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

ENVIRONMENTAL MANAGEMENT PROGRAMME: PRE-CONSULTATION

Date: March 2025

Compiled by: Ms Bianca Gilfillan (2023/7929)
DFFE Reference: TBC

EAP Signature: B. Gf

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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 – i. The EAP who prepared the EMPr; and 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 – i. Planning and design ii. Pre-construction activities iii. Construction activities iv. Rehabilitation of the environment after construction and where applicable post-closure; and 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 – i. Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; ii. Comply with any prescribed environmental management standards and practises; iii. Comply with any applicable provisions of the Act regarding closure, where applicable; and 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 – i. The applicant intends to inform his or her employees of any environmental risk which may result from their work; and 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

The property is situated to the east of Cola Beach within the developed area of Sedgefield, Western Cape. Encompassing approximately 5.21 hectares, it shares its southern boundary with coastal public land and is adjacent to Portion 79 of Farm Ruygte Valley No. 205, which is classified as a private nature reserve, to the east. The property is currently designated under Agriculture Zone I.

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

The proposed development site is situated above coastal cliffs, east of Cola Beach in Sedgefield, within the Goukamma Strandveld vegetation type (Mucina and Rutherford, 2006). This vegetation is characterized by parabolic dunes with mesic dune thicket patches, dominated by milkwood (*Sideroxylon inerme*). Based on field observations and structural characteristics, the vegetation is classified as Western Cape Milkwood Forest (SANBI, 2020), a forest type protected under the National Forests Act, 1998 (Act No. 84 of 1998). The coastal cliff edges are covered by wind-cropped thicket, heavily invaded by Acacia cyclops (rooikrans), indicating localized degradation. Historical aerial imagery from the National Geo-spatial Information (NGI) database (1973, 1990, 2010) confirms that the site has remained in a largely natural state, with some mobile dune sand noted in earlier images.

The property is currently vacant, and no residential dwellings are on site. The site can be located at GPS coordinates -Lat: - 34.040036° Lon: 22.824605°

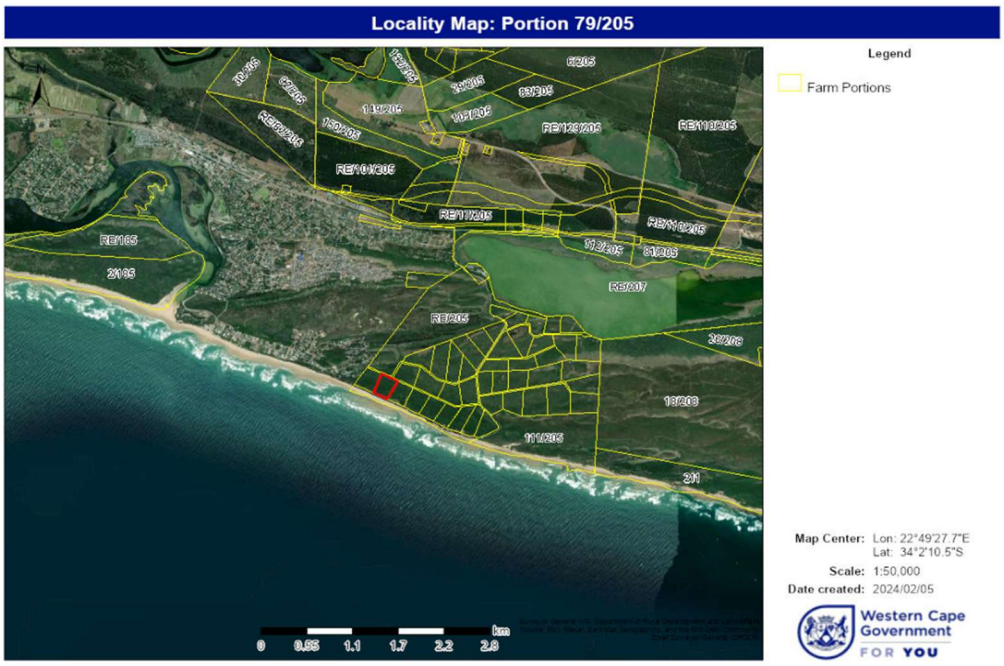


Figure 1: Locality Map

Preferred Development

The landowners intend to reside on their property and seek to construct a dwelling house approximately 200 square meters in size on the site. The construction of a dwelling house constitutes a primary right. In addition to their residential plans, it is their aspiration to develop three small self-catering tourist accommodation units, each measuring approximately 65 square meters, to supplement their income. Ancillary structures will include staff housing of approximately 50 square meters, as well as a shed of 80 square meters for the storage of farm implements necessary for the maintenance of the land. A gravel access road, not exceeding 3 meters in width, is proposed along the eastern boundary, leading to a designated parking area. From this parking area, access to the house and accommodation units will be provided via a boardwalk.

The residential structures and units are strategically positioned in clusters on the southern side of the property, atop elevated terrain overlooking the ocean to optimize scenic views. Although the property is designated for "Agriculture zone I, the owners do not intend to utilise the land for agricultural activities. The intrinsic value of the property is found in its natural beauty, and the owners aim to dedicate the remainder of the land to conservation efforts. The overarching development concept is to establish a tranquil and private retreat within a natural setting.

The architectural design will prioritise lightness and environmental sensitivity. The selected building materials will include steel, timber, glass, and natural stone, in contrast to traditional brick and concrete. The total footprint of the building is projected to measure 525 square meters. Additionally, the proposed access road will extend approximately 200 meters in length and 3 meters in width, culminating in a parking area of approximately 660 square meters. Consequently, the overall development area is estimated to be around 1,175 square meters, which represents less than 0.02% of the total site. This development will leave 99.98% of the site in its natural state.

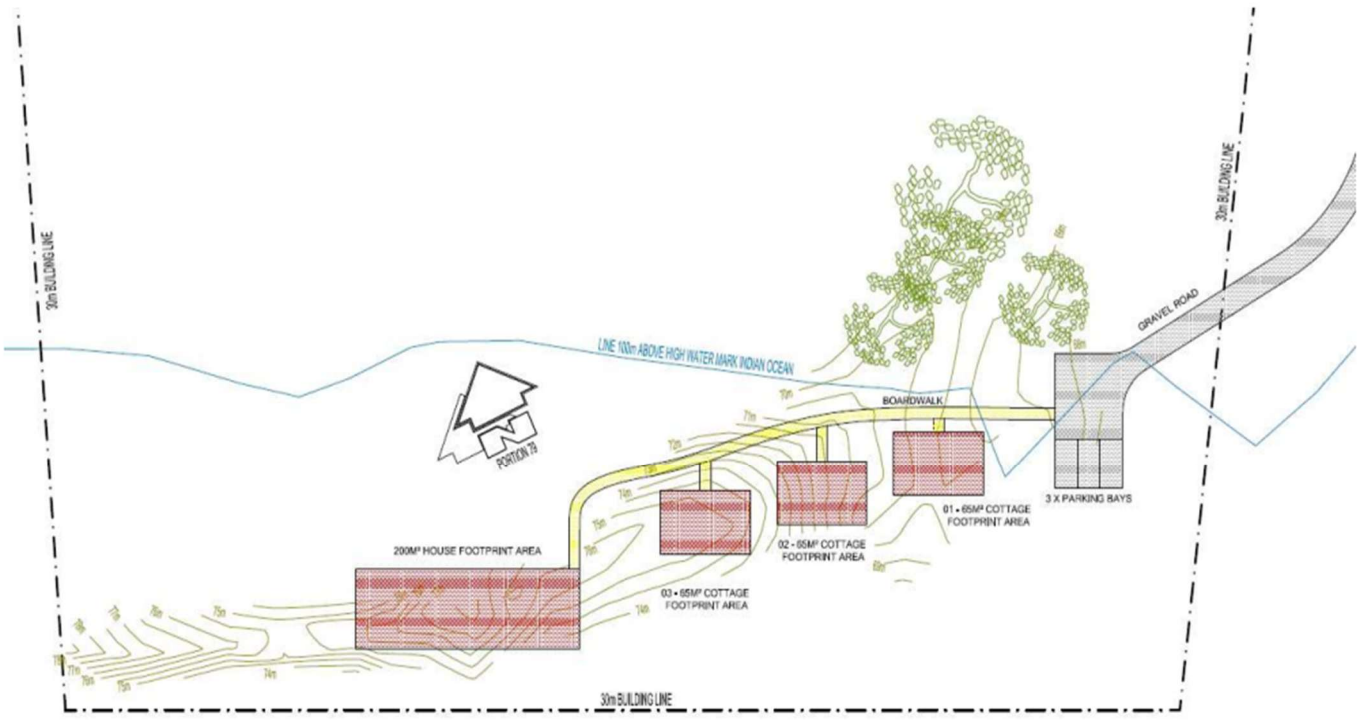


Figure 2: Preferred Alternative - Site Development Plan

Access to Portion 79 of the Farm 205 Rug:

The site is accessed from Groenvlei Road off the N2. The road passes the Groenvlei Lake and the Lake Pleasant Holiday Resort. A smaller gravel road diverges from the Groenvlei Road, which is a concealed one-way dirt road leading to another residential development on the neighbouring site. A new road will have to extended and constructed to the proposed development.

Services

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, utilizing 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.

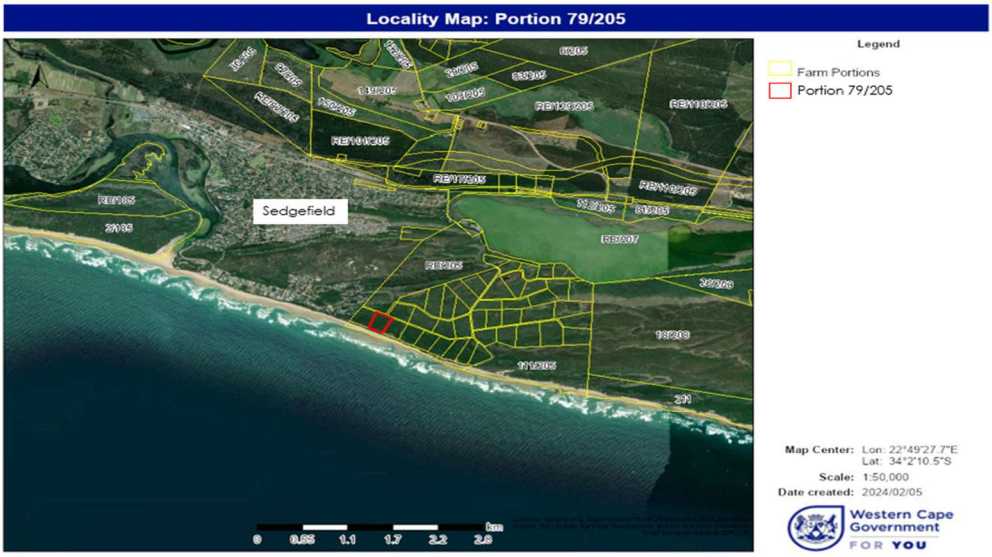


Figure 3: Aerial Map of the proposed development

Entrance to Lake Pleasant Resort

Groenvlei Road from N2 leading to the site

View towards Groenvlei

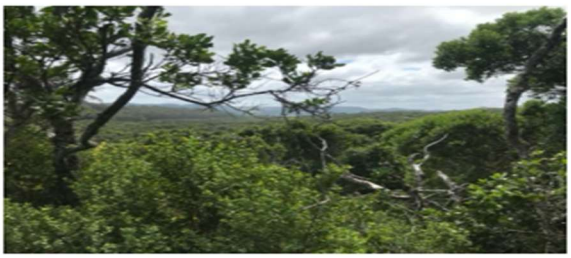
Narrow one-track access road towards site

End of existing road, that will be extended to site

View towards site, dense thicket vegetation

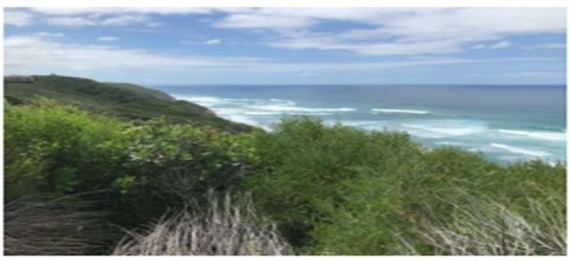
Large indigenous trees with dense undergrowth

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 2 Development

The proposed project will comprise one primary residence with a footprint of 400 square meters, in addition to three cottages, each with an area of 80 square meters. A boardwalk will connect all four units. Furthermore, the project will provide six parking bays allocated for the use of the units. There will also be an 80 square meter shed, along with a 50 square meter cottage designated as staff quarters.

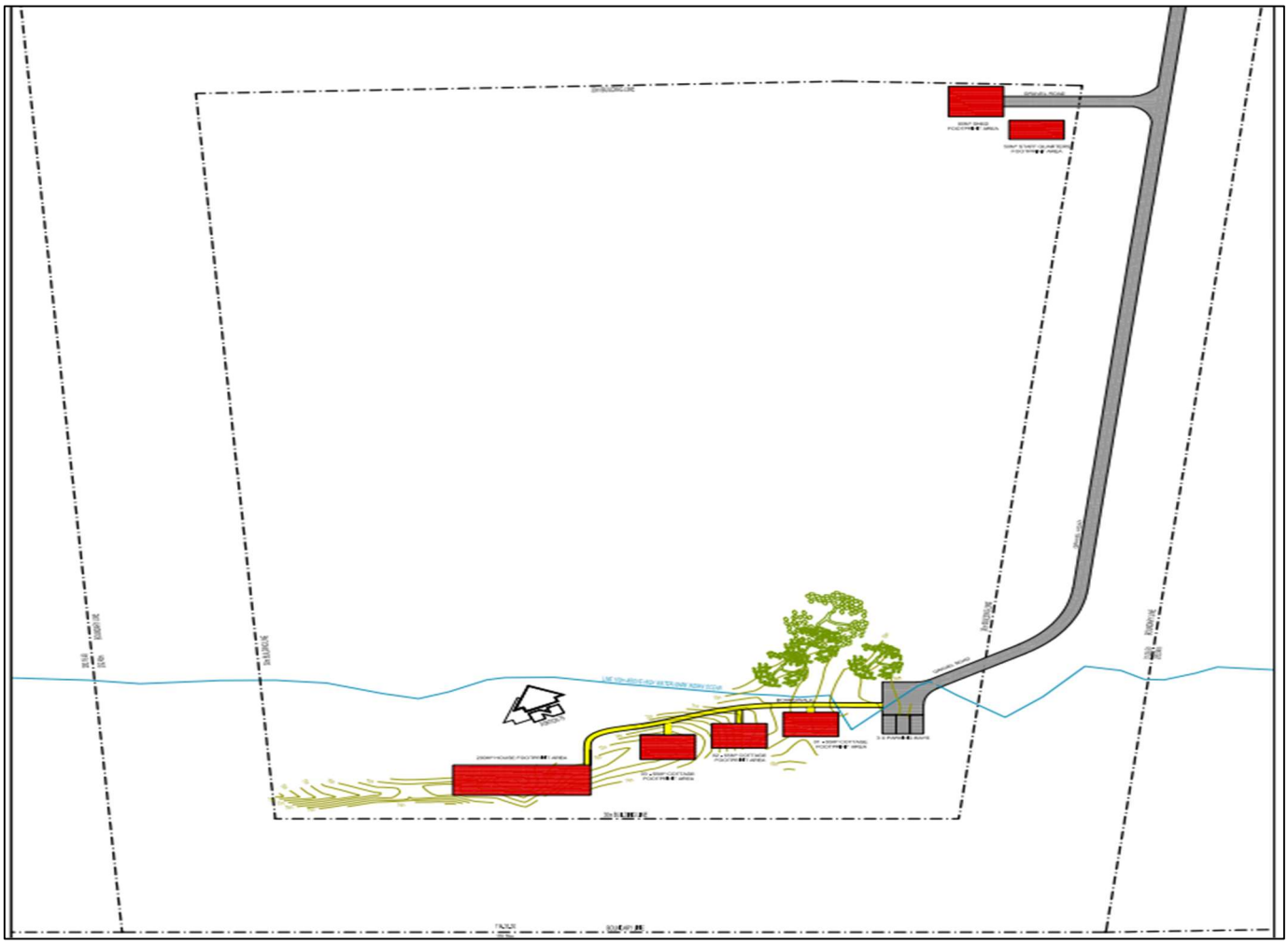


Figure 4: Alternative 2 SDP

The No-Go Alternative

The No-Go Option involves maintaining the site in its current undeveloped condition, prohibiting any construction or formal development without a rezoning process or the implementation of an alternative land use. In this scenario, the property would remain vacant, with no residential dwelling established.

While this option would preserve the existing natural state of the site, it does not align with the landowner's right to develop the property in accordance with existing land use rights. The property is privately owned, and the applicant intends to exercise their right to construct a residential dwelling, a right that is consistent with broader planning frameworks and historical use allowances in the area.

Moreover, the no-go option would result in a missed opportunity for job creation and economic growth. The proposed development will provide employment opportunities during both the construction and operational phases, supporting local businesses, contractors, and service providers or the potential for low-impact tourism in line with conservation objectives (in cases where a small tourism component is proposed). The current proposal includes a land use change to Open Space III for nature conservation purposes on the majority of the site (over 99%), allowing for the protection of the critical biodiversity area and the coastal forest, while accommodating a small, low-impact residential footprint.

To reserve the land for potential agricultural purposes, a closer examination reveals that the agricultural viability of the property is limited and does not present a meaningful opportunity for productive use. The site is relatively small in scale (approximately 5.21 ha) and fragmented by ecological sensitivities, including a Critical Biodiversity Area (CBA) and steep, erosion-prone slopes. These constraints significantly reduce the portion of the land that could theoretically be utilised for any viable agricultural activity. The property also lacks key agricultural infrastructure such as irrigation systems, water sources suitable for farming, and access roads that can accommodate agricultural vehicles or operations.

The site is located within a coastal, dune-rich environment and is characterised by sandy soils with high organic content in certain areas. These soil conditions are highly erodible, poorly structured for agricultural productivity, and not suited for cultivation or intensive farming. Furthermore, the natural vegetation on the site is dominated by coastal forest and Fynbos, both of which are indicators of low agricultural potential and are typically protected under environmental legislation due to their biodiversity value.

To retain the property under its current agricultural zoning (Agriculture Zone I) without allowing for rezoning or appropriate alternative land use would not promote agricultural production, rural economic development, or sustainable land management. On the contrary, it would prevent a more suitable and environmentally responsible land use from being realised, one that aligns with the site's actual capacity, conservation significance, and broader spatial planning goals.

Therefore, while the No-Go Option maintains the status quo, it may not be the most desirable outcome in terms of integrated environmental management, land use efficiency, or the realisation of private landowner rights. The proposed development, through careful planning, environmental sensitivity, and legal compliance, offers a more balanced approach that harmonises development needs with conservation priorities.

As per the Agricultural Compliance Statement, the no-go alternative considers impacts that will occur to the agricultural environment in the absence of the proposed development. There are no agricultural impacts of the no-go alternative, but this is not significantly different from the negligible impact of the development, and so from an agricultural impact perspective, there is no preferred alternative between the no-go and the development.

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" 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.

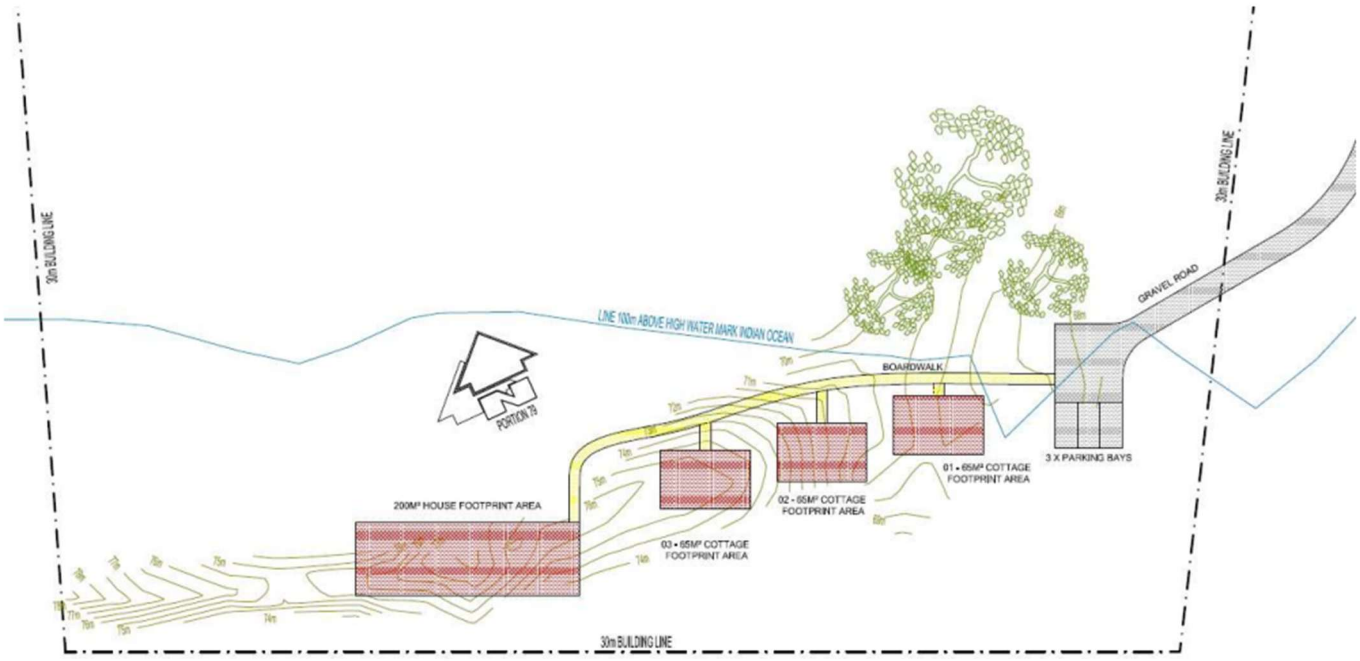


Figure 5: Preferred Alternative - Site Development Plan

6. ENVIRONMENTAL SENSITIVITY MAPS

Figure 5: SANBI Ecosystem – Portion 79 is within the SANBI Remaining Ecosystem Status still includes Goukamma Dune Thicket

Figure 6: 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 proposed development may impact the Goukamma Dune Thicket (Least Threatened under NEM:BA Act, 2022) and Western Cape Milkwood Forest, protected under the National Forests Act, 1998. The site is within Critical Biodiversity Areas (CBA1 and CBA2) and Ecological Support Areas (ESA2), with potential edge effects, fragmentation, and erosion risks to downslope cliff areas.

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	Irreversible	Irreversible	Irreversible	Irreversible	Low
Resource irreplaceability	Medium	Low	High	Medium	Low
Significance	**Medium**	**Medium**	**High - negative**	**Medium - negative**	**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. Approximately 10-20% of this ecosystem is degraded along the coastline.				

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 at least 3 months before site clearance.
  b. Responsibility: Developer; Timing: Pre-construction.
- **Rezoning for Conservation**:
  a. 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 (1,175 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 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 pathways to the beach are permitted; 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 activities may have a visual impact on neighbouring properties and commuters in the area. The site is accessed from Groenvlei Road off the N2. The development is proposed on the highest point of the site and is on a cliff approximately 70m above the beach.

Natural Vegetation: The area is characterised by dense natural vegetation typical of the Fynbos biome which offers visual screening. Existing vegetation should be minimally removed and will be a large mitigating factor to lessen the visual impact of the proposed development. The preservation of as much as possible existing vegetation is important to enhance the site's natural aesthetic appeal.

Topography: The topography of the area is varied, and sloping landscapes surround the site. The elevated topography of the site allows for optimal views over the ocean, but structures should be designed to fit into the landscape to minimise the visual intrusion of the new buildings. Utilising the natural depressions and contours of the land to minimise visibility during construction activities is important and will facilitate quicker recovery, post-construction, that will help reduce the visual footprint of the development.

Existing Infrastructure: There is little existing infrastructure directly surrounding the site; therefore, the area is relatively unspoilt. This emphasises the need for strategic placement and thoughtful design to integrate seamlessly with the existing environment. Special consideration is also required during construction activities so that they do not disrupt the current usage patterns and visual aesthetics of the environment.

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	Limited	Very limited	Local	Local	Limited
Intensity	Medium	Low	High	Medium	Negligible
Probability	Likely	Likely	Likely	Likely	Rare / improbable
Confidence	High	High	High	High	Medium
Reversibility	Low	Medium	Low	Medium	Low
Resource irreplaceability	Medium	Low	Medium	Low	Medium

Significance	**Low**	**Low**	**Low**	**Low**	**Negligible - negative**
Cumulative impacts	The site may be aesthetically unpleasant. Alteration of Landscape Character: Although the design should seamlessly be integrated into the landscape, the temporary construction activities and removal of some vegetation, could alter the visual character of the natural views. Dust and Construction Impact: As with most construction projects, activities are expected to generate dust and debris, which could temporarily affect the local visual environment. Nighttime Lighting: The use of lighting for security and operational purposes may introduce light pollution. This could impact wildlife and diminish the local community's enjoyment of naturally dark night skies. The selection of lighting solutions that will keep light pollution to a minimum should be taken into consideration during the design phase.				

Mitigation:

The construction site should be fenced and screened off from the surrounding areas, including chemical toilets (if required). Good housekeeping must be implemented at all times and the site must be kept tidy and clean (no litter etc.). Indigenous vegetation must be used for landscaping.
During the construction phase, the proposed development will be effectively screened from the N2 motorway using green shade cloth.

1. Sensitive Site Planning and Design
   - Buildings should be strategically positioned to blend with the natural topography and minimize visual intrusion.
   - Utilize low-profile architectural designs that complement the landscape rather than dominate it.
2. Use of Natural Materials and Colours
   - Select earth-toned colours and natural materials (e.g., stone, wood, and textured finishes) to integrate the development into the environment.
   - Avoid reflective surfaces that may create glare and increase visual impact.
3. Vegetation Preservation and Rehabilitation
   - A rehabilitation strategy must be implemented, where removed vegetation is salvaged and temporarily housed in a nursery for replanting post-construction.
   - Indigenous plant species should be prioritized for landscaping to maintain the local ecosystem and visual continuity.
   - Green roofs and vegetative screening can be incorporated into the design to further reduce the development's visibility.
4. Construction Management for Visual Impact Reduction
   - Dust suppression techniques (e.g., water spraying and covered stockpiles) should be enforced to minimize airborne dust that could degrade visual quality.
   - Limit construction activities to daylight hours to reduce noise and light disturbances during sensitive nighttime periods.
   - Efficient waste management practices should be applied, ensuring prompt removal of debris and temporary structures post-construction.
5. Lighting Design to Reduce Light Pollution
   - Install low-intensity, downward-facing lights with motion sensors to minimize unnecessary nighttime illumination.
   - Use warm-coloured lighting to reduce glare and maintain the natural ambience of the area.

Impact 3 – Socio-economic

Job creation- Positive Impact. No negative impacts on the socioeconomic aspects are foreseen as the proposed construction will not negatively impact on any person's social rights. Employment opportunities (temporary) will be generated during the construction phase. The positive socio-economic impact, including a few short-, medium- and long-term jobs outweigh the negligible to zero negative impacts this project may have on heritage resources.

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	High	High	High	High
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	Employment opportunities for people from the local community.				

Mitigation:

The contractor should employ people from the local community where possible and ensure that skill transfer and training are provided where feasible.

Impact 4 – Safety

It is essential to consider and mitigate occupational exposure, the risks of fires and explosions, as well as health hazards during the construction phase.

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	1. **Occupational Exposure:** Prolonged exposure to dust, noise, and hazardous materials could affect workers' health. 2. **Fire and Explosion Risks:** The use of flammable materials, heavy machinery, and electrical equipment increases the potential for fire and explosions. 3. **Health Hazards:** Construction activities can expose workers to physical hazards (e.g., falls, machinery accidents), chemical hazards (e.g., solvents, adhesives), and ergonomic risks.				

Mitigation:

- Adequate measures must be in place to ensure the safety of staff on-site, such as proper training of operators, first aid treatment, medical assistance, emergency treatment, prevention of inhalation of dust, protective clothing, footwear and gloves.
- Manuals and training regarding the correct handling of materials and operation of equipment should be in place and updates as new or updated material safety data sheets become available; and monitoring should be carried out on a regular basis, including accident reports.
- All employees are to be managed in strict accordance with the OH&S Act.
- Sufficient water must be available for firefighting purposes.
- All personnel must be trained in responsible fire protection measures. Regular inspections should be carried out to inspect and test fire-fighting equipment and pollution control measures.

- Relevant SANS Standards shall be implemented at the facility.
- **Personal Protective Equipment (PPE):** Provide appropriate PPE such as helmets, gloves, safety boots, ear protection, and respiratory masks.
- **Dust and Noise Control:** Implement dust suppression techniques (e.g., water spraying) and use noise barriers to reduce exposure levels.
- **Workplace Safety Training:** Conduct regular training sessions on safe work practices, emergency response, and hazard identification.
- **Ventilation Systems:** Ensure adequate ventilation in enclosed spaces to prevent the build-up of hazardous fumes.
- **Electrical Safety Protocols:** Maintain electrical equipment properly, avoid overloading circuits, and ensure safe installation practices.
- **First Aid and Emergency Preparedness:** Maintain fully equipped first aid kits on-site and ensure trained first-aid personnel are always available.

Impact 5 – Noise Disturbance

Impacts associated with general building construction noise. The construction phase will result in a temporary increase in ambient noise levels from moving machinery, equipment and additional people on site.

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	Reduced noise levels during the construction phase.				

Mitigation:

- Construction work will take place during the daytime.
- No construction activities must occur on Sundays or public holidays.
- The equipment and machinery used must be regularly maintained to reduce the potential noise disturbance.

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

Construction activities (e.g., clearing 1175 m², grading for road/boardwalk) may increase surface run-off, erode sandy soils (>750 mm deep, <15% clay), and contaminate groundwater via spills (e.g., fuel). The Preliminary Geotechnical and Geomatic Report (Pages 7–10) notes highly erodible soils, with weak zones at HW2 (160 mm, 360 mm depths). Removal of *Acacia cyclops* and temporary vegetation loss may exacerbate run-off and erosion (Terrestrial Biodiversity Assessment).

<u>Soil</u>

Mixing cement directly on the ground could also result in contamination. Contaminated soil will have to be rehabilitated or disposed of, depending on the level and nature of the contamination. Soil erosion and topsoil loss are not expected during construction as activities will be limited to the development footprint.

<u>Air pollution</u>

Dust will be generated during the construction activities, particularly during excavations. During the construction phase of the associated infrastructure dust will be generated. The effect on air quality is expected to be minor and localised, as well as of short-term duration as the construction phase is temporary. The contribution of exhaust fumes from the associated construction equipment and vehicles will be negligible.

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**	N/A
Cumulative impacts	Moderate: Incremental erosion and run-off from Portion 79, combined with existing coastal developments (e.g., Sedgefield dwellings; could alter local hydrology and soil stability, especially with cyclic erosion (4–6 m, 2005–2024). Future projects may exacerbate this if unregulated. Temporary dust and emissions add to existing tourism-related air quality impacts (e.g., Lake Pleasant Resort but are localized and short-term. Future developments could increase dust if not mitigated. Potential contamination of stormwater run-off, soil, and groundwater, dust generation and soil erosion.				

Mitigation:

Effective erosion control, spill prevention, and vegetation management can significantly reduce impacts
Dust suppression and emission controls can minimize air quality impacts.

- Erosion Control: Use silt fences, temporary cover crops, and retain vegetation (roots to 60 cm) to stabilize soils (Preliminary Geotechnical and Geomatic Report, Page 38).
- Run-Off Management: Install swales and sediment traps to divert run-off (Town Planning Report, Page 11).
- Spill Prevention: Store fuel in bunded areas, use spill kits, and train workers (Terrestrial Biodiversity Assessment).
- Vegetation: Salvage natives for replanting, clear *Acacia cyclops* per Alien Invasive Management Plan (Visual Compliance Statement, Page 11; Terrestrial Biodiversity Assessment).
- Monitoring: Regular site inspections during construction (Q3–Q4 2025; Town Planning Report, Page 6).

As per the Geotechnical Report:
1. Structural Foundation and Stability Measures

- Avoid weight-bearing structures at position D7, as it has been identified as structurally weak.
- Specialized foundation designs must be implemented for sites with soft, highly erodible soil (Lookout, BM path split, and PE) to prevent settlement and ensure long-term stability.
- Compacted foundation zones of at least 1.5m around external walls should be established to enhance soil stability and reduce erosion risk.
- Reinforcement at HW2 is required due to weak soil zones at 160mm and 360mm depths, where additional stabilization (such as deep compaction or geogrid reinforcement) should be incorporated.
- All structural plans must be reviewed and approved by an ECSA-registered structural engineer to ensure compliance with engineering safety standards.

2. Erosion and Soil Movement Mitigation

- Implement soil stabilization techniques, such as geotextiles, retaining walls, or soil-binding vegetation, to counteract erosion, especially in the high-risk zone south of Lookout Point.
- Grading and slope management should be prioritized to minimize excessive soil displacement and reduce the risk of landslides.
- Minimize ground disturbance during construction and phase excavation activities to reduce exposure of erodible soil to wind and water forces.
- Erosion control barriers, such as silt fences or terracing, should be installed in vulnerable areas to limit sediment displacement.

3. Coastal and Flood Risk Management

- Development should remain outside the 100-year high-risk flood protection zone, maintaining a 15m buffer inland from projected flood boundaries.
- Elevated foundation designs should be considered for structures in areas susceptible to long-term coastal movement and erosion risk.
- Stormwater management systems must be designed to prevent waterlogging and excessive runoff, which could exacerbate erosion.
- Long-term monitoring of coastal retreat and adaptive planning should be implemented to address future shifts in the coastal boundary.

4. Climate-Resilient Infrastructure
- Wind-resistant and weatherproof materials should be used to account for long-term climatic variations.
- Sustainable drainage solutions, such as permeable surfaces, should be incorporated to reduce surface runoff and prevent soil saturation.
- Dune stabilization measures, including vegetation reinforcement and dune rehabilitation programs, should be applied to safeguard against wind-driven erosion.

5. Construction Best Practices
- Limit heavy machinery operations in sensitive areas to prevent unnecessary soil compaction and degradation.
- Monitor construction activities regularly to ensure compliance with erosion control and soil stabilization protocols.
- Implement revegetation strategies post-construction, using indigenous plant species to restore disturbed areas and strengthen soil structure.
- Strict compliance with setback regulations (30m building line, 100m high-water mark) should be enforced to align with regional coastal development precedents.

Rainwater tanks will be placed around the main dwelling to collect rainwater for reuse from roofs.

Stockpiles of excavated materials or spoils during the construction phase should be strategically positioned to mitigate wind erosion and avoid adverse impacts on drainage lines. Dust suppression measures should be implemented in accordance with specific site conditions. Vehicles transporting materials prone to being displaced by wind must be securely covered. Ingress and egress points onto public roads must be cleared of any dust or mud. To minimise emissions resulting from exhaust fumes, regular maintenance of vehicles and equipment is essential to ensure optimal working conditions.

- Blanket clearing of the site.
- It is proposed that steel or concrete piling be utilised for the building structures, thereby limiting the exposure of bare soils and wind-blown dust.
- Erosion protection measures must be implemented in disturbed areas.
- Topsoil and soil stockpiles should be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation.
- A water cart must be employed on windy days to wet soils that would be prone to wind erosion to limit dust generation.
- Disturbed areas should be rehabilitated in parallel with construction completion.
- Compile and implement an Environmental Management Programme; and audit reporting by an ECO during construction.
- During construction: New roads need to be made using the same / similar materials and methods as the neighbouring road.
- Dust Suppression: Apply water sprays and cover stockpiles during clearing/grading (Visual Compliance Statement, Page 11).
- Emission Control: Use low-emission machinery and limit idling (Visual Compliance Statement, Page 11).
- Construction Timing: Daylight-only operations to reduce dust spread (Visual Compliance Statement, Page 11).
- Monitoring: Daily air quality checks during construction (Q3–Q4 2025; Town Planning Report, Page 6).

<u>Construction activities</u>

Storage of potential pollutants such as fuel, oil, cement, etc. should be confined to a sealed surface with a bund wall to prevent soil contamination from accidental leaks and spills. Only the volume of fuel required for the day should be stored. The use of potentially polluting substances should be strictly controlled and handled in designated areas under the supervision of competent and trained personnel as stipulated in the EMPr.

No vehicle or equipment will be serviced on-site. Appropriately sized drip trays must always be used in emergency situations. Approved absorbent material must be kept on-site in sufficient quantities to deal with small spills. Absorbent material and contaminated soil should be disposed of at a registered hazardous waste site.
No cement mixing is to occur directly on the ground and any cement or hydrocarbon spills should be cleared away immediately.

The generation of dust during the construction phase is expected to be minimal. Stockpiles of fine construction materials should be positioned such that they are not exposed to wind erosion or drainage lines. Dust suppression should be implemented according to the prevailing site-specific conditions. Construction vehicles transporting construction materials must be suitably covered to prevent materials from being blown off. Vehicles and machinery will be kept in good working order to avoid excess emissions.

All development activities must remain within the demarcated construction area. Chemical toilets should be provided for construction workers if the on-site ablution facilities are not adequate (1 toilet per 30 workers). Their use should be enforced. Chemical toilets will be serviced by an appropriate service provider, provided with toilet paper and cleaned regularly. Servicing will include emptying without spills and appropriate disposal by the service provider.

It is essential to maintain an onsite nursery, and the search-and-rescue plants should be repurposed for the rehabilitation of the site following construction activities.
These measures, grounded in specialist reports, ensure environmental integrity and compliance with NEMA principles during construction.

Impact 7 – Waste Generation

Waste generated through construction activities (general and hazardous) that is not correctly managed may result in pollution of water, air and soil resources.

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	Litter/contamination of potential soil, water or air pollution.				

Mitigation:

- Appropriate containers for different types of waste should be provided throughout the site.
- The containers must have sufficient capacity and be removed frequently.
- Environmental awareness training should include a section on the impacts of waste generation and improper waste management.
- Ensure that rubble and construction waste are sorted on site and that recyclable material is separated from disposable waste.
- The contractor should keep safe disposal certificates for record purposes.

Impact 8 – Cultural-historical

Heritage resources may be encountered during excavation activities on-site. A NID will be submitted to Heritage Western Cape.

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	Potential loss of cultural or historical resources, should it be encountered during construction activities. However, this is not expected. Potential loss of cultural or historical resources should they be encountered during construction activities, but this is not expected. Because there is no significant heritage resources associated with the property, it does not meaningfully contribute to the already altered cultural landscape of the area. The positive socio-economic impact, including a few short-, medium- and long-term jobs outweigh the negligible to zero negative impacts this project may have on heritage resources.				

Mitigation:

There are no cultural or historical features on-site. However, the provisions of the National Heritage Resources Act will apply.

- Environmental awareness training should be presented to all employees at the site.
- Such training should include the identification of potential heritage resources and how to react if the presence of heritage resources is suspected.
- If any sign of a heritage or cultural site is unearthed during excavations, then all activities must cease until a heritage specialist has been consulted and had the opportunity to investigate the findings.
- In case of the unexpected uncovering of fossil bones in the surficial coversands and soil, or buried archaeological material, or unmarked graves, it is recommended that a protocol for finds of potential fossil material (and buried artefacts), the Fossil Finds Procedure (FFP), is included in the Environmental Management Plan (EMP) for the Construction Phase of the project. Adjustments to the development plan are not expected to change this recommendation".

<u>Impacts foreseen during the operation phase:</u>

Impact 1 – Geotechnical Impacts

Negative: Operational activities (e.g., vehicle use on gravel roads, landscaping, wastewater management) may increase surface water run-off due to compacted soils and impermeable surfaces (e.g., parking areas) within the 1175 m² footprint. Potential spills (e.g., cleaning chemicals, fuel from vehicles) risk contaminating shallow groundwater (<2 m depth at HW2) and erodible soils (>750 mm deep, <15% clay). Inadequate stormwater management could lead to localized erosion, particularly near the 100 m HWM (Preliminary Geotechnical and Geomatic Report, Pages 7–10, 35–38; Town Planning Report, Page 10).

Impact	**Preferred Alternative**		**Alternative 2**		**No-Go**
	Without mitigation	With mitigation	Without mitigation	With mitigation	
Duration	On-going	On-going	On-going	On-going	-
Extent	Limited	Limited	Limited	Limited	-
Intensity	Low	Low	Low	Low	-

Probability	Unlikely	Unlikely	Unlikely	Unlikely	-
Confidence	High	High	High	High	-
Reversibility	Medium	Medium	Medium	Medium	-
Resource irreplaceability	Low	Low	Low	Low	-
Significance	**Medium-High-negative**	**Low- negative**	**High-negative**	**Medium-negative**	N/A
Cumulative impacts	Moderate: Ongoing run-off and potential contamination, combined with existing coastal developments (e.g., Sedgefield dwellings) and cyclic erosion (4–6 m retreat, 2005–2024), could increase sedimentation and pollution risks to Groenvlei Lake and regional groundwater (Preliminary Geotechnical and Geomatic Report, Pages 27, 38; Town Planning Report, Page 10).				

Mitigation:

- Stormwater Management: Install and maintain permeable surfaces (e.g., gravel) and detention basins to control run-off; direct flows away from the 100 m HWM (Preliminary Geotechnical and Geomatic Report, Page 38).
- Spill Prevention: Use designated areas for vehicle maintenance with spill kits; store chemicals in bunded containers (Terrestrial Biodiversity Assessment).
- Vegetation Maintenance: Sustain native Goukamma Strandveld to stabilize soils and reduce run-off per Alien Invasive Management Plan (Terrestrial Biodiversity Assessment; Visual Compliance Statement, Page 11).
- Wastewater Systems: Install compliant septic or conservancy tanks with regular servicing to prevent groundwater contamination (Town Planning Report, Page 6).
- Operational Practices: Limit vehicle use and schedule landscaping during low-rainfall periods (e.g., Q3–Q4 annually; Town Planning Report, Page 6).
- Monitoring: Conduct quarterly soil and water quality checks to detect erosion or contamination early (Preliminary Geotechnical and Geomatic Report, Page 38).

Impact 2 – Habitat and biodiversity loss

Negative: Operational activities (e.g., pedestrian traffic on boardwalks, landscaping maintenance, vehicle use on gravel roads) within the 1175 m² footprint may cause minor vegetation disturbance and habitat stress in the degraded CBA2 area, potentially affecting fauna (e.g., small mammals, birds). Improper management of invasive species (*Acacia cyclops*) or landscaping could reduce native Goukamma Strandveld cover, impacting biodiversity. No impact on CBA1 Milkwood Forest occurs (Terrestrial Biodiversity Assessment; Preliminary Geotechnical and Geomatic Report, Page 20).

Impact	**Preferred Alternative**		**Alternative 2**		**No-Go**
	Without mitigation	With mitigation	Without mitigation	With mitigation	
Duration	Permanent	Permanent	Permanent	Permanent	-
Extent	Local	Local	Local	Local	-
Intensity	Low	Low	Low	Low	-
Probability	Unlikely	Unlikely	Unlikely	Unlikely	-
Confidence	High	High	High	High	-
Reversibility	-	-	-	-	-
Resource irreplaceability	-	-	-	-	-
Significance	**Medium-negative**	**Low - negative**	**High - negative**	**Medium - High - negative**	N/A
Cumulative impacts	Low to Moderate: Minor habitat disturbance, combined with existing coastal developments (e.g., residence 250 m east; Visual Compliance Statement, Page 10) and potential future projects, could incrementally reduce biodiversity resilience. Historical *Acacia cyclops* invasion exacerbates this (Terrestrial Biodiversity Assessment; Town Planning Report, Page 10).				

Mitigation:

- Vegetation Management: Implement and sustain the Alien Invasive Management Plan to control *Acacia cyclops* and promote native Goukamma Strandveld growth (Terrestrial Biodiversity Assessment; Visual Compliance Statement, Page 11).

- Access Control: Restrict pedestrian and vehicle access to designated boardwalks and gravel roads to minimize habitat disturbance (Terrestrial Biodiversity Assessment; Town Planning Report, Page 10).
- Landscaping Practices: Use native species for landscaping; schedule maintenance during low wildlife activity (e.g., Q3–Q4 annually) to avoid fauna disruption (Terrestrial Biodiversity Assessment; Town Planning Report, Page 6).
- Fauna Protection: Install signage to deter wildlife disturbance; conduct annual fauna surveys to monitor populations (Terrestrial Biodiversity Assessment).
- Community Engagement: Educate residents and tourists on biodiversity protection via annual updates (Town Planning Report, Page 8).
- Monitoring: Conduct quarterly ecological inspections to assess vegetation health and biodiversity recovery (Terrestrial Biodiversity Assessment).

Impact 3 – Aesthetic impact

Long-term visual intrusion into a coastal fynbos landscape due to the operational presence of a built structure. Potential change in the area's visual character and aesthetic quality.

Impact	Preferred Alternative		Alternative 2		No-Go
	Without mitigation	With mitigation	Without mitigation	With mitigation	
Duration	Permanent	Permanent	Permanent	Permanent	-
Extent	Local	Local	Local	Local	-
Intensity	Low	Low	Low	Low	-
Probability	Unlikely	Unlikely	Unlikely	Unlikely	-
Confidence	High	High	High	High	-
Reversibility	-	-	-	-	-
Resource irreplaceability	-	-	-	-	-
Significance	**Medium - negative**	**Very Low - negative**	**High - negative**	**Medium - High - negative**	N/A
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 has been commissioned to prepare a Visual Compliance Statement for the proposed development located on Portion 79 of the Farm Ruygte Valley no. 205, situated between Knysna and Sedgefield, along the Garden Route in the Western Cape Province. This Visual Compliance Statement will examine the potential impacts of the physical characteristics of the proposed development, specifically concerning its form, scale, and bulk, and will assess their potential influence within the local landscape and receptor context.

The study area consists primarily of coastal towns and natural fynbos and agricultural landscapes in the inland. Sedgefield is a seaside village along the Garden Route. The prominent thoroughfare road is the N2 connecting Cape Town to Gqeberha. The study area consists of pockets of un-spoilt natural landscape and long stretches of beaches. The background of the site is the Outeniqua Mountain range. The proposed development will be situated on top of a stabilized coastal dune that allows for beautiful vistas over the ocean and towards Gericke's Point. The property is located on low sloping areas behind the front dune edge. The site rises to about 70m above sea level. The area falls within the Fynbos biome. The coastal vegetation consists mainly of coastal shrubs, dune vegetation and small trees.

The majority of the site consists of dense, shrubby, thicket vegetation, with large trees close to the highest point of the site.

The site visit provided essential insights into the visual dynamics of the proposed development on the landscape. The site is accessed from Groenvlei Road off the N2. The road passes the Groenvlei Lake and the Lake Pleasant Holiday Resort. A smaller gravel road diverges from the Groenvlei Road, which is a concealed one-way dirt road leading to another residential development on the neighbouring site. A new road will have to extended and constructed to the proposed development. The development is proposed on the highest point of the site and is on a cliff approximately 70m above the beach. From the site visit, it was established that the site is not visible from the N2 and Lake Pleasant Resort due to the higher topography and dense vegetation of the site. The development will also not be visible to viewers on the beach due to the highly elevated and eroded cliffs.

The proposed development is planned to have a very sensitive design approach. The total site is approximately 5 hectares, and the footprint of the buildings encompasses only an area of 525m2. Smaller, separate buildings are planned, instead of one large, voluminous building. This allows for the breaking of a solid mass and allows for vegetated areas between buildings, providing screening of the development. The building materials are envisioned to be natural materials, with a combination of light steel and glass structures, to easily blend into the natural environment.

Conclusion

It can be concluded that the proposed development can be authorised provided it is integrated effectively within the environment with minimal visual intrusions. The use of the land's inherent VAC enhances the project's ability to minimise visual impacts substantially. The visual impact of the project is minimal, given its scope and nature, and must be continually managed through best practice methods throughout the project's lifecycle.

The report has assessed the existing visual conditions and the project's compatibility with the landscape. The potential visual impacts, while inherently minimal due to the project's environmentally sensitive approach, can be effectively mitigated through careful planning, strategic placement, and conscientious ongoing management.

The proposed development is situated in a visually sensitive environment, surrounded by natural vegetation, varied topography, and minimal existing infrastructure. A well-planned design and construction approach will ensure that the development integrates harmoniously with its surroundings while minimizing visual impacts.

By preserving natural vegetation, incorporating strategic site placement, and using earth-toned materials, the visual footprint of the development can be significantly reduced. The site's elevated position offers panoramic ocean views, but careful design must ensure that structures blend into the landscape rather than dominate it. The use of natural land depressions and existing vegetation as visual buffers will further reduce visibility from key viewpoints.

The impact on local receptors, including nearby residents, motorists, and beach visitors, is expected to be minimal due to the shielding effects of dense vegetation, topography, and distance. Construction-related impacts, such as dust, temporary landscape changes, and nighttime lighting, must be carefully managed through dust suppression, controlled lighting, and site rehabilitation efforts.

To maintain the visual integrity of the area, mitigation measures should include the sensitive placement of buildings, the use of natural materials and colours, and a rehabilitation strategy to restore vegetation post-construction. Temporary structures and debris should be promptly removed, ensuring that the final development enhances rather than detracts from the visual appeal of the landscape.

With these mitigation strategies in place, the development is expected to be visually sustainable, aligning with the natural character of the region while minimizing disruption to the local environment and community.

Management Measures –

It is recommended that the following be included in the Environmental Authorisation / Environmental Management Program:

It is essential for the buildings to integrate seamlessly with the natural environment. Employing down lighting, utilising earthy colours, and strategically positioning satellite dishes are recommended measures to achieve effective mitigation of visual disturbances.

Lighting Design to Reduce Light Pollution

- Install low-intensity, downward-facing lights with motion sensors to minimize unnecessary nighttime illumination.
- Use warm-coloured lighting to reduce glare and maintain the natural ambience of the area.

Sensitive Site Planning and Design

- Buildings should be strategically positioned to blend with the natural topography and minimize visual intrusion.
- Utilize low-profile architectural designs that complement the landscape rather than dominate it.

Use of Natural Materials and Colours

- Select earth-toned colours and natural materials (e.g., stone, wood, and textured finishes) to integrate the development into the environment.
- Avoid reflective surfaces that may create glare and increase visual impact.

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

The proposed project is for tourist accommodation on portion 79 of farm 205 Ruygte Valley. The project will consist of one house with a footprint of 400m², three cottages at 80m² each, a boardwalk connecting the four units, 6 parking bays for the four units, an 80m² shed, and a 50m2 cottage as staff quarters. The proposed project is located west of the town of Knysna.

The project is likely to require agricultural approval (or at least comment from Department of Agriculture) as part of the required approval in terms of applicable municipal land use legislation, as well as in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970 - SALA), because it is on land currently zoned for agriculture.

A specialist agricultural assessment is required to include a verification of the agricultural sensitivity of the development site as per the sensitivity categories used by the web-based environmental screening tool of the Department of Forestry, Fisheries and the Environment (DFFE). The screening tool's classification of sensitivity is merely an initial indication of what the sensitivity of a piece of land might be. What the screening tool attempts to indicate is whether the land is suitable for crop production (high and very high sensitivity) or unsuitable for crop production (low and medium sensitivity). To do this, the screening tool uses two independent criteria, from two independent data sets, which are indicators of suitability for crop production but are limited in that the first is outdated and the second is fairly course, modelled data which is not accurate at site scale. The two criteria are:

1. Whether the land is classified as cropland or not on the field crop boundary data set (Crop Estimates Consortium, 2019). All classified cropland is, by definition, either high or very high sensitivity.
2. Its land capability rating as per the Department of Agriculture's updated and refined, country-wide land capability mapping (DAFF, 2017). Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain-fed agricultural production. The direct relationship between land capability rating, agricultural sensitivity, and rain-fed cropping suitability.

It is important to note that agricultural sensitivity is not necessarily correlated with the significance of an agricultural impact and is therefore often of very limited value for assessing agricultural impact. What is of importance to an agricultural assessment, rather than the site sensitivity verification, is its assessment of the impact significance.

The assessment verifies that the site is not within crop boundaries and therefore confirms the less than high sensitivity rating by the screening tool that is based on the cropping status component of sensitivity. Crop production in the area is confined to land types that have higher water and nutrient holding capacity. This assessment therefore rates the assessed area as having a maximum land capability of 6 and therefore as being of medium agricultural sensitivity in terms of the land capability component of sensitivity.

In conclusion, this assessment confirms the low, medium sensitivity rating of the site by the screening tool because of the site's assessed agricultural production potential and current agricultural land use. It however disputes the classified land capability of >6 and rates the entire assessed area as having a maximum land capability of 6.

The site is not within a Protected Agricultural Area (PAA) (DALRRD, 2020). A PAA is a demarcated area in which the climate, terrain, and soil are generally conducive for agricultural production and which, historically, or in a regional context, has made important contributions to the production of the various crops that are grown across South Africa. Within PAAs, the protection of viable, arable land is considered a priority for the protection of food security in South Africa.

The entire development footprint is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland. The proposed development on this land will result in negligible loss of future agricultural production potential in terms of national food security. The overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as acceptable.

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present, or reasonably foreseeable future activities that will affect the same environment. The potential cumulative agricultural impact of importance is a regional loss of future agricultural production potential.

Due to its negligible agricultural impact, the assessed development will not contribute to the cumulative impact. The cumulative agricultural impact of the proposed development is therefore assessed here as being of low significance and therefore as acceptable. The development will not have an unacceptable negative impact on the agricultural production capability of the area, and it is therefore recommended, from a cumulative agricultural impact perspective, that the development be approved.

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

The property (approximately in red block) is located within the Cape Supergroup rocks, on thick sand (light yellow Bredasdorp formation). Kirkwood formation conglomerates (Ke dark orange) might be present in thin layers under the sand. Peninsula sandstones (Light pink Op) underly the sand and conglomerates at depths of typically approximately 70-90m. Steep topographical features are present due to the formation of high wind-blown recent sand dunes and semi consolidated fossil sand dune.

Geology and geophysical scan: The area is located on coastal sand dune with underlying fossil dune. The soft and semi consolidated material is overlying east-west striking, 45 degrees southernly dipping peninsula sandstone at depths of 60-80m. Position D7 on the geophysical scan indicate a step change in sandy overburden, from 15m to 25m deep, and a structurally weak point at 120m depth.

Slope: The area is classified as low sloped area in the areas of PE, BM and HW2 inland, covered in tall trees from the 65m contour at 0-21 degrees, with high slope values from the BM area towards the Lookout point and toward the coast, covered in coastal shrubs, from the 75m contour to the sea level, at 26 to 70 degrees over 50m. The area from the lookout to the coastal zone is a high-risk area due to the high slope values.

Soil: Soil is predominantly silty loam, sandy loam and sand at depth at the Lookout point test pit. Silty loam and sandy loam is present at the HW2 test pit. Both sites have organic rich top layers, but the organic layer is deeper at the HW2 site, indicating an older soil profile with in-situ development of a soil profile. The topsoil in this area is loose and therefore highly erodible. The combination of high slope and high erodibility value does pose a major indicator for probable movement. Moisture content is not alarming and expected along the coast in high organic layers. Clay content is minor

Vegetation: Well established coastal forest, gradually tapering from the 65m contour towards the 30m coastal zone to shrubs, is present in all historical satellite images. Roots were present in soil samples to depths of 60cm and deeper, indicating well-established plant growth that helps to stabilise the dune. Vegetation has consistently grown from 2005 to 2024 from the 25m contour inland, indicating dune stability over time.

Climate and environmental: low range warming is expected, seasonal rainfall minor increase from 196 to 202mm over 100 years, with a projected downwards trend in average rainfall. The area is located in a zone with 4 days less extreme rainfall day events by the year 2050. The Coastal flooding at the property is currently low and projected to very low in the year 2050 and wind speeds are average at 5,75 m/s.

Projections sea level rise and coastal flooding: The 100-year low risk projection indicates that the coastal zone will be level with the 40m contour (property border) and the high risk projection indicates that the coastal zone will be level with the Lookout point, 50m from the current coastal zone.

Observation summary and conclusion

Geologically: A structurally weak area is located on position D7. Do not place weight-bearing structures on this position, or design structures around it. Position PE is far enough, but be aware not to place excessive weight bearing pillars on this position when designing foundations for the dwelling

Foundations: Lookout, BM path split and PE sites have soft, but consistent highly erodible soil profiles. Sites HW2 in the tall trees has weak areas at 160 and 360mm depth due to high organic matter content. All sites consist of soft material that needs special foundation, and compaction designs to carry weight for the proposed dwellings. The area is low risk for soil movement due to the low slope from BM to HW2. However, the zone south of the lookout is high risk due to high slope changes.

Climatic conditions is projected to be low risk for rainfall, temperature, wind and vegetation cover is well established indicating dune stability.

2100 flooding high risk projections indicate that the 100-year coastal flood line may be level with the lookout point coordinates. Satellite image measurements from 2005 to 2024 indicate that the coastal zone might move inland 30m over 100 years (based on 6m inland movement every 20 years), this is in line with the low-risk coastal flooding projections, in line with the 40m contour line, or on the current property border. Conclusions:

The dune morphology is stable north of the property's coastal border, as indicated by well-established vegetation and thick organic layers in the soil. Thick vegetation protects the dune from wind erosion. Cyclic wave erosion is present at the high tide mark in the coastal zone and it is projected to move 30m inland over 100 years.

Foundation design has to allow for soft, uncompressed highly erodible sandy material at all sites, allow for a compacted zone of 1,5m around the foundations of any outside walls, and has to be designed and signed off by an ECSA registered structural engineer.

The proposed dwellings at location PE are not in the current erosion zone, nor the projected low or high risk 100-year coastal flooding zones, nor in the measured projected 100-year zone and are not located on position D7. It is located 15m north (inland) of the 100-year high risk projection zone.

The border line, low risk projection 100-year coastal flooding zone, and the measured 100-year coastal zone movement overlaps. The 30m building line and the high-risk projection 100-year coastal flooding overlaps.

The 100m line above the high-water mark is located north of location PE. Locations BM and HW2 is north of the 100m line above the high-water mark.

Existing dwellings in the adjacent developed areas of Sedgefield have been built between the 100-year low and high-risk projection lines, and south of the 100m high water mark.

Should the local authority change building regulations and move the 30m building line to the 100m line above the high water mark, the municipal authority has to first give permission for the proposed dwelling at the PE location, irrespective of the above findings and observations, Then the BM location is the next best option for a dwelling as it is located on the 100m line above the high water mark and above all the other risk projection lines.

8.4. 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 (Figure 1). 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 strong pressure to develop this area. Most areas to the north and north-east of the site are in a natural state, providing an important natural 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 5.21 ha.

Desktop Description of Site

Regional Vegetation Patterns

The property is within one mapped regional terrestrial vegetation type, Goukamma Strandveld, as per Mucina and Rutherford (2006). Field observations confirm that the site's vegetation is classified as 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, specifically Western Cape Milkwood Forest.

Goukamma Strandveld (Western Cape Milkwood Forest)

Distribution: This vegetation type occurs in the Western Cape Province, in coastal stretches 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 (e.g., Celtis africana, Ekebergia capensis, Searsia chirindensis). Fynbos shrubland occurs on upper dune slopes and crests, where succulents may be common in open areas. 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. The site's proximity to these areas underscores its 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) connected to Goukamma Nature Reserve. Even small impacts can cause local ecosystem damage, edge effects (e.g., trampling, runoff), and wider fragmentation risks, with effects potentially evident decades later due to the long lifespan of trees. The footprint is small (1,175 m²), but the impact is assessed as MODERATE negative significance due to high irreplaceability (CBA1/CBA2) and permanent duration.

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 the Department of Forestry, Fisheries and the Environment (DFFE), involving significant regulatory processes. The impact is assessed as LOW negative significance due to localized effects but high compliance requirements.

3. Impacts on Conservation Planning: The site's CBA1 and CBA2 status and proximity to Goukamma Nature Reserve and Lake Pleasant Private Nature Reserve highlight its importance for biodiversity conservation. Development compromises conservation objectives, particularly given cumulative development pressures in the region. This impact is assessed as MODERATE negative significance due to high threshold value and long-term duration.

4. Impacts on Downslope Cliff Areas: The development is at the summit of coastal cliffs, risking destabilization of ecosystems below due to vegetation loss or erosion. The cliff-edge thicket is degraded by Acacia cyclops but stable. Construction-related disturbances (e.g., runoff, trampling) could lead to slope collapse, as seen near Gericke Point. This impact is assessed as MODERATE negative significance due to high reversibility challenges and erosion risks.

Conclusion

Desktop information, field data, and historical aerial imagery (NGI, 1973, 1990, 2010) verify the following patterns for the Terrestrial Biodiversity Theme:

1. The site is within Goukamma Strandveld, classified as Western Cape Milkwood Forest (SANBI, 2020), protected under the National Forests Act, 1998. While Goukamma Strandveld is not listed as threatened, its coastal components require reassessment due to high biodiversity value (SANBI, 2020).

2. The proposed development is within natural habitat of **Very High** biodiversity value, located in CBA1 and CBA2 areas, constituting an indigenous forest, adjacent to protected areas (Goukamma Nature Reserve), and earmarked for future conservation.

3. The vegetation is dominated by the protected tree species Sideroxylon inerme.

4. The development is on the lip of unstable Holocene sand cliffs, requiring established vegetation to prevent erosion.

5. The impact assessment identified four impacts, with three of concern: forests (MODERATE negative), protected trees (LOW negative), conservation planning (MODERATE negative), and downslope cliff areas (MODERATE negative). Cumulative fragmentation risks threaten ecological processes.

Terrestrial Biodiversity Statement

1. The entire site is in a natural state, within CBA1 and CBA2 areas, and constitutes Western Cape Milkwood Forest, with **VERY HIGH** sensitivity per the Terrestrial Biodiversity Theme. A Specialist Assessment is required per the "Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity" (Government Gazette, 2020).

2. Potential impacts have HIGH, MODERATE, and LOW negative significance due to the high conservation value of forest habitats, cumulative fragmentation risks, and proximity to protected areas. The small development footprint contributes to a trend disrupting ecological processes.

3. Due to risks to coastal forest ecosystems, cliff stability, and incompatibility with conservation planning, the proposed development is not acceptable and should not be approved.

4. This statement is subject to conditions in the final approved EMPr, including permits under the National Forests Act, an Alien Invasive Management Plan, and an Ecological Management Plan.

Recommendations

If the proposed development is approved:

1. Compile and implement an Alien Invasive Management Plan, led by a qualified ecologist, to eradicate Acacia cyclops and other invasives using approved methods (e.g., mechanical removal, herbicide). The plan must include annual monitoring for 5 years post-construction and simultaneous rehabilitation with indigenous species to prevent slope failure.

2. Limit clearance to the direct footprint of the proposed structure (1,175 m²) and required infrastructure (e.g., access road, firebreaks). Remaining areas must remain natural, with no gardens permitted.

3. Conduct a search-and-rescue operation for indigenous plants prior to construction, supervised by a botanical specialist. Rescued plants must be relocated to an onsite nursery for post-construction rehabilitation.

4. Allow construction disturbances outside the footprint to revert to thicket via natural regeneration or active restoration, formalized in an Ecological Management Plan. The plan, submitted to CapeNature within 6 months of approval, must include fire management, erosion control, and restoration of degraded thicket patches.

5. Obtain a permit from the DFFE for impacts on Western Cape Milkwood Forest and Sideroxylon inerme under Section 7(3)(a) of the National Forests Act, 1998, at least 3 months before clearance.

6. Rezone undeveloped areas (99.98% of the 5.21 ha) to Open Space III (Nature conservation area) through an application to Knysna Municipality, in consultation with CapeNature, within 6 months of Environmental Authorisation.

7. Implement downslope cliff protection measures, including erosion control (e.g., silt fences, revegetation) and a prohibition on new beach pathways. Only public access routes (e.g., Groenvlei Beach) 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 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. The training must take into account language and literacy requirements as well as measures to determine the effectiveness of the training. 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. The induction training will, as a minimum, include the following: ➢ The importance of conformance with all environmental policies. ➢ The environmental impacts, actual or potential, of their work activities. ➢ The environmental benefits of improved personal performance. ➢ 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 ➢ 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: ➢ 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; ➢ Inclusion of HIV/AIDS activities at site meetings and other discussions; and ➢ Voluntary Counselling and Testing. Education will cover: ➢ Stigma and discrimination issues; ➢ Preventative behaviours including on-site safety and awareness; and ➢ 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 start spreading.

Early detections and rapid response actions:

- Regularly survey 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

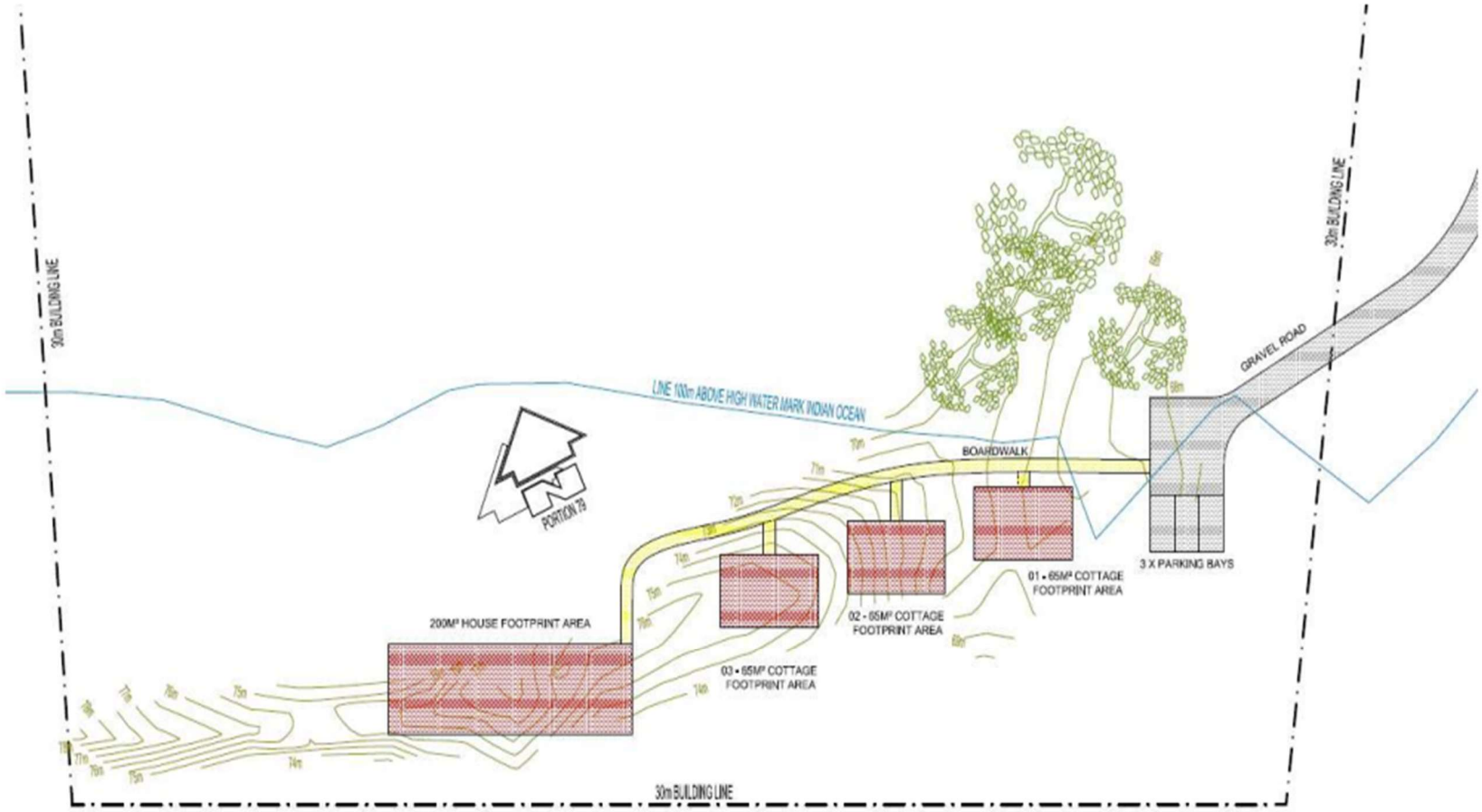
Experience:

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


30m BUILDING LINE
LINE 100m ABOVE HIGH WATER MARK INDIAN OCEAN
PORTION 79
BOARDWALK
GRAVEL ROAD
30m BUILDING LINE
200M² HOUSE FOOTPRINT AREA
03 - 65M² COTTAGE FOOTPRINT AREA
02 - 65M² COTTAGE FOOTPRINT AREA
01 - 65M² COTTAGE FOOTPRINT AREA
3 X PARKING BAYS
30m BUILDING LINE

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: _____