the site, approximately 70 m above beach level.**

**The following landscape characteristics influence the visual sensitivity of the site:**

**Natural vegetation**
**The area is characterised by dense indigenous Fynbos and dune thicket vegetation, which provides partial visual screening. The amended layout prioritises vegetation retention and minimises clearing. Existing vegetation will be preserved wherever feasible and rehabilitated post-construction to maintain visual continuity and landscape integrity.**

**Topography**
**The site occurs within a varied dune and cliff landscape. Structures will be designed to follow natural contours and depressions to reduce visual prominence. Sensitive siting and low-profile architectural design will minimise skyline intrusion and reduce long-term visual contrast.**

**Landscape context**
**The surrounding landscape is largely undeveloped and retains a high scenic value. This increases visual sensitivity and requires careful integration of the proposed structures through scale control, material selection, and vegetation buffering.**

**Temporary construction activities will result in short-term visual disturbance; however, post-construction rehabilitation and vegetation recovery will reduce long-term visual effects.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Long term | Long term | Permanent | Long term | On-going |
| **Extent** | Local | Very limited | Local | Very limited | Local |
| **Intensity** | Medium | Low | High | Low | Negligible |
| **Probability** | Likely | Likely | Likely | Likely | Rare/improbable |
| **Confidence** | High | High | High | High | Medium |
| **Reversibility** | Moderate | Medium | Low | Moderate | Low |
| **Resource irreplaceability** | Medium | Low | Medium | Low | Medium |
| **Significance** | **Medium** | **Medium** | **Medium** | **Medium** | **Negligible - negative** |
| **Cumulative impacts** | The development will introduce a new built element into a currently undeveloped coastal landscape. While the footprint is limited, cumulative visual impacts could arise if future developments adopt similar siting patterns. Sensitive architectural design, vegetation retention, and strict footprint control are therefore critical to prevent incremental degradation of landscape character.<br><br>Temporary construction impacts such as dust, exposed soil, and equipment visibility will be short-term and reversible.<br><br>Night-time lighting may alter the natural dark-sky character if unmanaged. | | | | |

**Mitigation:**

1. Sensitive site planning and design
    - Buildings must be positioned to follow natural contours and minimise skyline intrusion.
    - Low-profile architecture must be used to reduce visual dominance.
    - Structures must remain within the approved footprint.
2. Materials and colours
    - Natural, earth-toned finishes must be used.
    - Reflective surfaces must be avoided.
    - Materials must visually recess into the landscape.
3. Vegetation preservation
    - Existing indigenous vegetation must be retained wherever possible.
    - Disturbed areas must be rehabilitated immediately post-construction.
    - Indigenous dune vegetation must be used for landscaping.
    - Salvaged plants must be reused where feasible.
4. Construction phase controls
    - Construction areas must be demarcated to prevent unnecessary clearing.
    - Stockpiles must be screened using natural berms or vegetation where possible.
    - Dust suppression must be implemented.
    - Construction must be limited to daylight hours.
    - Temporary structures must be removed immediately after completion.
5. Lighting controls
    - Downward-facing, shielded lighting only.
    - Motion sensors preferred.
    - Warm-spectrum lighting.
    - No floodlighting.
    - Minimise light spill into natural areas

**Impact 3 – Socio-economic**

**The proposed development is expected to generate a positive socio-economic impact primarily through temporary employment opportunities during the construction phase and limited longer-term maintenance employment. No significant negative socio-economic impacts are anticipated, as the project does not displace existing livelihoods, restrict public access, or negatively affect social infrastructure.**

**The socio-economic benefits are associated with short- to medium-term job creation and local economic participation. These benefits are considered positive, although limited in scale, and do not result in irreversible or long-term structural economic change.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Temporary | Temporary | Temporary | Temporary | Medium-term |
| **Extent** | Limited | Limited | Limited | Limited | Limited |
| **Intensity** | High (positive) | High (positive) | High (positive) | High (positive) | High (positive) |
| **Probability** | Likely | Likely | Likely | Likely | Likely |
| **Confidence** | High | High | High | High | High |
| **Reversibility** | Low | Low | Low | Low | Medium |
| **Resource irreplaceability** | Medium | Medium | Medium | Medium | Low |
| **Significance** | **Medium - positive** | **Medium - positive** | **Medium - positive** | **Medium - positive** | **Low - negative** |
| **Cumulative impacts** | The cumulative socio-economic impact is considered positive but limited, primarily associated with employment opportunities for local community members during construction and operational maintenance. | | | | |

**Mitigation:**

- The contractor should prioritise employment of local community members where feasible.
- Skills transfer and basic training should be encouraged during construction.
- Contractors should comply with fair labour practices and occupational health and safety standards.

**Impact 4 – Safety**

**Construction activities introduce occupational safety risks, including exposure to dust and noise, machinery hazards, fire risk, and general construction-related health and safety concerns. These risks are temporary in nature and limited to the construction footprint. With proper occupational health and safety controls, risks can be reduced to low and acceptable levels.**
**No long-term public safety risks are anticipated during the operational phase, provided that the site is managed in accordance with applicable safety legislation and standards.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Temporary | Temporary | Temporary | Temporary | On-going |
| **Extent** | Local | Local | Local | Local | Local |
| **Intensity** | Medium | Low | Medium | Low | Low |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | Not Probably |
| **Confidence** | Medium | Medium | Medium | Medium | Medium |
| **Reversibility** | Medium | High | Medium | High | Medium |
| **Resource irreplaceability** | Medium | Low | Medium | Low | Low |
| **Significance** | **Medium-negative** | **Low - negative** | **Medium - negative** | **Low - negative** | **Negligible** |
| **Cumulative impacts** | Potential cumulative impacts relate primarily to worker health and safety risks during construction and include:<br>1. Occupational exposure — dust, noise, and hazardous materials<br>2. Fire and explosion risk — flammable materials and equipment<br>3. Physical injury risk — machinery, falls, ergonomic strain<br><br>These impacts are temporary and confined to the construction phase. | | | | |

**Mitigation:**

- All construction activities must comply with the Occupational Health and Safety Act (OHSA).
- A site-specific Health and Safety Plan must be developed prior to construction.
- Workers must receive safety training and induction before accessing the site.
- Appropriate Personal Protective Equipment (PPE) must be provided and worn at all times.
- Dust suppression measures (e.g., water spraying) must be implemented.
- Noise exposure must be managed through equipment controls and scheduling.
- Firefighting equipment must be available and inspected regularly.
- Adequate water must be available for fire control.
- Personnel must be trained in fire response procedures.
- First aid kits and trained first-aid staff must be present on site.
- Electrical installations must comply with relevant SANS standards.
- Hazardous materials must be stored and handled according to safety manuals and MSDS requirements.
- Regular safety inspections and incident reporting must be maintained.

**Impact 5 – Noise Disturbance**

**Construction activities will temporarily increase ambient noise levels due to machinery, equipment, and construction personnel. These impacts are short-term, localised, and limited to the construction phase. No significant long-term operational noise impacts are anticipated.**

| **Impact** | **Preferred Alternative** | | **Alternative 2** | | **No-Go** |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Temporary | Temporary | Temporary | Temporary | - |
| **Extent** | Very limited | Very limited | Very limited | Very limited | - |
| **Intensity** | Low | Low | Medium | Low | - |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | - |
| **Confidence** | High | High | High | High | - |
| **Reversibility** | Medium | Medium | Medium | Medium | - |
| **Resource irreplaceability** | Low | Low | Medium | Low | - |
| **Significance** | **Low - negative** | **Low - negative** | **Medium-negative** | **Low - negative** | N/A |
| **Cumulative impacts** | Noise impacts are temporary and confined to the construction phase. No meaningful cumulative noise impacts are expected given the short duration and small scale of construction activities. | | | | |

**Mitigation:**

- Construction activities must be limited to daylight hours.
- No construction may occur on Sundays or public holidays.
- Equipment and machinery must be properly maintained to minimise noise emissions.
- Vehicles and machinery must not idle unnecessarily.
- Contractors must comply with municipal noise by-laws.
- Complaints from neighbouring landowners must be logged and addressed immediately

**Impact 6 – Geotechnical Impacts: Surface water run-off/groundwater/soil, air quality**

**The total development disturbance footprint is estimated at ±1,375 m². This figure represents the maximum foreseeable construction disturbance envelope, including building platforms, access routes, boardwalks, working margins, temporary laydown areas, stockpiling zones, and construction manoeuvring space.**

**The footprint therefore reflects the realistic worst-case disturbance area, not only the building footprint. All activities will be strictly confined to this demarcated area, and the remaining ±5 ha of the property will remain in a natural state and subject to conservation management.**
**No disturbance outside the approved footprint will be permitted.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | On-going | Short term | On-going | Short term | - |
| **Extent** | Local | Local | Local | Local | - |
| **Intensity** | Medium | Low | Medium | Low | - |
| **Probability** | Likely | Unlikely | Likely | Unlikely | - |
| **Confidence** | High | High | High | High | - |
| **Reversibility** | Medium | Medium | Medium | Medium | - |
| **Resource irreplaceability** | Medium | Low | Medium | Low | - |
| **Significance** | **Medium - negative** | **Low- negative** | **Medium - negative** | **Low - negative** | Negligible |
| **Cumulative impacts** | Cumulative impacts are expected to be low. While incremental erosion and surface run-off may occur during construction, the disturbance footprint is small relative to the overall ecosystem. With proper erosion control and rehabilitation, no long-term cumulative degradation of soil stability, groundwater quality, or air quality is expected. Dust and emissions are temporary and confined to the construction phase. | | | | |

**Mitigation:**

Soil stability and erosion control

- No weight-bearing structures may be located within identified structurally weak zones (e.g., D7).
- Foundation zones must be compacted to a minimum depth of 1.5 m and approved by an ECSA-registered structural engineer.
- Soil disturbance must be minimised and phased to reduce exposure of bare ground.
- Erosion control barriers (silt fences, geotextiles, sediment traps) must be installed in vulnerable areas.
- Swales and drainage channels must be constructed to manage surface run-off.
- Excavated areas must be rehabilitated immediately following construction.

Vegetation management

- Indigenous vegetation must be retained wherever possible.
- Alien invasive species removal must occur simultaneously with rehabilitation.
- Salvaged plants must be reused in on-site restoration.
- An on-site nursery must support post-construction revegetation.

Pollution prevention

- Fuel and hazardous substances must be stored in bunded areas on sealed surfaces.
- No vehicle servicing may occur on site.
- Spill kits must be available at all times.
- Cement mixing on bare soil is prohibited.
- Contaminated soil must be removed and disposed of at licensed facilities.

Construction air quality

- Dust suppression must be implemented using water sprays.
- Stockpiles must be stabilised or covered.
- Vehicles transporting loose material must be covered.
- Machinery must be maintained to minimise emissions.
- Idling must be minimised.

Coastal and stormwater resilience

- Development must remain outside the 100-year flood risk zone.
- Stormwater systems must prevent water concentration and erosion.
- Permeable surfaces must be used where possible.
- Long-term monitoring of coastal movement must inform adaptive management.

Construction controls

- Construction areas must be clearly demarcated.
- Heavy machinery must avoid sensitive zones.
- Disturbed areas must be rehabilitated in parallel with construction.
- An Environmental Control Officer must monitor compliance.

**Impact 7 – Waste Generation**

**Construction within the ±1,375 m² disturbance footprint will generate general construction waste and small volumes of hazardous waste (e.g. fuel residues, cement, packaging, absorbent spill material). If not properly managed, such waste could result in localised contamination of soil, surface water, groundwater and air quality. Given the sensitivity of the coastal dune system and highly permeable sandy soils, improper waste handling could increase pollution risk.**

**All waste impacts are temporary and confined to the construction phase, provided strict waste management protocols are implemented.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Temporary | Temporary | Temporary | Temporary | - |
| **Extent** | Very limited | Very limited | Very limited | Very limited | - |
| **Intensity** | Medium | Low | Medium | Low | - |
| **Probability** | Likely | Unlikely | Likely | Unlikely | - |
| **Confidence** | High | High | High | High | - |
| **Reversibility** | Medium | Medium | Medium | Medium | - |
| **Resource irreplaceability** | Medium | Low | Medium | Low | - |
| **Significance** | **Medium - negative** | **Low - negative** | **Medium - negative** | **Low- negative** | N/A |
| **Cumulative impacts** | If unmanaged, construction waste could contribute to incremental soil contamination, litter accumulation and stormwater pollution. However, due to the small scale of the disturbance footprint and the temporary construction duration, cumulative impacts are considered low provided mitigation measures are enforced. | | | | |

**Mitigation:**

Waste management must comply with the Environmental Management Programme (EMPr) and applicable waste legislation.

- Waste generation must be minimised at source through efficient material use and site planning.
- Clearly labelled containers must be provided for general waste, recyclable materials and hazardous waste.
- Containers must be covered to prevent wind-blown litter and contamination of surrounding vegetation.
- Waste must be removed from the site regularly and disposed of at licensed disposal facilities.
- Construction rubble must be sorted, with recyclable materials separated from landfill waste.
- No waste may be buried, burned or disposed of on site.
- Hazardous materials (fuel residues, cement wash water, spill absorbents) must be stored in bunded areas and removed by an approved hazardous waste contractor.
- Safe disposal certificates must be retained for audit purposes.
- Environmental awareness training must include waste handling and pollution prevention.
- The Environmental Control Officer (ECO) must conduct routine inspections to ensure compliance.

All waste management activities must remain within the approved ±1,375 m² disturbance footprint.

**Impact 8 – Cultural-historical**

**Excavation activities within the ±1,375 m² disturbance footprint may theoretically expose previously unknown heritage or palaeontological material. However, Heritage Western Cape has confirmed that no further heritage studies are required for the proposed development.**

**No known heritage resources occur on the site, and the development is therefore not expected to result in measurable cultural or historical impacts.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Temporary | Temporary | Temporary | Temporary | - |
| **Extent** | Very limited | Very limited | Very limited | Very limited | - |

| | | | | | |
|---|---|---|---|---|---|
| **Intensity** | Medium | Low | Medium | Low | - |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | - |
| **Confidence** | High | High | High | High | - |
| **Reversibility** | Medium | Medium | Medium | Medium | - |
| **Resource irreplaceability** | Low | Low | Low | Low | - |
| **Significance** | **Low - negative** | **Low - negative** | **Low - negative** | **Low- negative** | N/A |
| **Cumulative impacts** | No cumulative heritage impacts are anticipated. The site does not contribute materially to regional heritage resources, and the competent heritage authority has confirmed that further assessment is not required. | | | | |

**Mitigation:**

Although no heritage features are known on-site and no additional studies are required by Heritage Western Cape, a precautionary chance-find protocol remains applicable:

- The provisions of the National Heritage Resources Act (Act 25 of 1999) must be adhered to at all times.
- Construction staff must receive environmental awareness training that includes heritage identification.
- If archaeological, palaeontological, or burial material is encountered, all work must cease immediately in the affected area.
- Heritage Western Cape must be notified before work resumes.
- A Fossil Finds Procedure (FFP) must form part of the Environmental Management Programme (EMPr).

No layout or footprint adjustments are required.

**Impacts foreseen during the operation phase:**

**Impact 1 – Geotechnical Impacts**

**Operational activities associated with low-density residential use (e.g., limited vehicle movement, pedestrian access, landscaping, and wastewater management) may result in minor increases in surface runoff within the ±1,375 m² disturbance footprint. The site is underlain by sandy, erodible soils; however, the small operational footprint, permeable surfaces, and retained indigenous vegetation significantly limit erosion and hydrological risk.**

**Potential contamination risks from household chemicals or accidental spills are low and localized. Groundwater is shallow in isolated areas (as noted in the Preliminary Geotechnical and Geomatic Report), but compliant wastewater infrastructure and stormwater management will reduce any risk of pollution.**

**The operational phase impact is therefore expected to be low intensity and manageable.**

| **Impact** | **Preferred Alternative** | | **Alternative 2** | | **No-Go** |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | On-going | On-going | On-going | On-going | On-going |
| **Extent** | Limited | Limited | Limited | Limited | Limited |
| **Intensity** | Low | Low | Low | Low | Low |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | Unlikely |
| **Confidence** | High | High | High | High | High |
| **Reversibility** | Medium | Medium | Medium | Medium | Medium |
| **Resource irreplaceability** | Low | Low | Low | Low | Low |
| **Significance** | **Low- negative** | **Low- negative** | **Low- negative** | **Low- negative** | **Low- negative** |
| **Cumulative impacts** | Cumulative geotechnical impacts are expected to be **negligible**. The operational footprint is small relative to the property size, and stormwater will be dispersed through permeable surfaces and retained vegetation. The development does not introduce impervious urban-scale surfaces and will not materially alter regional hydrological patterns. | | | | |

**Mitigation:**

- Maintain permeable gravel surfaces for access and parking to allow natural infiltration.
- Install small-scale stormwater dispersion features (swales or infiltration trenches) to prevent concentrated runoff.
- Maintain indigenous vegetation buffers to stabilise soil and reduce erosion.
- Ensure wastewater systems are compliant and serviced regularly.
- Store household chemicals securely; prohibit fuel storage outside approved containers.
- Conduct periodic inspections of slopes and drainage areas.
- Avoid unnecessary soil disturbance during landscaping.

**Impact 2 – Habitat and biodiversity loss**

**Operational residential use may result in minor localised disturbance within the ±1,375 m² development footprint due to pedestrian movement, routine landscaping, and limited vehicle activity. These activities occur within an already degraded CBA2 portion of the site and do not encroach into the CBA1 Milkwood Forest or protected forest areas.**

**If invasive vegetation is not managed correctly, there is a risk of reduced native strandveld cover. However, ongoing alien clearing and rehabilitation commitments are expected to result in a net biodiversity improvement over time. The operational phase impact is therefore low intensity and manageable.**

| **Impact** | **Preferred Alternative** | | **Alternative 2** | | **No-Go** |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Permanent | Permanent | Permanent | Permanent | Permanent |
| **Extent** | Local | Local | Local | Local | Local |
| **Intensity** | Low | Low | Low | Low | Low |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | Unlikely |
| **Confidence** | High | High | High | High | High |
| **Reversibility** | Medium | Medium | High | High | Medium |
| **Resource irreplaceability** | Low | Low | Low | Low | Low |
| **Significance** | **Low - negative** | **Low - negative** | **Low - negative** | **Low - negative** | **Low - negative** |
| **Cumulative impacts** | Cumulative biodiversity impacts are expected to be **low**. The operational footprint is small relative to the property and is offset by invasive species removal, rehabilitation, and long-term conservation commitments. The development does not fragment intact CBA1 habitat and may improve ecological conditions through active management. | | | | |

**Mitigation:**

- Maintain and implement the Alien Invasive Management Plan to control Acacia cyclops.
- Retain indigenous vegetation buffers outside the footprint.
- Restrict movement to boardwalks and designated paths.
- Use only indigenous dune vegetation in landscaping.
- Prohibit introduction of exotic ornamental plants.
- Conduct annual ecological inspections to monitor vegetation recovery.
- Educate residents and visitors on biodiversity protection.

**Impact 3 – Aesthetic impact**

**The operational presence of permanent structures introduces a localised visual change within a coastal fynbos landscape. The development footprint is limited, and structures are designed to visually recess into the landscape through low-profile architecture, natural materials, and vegetation retention.**

**While a long-term built presence alters the immediate visual character of the site, mitigation and design controls significantly reduce visual intrusion and prevent skyline dominance.**

**The operational visual impact is therefore low and manageable.**

| Impact | Preferred Alternative | | Alternative 2 | | No-Go |
|---|---|---|---|---|---|
| | Without mitigation | With mitigation | Without mitigation | With mitigation | |
| **Duration** | Permanent | Permanent | Permanent | Permanent | Permanent |
| **Extent** | Local | Local | Local | Local | Local |
| **Intensity** | Low | Low | Low | Low | Low |
| **Probability** | Unlikely | Unlikely | Unlikely | Unlikely | Unlikely |
| **Confidence** | High | High | High | High | High |
| **Reversibility** | Low | Low | Low | Low | Low |
| **Resource irreplaceability** | Low | Low | Low | Low | Low |
| **Significance** | **Low - negative** | **Low - negative** | **Low - negative** | **Low - negative** | **Low - negative** |
| **Cumulative impacts** | Medium – Incremental development in a largely natural area may collectively erode visual integrity over time. | | | | |

**Mitigation:**

- Fragmented building layout to reduce bulk.
- Use of natural, low-contrast materials (timber, glass, steel).
- Strategic placement behind dune ridges and within vegetated areas.
- Restoration of disturbed vegetation post-construction.
- Controlled and shielded lighting at night

# 8. SPECIALIST RECOMMENDATIONS

## 8.1. Visual Compliance Statement (Outline Landscape Architects, March 2025)

Outline Landscape Architects prepared a Visual Compliance Statement for the proposed development on Portion 79 of Farm Ruygte Valley No. 205, located between Knysna and Sedgefield along the Garden Route, Western Cape.

The purpose of the statement was to assess the compatibility of the proposed development's form, scale, bulk and placement within the receiving landscape and visual receptor environment.

**Landscape Context**

The broader study area comprises a mosaic of coastal settlements, fynbos vegetation, agricultural inland landscapes, and stretches of relatively undisturbed natural coastline. The N2 corridor is the primary regional transport route connecting Cape Town and Gqeberha. The Outeniqua Mountain range forms the inland scenic backdrop.

The site is situated on a stabilised coastal dune system approximately 70 m above sea level. Vegetation consists of dense indigenous coastal thicket, dune shrubs and scattered trees typical of the Fynbos biome. The development area lies on gently sloping terrain behind the primary dune edge rather than on the exposed cliff face.

The property extends over approximately 5 hectares. The total development disturbance footprint, including buildings, access, boardwalks and construction margins, is approximately 1,375 m², representing a very small proportion of the overall site area.

**Visual Exposure and Receptors**

The site visit confirmed that:

- The development area is screened from major regional transport corridors by vegetation and topography
- Dense dune thicket provides natural visual buffering
- Visual exposure from distant receptors is limited and fragmented
- Potential visibility is localised and occurs only from selective vantage points

The site is elevated above the beach and coastal edge. While portions of the dune system are visible from coastal viewpoints, vegetation and landform significantly reduce direct views of the proposed structures when appropriate mitigation is implemented.

Absolute visual invisibility cannot be guaranteed; however, the visual influence of the development is expected to be low and localised.

**Design Approach**

The proposed development adopts a sensitive, fragmented architectural layout rather than a single dominant structure. Smaller building elements are separated by vegetated spaces to reduce visual mass and allow natural screening.

Key design principles include:

- Low-profile building forms
- Fragmented layout to reduce bulk
- Structures positioned below the skyline where feasible
- Use of natural materials and muted colour palettes
- Retention of indigenous vegetation
- Minimal site clearing
- Integration with natural contours

This approach reduces visual dominance and supports landscape integration.

**Conclusion**

The Visual Compliance Statement concludes that the development can be accommodated within the landscape provided that strict visual mitigation measures are implemented and maintained.

The development footprint is small relative to the site extent, and with appropriate design controls the visual impact is assessed as low and manageable. The project does not fundamentally alter the regional scenic resource and is compatible with the surrounding landscape character.

Ongoing management is required to maintain visual integration throughout the operational life of the development.

**Recommended Management Measures**

*(to be incorporated into the EMPr / EA conditions)*

**Lighting Controls**

- Low-intensity, downward-facing lighting only
- Motion sensor lighting preferred
- Warm-spectrum lighting
- No floodlighting
- Minimise light spill into natural areas

**Sensitive Site Planning**

- Buildings must follow natural contours
- Structures must remain within the approved footprint
- Skyline intrusion must be avoided
- Low-profile architecture required

**Materials and Colours**

- Earth-toned finishes only

- Natural materials preferred
- No reflective surfaces
- Materials must visually recess into the landscape

**Vegetation Preservation**

- Retain indigenous vegetation wherever possible
- Immediate rehabilitation of disturbed areas
- Indigenous dune vegetation for landscaping
- Salvaged plants reused where feasible

## 8.2. Agricultural Compliance Statement and Site Sensitivity Verification (Soil Za, Johann Lanz & David Lakey, January 2025) –

An Agricultural Compliance Statement and Site Sensitivity Verification was undertaken by Soil ZA to evaluate the agricultural suitability and sensitivity of Portion 79 of Farm 205 Ruygte Valley in relation to the proposed development.

The development comprises a single dwelling unit, ancillary cottages, access infrastructure and associated services, with a total disturbance footprint of approximately 1,375 m² within a ±5-hectare property.

The property is currently zoned agricultural and therefore falls under the scope of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA) and relevant municipal land-use legislation. Consultation with the Department of Agriculture may be required as part of the statutory approval process.

**Agricultural Sensitivity Verification**

The assessment verified agricultural sensitivity in accordance with the DFFE Environmental Screening Tool categories. The screening tool provides an initial indication of suitability for crop production using two datasets:

1. Cropland classification (Crop Estimates Consortium, 2019)
2. National land capability mapping (DAFF, 2017)

The screening tool differentiates land as suitable (high/very high sensitivity) or unsuitable (low/medium sensitivity) for rain-fed crop production. However, the screening tool is recognised as a coarse-scale model and must be verified at site scale by specialist assessment.

**Specialist Findings**

The agricultural specialist confirmed that:

- The site is not located within mapped cropland boundaries
- Soils lack sufficient water and nutrient-holding capacity for viable cropping
- The land has a maximum land capability rating of 6
- The site is therefore of medium agricultural sensitivity
- The site is unsuitable for viable commercial crop production
- The property is not within a Protected Agricultural Area (PAA)
- The land does not contribute meaningfully to regional food security

The specialist disputes the screening tool's classification, suggesting a capability greater than 6 and confirms that the entire assessed area falls within land capability class 6.

**Agricultural Impact Assessment**

Because the site is unsuitable for viable cropping and does not fall within a Protected Agricultural Area, the proposed development does not result in the loss of productive agricultural land.

The disturbance footprint represents a very small proportion of the property and is below the threshold requiring conservation for agricultural production purposes.

The negative agricultural impact is assessed as:

**Low significance and acceptable**

The development will result **in negligible loss of future agricultural production potential and** will not affect national or regional food security.

**Cumulative Impact**

Cumulative agricultural impacts are defined as the incremental loss of productive agricultural land across a region.

Due to the site's limited agricultural capability and the negligible production value of the affected footprint, the development will not contribute meaningfully to regional cumulative agricultural loss.

The cumulative agricultural impact is therefore assessed as:

**Low significance and acceptable**

**Conclusion**

From an agricultural perspective:

- The land is not viable cropland
- It is not protected agricultural land
- The development footprint is minimal
- The agricultural impact is negligible
- No meaningful contribution to cumulative loss occurs

The agricultural specialist, therefore, concludes that the development is acceptable from an agricultural capability perspective.

## 8.3. Preliminary Geomatic and Geotechnical investigation (Dr Esmé Spicer, May 2024)

A Preliminary Geomatic and Geotechnical Investigation was undertaken by Dr Esmé Spicer (Rockhounds (Pty) Ltd) to assess the geological, geotechnical, geomorphological and climatic suitability of Portion 79 of Farm 205, Ruygte Valley, Sedgefield, for the proposed development.

**Geological and Geophysical Context**

The site is underlain by the Cape Supergroup, with thick deposits of coastal sand (Bredasdorp Formation) overlying fossil dune material. Thin layers of Kirkwood Formation conglomerates may occur beneath the sand, with Peninsula Formation sandstones underlying these units at depths of approximately 70–90 m.

Geophysical scanning indicates that soft and semi-consolidated dune sands overlie east–west striking Peninsula sandstones dipping southwards at approximately 45 degrees. A notable step change in sandy overburden thickness occurs at Position D7, where sand depth increases from approximately 15 m to 25 m, indicating a structurally weak zone.

**Topography and Slope Stability**

The site comprises:

- Low to moderate slopes (0–21°) in the inland areas around PE, BM and HW2, characterised by tall forest vegetation from approximately the 65 m contour;
- Steep slopes (26–70°) extending from the BM area toward the lookout point and coastal edge, between the 75 m contour and sea level.

The area south of the lookout point is classified as high risk due to steep slope gradients and erosion susceptibility, while the inland portion of the site is considered low risk for slope instability.

**Soil Characteristics**

Soils across the site consist predominantly of silty loam, sandy loam and sand, with organic-rich topsoil layers. The HW2 area exhibits deeper organic horizons, indicating an older, in-situ soil profile. Clay content is low, and the soils are classified as highly erodible, particularly where vegetation is disturbed.

The combination of loose topsoil and steep slopes in the southern portion of the site presents a higher risk of soil movement, while the inland areas are comparatively stable due to gentler gradients.

**Vegetation and Dune Stability**

Dense and well-established coastal forest and dune thicket vegetation occurs across the site, tapering toward shrub-dominated vegetation closer to the coast. Root systems were observed to depths exceeding 60 cm, providing effective dune stabilisation.

Historical satellite imagery (2005–2024) confirms consistent vegetation cover and dune stability inland of the 25 m contour, indicating a stable dune system north of the active coastal erosion zone.

**Climate, Sea Level Rise and Coastal Flooding**

Climate projections indicate:

- Minimal long-term increase in average rainfall (±196 mm to ±202 mm over 100 years);
- A reduction in extreme rainfall event days by approximately four days by 2050;
- Average wind speeds of approximately 5.75 m/s;
- Low to very low projected coastal flooding risk at the property by 2050.

Sea level rise and coastal flooding modelling indicate:

- Low-risk 100-year projection aligning with the 40 m contour (property boundary);
- High-risk 100-year projection extending to the lookout point, approximately 50 m inland from the current shoreline;
- Measured coastal retreat of approximately 30 m over 100 years, consistent with observed cyclic erosion of ~6 m per 20 years.

**Geotechnical Findings and Constraints**

Key findings include:

- Position D7 is identified as structurally weak and unsuitable for weight-bearing structures;
- PE, BM path split and lookout locations comprise soft but consistent sandy profiles requiring specialised foundation solutions;
- HW2 exhibits weak zones at depths of 160 mm and 360 mm due to organic material;
- All building platforms require engineered foundation systems, including a minimum 1.5 m compacted zone around external walls.

The zone south of the lookout point is considered high risk due to slope and erosion potential and is excluded from development.

**Development Suitability and Setback Compliance**

The proposed development footprint:

- Is not located within the structurally weak D7 zone;
- Lies outside the measured and modelled 100-year coastal erosion and flood risk zones;

- Is situated approximately 15 m inland of the high-risk 100-year projection line;
- Complies with the 30 m coastal building line;
- Is located north of the 100 m High Water Mark buffer.

Alternative locations BM and HW2 are located further inland and north of the 100 m High Water Mark and remain technically feasible alternatives should future layout refinement be required.

**Conclusions**

The geotechnical investigation concludes that:

- The inland dune system is stable, supported by long-term vegetation establishment;
- Coastal erosion is active only within the immediate shoreline zone and is not projected to affect the proposed development footprint within the 100-year horizon;
- The proposed development location is geotechnically suitable, subject to appropriate foundation design;
- All structures must be designed by and signed off by an ECSA-registered structural engineer;
- Development must avoid steep southern slopes and the D7 structurally weak zone.

With adherence to the recommended foundation, erosion control and setback measures, the proposed development is considered geotechnically acceptable

## 8.4. Engineering and Geotechnical Assessment Summary (Rock Hounds (Pty) Ltd – May 2025

The Preliminary Geotechnical and Geomatic Report (Rock Hounds, 2024) confirms that the southern portion of Portion 79 consists of unconsolidated, highly erodible Holocene dune sands with steep slopes and areas of structural weakness, including a Structurally Weak Zone (SWZ) and the D7 fracture line, both of which present significant instability risks. These dune slopes are prone to erosion, slumping, and collapse, especially when vegetation is disturbed or during severe rainfall events. In contrast, the central to northern sections of the property contain moderately sloping, more stable terrain, suitable for lightweight, elevated development with minimal excavation. The report emphasises strict avoidance of steep dune faces, the coastal cliff edge, and all identified instability zones, and recommends only using foundations appropriate for sandy, low-strength soils. The development footprint has therefore been positioned within the stable portion of the property, outside the erosion risk lines, and more than 100 m from the High-Water Mark, in accordance with geotechnical constraints and safety considerations.

**Conclusion**

The engineering assessment concludes that development is feasible only within the stable central–northern portion of the site, and that no infrastructure should occur on or near the southern dune slopes, the Structurally Weak Zone, the D7 fracture, or within the erosion-risk area. Provided that foundations are designed according to the engineering recommendations and construction avoids all geotechnical no-go areas, the risk to property and the environment can be managed. Any deviation into slope-affected zones would significantly increase the likelihood of erosion, instability, or structural failure.

**Recommendations**

- Locate all development only within the stable central–northern footprint, outside the erosion risk zone, CML, and >100 m from the High-Water Mark.
- Avoid all steep dune slopes and geotechnical hazard areas, including the Structurally Weak Zone and the D7 fracture.
- Use lightweight, elevated or modular foundations suitable for loose, sandy dune soils, with minimal cut-and-fill.
- Retain natural vegetation wherever possible to stabilise dune sands and prevent erosion.
- Implement soft stormwater management measures (swales, permeable surfaces) to prevent concentration of runoff.
- Restrict construction access to the designated stable route and avoid all dune-crest or slope-edge activity.
- Engineer and ECO to inspect and sign off on foundation excavations and any activity near sensitive slopes.
- Include ongoing monitoring in the operational phase to detect erosion, subsidence, or stormwater issues early.

## 8.5. Terrestrial Biodiversity Assessment (Dr David Hoare of BioCensus (Pty) Ltd, March 2025) –

BioCensus (Pty) Ltd was appointed to undertake the Terrestrial Biodiversity Specialist Assessment in March 2025. The site is located above the coastal cliffs to the east of Cola Beach, Sedgefield, in the Garden Route. It is accessed from the Groenvlei Beach Road, a gravel road that runs past the western side of Groenvlei to the beach on the western edge of Goukamma Nature Reserve. The site is in an area of untransformed coastal thicket between Goukamma Nature Reserve and Cola Beach in Sedgefield. This strip of privately owned land has been divided into a row of plots overlooking the sea, one of which has already been developed, creating pressure for further development. Most areas to the north and north-east of the site are in a natural state, providing an important buffer to the vegetation in Goukamma Nature Reserve. The scope of this report covers the entire property, part of which is being considered for development. The entire site is approximately 5.21 ha.

**Desktop Description of Site**

Regional Vegetation Patterns

The property occurs within one mapped regional terrestrial vegetation type, Goukamma Strandveld, as per Mucina and Rutherford (2006). Field observations confirm that portions of the site support vegetation consistent with Western Cape Milkwood Forest (SANBI, 2020), a forest type protected under the National Forests Act, 1998 (Act No. 84 of 1998). The vegetation map also shows Cape Seashore Vegetation at the base of the cliffs, which is not relevant to the proposed development footprint located above the cliffs. All natural vegetation on site therefore falls within Goukamma Strandveld, including areas consistent with Western Cape Milkwood Forest.

Goukamma Strandveld (including Western Cape Milkwood Forest components)

Distribution: This vegetation type occurs in coastal stretches of the Western Cape Province from Victoria Bay near Wilderness to the Knysna Heads, with smaller areas from Robberg Peninsula near Plettenberg Bay eastward to Keurboomstrand.
Vegetation & Landscape Features: Occurs on flat to moderately undulating coastal dunes, forming a mosaic of low to tall (1–5 m) dense thicket dominated by small trees (e.g., Sideroxylon inerme) and woody shrubs with abundant lianas, interspersed with low (1–2 m) asteraceous fynbos. Thicket clumps are best developed in fire-protected dune slacks, occasionally supporting pockets of coastal forest. Fynbos shrubland occurs on upper dune slopes and crests. Coastal cliff edges are covered by wind-cropped thicket, heavily invaded by Acacia cyclops (rooikrans), indicating localized degradation.

The Western Cape Biodiversity Spatial Plan (WCBSP, 2023) classifies most of the site as a Critical Biodiversity Area (CBA1), with a band of CBA2 along the southern part. Two Ecological Support Areas (ESA2) are also present. Nearby protected areas include Goukamma Nature Reserve to the east and Lake Pleasant Private Nature Reserve inland, underscoring the site's role as a conservation buffer.

Summary of Potential Impacts

The assessment considered four potential impacts associated with the proposed development:

1. Impacts on forests: The site contains low coastal forests (Western Cape Milkwood Forest components) connected to Goukamma Nature Reserve. Even small impacts can cause local ecosystem damage, edge effects (e.g., trampling, runoff), and fragmentation risks. The footprint is small, but impacts may be long-term due to the lifespan of trees.
2. Impacts on protected trees: The dominant tree species, milkwood (Sideroxylon inerme), is protected under the National Forests Act, 1998. Any damage requires a permit from DFFE.
3. Impacts on conservation planning: The site's CBA1/CBA2 status and proximity to protected areas highlight its conservation importance and cumulative development sensitivity.
4. Impacts on downslope cliff areas: The development is located at the summit of coastal cliffs, with potential for downslope destabilisation if vegetation is disturbed or erosion occurs.

Conclusion

Desktop information, field data, and historical aerial imagery verify that the site retains largely natural habitat of high biodiversity value within CBA1/CBA2 and ESA2 areas, with protected milkwood trees present and a sensitive cliff-edge system influenced by invasion and erosion dynamics. Potential impacts are negative and permanent in duration, but

are localised in extent and can be reduced through strict footprint control, avoidance of sensitive areas, invasive alien management, rehabilitation, and long-term ecological management commitments implemented through the EMPr.

Terrestrial Biodiversity Statement (BAR-safe wording)

- The site is largely in a natural state and includes CBA1/CBA2 and ESA2 areas, with vegetation of high biodiversity value and protected milkwood trees present; a specialist assessment is therefore required in line with the Terrestrial Biodiversity Protocol (Government Gazette, 2020).
- Potential impacts range from LOW to MODERATE negative significance, primarily due to habitat sensitivity, edge effects, cliff stability risks, and cumulative fragmentation pressures.
- The development may be considered only if the approved footprint is strictly limited, sensitive areas are avoided, and the specialist mitigation measures are implemented and enforced through the EMPr and conditions of authorisation.
- This statement is subject to the final approved EMPr, including (as applicable) permits under the National Forests Act, an Alien Invasive Management Plan, and an Ecological Management Plan.

Recommendations

If the proposed development is approved:

- Compile and implement an Alien Invasive Management Plan, led by a qualified ecologist, to eradicate Acacia cyclops and other invasives, including annual monitoring for 5 years post-construction and simultaneous rehabilitation with indigenous species to prevent slope failure.
- Limit clearance strictly to the approved total disturbance footprint (±1,375 m², inclusive of buildings, access, and associated infrastructure). Remaining areas must remain natural, and garden expansion beyond the approved footprint must be prohibited.
- Conduct a search-and-rescue operation for indigenous plants prior to construction, supervised by a botanical specialist. Rescued plants must be relocated to an on-site nursery for use in rehabilitation.
- Formalise rehabilitation and restoration requirements in an Ecological Management Plan, including fire management, erosion control, and restoration of degraded thicket patches, and submit the plan to CapeNature within 6 months of approval.
- Obtain a permit from DFFE for any impacts on Western Cape Milkwood Forest components and protected milkwood trees (Sideroxylon inerme) under Section 7(3)(a) of the National Forests Act, 1998, prior to site clearance (recommended submission at least 3 months before planned clearance).
- Secure long-term conservation commitments for the remainder of the property outside the development footprint through appropriate land-use and conservation mechanisms (e.g., rezoning/overlay/servitude and/or stewardship commitments as reflected in the BAR), in consultation with the relevant authorities. (Remove the "99.98%" figure unless it is recalculated and consistently used throughout the BAR.)
- Implement downslope cliff protection measures, including erosion control (e.g., silt fences, revegetation) and a prohibition on new beach pathways. Only existing public access routes may be used.

# 9. MONITORING

## 9.1. Signing of the EMPr

The acknowledgement form at the back of the approved EMPr is to be signed by the holder of the Environmental Authorisation (the Developer), the Site Manager and the ECO, acknowledging that all parties are familiar with the requirements of the EMPr. All employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr as well as the contractual conditions relating to the environment as contained in the contract document.

## 9.2. Legislation

Of importance are all national, provincial and municipal by-laws and regulations. Statutes are amended periodically and it is the Developer's responsibility to identify legislation relevant to the proposed activity.

| LEGISLATION | ADMINISTERING AUTHORITY | TYPE<br><br>Permit/ license/ authorization/comment |
|---|---|---|
| **NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)** | Department of Environmental Affairs | AUTHORIZATION |
| **NATIONAL ENVIRONMENTAL MANAGEMENT AMENDMENT ACT (ACT 62 OF 2008)** | Department of Environmental Affairs | AUTHORIZATION |
| **NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO 10 OF 2004)** | SANParks, CapeNature and Department of Agriculture, Fisheries and Forestry | COMMENT |
| **NATIONAL WATER ACT (ACT 36 OF 1998)** | Department of Water Affairs | COMMENT |
| **WESTERN CAPE NATURE CONSERVATION LAWS AMENDMENT ACT (ACT 3 OF 2000)** | CapeNature | RELEVANT CONSIDERATION |
| **CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)** | Department of Agriculture, Fisheries and Forestry | COMMENT |
| **NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)** | Heritage Western Cape | RELEVANT CONSIDERATION |
| **OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)** | Department of Health | RELEVANT CONSIDERATION |

## 9.3. Policies

| |
|---|
| National Policy Development Framework 2020 |
| The National Environmental Management Act, 1998 (107 Of 1998) |
| Knysna Municipal Land Use Planning Bylaw, 2015 |
| Spatial Planning and Land Use Management Act (16 Of 2013) |
| Western Cape Land Use Planning Act, 2014 (3 Of 2014) |
| Subdivision Of Agricultural Land Act, 1970 (Act 70 Of 1970) |
| National Heritage Resources Act, 1999 (Act 25 Of 1999) |
| National Health Act, 2003 (Act 61 Of 2003) |

## 9.4. Project Responsibilities

### 9.4.1. The Developer

While the specific role players and their responsibilities are listed below, the Developer is ultimately responsible for ensuring compliance with the environmental specification and upholding the environmental commitment to compliance with all National, Provincial and Local legislation, policies and guidelines that relate to the management of the environment. Briefly, the Developer:

- Appoint specialists, including the Environmental Control Officer and assemble the construction team.
- Must ensure that the Environmental Control Officer is integrated as part of the project team while remaining independent.
- May on the recommendation of the Engineer and/or Environmental Control Officer order the Contractor to suspend any or all works on site if the Contractor or Sub-Contractor/Supplier fails to comply with the conditions of authorisations and EMPr.
- Take full responsibility for all activities to be undertaken on the site by the contractor and sub-contractors regarding compliance with all authorisations and associated EMPr; and
- Maintain control of all activities pertaining to the project.

### 9.4.2. The Contractor (including sub-contractors)

The Contractor is required to:

- Be fully conversant with the conditions of all authorisations and associated EMPr.
- Comply with all applicable legislation.
- Supply method statements timeously for all activities requiring special attention as specified and/or requested by the Developer, Environmental Control Officer and/or project manager throughout the period of the Contract.
- Must appoint Occupational Health and Safety Officer and Safety, Health and Environmental Officer.
- Brief all staff about the requirements and the importance of the environmental specifications.
- Ensure that all staff attend the environmental awareness workshop/training sessions as when scheduled by the relevant officer.
- Ensure that all work is done in compliance with occupational health and safety requirements.
- Comply with requirements of the Environmental Control Officer in terms of specifications of the authorisations and associated EMPr, the project specification, as applicable within the period specified.
- Ensure any Subcontractors/Suppliers undertaking work on the site comply with the specifications of the authorisations. The Contractor will be held responsible for non-compliance on their behalf.
- Take full responsibility for the costs of any damages or compensation resulting from non-adherence to the conditions of the authorisations and associated EMPr or written site instructions.
- Ensure that the Engineer or site manager communicates timeously any foreseeable activities which will require input from the Environmental Control Officer; and
- Conduct all activities in a manner that minimises disturbance to the natural environment as well as directly affected residents and the public in general.
- Communicate timeously and inform the project manager of planned blasting on the site.

### 9.4.3. Environment Control Officer

Responsibility for the implementation of the EMPr lies with the Developer who must retain the services of a suitably experienced independent Environmental Control Officer (ECO) who will monitor the construction process and rehabilitation/mitigation measures periodically.

The ECO's responsibilities must include, *inter alia*:

- Be fully conversant with the conditions of the authorisation and associated EMPr.

- Be familiar with the recommendations and mitigation measures in the EMPr for the project as well as the contents of the EA.
- Be fully conversant with the findings and conclusions of the EIA for the subject development.
- Undertake comprehensive pre-construction site inspection of the development site, regular site inspections during the construction phase and conduct audits.
- Conduct and facilitate environmental awareness workshop/training for all staff on the project.
- Compile and administer an environmental monitoring plan for purposes of ensuring that management measures are implemented and are effective.
- Compile and administer an environmental audit report reporting system able to flag non-compliance as well as compliance actions on the site.
- Report environmental incidents to the project manager and the competent authority as and when required in terms of the specifications contained herein.
- Monitor the implementation of the EMPr during the construction and rehabilitation phases.
- Report any non-compliance or remedial actions that need to be applied to the appropriate environmental authorities.
- Monitor the Principal Contractor, sub-contractors, construction teams and Developer compliance with the EMPr during the construction and rehabilitation phases.
- Monitor all site activities weekly and/or monthly for compliance.
- Conduct monthly site audits according to the EMPr and report findings to the Developer/Contractor.
- Attend monthly site meetings or when it is necessary.
- Recommend corrective action for any environmental non-compliance at the site and recommend and/or amend EMPr and communicate such to authorities where the EMPr comes short of being effective in the mitigation measures on the environmental specifications.
- Compile a monthly report highlighting the effectiveness of the EMPr and shortcomings if there are any, as well as progress and compliance with the EMPr specifications. These monthly reports are to be submitted to the Developer and the authority is requested; and
- Conduct one training on the EMPr and general environmental awareness prior to the commencement of activities.

It must be noted that the responsibility of the ECO is to monitor compliance, give advice on the implementation of the EMPr and report non-compliance and not to enforce compliance. Ensuring compliance is the responsibility of the Developer.

### 9.4.4. EXTERNAL INDEPENDENT AUDITOR

Appointment of an External Independent Auditor as per the Regulation 34 of the EIA Regulations, 2014 (as amended). The roles and responsibilities of the external independent Auditor include:

- Responsible for the implementation of an Environmental Monitoring and Audit program aimed at monitoring environmental impacts during construction and ensuring compliance with environmental protection conditions, recommendations from Environmental Impact Assessments (EIA), and pertinent environmental legislation.
- Monitor the contractor's activities and ensure compliance with environmental requirements
- Establish monitoring protocols, track environmental impacts, and assess the performance and effectiveness of mitigation measures.
- Undertake document monitoring, audit data and report on compliance with the Environmental Management Programme (EMPr).
- Be involved in resolving environmental complaints related to construction activities.
- Feedback audit results
- Conduct random site inspections.
- Audit the EIA/EA recommendations and requirements against the status of implementation of environmental protection measures on site.
- Check complaint cases and the effectiveness of corrective measures

### 9.4.5. OCCUPATIONAL HEALTH AND SAFETY OFFICER

The OHS Officer will be responsible for undertaking the following:

- Planning, implementation and overseeing of safety of all staff on the site;
- Ensure that the contractor complies with Occupational Health and Safety legislation and guidelines;
- Compilation of a comprehensive project Health and Safety Risk Assessment (HSRA);
- Compilation of health and safety specifications based on risks identified;
- Reviewing and approval of health and safety plan(s) submitted by appointed Principal Contractor(s);
- Conducting monthly health and safety inspections and compiling monthly OHS reports;
- Conducting monthly health and safety audits and compiling audit reports;
- Conducting investigation on all injuries and accidents/incidents and writing reports thereafter;
- Selecting suitable locations or places for fire extinguishers;
- Conducting or providing first aid to staff and visitors in the event of injury or illness;
- Conducting fire drills, participate in fire and accident prevention programmes;
- Monitoring compliance with the Occupational Health and Safety Act (OHSA) and Regulations;
- Establishment and monitoring of project health and safety file;
- Monitoring the Principal Contractor(s') health and safety performance; and
- Preparation of project close-out reports and submission of project files to the client;
- Keep records of incidents and accidents and identify potential safety and fire hazards;

# 10. REPORTING PROCEDURES

## 10.1. Documentation

Typically, an audit analyses the results obtained from monitoring and assesses whether objectives and targets have been met and whether there are variances from the stipulated EMPr and legal requirements. In addition, the audit assesses whether EMPr implementation has been undertaken according to planned arrangements and whether the EMPr itself is being appropriately updated. The audit should confirm that identified corrective actions have been undertaken and then assess the effectiveness of such actions.

The timing of audits should be included in the implementation schedule in the EMPr.

The key steps in a successful audit are:

- Establish audit procedures.
- Determine the frequency of audits.

The following documentation must be kept on site in order to record compliance with the EMPr:

An Environmental File which includes:

- An Environmental File which must include:
  - Copy of the Environmental Authorisation.
  - Copy of the EMPr; o Copy of all other licenses/permits.
  - Copy of rehabilitation plans (if applicable).
  - Copy of the Storm Water Management Plan.
  - Copy of relevant legislation(s); o Environmental Policy of the Main Contractor.
  - Environmental Method Statements compiled by the Contractor.
  - Non-conformance Reports.
  - Copy of all instructions and or directives issued.

Environmental register, which will include:

- Communications Register – including records of complaints, minutes and attendance registers of all environmental meetings.
- Monitoring Results – including environmental monitoring reports, register of audits, non-conformance reports, and

- Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record.

❖ Waste Documentation such as, but not necessarily limited to: Waste Manifest Documents, Safe Disposal Certificates (SDCs) and Sewerage Disposal Receipts.
❖ Material Safety Data Sheets (MSDSs) for all hazardous substances; and
❖ Written Corrective Action Instructions.

## 10.2. Environmental Awareness Plan

OBJECTIVE: Ensure all operation personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and ongoing minimisation of environmental harm (Environmental Awareness Plan).

To achieve effective environmental management, it is important that Contractors and site employees are aware of the responsibilities in terms of the relevant environmental legislation and the contents of this EMPr. The Developer/ Applicant is responsible for informing its employees and contractors (transportation contractors) of their environmental obligations in terms of the environmental specifications, and for ensuring that employees are adequately experienced and properly trained in order to execute the works in a manner that will minimise environmental impacts. The Developer / Applicant's obligations in this regard include the following:

- Employees must have a basic understanding of the key environmental features of the site and its surrounding environment.
- Ensuring that a copy of the EMPr is readily available on-site and that all site staff are aware of the location and have access to the document.
- Employees must be familiar with the requirements of the EMPr and the environmental specifications as they apply to the operation of the facility.
- Ensuring that, prior to commencing any new site works, all employees have attended an Environmental Awareness Training course. The course must provide the site staff with an appreciation of the project's environmental requirements, and how they are to be implemented.
- Awareness of any other environmental matters, which are deemed to be necessary by the site manager.
- Ensure that construction workers have received basic training in environmental management, including the storage and handling of hazardous substances, minimise of disturbance to sensitive areas, management of waste and prevention of water pollution
- Records must be kept of those who have completed the relevant training.
- Training should be done either in a written or verbal format but must be in an appropriate format and language for the receiving audience
- Refresher sessions must be held to ensure the operating staff are aware of their environmental obligations.
- **Induction Training**:
    - Conduct mandatory environmental induction training for all site personnel before work commences, facilitated by the Environmental Control Officer (ECO) in the native language of the workforce, with translators if necessary.
    - Training must cover:
- The site's Very High biodiversity sensitivity, including its classification as Critical Biodiversity Areas (CBA1/CBA2) and Western Cape Milkwood Forest, protected under the National Forests Act, 1998.
- Identification and protection of milkwood trees (*Sideroxylon inerme*) and other indigenous species.
- Risks to downslope cliff areas, including erosion and disturbance of wind-cropped thicket, and the prohibition of beach pathways.
- Strict adherence to the development footprint and no-go areas (e.g., forest, cliff edges).
- Procedures for handling alien invasive species (e.g., Acacia cyclops) and the importance of simultaneous rehabilitation.
- Emergency procedures for environmental incidents (e.g., spills, erosion events).
    - All personnel must sign an induction attendance record to acknowledge understanding of the EMPr and environmental responsibilities.
- **Ongoing Awareness:**

- Display environmental awareness posters at key site locations, highlighting protected species, no-go areas, and emergency contacts.
- Include environmental topics in weekly Toolbox Talks, emphasizing compliance with the Alien Invasive Management Plan and Ecological Management Plan.
- Responsibility: ECO, Site Manager; Timing: Pre-construction (induction), weekly (Toolbox Talks), and ongoing (posters).

- **Training Records:**
  - Maintain records of all training sessions and attendance, to be included in the ECO's monthly audit reports submitted to the Department of Forestry, Fisheries and the Environment (DFFE).
  - Responsibility: ECO; Timing: Ongoing.

Therefore, prior to the commencement of construction activities on site and before any person commences with work on-site thereafter, adequate environmental awareness and responsibility are to be appropriately presented to all staff present onsite, clearly describing their obligations towards environmental controls and methodologies in terms of this EMPr.

## 10.3. Environmental Register

All environmental-related incidents should be reported to the environmental section. The Developer/project manager should compile and keep an Incidents and Accidents Register on the file/book in which all environmental-related incidents and accidents are recorded, e.g., chemical spills, fires, accidents involving workers and vehicles, etc. The contractor will ensure that the following information is recorded for all complaints/incidents:

- The name and contact details of the persons involved.
- The person recording the incident.
- The date and time of the incident.
- The nature, extent, and cause of the accident.
- The name and contact details of any persons notified of the incident.
- The actions taken to deal with the incident and whether the accident has been sufficiently.
- Dealt with additional steps required to prevent the recurrence of the incident.
- Causes of complaint/incident.
- Party/parties responsible for causing the complaint/incident.
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident.
- Additional corrective or remedial action taken and/or to be taken to address and prevent recurrence of the complaint/incident.
- Time frames and the parties responsible for the implementation of the corrective or remedial actions.
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented; and
- Copies of all correspondence received regarding complaints/incidents.

The above records will form an integral part of the Contractors' Records. These records will be kept with the EMPr and will be made available for scrutiny as and when necessary.

## 10.4. Method Statements

The objective is to ensure all construction activities are undertaken with the appropriate level of environmental awareness to minimise environmental risk. The environmental specifications are required to be underpinned by a series of Method statements, within which the Contractors and Service Providers are required to outline how any identified environmental risks will practically be mitigated and managed for the duration of the contract, and how specifications within this EMPr will be met. That is, the Contractor will be required to describe how specified requirements will be achieved through the submission of written Method Statements to the ECO.

Method Statement is defined as "*a written submission by the Contractor in response to the environmental specification or a request by the Site Manager, setting out the plan, materials, labour and method the Contractor proposes using to conduct an activity, in such detail that the Site Manager and Environmental Officers are able to assess whether the Contractor's proposal is in accordance with the Specifications and/or will produce results in accordance with the Specifications*". The Method Statement must cover applicable details with regard to:

- Construction procedures
- Materials and equipment to be used
- Getting the equipment to and from the site
- How the equipment/material will be moved while on-site
- How and where the material will be stored
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur
- Timing and location of activities
- Compliance/non-compliance with the Specifications, and
- Any other information deemed necessary by the ECO.

The Contractor may not commence the activity covered by the Method Statement until it has been approved by the Site Manager, except in the case of emergency activities and then only with the consent of the Site Manager. Approval of the Method Statement will not absolve the Contractor from their obligations or responsibilities in terms of their contract. Failure to submit a method statement may result in suspension of the activity concerned until such time as a method statement has been submitted and approved. The ECO should monitor the construction activities to ensure that these are undertaken in accordance with the approved Method Statement.

It is a statutory requirement to ensure the well-being of employees and the environment. To allow the mitigation measures in this document to be implemented, task-specific method statements should be developed for each set of tasks. A Method Statement details how and when actions/activities will be carried out, detailing possible dangers/risks, and the methods of control required; this should ideally entail the following:

- Type of construction activity.
- Timing and location of the activity.
- Construction procedures.
- Materials and equipment to be used.
- Transportation of the equipment to and from the site.
- How equipment/material will be moved while on site.
- Location and extent of construction site office and storage areas.
- Identification of the resultant impacts.
- Methodology and/or specifications for impact prevention/containment.
- Methodology for environmental monitoring.
- Emergency/disaster incident and reaction procedures (required to be demonstrated); and
- Rehabilitation procedures and continued maintenance of the impacted environment.

The Contractor will be accountable for all actions taken regarding compliance with the approved Method Statements. The Contractor shall keep all the Method Statements and subsequent revisions on file, copies of which must be distributed to all relevant personnel for implementation.

The following is a list of Method Statements that may be required:

- Construction site and office/yard establishment.
- Cement mixing/concrete batching, etc.
- Dust management.
- Environmental awareness course(s).
- Environmental monitoring.
- Erosion control.
- Fire, hazardous and/or poisonous substances.
- Fuels and fuel spills (may form part of the item above).
- Storage, handling and decanting of diesel (may form part of the item above);
- Personnel, public and animal safety.
- Rehabilitation of modified/damaged environment(s).
- Solid and liquid waste management.
- Top-soil management.
- Stormwater Management; and
- Wash areas.

***NB: No work may commence or take place before the Method Statement has been approved by all relevant parties.***

## 10.5. Non-Conformance Report

A Non-Conformance Report (NCR) will be issued to the Developer as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Developer in writing. Preceding the issuing of a NCR, the Developer must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR. The following information should be recorded in the NCR:

- Time and date of the incident.
- Details/description of incident.
- Listing the incident as significant or minor.
- The contractor's name responsible for the non-conformance.
- Nature of the risk and the associated environment.
- Any plant or equipment involved.
- Work procedures not followed.
- Any other physical aspects; and
- Remedial actions undertaken to correct the incident.
- Agreed timeframe by which the actions documented in the NCR must be carried out.
- Details of non-conformance.
- Any plant or equipment involved.
- Any chemicals or hazardous substances involved.
- Work procedures not followed.
- Any other physical aspects.
- Nature of the risk.
- Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account.
- Agreed timeframe by which the actions documented in the NCR must be carried out; and

The ECO should verify that the agreed actions have taken place by the agreed completion date. When completed satisfactorily, the ECO and Developer should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

## 10.6. Environmental Emergency Response

The Developer's environmental emergency procedures must ensure appropriate responses to unexpected/accidental actions/incidents that could cause environmental impacts.

The Environmental Emergency Response Plan is separate from the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and must ensure and include the following:

- Employees shall be adequately trained in terms of incidents and emergency situations.
- Details of the organisation (i.e. manpower) and responsibilities, accountability and liability of personnel.
- A list of key personnel and contact numbers.
- Details of emergency services (e.g. the fire department / on-site fire detail, spill clean-up services) shall be listed.
- Internal and external communication plans, including prescribed reporting procedures.
- Actions to be taken in the event of different types of emergencies.
- Incident recording, progress reporting and remediation measures to be implemented; and
- Information on any hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

# 11. COMPLIANCE WITH THE EMPr

## 11.1. Monitoring and Compliance

Environmental Monthly reports will be compiled by the EO monthly and must be submitted to the Environmental Specialist/authority. The report should include details of the activities undertaken in the reporting period, any non-conformances or incidences recorded, corrective action required and details of these non-conformances or incidents which have been closed out.

A document handling system must be established to ensure accurate updating of EMPr documents and availability of all documents required for the effective functioning of the EMPr. Supplementary EMPr documentation could include:

- Method Statements.
- Environmental Action Plan
- Environmental File Site instructions.
- Emergency preparedness and response procedures.
- Record of environmental incidents.
- Non-conformance register.
- Training records.
- Site inspection reports.
- Waste Register.
- Water Usage Register.
- Fauna and Flora Register.
- Hazardous chemical Inventory list.
- Monitoring reports.
- Auditing reports.
- Public complaints register (single register maintained for the overall site).

The monitoring and compliance of the development should take place as follows:

- The ECO has the authority to instruct the Developer to cease a particular operation causing or liable to cause significant environmental damage, and issue fines or penalties for non-compliance of the Environmental Management Programme/ EMPr.
- An ECO must during construction activities monitor the site monthly and prepare an audit report monthly. Audit reports must be submitted to Compliance Monitoring of the Department monthly.
- The ECO/holder of the Environmental Authorisation must, in addition, submit an environmental audit report to the Department within 30 days of completion of the construction phase (i.e., within 30 days of site handover) and a final environmental audit report within 30 days of completion of rehabilitation activities.
- All documentation e.g. audit/monitoring/compliance reports and notifications, required to be submitted to the Department in terms of the Environmental Authorisation, must be submitted to the Compliance Monitoring of the Department.
- Environmental audit reports must be compiled in accordance with Appendix 7 of the EIA Regulations 2014, as amended and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the Environmental Authorisation conditions as well as the requirements of the approved EMPr.
- Operation of the activity – a written notification of operation must be given to the Department no later than fourteen (14) days prior to the commencement of the activity's operational phase.

## 11.2. Auditing Process

The terms of reference for the audits must comprise the following:

- Develop a checklist against which the criteria can be referenced during the audit.
- During the audit process, key individuals involved with the management of the project are to be given the opportunity to comment on issues being audited and will be invited to accompany the auditor during the site inspection.

- Compile an audit report on the implementation of the EMPr and compliance to the Environmental Authorisation and submit this report to the competent authority (Department of Environment Affairs and Development Planning/ DFFE).

Compliance ratings against which the listed criteria are assessed are as follows:

| Symbol | Rating | Interpretation |
|---|---|---|
| Y | Yes | Evidence of compliance |
| P | Partial | Evidence of partial compliance |
| N | No | Evidence of non-compliance |
| NR | Not Relevant | The condition or commitment is not relevant at this stage of the development or it is inappropriate |
| NA | Not Audited | Not audited |

## 11.3. Non-Compliance

**Definition**

The non-compliance is defined as, and will be issued for:

- Any deviation by the Developer from the environmental conditions and requirements as set out in the EA and EMPr - or;
- Any contravention by the Developer of environmental legislation - or;
- Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the Environmental Control Officer (ECO) but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

**Types of non-compliance issued**

Two types of non-compliance may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- Total disregard by the Developer to the environmental conditions and requirements listed in the EA and EMPr.
- An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

## 11.4. Issuing a Non-Compliance

Non-compliance may be issued to:

- The Developer
- Any representative of the Developer

## 11.5. Process of Issuing Non-Compliance

The appointed Environmental Control Officer (ECO) may issue a formal non-compliance to the Developer. A copy of the non-compliance issued will be placed in the EMPr file. The Developer will be responsible for returning a formally signed off corrective action (as per template) to the ECO to be placed in the EMPr file. The ECO will be required to sign-off on the corrective action, indicating that it has been completed within the timeframes and to the satisfaction of the ECO.

## 11.6. Failure to complete corrective actions

In the event that the Developer fails or refuses to complete the corrective action, either at all or within the allocated timeframe, the ECO shall,

- Inform DFFE in writing that a condition of approval for the project is not being met.

The DFFE office is responsible for resolving the impasse with the Developer.

The Developer is deemed not to have complied with the EA and EMPr if:

- Within the boundaries of the site and site extensions, there is evidence of contravention of clauses.
- Environmental damage occurs due to negligence; inappropriate actions taken by the Developer or any of his staff.

On receiving a notice of non-compliance, the Developer is required to swiftly address the issue/s, taking all corrective actions required to rectify the situation. Penalties will be applied for non-compliant situations. Penalties/fines are advocated to ensure corrective measures are successfully undertaken and the necessary standard of rehabilitation is achieved.

Penalties associated with a non-compliance are not a set amount but will depend on the nature and extent of the impact. The cost of any soil and /or groundwater monitoring and any soil and /or groundwater remediation required by authorities will be to the Developer's account.

The imposition of such a penalties / fine shall not preclude the relevant competent authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression as deemed fit.

## 11.7. Unlawful Activity/ies

Section 28 (15) of NEMA entitles authorities to administer a fine not exceeding R1 million or to imprisonment for a period not exceeding 1 year or both such a fine and imprisonment.

Section 31N of NEMA entitles environmental authorities to administer a fine not exceeding R 5 million or 10 years imprisonment and/or a fine and imprisonment for a person guilty of an unlawful activity. The Act makes allowance for the rectification of unlawful activity and may charge up to R1 million administration fees over and above the remediation costs.

NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of other environmental statutes. Importantly, NEMA provides for the liability of conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

## 11.8. ENVIRONMENTAL CODE OF CONDUCT

One of the objectives of the EMPr is to ensure that the workforce, contractors, sub-contractors and construction staff have an understanding of environmental issues and potential impacts that may arise from development activities.

This environmental code of conduct provides the basic rules that should strictly be adhered to. It is the responsibility of the Contractor to ensure that site personnel understand and adhere to the Code of Conduct.

**ALL PERSONS ARE OBLIGED TO KEEP TO THE RULES OF THIS CODE OF CONDUCT**

Ignorance, negligence, recklessness or a general lack of commitment which will result in environmental degradation or pollution will not be tolerated!

**ENVIRONMENTAL RULES**

- Only use authorised accesses.
- Do not litter.
- Dispose of solid waste to the correct waste containers provided.
- Prevent pollution.
- Use the toilet facilities provided.
- Do not dispose of contaminated wastewater into the stormwater drainage system or the environment.
- Immediately report any spillage from containers, plants or vehicles.
- Do not burn or bury waste on the site.
- Do not trespass onto private properties.
- Do not waste electricity, water or consumables.
- No catching, teasing, or setting of devices to trap or kill any animal.
- No damage or removal of any trees unnecessarily, shrubs or branches, unless it forms part of working instructions and authorisation has been received where necessary.
- Do not deface, draw or cut lettering or any other markings on trees, rocks or buildings.
- Know the firefighting procedure, fire drill and locations of firefighting equipment; and
- Know the environmental incident procedures.

## 12. AMENDMENTS TO THE EMPr

This EMPr outlines the environmental practices and mitigation measures to be adhered to during the construction, operational, and rehabilitation phases; in order to curtail and/or minimise potential negative impacts and promote sound environmental practises.

Any significant issues not covered in the EMPr as submitted, will be addressed as an addendum to this EMPr, and submitted for approval. The EMPr is a living document and is subject to change from time to time in consultation with the DFFE. Any amendments to the EMPr will require approval from the DFFE.

## 13. ENFORCING THE EMPr

The holder of the Environmental Authorisation (EA) has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes casual labour, etc.). The EA and approved EMPr shall be part of the terms of reference for all stakeholders.

All senior and supervisory staff members shall familiarise themselves with the full contents of the EA and approved EMPr. They shall know and understand the specifications of the EA and approved EMPr and shall be able to assist other staff members in matters relating to the EA and approved EMPr.

## 14. OPERATIONAL EMPr (OEMPr)

The most important part of the operational phase will be to ensure that the site is meticulously maintained and that the operations are carefully monitored. The applicant will remain overall responsible for the environmental performance of the site and must be aware of the legal requirements and obligations. The applicant must also be aware of the legal action that can be taken against **him/ her** as a person with regard to negligence leading to environmental pollution. The owner or delegated responsible person must implement an operational and maintenance management plan, which must include:

- ✓ Access management and control.

- ✓ Energy management and monitoring.
- ✓ Water management and monitoring.
- ✓ Waste and pollution management; Sewerage management.
- ✓ Wastewater Management Fire Management.
- ✓ Minimise dust and air emissions.
- ✓ Protection of Indigenous natural vegetation and fauna.
- ✓ Specific monitoring and operational instructions.
- ✓ Emergency plans which will cover all reasonable aspects of the operations which might lead to environmental pollution or degradation.

- ✓ **Biodiversity Conservation**:
  - Maintain the undeveloped portions of the site (99.98% of the 5.21 ha) under a formal conservation agreement, such as rezoning to "Open Space III" (Nature conservation area), in consultation with Knysna Municipality and CapeNature.
  - Responsibility: Applicant; Timing: Within 6 months of Environmental Authorisation.
- ✓ **Alien Invasive Species Management**:
  - Implement annual monitoring and eradication of alien invasive species (e.g., Acacia cyclops) as per the Alien Invasive Management Plan. Engage a qualified ecologist to conduct surveys and report findings to the ECO.
  - Rehabilitate any cleared areas with indigenous species to maintain ecological integrity.
  - Responsibility: Applicant, ECO; Timing: Annually for at least 5 years post-construction.
- ✓ **Ecological Management Plan**:
  - Implement the Ecological Management Plan to protect the Western Cape Milkwood Forest and Goukamma Dune Thicket. The plan must include:
    - Fire management protocols to prevent uncontrolled fires in the forest.
    - Erosion control measures for cliff edges, such as revegetation and stormwater management.
    - Restoration of degraded thicket patches using plants from the onsite nursery.
  - Submit annual compliance reports to CapeNature and DFFE.
  - Responsibility: Applicant, ECO; Timing: Ongoing, with annual reports.
- ✓ **Access Management**:
  - Restrict access to designated routes to prevent disturbance to natural vegetation and cliff areas. Prohibit any new pathways to the beach.
  - Responsibility: Applicant; Timing: Ongoing.
- ✓ **Environmental Monitoring**:
  - Conduct quarterly inspections by the ECO to verify compliance with the EMPr and Ecological Management Plan, focusing on biodiversity, erosion, and alien invasive species.
  - Responsibility: Applicant, ECO; Timing: Quarterly.
- ✓ **Emergency Plans**:
  - Develop and implement emergency response plans for environmental incidents (e.g., spills, erosion events, fires), including contact details for DFFE and CapeNature.
  - Responsibility: Applicant; Timing: Pre-operation and ongoing.

## 14.1. Traffic Access Routes & Haul Roads

The Operator of the site must control the movement of all vehicles including that of his suppliers so that they remain on designated routes. In addition, such vehicles must be routed and operated as to minimise disruption to regular users of the routes not on the Site.

- ✓ On public roads adjacent to the Site vehicles/ delivery trucks/ tankers will adhere to municipal and provincial traffic regulations.
- ✓ Only approved access roads may be used.
- ✓ All measures must be implemented to minimise impacts on local commuters, e.g. limiting tanker vehicles travelling on public roadways during the morning and late afternoon commute time and avoiding using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.

## 14.2. Energy Management

All reasonable steps must be taken to ensure the efficient management of energy. Energy management and conservation measures must be propagated and encouraged. The objective of energy management will be to encourage the conservation of energy, for example:

- ✓ Install energy-efficient appliances (e.g. a grade one refrigerator is at least 35% more energy efficient than a grade three one).
- ✓ Install energy-efficient lighting (which uses less energy to give the same amount of illumination and lasts longer than conventional incandescent bulbs).
- ✓ Insulate water heaters and hot water pipes (insulating hot water pipes from the water heater to the source is another way to conserve).
- ✓ Disconnect or switch- off units/appliances which are not in use.
- ✓ Monitor different energy uses (e.g. electricity, fuels and gas).

## 14.3. Water Management

- ✓ Ensure that all additional water uses are correctly registered with the Department of Water and Sanitation (e.g. Agri-industrial use).
- ✓ Water conservation measures such as low-flow taps, high-pressure hoses, dual flush toilets, water-wise gardens, rainwater tanks etc. must be encouraged and implemented.
- ✓ Every reasonable effort must be made to reduce the long-term water demand.
- ✓ Environmental training of personnel must include water conservation awareness.

## 14.4. Waste & Pollution Management

An integrated waste management approach based on waste minimisation (e.g. reduction, recycling, reuse and disposal) must be encouraged. Poor waste management can lead to adverse environmental impacts (e.g. odours, pollution and visual impact) as well as health risks. Sound waste management is thus non-negotiable.

- ✓ No on-site burying or dumping of any waste materials, vegetation, litter or refuse may be allowed.
- ✓ Domestic waste must be stored in approved containers (e.g. bins with removable lids).
- ✓ All solid waste will be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989).
- ✓ If required, any future industries on-site requiring additional waste and/or emissions permits or licences in terms of the applicable legislation, the owner/tenants must obtain these permits/licences before the specific operations can commence.

## 14.5. Recycling

Whenever possible, a suitable recycling arrangement must be negotiated with a local recycling agent to ensure the reuse of recyclable material. Recycling should aim at sorting as much of the following materials as practical:

- ✓ Paper and cardboard
- ✓ Aluminium
- ✓ Copper
- ✓ Metals (other than aluminium and copper)
- ✓ Glass
- ✓ Organic waste
- ✓ Batteries
- ✓ Electronic equipment

Recycling industries in the development may require specific waste management licences in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008).

## 14.6. Pollution Management

All possible pollution sources must be identified, and all reasonable steps taken to prevent pollution or accidental spillages.

- ✓ Ensure that all concentrated potential sources of pollution are protected (bunded) in order to minimise the risk of accidental spillage or pollution. Storage tanks should be bunded in such a way as to contain at least 120% of the storage tank's capacity.
- ✓ Vehicles and other machinery must be serviced well above the 1:100-year flood line or within a horizontal distance of 100m from any watercourse or 500m of a wetland/pan. Oils and other potential pollutants must be disposed of at an appropriate licensed site, with the necessary agreement from the owner of such a site.

## 14.7. Fire Management

Refer to the emergency preparedness and response paragraph.

### 14.7.1. Accidental fires

Fire safety is a very real risk and must be stringently controlled. No fires will be permitted on site for any reason. If required, a designated smoking area will be provided and clearly demarcated and signposted, with a facility for safe containment and disposal of cigarette butts. The following measures must be implemented:

- ✓ Adequate firefighting equipment must be available on-site and in good working order (including at least one type of ABC (all-purpose) 2.5 kg fire extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.
- ✓ The operator must provide a list of all authorities involved in firefighting in the region. This list must include emergency contact numbers and must be visible at the site office.

# 15. CONCLUSION

This EMPr is a living document intended for use by the Applicant during pre-construction, construction, post-construction and during the **operation of the activity**. Further, this EMPr should be a day-to-day management guiding document which sets out the environmental standards that must be complied with to minimise the negative impacts and maximise the positive benefits of the proposed development. **The proposed development is an operational activity and therefore the EMPr remains valid for the lifespan of the activity.**

The EMPr provides mitigation measures that must be implemented to ensure that the environmental impact which comes as a result of the development is avoided, minimised and managed appropriately. The environmental authorisation specifications must also be considered in the implementation of the development as they are part of the EMPr. In terms of the legislation, the EMPr has been compiled in line with Appendix H of the Environmental Impact Assessment Regulations, 2014 (GN No. R 982 of 4 December 2014), as amended. All attempts must be made to have this EMPr available, as part of any contractual documentation, so that the contractors are made aware of the potential cost and timing implications needed to fulfil the EMPr implementation.

It is significant to note that EMPr can successfully lead the development towards becoming sustainable and non-compliance with the specifications of the EMPr can equally make the activity destructive and unsustainable in the long term. Therefore, it is important that all role players in the development take some time to familiarise themselves with the EMPr document to understand its specifications. The EMPr is open to be amended from time to time as long as the authorisation is still valid to ensure that gaps identified during the environmental auditing process are addressed.

## 16. ENVIRONMENTAL MANAGEMENT PROGRAMME

### 16.1. CONSTRUCTION PHASE

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| **Authorisations, Licences and Permits** | **Environmental Authorisations** | | |
| | All necessary authorisations, permits and licences must be obtained by the Developer prior to the commencement of construction. | Developer | Once-off |
| **Appointment of Construction Team** | **Appointment of Contractor** | | |
| | The Developer must ensure that this EMPr forms part of any contractual agreements with a Contractor(s) and sub-contractors for the execution of the proposed project. The Contractor must make adequate provision in their budgets for the implementation of the EMPr. | Developer & Contractor | Once-off |
| | The Principal Contractor (including sub-contractors and suppliers) must comply with the relevant provisions of the EMPr, applicable environmental legislations, by-laws and associated regulations promulgated in terms of these laws. | | |
| | Local labourers should be used for such methods. | | |
| | **Appointment of Environmental Control Officer** | | |
| | An Independent ECO must be appointed at the Developer's cost to monitor the implementation of the EMPr. | Developer, Site Manager & ECO | Once-off |
| | The nomination of the ECO must be given to DFFE in writing 14 days prior to commencement. Commencement in this case includes site clearing. The notification must include contact details for the ECO, details pertaining to the ECO's relevant experience, the date on which it is anticipated that the activity will commence, as well as a reference number. | | |
| | Should the ECO for the development change at any time, this must be communicated, in writing, to DFFE, within fourteen (14) days of appointing the new ECO. The notification must include contact details for the ECO, details pertaining to the ECO's relevant experience and reasons for the change in ECO. | | As required |
| **Preparation of Method Statements** | **Method Statements** | | |
| | Method Statements must be submitted by the Developer to the ECO and must be adhered to by the Developer. These relate to water and stormwater management requirements, solid waste management requirements, the storage of hazardous materials (if applicable), standard emergency procedures, and fire management. | Developer | Once-off |
| | The ECO will monitor the implementation of the Statements. | ECO | On-going |
| **Notifying Relevant I&APs** | **Notice of Environmental Authorisation (EA)** | | |
| | A written notice must be given to all relevant I&APs notifying them of the EA. The notice must include a date on which the EA was received and the reference number for the EA. | Developer | Once-off – pre-construction |
| **Education of Site Staff on General and Environmental Conduct** | **Environmental Awareness and Training** | | |
| | Staff must be adequately educated by the ECO as to the provisions included in the EMPr, and in terms of general environmentally friendly practice. | ECO & Site Manager | Once-off and as required |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| *A general regard for the social and ecological wellbeing of the site and adjacent areas is expected of the site staff.* | The ECO & Site Manager must ensure that all staff, and if applicable, Contractors / Sub-contractors / Suppliers / Service Providers are trained on the environmental, occupational safety and/or legal responsibilities expected from them.<br><br>The training must take into account language and literacy requirements as well as measures to determine the effectiveness of the training.<br><br>Proof of training must be attached to the ECO's audit reports. | | |
| | Consideration of the implications of the EA and EMPr must form part of the formal site induction for all contractors, sub-contractors and casual labourers, preferably in their native language.<br><br>The induction training will, as a minimum, include the following:<br><br>➢ The importance of conformance with all environmental policies.<br>➢ The environmental impacts, actual or potential, of their work activities.<br>➢ The environmental benefits of improved personal performance.<br>➢ Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Consultant's environmental management systems, including emergency preparedness and response requirements; and<br>➢ The mitigation measures required to be implemented when carrying out their work activities. | | |
| | All contractors, sub-contractors and casual labourers must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record. | ECO & Site Manager | Once-off |
| | Staff operating equipment shall be adequately trained and sensitised to any potential hazards associated with their tasks. | Developer & Site Manager | During staff induction, followed by on-going monitoring |
| | Translators are to be used where necessary during staff training. | Site Manager | |
| | Use of environmental awareness posters on site is advocated. | Site Manager | On-going monitoring |
| | Staff must be made aware that they are not to make excessive noise e.g. shouting, hooting. | | |
| | All employees must undergo the necessary safety training and wear the necessary protective clothing at all times. | | |
| | No alcohol / drugs to be present on site; no vehicles or machinery are to be operated whilst under the influence of alcohol or drugs. | | |
| | No firearms allowed on site or in vehicles transporting staff to / from the site (unless used by security personnel). | | |
| | No unsocial behaviour will be permitted. | | |
| | Bringing pets onto site is forbidden. | | |
| | Staff must make use of facilities provided for them, as opposed to ad-hoc alternatives (e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden). | | |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| | No fires are permitted on site. | | |
| | Trespassing on private / commercial properties adjoining the site is forbidden. | | |
| | No worker may be forced to do work that is potentially dangerous or for what he / she is not so trained | | |
| | The Site Manager is to ensure that conditions of the EMPr are included in the Toolbox Talks. | | |
| **Site Management** | **Access** | | |
| | No vehicles may drive onto the adjacent properties and any other no-go areas. | Site Manager | On-going |
| | All no-go areas will be indicated during Toolbox Talks and/or indicated with warning signs in all relevant languages. | | |
| | **Site Management** | | |
| | Adequate drainage and erosion protection must be provided around the site and where necessary. | Site Manager | On-going |
| | Access points and other cleared surfaces must be dampened whenever necessary and especially in dry and windy conditions, to avoid excessive dust. Alternatively, a binding product such as Dustex (supplied by Patch Industrial Supplies) could be used. | | |
| **Sewage and Sanitation** | **Ablutions** | | |
| | Toilets must be no closer than 32m from any watercourse. Such facilities, which shall comply with local authority regulations, shall be maintained in a clean and hygienic condition. Their use shall be strictly enforced. They must be positioned in an appropriate place, also taking into consideration, gradient of the land. | Site Manager | Immediately & on-going |
| | The Site Manager must ensure that toilets are cleaned regularly. | | On-going |
| | Unauthorised spilling of waste into the environment and burying of waste is strictly prohibited. | | |
| | Ablution facilities must not cause any pollution to any water resource and it must not be a health hazard to the general public. | | |
| **Social Impacts** | **Communication between Site Manager, Site Staff and I&APs** | | |
| | A complaints register must be kept on site. Details of complaints must be incorporated into the audits as part of the monitoring process. This must be in 3-copy carbon format, with numbered pages. | Site Manager | Immediately and on-going |
| | Should the staff be approached by members of the public or other stakeholders, they must assist them in locating the Site Manager or provide a number on which they may contact the Developer/ Site Manager. | | On-going |
| | The conduct of the staff when dealing with the public or stakeholders shall be in a manner that is polite and courteous at all times. | | |
| | Drivers of heavy-duty vehicles must exercise care when travelling to and from the site – and adhere to all legally enforceable requirements. | | |
| | Due to the concentration of a workforce in the area, the Site Manager must implement an HIV/AIDS Awareness Programme on site. The Site Manager must appoint an HIV/AIDS Awareness Officer for the duration of the construction period. Activities for HIV/AIDS awareness and prevention will be broad based, targeting both individuals and groups. They may consist of:<br><br>➢ Peer educators (reference people) drawn from the local labour force and trained in HIV/AIDS issues for discussions with colleagues (estimate 1 per 30 employees); | | Immediately and as required |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| | ➢ Small focus group discussions and information covering key issues should be held;<br>➢ Inclusion of HIV/AIDS activities at site meetings and other discussions; and<br>➢ Voluntary Counselling and Testing.<br><br>Education will cover:<br><br>➢ Stigma and discrimination issues;<br>➢ Preventative behaviours including on-site safety and awareness; and<br>➢ Referral to local health centres and services available. | | |
| **Equipment lay-down and storage** | **Storage Areas** | | |
| | Choice of location for equipment lay-down and storage areas must take into account prevailing winds, distances to water bodies, general on-site topography and water erosion potential of the soil. Impervious surfaces, bunded areas or drip trays must be provided where necessary. | Site Manager | On-going |
| | Equipment lay-down and storage areas must be designated, demarcated and signed. | | |
| **Conservation of the Natural Environment** | **Erosion and Stormwater Control** | | |
| | Soil disturbance must be restricted to the current extent of the project, unless for the removal of alien invasive plants. | Site Manager & ECO | Throughout the duration of the project |
| | Stormwater control must be undertaken to prevent soil loss from the site. | | Immediately |
| | Erosion prevention and control measures must be implemented. These control measures must be advised by the ECO as control measures are unique to the site, the activity, and dependent on severity and extent. | | On-going |
| | Provision shall be made for stormwater management measures that will ensure effective run-off control and prevent erosion at run-off points and ponding. | | |
| | Continuous monitoring for evidence of erosion must be undertaken around the site. | | |
| | Earth, stone or rubble is to be properly disposed of so as not to obstruct natural water pathways over the site. | | |
| | Stormwater management must ensure that flow from the development does not result in negative impacts. | | On-going |
| | **Fauna and Flora** | | |
| | Areas which are identified by the Environmental Control Officer (ECO) as being ecologically sensitive and which are adjacent to the site are to be suitably demarcated to prevent damage during construction practices. These areas are to be recognised as "no-go" areas. | ECO & Site Manager | Immediately |
| | No natural vegetation may be cleared without prior permission from the ECO and if applicable from any relevant authority. Indigenous vegetation that is removed is to be replanted either back to the point from which it was taken or must be replaced by new relevant indigenous vegetation. | | On-going |
| | The ECO must identify and make known to the team all Red Data listed vegetation species. All permits for the removal/ translocation of the identified protected vegetation species must be obtained prior to any ground clearance from the Department of Forestry (DFFE). | | On-going |
| | All alien invasive plant species must be continuously removed around the site. The best way to do this is to remove the plants from the roots by hand and leave the plants in the | ECO & Site Manager | Immediate and On-going |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| | sun to dry out and die before disposal. Please refer to the appended Alien Plant Control Programme for specific methods of removal. | | |
| | When removing alien invasive plants from the riparian area, caution must be taken to ensure that indigenous species are not being removed and all embankments are stable. Indigenous plants must be planted immediately to rehabilitate these areas. | | |
| | Disturbance to birds, animals and reptiles and their habitats must be minimized wherever possible. | Site Manager | |
| **Conservation of Water Resources** | **Water Sources** | | |
| | Under no circumstances may any materials or waste generated from the project be disposed of into the adjacent riparian areas, including the buffer zone. | Site Manager | On-going |
| | All parked vehicles/ trucks must have drip trays placed underneath the vehicle where potential leaks may occur. | Site Manager | On-going |
| **Waste Management** | **On-Site Waste Management** | | |
| | The excavation and use of rubbish pits is forbidden. | | |
| | Burning of waste is forbidden. *A possible exception to this may be that the alien invasive vegetation which is removed from the site should be burned to prevent the spread of the plants; however, permission to burn AIPs must first be obtained from the competent authority and other conservation boards. The transportation of Alien Invasive Plants is strictly forbidden in terms of the Conservation of Agricultural Resources Act (CARA), especially if in seed; unless stored in a completely sealed container.* | | On-going and monitored weekly |
| | Littering on the site is forbidden and the site shall be cleared of litter at the end of each working day. | | |
| | An adequate number of general waste bins must be arranged around the site to collect all domestic refuse, and to minimise littering. | | On-going monitoring |
| | Solid waste must be managed and separated into recyclable and non-recyclable materials and disposed of accordingly. | | |
| | All waste generated during operation is to be disposed of at a facility registered in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). | | |
| **Handling of Hazardous Materials (if necessary)** | **Hazardous Materials** | | |
| | Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs must additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. | | |
| | Cement and other potential environmental pollutants must be stored within an impermeable bunded, roofed and sign posted area. | | |
| | Cement and other potential environmental pollutants must be mixed on an impermeable surface that is bunded to prevent the leakage of pollutants onto the ground (if necessary). | Site Manager | On-going |
| | All empty contaminated containers must be stored within a hazardous bunded area until collection by a reputable hazardous waste collection company. Waybills must be presented to the ECO for review and filing purposes. | | |
| | No vehicles transporting hazardous materials to the site may be washed on or near site. They must return to the supplier of such material to be cleaned out. | | |
| **Cultural Environment** | **Archaeology and Artefacts** | | |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| | No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from Heritage Western Cape. | Site Manager | On-going |
| | The Fossil Finds Procedure (FFP) must be followed: If fossil bones are uncovered during excavations, stop work and report to Heritage Western Cape (HWC) immediately. | | |
| **Safety and Security** | **Safety and Security On-Site** | | |
| | Material stockpiles or stacks must be stable and well secured to avoid collapse and possible injury to site workers / local residents. | Site Manager | On-going |
| | Firefighting equipment must be present on site at all times. All equipment on site must be used in accordance with the Occupational Health and Safety Act regulations of South Africa (OHSA), Act No. 85 of 1993); staff must be trained in firefighting procedures. | | |
| | No unauthorised person may be permitted to enter the site without prior permission of the site manager. | | |
| | Vehicle speeds shall not exceed 20km/h when traversing unconsolidated and non-vegetated areas. | | |

## 16.2. REHABILITATION AND OPERATIONAL PHASE

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| **Vegetation Rehabilitation – progressive rehabilitation must be carried out** | **Vegetation** | | |
| | All disturbed areas, or areas which have been disturbed for the purpose of the development, are to be re-vegetated. This will aid in preventing erosion within the site. A 100% indigenous planting plan must be adhered to in terms of all planting carried out on the site. Consultation must be made with a Botanical Specialist for a site-specific vegetation list, | Contractor & ECO | Project completion |
| | Erosion prevention and control measures must be implemented. Organic mulch or sandbags must be used to contain all sediment and prevent erosion during rehabilitation. | Contractor | Rehabilitation |
| | All rehabilitated areas must be maintained through weekly inspections until a 100% success rate has been achieved. | Contractor & ECO | Post Construction/ Maintenance Phase |
| | Encroachment of invasive alien plants in this regard will need to be monitored on a regular basis to prevent re-infestation. This would need to be undertaken by the ECO or a designated specialist. | Developer, Contractor & ECO | Project completion and Maintenance |
| **Land Rehabilitation** | **Land** | | |
| | Rehabilitation must be executed in such a manner that surface runoff will not cause erosion of disturbed areas during and after rehabilitation. | Contractor & ECO | Project completion |
| | Any rubble is to be removed from the site to an appropriate disposal site. Burying of rubble on site is prohibited. | Contractor | Project completion |
| | The site is to be cleared of all litter at all times. | Developer & Contractor | Project completion and Maintenance |

| Activity | Management / Mitigation | Responsibility | Frequency / Timing |
|---|---|---|---|
| | The surface of all disturbed areas must be left rough to facilitate the binding of topsoil and vegetation. | Contractor | Progressive rehabilitation and on Project completion |
| **Removal and Repair of Materials and Infrastructure** | **Materials and Infrastructure** | | |
| | All materials used for construction must be removed from the site after construction. | Contractor | Project completion |
| | The Contractor must repair any damage that the construction works may have caused to adjacent areas. | Contractor | Project completion |
| | Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the ECO. | Contractor | Project completion |
| | All areas where temporary services were installed are to be rehabilitated to the satisfaction of the ECO. | Contractor | Project completion |
| **Stormwater Management** | **Stormwater** | | |
| | Any negative stormwater effects, related to the construction phase, must be remediated. | Contractor | Project completion |
| | On-going monitoring and assessing of stormwater drainage must occur on the site during the operational phase of the proposed project. | Developer | During Operational phase |
| **Waste** | **Removal of Hazardous and Non-Hazardous Waste** | | |
| | All hazardous materials and containers must be collected by a reputable hazardous waste collection company and disposed of appropriately. | Contractor | Project completion |
| | Collection and disposal of non-hazardous waste to a registered landfill site must occur at least once a week. | Developer | During Operational phase |
| **Fire Management** | **Fire** | | |
| | A Fire Management Plan must be implemented on the property. The landowner must register with the Southern Cape Fire Protection Agency/SCFPA to ensure that the property has addressed all necessary fire management protocols. | Landowner | During Operational phase |

## 16.3. ALIEN PLANT CONTROL

***Benefits of control***

- Elimination of the spread of these species into non-affected areas.
- Improvement of water quality and quantity.
- Legal compliance: landowners are required to eradicate or control declared weed and alien invader plants in terms of the Conservation of Agricultural Resources Act 43 of 1983 and the National Environmental Management: Biodiversity Act 10 of 2004.
- Improvement of biodiversity in conservation areas. Fast-growing invader plants suppress indigenous flora, with a resultant loss in overall biodiversity.
- Commercial reasons: alien vegetation can spread from conservation areas into production land resulting in greater weed control costs.

***Important factors influencing the effectiveness of a control programme***

- Timeous implementation of control operations is important for alien plants.
- Operations must be directed towards killing alien vegetation. This is best achieved by using an effective herbicide chosen by the ECO and applied by using the "cut-stump, frilling or ring barking methods. Under no circumstances may spraying with a "Rose" or multi-stream nozzle head be done.

***Requirements for an effective alien vegetation control programme***

- Identify the problem: extent, location and species of problem plant.
- Divide the problem areas into manageable units, taking budget and resource constraints into account.
- Identify any sensitive ecosystems, rare or endangered plants etc. which may be affected by a control programme. Identify the original ecosystem applicable to the area.
- Make provision for a number of follow-up operations. The initial clearing operation is only part of the total programme. Failure to follow up will result in a failure of the entire programme.

While the importance of removing or clearing of alien or exotic vegetation is recognised, there should be control over the way in which this takes place. Often what generally appears to be covered by alien vegetation, actually contains pockets of sensitive vegetation or protected species. It is for this reason that clearing of such areas must be undertaken by hand (*Guidelines for the Control and Management of Activities in Sensitive Coastal Areas, first edition, 1998*).

It is important to note that all of the above must be performed with instruction by a suitably qualified Botanical Specialist, as well as in the presence of the specialist.

<u>Alien Vegetation Clearing can be broken down into the following PHASES:</u>

PHASE 1: Removal by cutting, excavating, burning, ringbarking, hand pulling, herbicide spraying and biological measures.

PHASE 2: The removal of all biomass by either burning, chipping or removing usable material.

PHASE 3: (Follow up) which is critical to the success of the AIS clearing to achieve the following:

- Rehabilitation of the infested area to its natural or near natural state or
- To exercise the land rights as per the agricultural rights (horticultural or agricultural purposes).

PHASE 4: Implement a long-term maintenance plan in order to combat further germination of AIS as a result of:

- The seedbank has been exposed and disturbed as a result of clearing, this will result in the germination of the seeds from within the AIS seedbank in situ.
- The resulting germination rate and density will be far higher than the original infestation.
- There will still be further germination of seeds disbursed by wind /birds from surrounding properties that are infested with AIS.

Types of Recommended Treatments for AIS

Benefits of Control:

- Elimination of the spread of invasive species (e.g., Acacia cyclops) into non-affected areas.
- Improvement of biodiversity in Critical Biodiversity Areas (CBA1/CBA2).
- Legal compliance with the Conservation of Agricultural Resources Act, 1983, and National Environmental Management: Biodiversity Act, 2004.
- Prevention of slope failure and erosion in downslope cliff areas.

Requirements for an Effective Alien Vegetation Control Programme:

- **Identification**: Map the extent, location, and species of alien invasive plants (e.g., Acacia cyclops) by a qualified botanical specialist.
- **Manageable Units**: Divide infested areas into manageable units based on budget and resources.
- **Sensitive Ecosystems**: Identify sensitive ecosystems (e.g., Western Cape Milkwood Forest, wind-cropped thicket) to avoid damage during clearing. Clearing must be undertaken by hand to protect pockets of indigenous vegetation.
- **Follow-Up Operations**: Conduct follow-up operations annually for 5 years to prevent regrowth from seed banks or re-infestation from neighbouring properties.
- **Simultaneous Rehabilitation**: Replant cleared areas with indigenous species immediately after removal to prevent slope failure and maintain ecological integrity.

Types of Recommended Treatments:

1. Felling and Herbicide Treatment:
    - Cut invasive species (e.g., Acacia cyclops) horizontally close to the ground and apply a registered herbicide (approved by DFFE) to the cut stump within minutes to target the cambium layer.
    - Use a vegetable dye to track treated stumps.
    - Remove biomass by chipping or burning (with DFFE permission) to prevent seed spread.
    - Responsibility: Botanical Specialist, Contractor; Timing: Construction phase.

- This method applies to AIS which can regenerate by coppicing (regrow from the cut stump). When felling. Always cut the AIS as horizontally and close to the ground as possible so as not to leave sharp points that could be a danger to others.
- A registered herbicide with the Department of Agriculture is then applied to the cut stump.
- A sticker agent may also be needed depending on the type of herbicide used plus the use of vegetable dye should be added to your herbicide mix to allow for tracking of what has and what has not been sprayed.
- Herbicide, when used in this method, is applied via a solid cone nozzle the herbicide must be applied to the cut stump as soon as possible to allow the herbicide to be absorbed by the plant via the xylum phloem canals (a plant version of veins and arteries).
- These veins are found cambium layer which is the area between the bark and the wood, and this is where the herbicide must be applied. i.e. the outer rim of the cut stump.
- Cut material (biomass) needs to be removed / stacked depending on further use or burnt/chipped. When felling AIS don't block riparian zones with cut material.

2. Felling:
   - For non-coppicing species (e.g., pines), cut close to the ground and remove biomass.
   - Responsibility: Contractor; Timing: Construction phase.This applies to species of invasive plants that cannot regenerate by coppicing e.g. most pine species.
   - As with treatment 1 cut as horizontally and close to the ground as possible.
   - Cut material (biomass) needs to be removed / stacked depending on further use or burnt/chipped. When felling AIS don't block riparian zones with cut material.

3. Ringbarking:
   - Cut a ring around the trunk (0.5 m high) and apply herbicide to the cambium layer in sensitive areas where felling is impractical.
   - Responsibility: Botanical Specialist; Timing: Construction phase.
   - Used on AIS in areas where it is impossible to remove the biomass or where felling would damage the surrounding indigenous habitat.
   - This involves simply cutting a ring half a meter up the tree's trunk, exposing the cambium layer then painting the exposed cambium layer with approved herbicide from the Department of Agriculture.

4. Folio Spraying with Herbicide:
   - Use for follow-up in areas with mass germination (e.g., seed banks), targeting plants at 1 m height to kill early and late germinants.
   - Avoid spraying in riparian zones or near indigenous species.
   - Responsibility: Botanical Specialist; Timing: Post-construction, annually.
   - This method is mainly restricted to follow-up phases over areas where the seed bank has germinated on mass.
   - When doing this wait till the newly germinated AIS has reached a height of 1 meter as at this point of growth this will result in killing the early and late germinating seedlings.
   - This process will have to be repeated depending on the depth of the seedbank which correlates to the frequency of AIS germination.

5. Hand Pulling:
   - Pull seedlings by hand after rainfall, especially in sensitive areas (e.g., cliff edges).
   - Responsibility: Contractor, ECO; Timing: Ongoing.
   - This method should be a way of life i.e. if AIS species is observed, hand pulling is recommended where possible. It is best to pull by hand after rainfall.

- This method also applies to areas that are sensitive, e.g. riparian zones where herbicide is not allowed or areas where the use of an herbicide could harm surrounding natural ecosystems or commercial crops.

Monitoring:

- Conduct surveys 4-6 months after each clearing operation to check for regrowth.
- Monitoring involves repeated observations or recording of data to be able to track progress and determine the efficacy of control methods. A very basic monitoring programme applies to private land.

| WHAT | FREQUENCY | HOW | RESPONSE |
|---|---|---|---|
| **How effective is the control measure** | **4-6months after every operation** | **Survey cleared areas and look for regrowth** | **Continue with methods or adapt to be more effective** |
| **Do the infestation levels decrease** | **Annually** | **Visual, photos** | **Continue clearing** |
| **How much herbicides were used** | **After every operation** | **Herbicides records** | **Keep track of cost and ensure no wastage** |
| **Does fynbos/forest recover in cleared area** | **Annually** | **Photos, surveys** | **If it does, look at clearing methods, clearing intervals or consult an expert.** |

Objectives

Objective 1: Prevention

To put measures into place to prevent the introduction of new NEMBA-listed plants and animals onto the property and invasive species from spreading from neighbouring properties.

Preventative action:

- No listed invasive and alien plants will be planted.
- Areas bordering onto neighbouring land will be prioritized for control to prevent existing invasive plants from spreading beyond the boundaries of the property
- No listed invaded animal species will be introduced to the property.
- These prevention measures will be communicated to all users of the property (where applicable).

Objective 2: Early detection and rapid response (EDRR)

To put measures into place whereby new and secondary invasive species are detected early and removed before establishing sustainable populations and starting to spread.

Early detections and rapid response actions:

- Regularly survey the property to detect any new or emerging invasive plant species.
- Report category 1a species immediately to the Department of Environmental Affairs and ask for assistance with control of the species.
- Do not allow new or emerging species to produce seeds or offspring or start growing vegetatively; act immediately by removing them.
- Update the list by including these species and indicate where on the property they were located.

- Increase surveillance in the area where species occur to ensure the plants don't re-sprout or re-occur.

Objective 3: Restrictive activity and duty of care

To adhere to the restrictive activity and duty of care as determined by NEMBA & Regulations concerning invasive and lien species

- Action NEMBA Regulations (6a-g) restricted Activities:
- Prevent spreading or allowing the spread of any specimen of a listed invasive species.

While the importance of removing or clearing of alien or exotic vegetation is recognised, there should be control over the way in which this takes place. Often what generally appears to be covered by alien vegetation, actually contains pockets of sensitive vegetation or protected species. It is for this reason that clearing of such areas must be undertaken by hand (*Guidelines for the Control and Management of Activities in Sensitive Coastal Areas, first edition, 1998*).

**It is important to note that all of the above must be performed with instruction by a suitably qualified Botanical Specialist, as well as in the presence of the specialist.**

## ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

**PROJECT NAME:**

**PROPOSED DEVELOPMENT OF A RESIDENTIAL DWELLING ON PORTION 79 OF FARM 205 RUYGTE VALLEY, KNYSNA, WESTERN CAPE.**

**DEVELOPER:**

Signed: …….. Date: …….....

**SITE MANAGER:**

Signed: …….. Date: …….....

**ENVIRONMENTAL CONTROL OFFICER**

Signed: …….. Date: …….....

## APPENDIX A: CV OF EAP

# *Curriculum Vitae*

## Ms. Bianca Gilfillan

Education: **University of Technology - 2000 – 2003**
ND: Environmental Management BTECH: Environmental Management
**University of Western Cape 2009**
Environmental Science
**University of Stellenbosch 2014 – Present**
MPhil. Environmental Management

Qualifications: BSC Honours: Environmental Science
BTECH: Environmental Management
ND: Environmental Management

Registration: Registered Environmental Practitioner - 2023/7929

Languages: English and Afrikaans

---

Career: **ENVIRONMENTAL CONTROL OFFICER**
Department of Environmental Affairs and Development Planning (DEA&DP)
September 2005 – December 2005
**ENVIRONMENTAL OFFICER**
National Ports Authority (CT)
June 2002 – November 2022
**ENVIRONMENTAL MANAGER**
Western Cape Environmental Consultants
February 2003- December 2021

**ENVIRONMENTAL MANAGER**
Infinite Universal Solutions
January 2022- Present

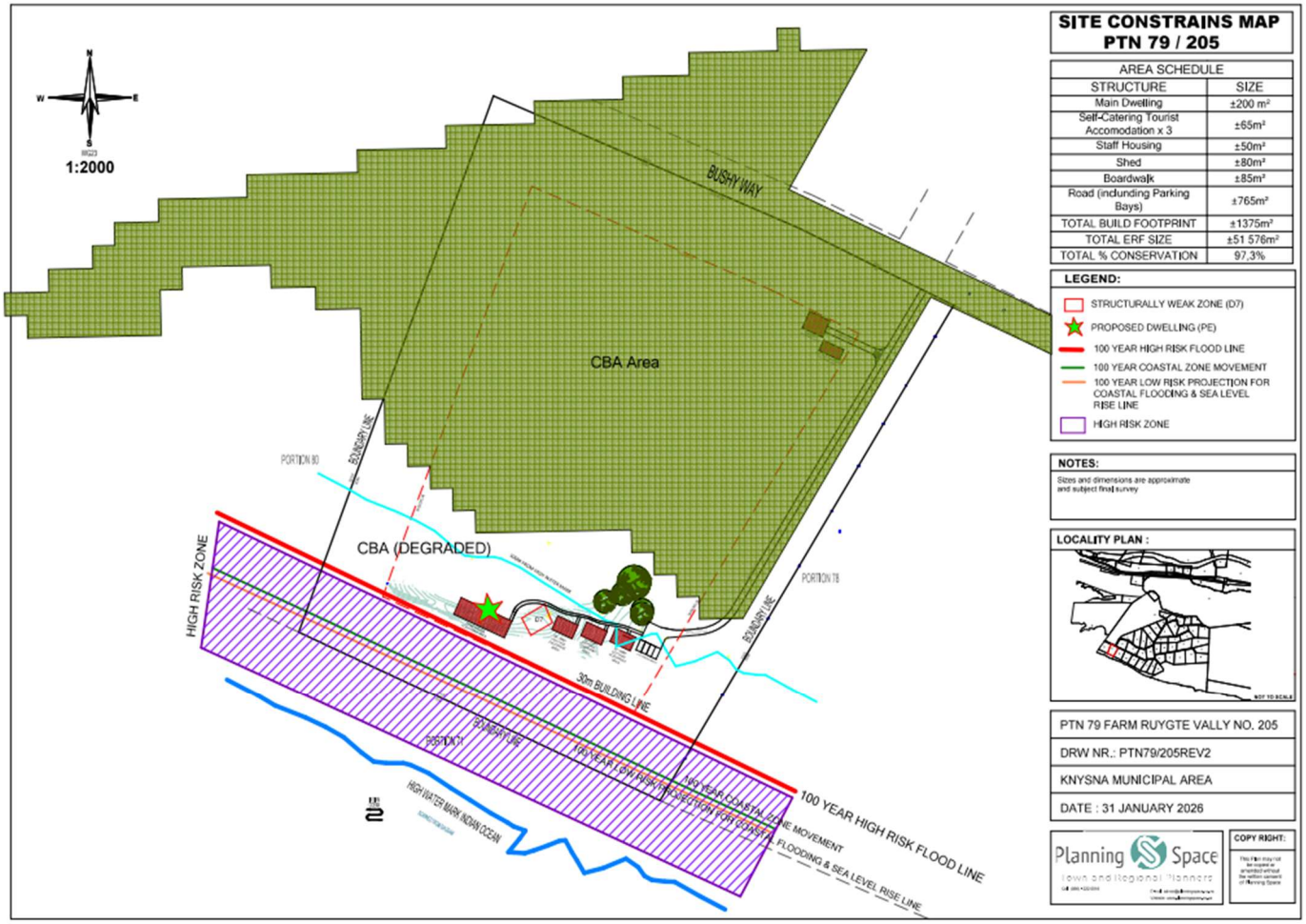
Experience:

Environmental Applications: Scoping and EIA / Basic Assessment / EMPr

- Development of subsidy housing for various Municipalities in the Western Cape Region and ASLA Devco (Pty)Ltd, including Hessequa Municipality, Cape Agulhas Municipality, Matzikama Municipality, Breede Valley Municipality etc.
- Low-cost housing developments.
- Various residential developments along the West Coast incl. Langebaan, Jacobsbaai, St Helena Bay, Dwarskersbos and Elands Bay.
- Upgrading of the Dwarskersbos Wastewater Treatment Works.
- Renewable Energy applications – Windfarms and Solar PV
- Resort development, tourist facilities, waste disposal site in Murraysburg, Beaufort West and golf courses Applications for equestrian Estate in the West Coast and Boland areas.
- Filling stations, chicken houses, and the upgrading of roads.

- Environmental Control Officer for various sites within the Western Cape.

## APPENDIX B: SITE DEVELOPMENT PLAN


SITE CONSTRAINS MAP
PTN 79 / 205
AREA SCHEDULE
STRUCTURE | SIZE
Main Dwelling | ±200 m²
Self-Catering Tourist Accomodation x 3 | ±65m²
Staff Housing | ±50m²
Shed | ±80m²
Boardwalk | ±85m²
Road (including Parking Bays) | ±765m²
TOTAL BUILD FOOTPRINT | ±1375m²
TOTAL ERF SIZE | ±51 576m²
TOTAL % CONSERVATION | 97,3%
LEGEND:
STRUCTURALLY WEAK ZONE (D7)
PROPOSED DWELLING (PE)
100 YEAR HIGH RISK FLOOD LINE
100 YEAR COASTAL ZONE MOVEMENT
100 YEAR LOW RISK PROJECTION FOR COASTAL FLOODING & SEA LEVEL RISE LINE
HIGH RISK ZONE
NOTES:
Sizes and dimensions are approximate and subject final survey
LOCALITY PLAN :
PTN 79 FARM RUYGTE VALLY NO. 205
DRW NR.: PTN79/205REV2
KNYSNA MUNICIPAL AREA
DATE : 31 JANUARY 2026
COPY RIGHT:
1:2000
BUSHY WAY
CBA Area
CBA (DEGRADED)
HIGH RISK ZONE
PORTION 80
PORTION 78
BOUNDRY LINE
30m BUILDING LINE
100 YEAR HIGH RISK FLOOD LINE
100 YEAR COASTAL ZONE MOVEMENT
100 YEAR LOW RISK PROJECTION FOR COASTAL FLOODING & SEA LEVEL RISE LINE
HIGH WATER MARK INDIAN OCEAN
Planning Space
town and regional planners

## Map Indicating Proposed Development Area Within 100 meters of High-Water Mark


Legend

- Farm Portions
- 100-meter High-Water mark
- Portion 79/205

Map Center: Lon: 22°49'29.8"E
Lat: 34°2'22.5"S

Scale: 1:4,514

Date created: 2024/02/05

Western Cape Government
FOR YOU

## Appendix C: Declaration of Understanding

## DECLARATION OF UNDERSTANDING

I,_____

Representing: _____

I hereby acknowledge that the conditions of the Environmental Management Plan (EMPr) have been presented to me. I confirm that I have thoroughly read and comprehended the contents of this plan, and I affirm that a copy of the EMPr has been made available to me.

Site: _____

Date: _____

I hereby acknowledge my responsibility to enforce and implement the Environmental Specifications delineated in this Environmental Management Program. Furthermore, I commit to ensuring that all individuals under my supervision are informed of these specifications and the contents of the Environmental Management Program.

Signed: _____

Place: _____

Date: _____

Witness 1: _____