

**Final BAR: Appendix F – DRAFT ENVIRONMENTAL MANAGEMENT  
PROGRAMME REPORT (Draft EMPr)**

In terms of the **National Environmental Management Act** (Act No. 107 of 1998, as amended) & 2014  
Environmental Impact Regulations (as amended, 2017) for:

**PROPOSED DEVELOPMENT OF A RESIDENTIAL DWELLING ON ERF  
1363, PARADYS STRAND, KOUGA LOCAL MUNICIPALITY, EASTERN  
CAPE**

**DEDEAT REFERENCE NUMBER: EC08/C/LN1&3/M/18-2026**



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**DATE:**

**22 July 2026**

## ENVIRONMENTAL MANAGEMENT PROGRAMME REQUIREMENTS:

Appendix 4 of Regulation 982 of the 2014 EIA Regulations (as amended, 2017) published in terms of the NEMA, contains the required contents of an Environmental Management Programme (EMP). The table below serves as a summary of how these requirements were incorporated into this EMPR:

An EMPr must comply with section 24N of the Act and include:-

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) Details of –<br>(i) The EAP who prepared the EMPr; and<br>(ii) The expertise of the EAP to prepare an EMPr, including a curriculum Vitae;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Attached CV of the EAP (Annexure 2).                                                                                                                                |
| (b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Section 2 - PROJECT DETAILS<br>Section 4 - ENVIRONMENTAL MANAGEMENT PROGRAMME                                                                                       |
| (c) a map at an appropriate scale which superimposes the proposed activity, it associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;                                                                                                                                                                                                                                                                                                                                                                                                                   | Appendix A2 (Alternative 2) of FBAR                                                                                                                                 |
| (d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including –<br>(i) planning and design;<br>(ii) pre-construction activities;<br>(iii) construction activities;<br>(iv) rehabilitation of the environment after construction and where applicable post closure; and<br>(v) where relevant, operation activities;                                                                                                                           | Final BAR<br>Section 4 - ENVIRONMENTAL MANAGEMENT PROGRAMME                                                                                                         |
| (f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to –<br>(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;<br>(ii) comply with any prescribed environmental management standards or practises;<br>(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and<br>(iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable; | Section 4 - ENVIRONMENTAL MANAGEMENT PROGRAMME                                                                                                                      |
| (g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Section 4 - COMPLIANCE WITH THE EMPr AND REPORTING                                                                                                                  |
| (h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section 6 –EMP Targets – Planning, Construction, Operations<br>Section 4 - COMPLIANCE WITH THE EMPr AND REPORTING                                                   |
| (i) an indication of the persons who will be responsible for the implementation of the impact management actions;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Section 7 - PROJECT RESPONSIBILITIES                                                                                                                                |
| (j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME<br>Section 6 –EMP Targets – Planning, Construction, Operations                                                       |
| (k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME<br>Section 6 –EMP Targets – Planning, Construction, Operations<br>Section 4 - COMPLIANCE WITH THE EMPr AND REPORTING |
| (l) a program for reporting on compliance, taking into account the requirements as prescribed by Regulations;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Section 4 - COMPLIANCE WITH THE EMPr AND REPORTING                                                                                                                  |
| (m) an environmental awareness plan describing the manner in which –<br>(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and<br>(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and                                                                                                                                                                                                                                                                                                                                                             | Section 5 - ENVIRONMENTAL MANAGEMENT PROGRAMME<br>Section 10. - CODE OF CONDUCT                                                                                     |
| (n) any specific information that may be required by the competent authority.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Final BAR and appendices                                                                                                                                            |



## Glossary of Terms

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>BAR</b>    | <b>Basic Assessment Report</b> – A tool used by the EAP to submit to the competent authority if listed activities is triggered in Regulations GNR 327 and GNR 324 as per NEMA to make a decision regarding a proposed development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>DFFE</b>   | <b>Department Forestry Fisheries and Environment</b> – the national authority for sustainable environmental management and integrated development planning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>DEDEAT</b> | Eastern cape Department of Economic Development, Environmental Affairs and Tourism                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>CBA</b>    | <b>CBA Critical Biodiversity Area</b> – Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>CMP</b>    | <b>Coastal Management Plan</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>EAP</b>    | <p><b>Environmental Assessment Practitioner</b> – An EAP and a specialist, appointed in terms of regulation 12(1) or 12(2) must –</p> <ul style="list-style-type: none"> <li>(a) be independent.</li> <li>(b) Have expertise in conducting environmental impact assessments or undertaking specialist work as required, including knowledge of the Act, these regulations and any guidelines that have relevance to the proposed activity.</li> <li>(c) Ensure compliance with these Regulations</li> <li>(d) Perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application.</li> <li>(e) Take into account, to the extent possible, the matters referred to in regulation 18 when preparing the application and any report, plan or document relating to the application; and</li> <li>(f) Disclose to the proponent or applicant, registered and affected parties and the competent authority all material information in the possession of the EAP and, where applicable, the specialist, that reasonably has or may have the potential of influencing – <ul style="list-style-type: none"> <li>i. Any decision to be taken with respect to the application by the competent authority in terms of these regulations; or</li> <li>ii. The objectivity of any report, plan or document to be prepared by the EAP or specialist, in terms of these Regulations for submission to the competent authority; unless access to that information is protected by law, in which case it must be indicated that such protected information exists and is only provided to the competent authority.</li> </ul> </li> </ul> <p>(2) In the event where the EAP or specialist does not comply with sub regulation (1)(a), the proponent or applicant must, prior to conducting public participation as contemplated in chapter 5 of these regulations, appoint another EAP or specialist to externally review all work undertaken by the EAP or specialist, at the applicants cost.</p> <p>(3) An EAP or specialist appointed to externally review the work of an EAP or specialist as contemplated in sub regulation (2), must comply with sub regulation (1).</p> |
| <b>ECO</b>    | <b>Environmental Control Officer</b> – A site agent who needs to ensure that all environmental authorisation and conditions are adhered to during the construction phase of the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>EIA</b>    | <b>Environmental Impact Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>EMPr</b>   | <b>Environmental Management Programme</b> – can be defined as “an <b>environmental management</b> tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>ESA</b>    | <b>Ecological Support Area</b> – Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Pas or CBAs, and are often vital for delivering ecosystem services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| <b>KKLM</b>  | <b>Koukamma Local Municipality</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>NEMA</b>  | <b>National Environmental Management Act (Act 107 of 1998) as amended 2017</b> – national environmental legislation that provides principles for decision-making on matters that affect the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>PA</b>    | <b>Protected Area</b> - A protected area is an area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition. <sup>1</sup> The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas. |
| <b>SANBI</b> | <b>South African National Biodiversity Institute</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>SBDM</b>  | <b>Sarah Baartman district Municipality</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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# 1. INTRODUCTION

In accordance with the Integrated Environmental Management Guidelines published by the Department of Forestry, Fisheries, and the Environment (DFFE) 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”.

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"*

This draft EMPr must be read in conjunction with the Basic Assessment Report (July 2026) and all related appendices. All recommendations, relevant conditions and mitigation measures provided in these documents have been included in the EMPr and must be adhered to.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by planning, construction and operational phases and activities associated with this project.

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

**This EMPr is a dynamic document that may require updating during the project phases in response to new and changing circumstances to mitigate environmental impacts.**

**Relevant changes and updated EMPr must be submitted to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) for approval.**

## 1.2 Purpose of the EMPr

The purpose of this EMPr is to ensure that the negative environmental impacts of the proposed activities are managed, mitigated and kept to a minimum during the planning, construction and operational phases of the proposed development. The EMPr focuses on providing practical measures to avoiding negative environmental impacts and enhance positive environmental impacts where possible.

Once the EMPr is approved by DEDEAT it is seen as a legal binding document on the following affected parties:

- 1 Project Applicant (Mr Krzysztof Kryszczuk)
- 2 Project planning team including for example, engineer, architect, ECO (Pure Desing, engineer)
- 3 All contractors and subcontractors (eg Service providers)
- 4 Operational management team (Owner / residents)

Copies of this EMPr must be kept on site and all senior personnel are expected to familiarise themselves with the content of this EMPr.

Contractor method statements **must be aligned to relevant conditions in the EMPr and any conditions of the EA** (if attained).

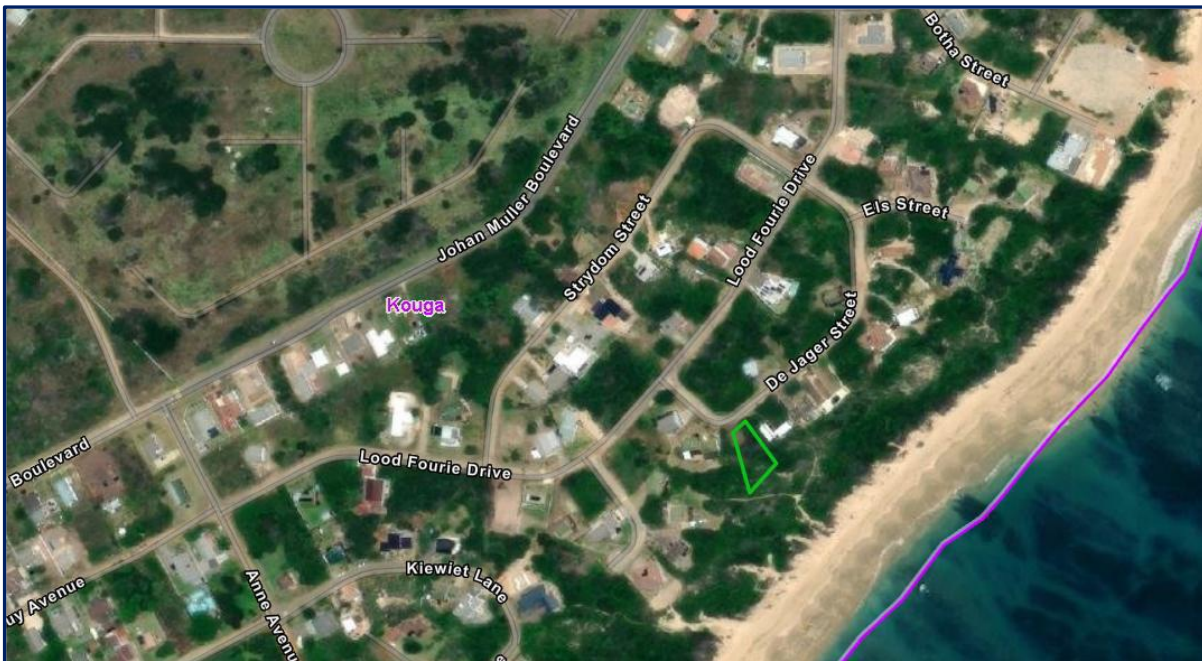
It is suggested that the EMPr be reviewed on a five (5) year basis if required. Should any amendments need to be made during operational phase, **written authorisation should be obtained from DEDEAT.**

## 1.2 The Polluter-Pays Principle

This principle provides for “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 rigorously applied throughout the construction phase of this project.

## 2. PROJECT DETAILS

Erf 1363 is situated on de Jager street in Parady's Strand (SG Code: C03400110000136300000) and falls within 100 meters of the high-water mark of the sea. The erf is an estimated 741.6 m<sup>2</sup> in extent. Approximate central coordinates: 34° 6'21.00"S; 24°53'16.07"E (Figure 1). Erf 1363 is located on the secondary dune (60 m landward from the primary dune closest to the beach); a large part of the property slopes towards the south-east. There are smaller undulations on Erf 1363 and a frontal dune ~50 m towards the east.



**Figure 1: Location of erf 1363, Parady's beach**

The owner of the property is proposing to develop a dwelling. The design includes two level structure with a raised first storey with an estimated footprint of 181.88 m<sup>2</sup> and a ground level storey of 71.3 m<sup>2</sup> provided below the dwelling. A decking area of an estimated 43.8 m<sup>2</sup> is proposed. A raised walkway between the house and the timber platform is proposed; the walkway will be an estimated 5.5 meters in length and 1 meter in width. The platform will be approximately 33 m<sup>2</sup>. The overall development will be an area of 329.9 m<sup>2</sup>.

The proposed dwelling comprises a raised two-level structure. The garage (60 m<sup>2</sup>) is located at the lower level, with the main living areas elevated above it to accommodate the dune topography and minimise interference with natural sand movement. The architectural drawings indicate a ground-storey floor level of 16.3 m (survey elevation) and a roof apex of 23.5 m, resulting in an overall building height of 7.2 m between the ground-storey floor level and the roof apex. The design complies with the applicable 8.5 m municipal height restriction indicated on the site drawings (Appendix A of FBAR).

The materials proposed to be used in the development include bricks and timber. Access to the proposed development area will be a driveway developed off de Jager Street. Bricks and concrete will be used for the development of access and garages on the western side (road section) of the erf. The garage area will be levelled, and a retaining wall will be

put in place. A combination of timber, bricks and concrete will be used to construct the central and eastern section of the dwelling. The timber section of the dwelling will be raised using wooden poles / columns. Aluminum and glazing will be used for the windows and doors and windows and aluminum roof sheets are proposed. Suitable waterproofing measures have been included in the design (Refer to Appendix A of FBAR).

The development will be managed using self-generated electricity via a combination of solar power and gas. Stormwater management will be via correct placement of drainage pipes, stormwater catchment tanks, gradient and permeable paving and anti-erosion features where required. Measures will be implemented to ensure the stormwater will drain to the Kouga municipal stormwater system in the road servitude and not released in such a way to result in erosion. Water and waste management services are provided by the Kouga municipality as it is zoned as residential 1 and relevant service fees will be included in the rates. Sewage will be treated by means of a conservancy tank which will be suitable sized and sealed and regularly serviced. The tank will be positioned to allow for easy access of the honey sucker service (i.e., the western section of the erf adjacent to the road).

Due to the dynamic nature of the site within a coastal environment, the dwelling is recommended to be designed in such a way to prevent instability of the dunes and to prevent erosion. Maintaining a dense vegetation cover will trap and stabilise the sand to some extent and avoid the nuisance of sand encroachment. The house design should keep this in mind in terms of doorways and outside spaces. A raised structure would allow sand transport under the structure with less nuisance inside the buildings. The eastward part of the property could be raised (inundated by sand) in future years as the frontal dune migrates onto the property. The rate of movement is not known at this stage. To avoid possible shifts, it is advised that the foundations/pylons of the building on Erf 1363 extend down as far as possible along the southwestern side of the building (engineering advise recommended on depths). This will allow movements of the upper part of the dune without impacting the foundations of the building on Erf 1363. The risk of these shifts is less towards the north of Erf 1363.

The design, orientation and layout of the proposed development has been informed by the geomorphological assessment to respond to the site's sensitive coastal dune environment. The dwelling and associated elevated walkway and lookout platform have been orientated in a generally south-easterly direction in accordance with the recommendations of the geomorphological specialist to minimise interference with prevailing wind patterns and natural aeolian sand transport processes.

The dwelling has been positioned within the more stable north-western portion of the erf, with earthworks largely confined to the garage and driveway area adjacent to the existing road. The eastern portion of the property, which comprises the more dynamic dune environment, remains largely undeveloped. The dwelling incorporates a raised structural design, thereby reducing the extent of cut-and-fill earthworks and allowing continued natural sand movement beneath the structure. This approach reduces interference with natural coastal processes, limits disturbance to the dune profile and indigenous vegetation, and accommodates natural dune processes and reduces the long-term risk associated with dune movement and erosion.

The proposed raised timber walkway and lookout platform have been designed as low-impact structures to provide a designated area for passive recreation, including a viewing area and a designated area for the maintenance and cleaning of surfing equipment. By providing a single defined route and viewing point within the property, the walkway is intended to concentrate pedestrian movement by residents and their visitors, thereby reducing the likelihood of informal trampling and the creation of multiple footpaths through the sensitive dune vegetation. The raised design will allow wind and sand to pass beneath the structure, thereby maintaining natural aeolian sand transport beneath the deck. The structure has also been designed so that it can be removed in future should post-construction monitoring indicate that it is adversely affecting sediment transport, dune dynamics, erosion or localised sand accumulation.

Two site development plans have been developed.

Alternative 1 is the original SDP and shows the platform to be placed on the secondary dune with and stormwater runoff is shown to the northern western and south eastern sections of the erf (Appendix A1 of Final BAR).

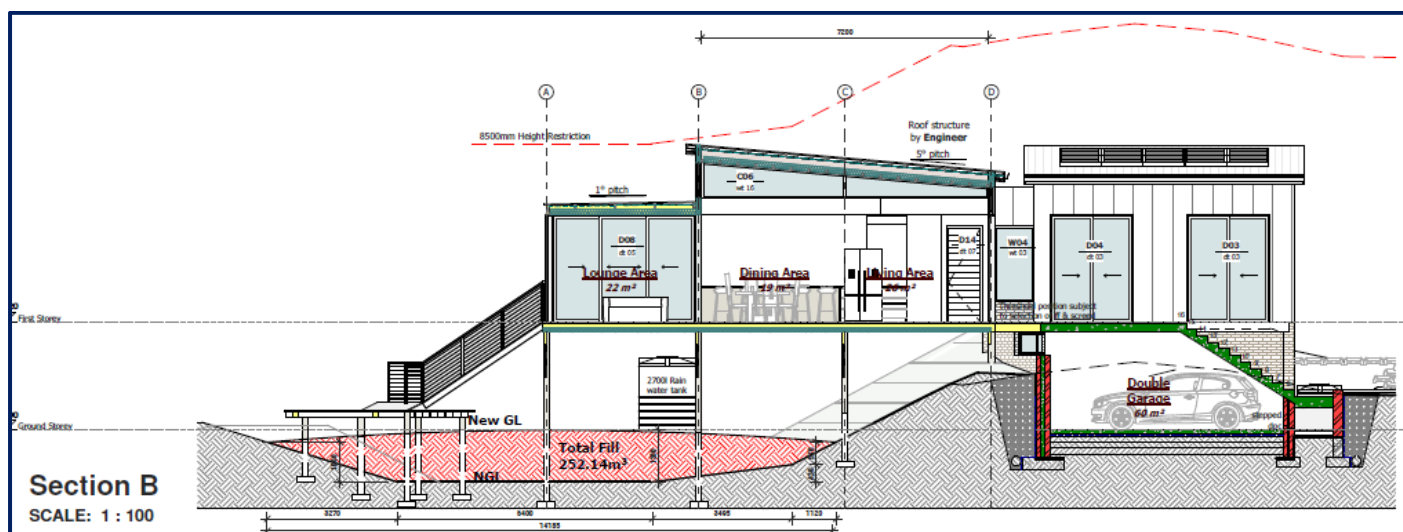
Alternative 2 was developed in response to comments received from DFFE Oceans and Coast and the DEDEAT (Appendix A2 of Final BAR).

Alternative 2 shows that the platform has been moved approximately 1 m landward and therefore increasing its separation from the foredune and further reducing the potential for impacts on coastal processes and dune stability. The stormwater management indicates that runoff will be towards the north-western (road-side) portion of the erf, thereby avoiding concentrated discharge onto the south-eastern dune slope and reducing the potential for erosion, dune instability and disturbance to natural coastal processes.

Excavated material suitable for reuse will be utilised on site for backfilling and landscaping as far as possible. The material would not be placed as a uniform engineered fill platform but rather used for localised regrading beneath and around the elevated structure. The estimated volume of excavation is approximately 253 m<sup>3</sup> which represents a preliminary estimate only, as the actual excavation depth will vary across the footprint in response to the existing ground levels and the final engineering design. The average fill depth is expected to be approximately 1000 mm, although the actual depth would vary across the site depending on the existing ground levels and the final engineering design.

The geomorphological specialist has confirmed that the excavated material may be reused as fill material, given that the dwelling is supported on stilts. The excavated sand has been recommended to be deposited on the low-lying eastern part of Erf 1363 to stabilise the dune face where the construction will take place and act as a sand store for future coastal sand transport processes. The specialist has confirmed that there is sufficient space to place the sand between the secondary dune and the spur extending to the east. This deposit (of maximum 1.3 m depth) will reduce the slope of the secondary dune (improve slope stability) and provide a sand store for future sand transport and act as buffer against erosional processes or slope instabilities. It also maintains the sand onsite, limiting the change to the sand budget of Erf 1363.

Final detailed site layout plans, designs and engineering drawings will be provided once an environmental authorisation is in place; the site layout and designs will align to the relevant conditions of the EA (if attained) and accompanying mitigation measures contained within an approved Environmental Management Plan Report (EMPr).



**Figure 2: Preferred design of the proposed dwelling on erf 1363 showing estimated excavation and stabilising fill material towards east of the development and walkway positioned off secondary dune crest and on the fill area (adapted from Pure Design, 2026) (Refer to Appendix A)**

Based on the scope of work, the preconstruction and planning phase is estimated to take a further 24 months to complete; the construction of the dwelling is expected to take between 6 – 24 months to complete.

The main impacts associated with the proposed activity includes the following:

- Impacts to dune systems
- Disturbance in dynamic coastal environment
- Disturbance from the dynamic coastal environment
- Erosion
- Disturbance to vegetation
- Alien invasive species
- Dust impacts
- Incorrect waste management
- Positive impact on socio-economic conditions as a result of employment opportunities
- Negligible impacts on heritage resources with the implementation of measures contained within this draft EMPr.

The proposed development triggers activities in Listing Notice 1 and Listing Notice 3 of the Environmental Impact Assessment Regulations, 2014 (as amended, 2017) published in terms of the national Environmental Management Act (Act 107 of 1998) (NEMA) and therefore requires an environmental authorisation to be issued by the competent authority before development can commence. The competent authority for the application is the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism.

The conditions of the EA must be incorporated into the final designs and approved by the DEDEAT, followed by approval from the Kouga local municipality.

The draft basic assessment report was distributed to interested and affected parties for a 30-day review and comment period. The report has been updated to address all comments received and the final report will be submitted to the DEDEAT for a 107-day decision making phase. The report aims to provide all relevant information required for the competent authority to make an informed decision on the proposed NEMA EA application.

The EMPr (this report) contains all the mitigation measures to prevent / reduce negative environmental impacts and enhance positive impacts. These mitigation measures are a combination of measures recommended by the specialist assessments, authorities and the EAP. **This EMPr must be updated with all conditions of the environmental authorisation (EA) if attained and the final approved designs.**

### 3. LEGISLATIVE REQUIREMENTS

#### 3.1 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 Applicant), the Contractor, and the ECO; acknowledging that all parties are familiar with the requirements of the EMPr. All employees 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.

#### 3.2 Legislation

Of importance are all national, provincial and municipal by-laws and regulations

*Relevant environmental legislation and guidelines:*

- **National Environmental Management Act (Act 107 of 1998) and EIA Regulations**

The NEMA 2014 Environmental Impact Assessment (EIA) Regulations (as amended, 2017) sets out a list of identified activities that may not commence without environmental authorisation from the competent authority. The proposed development triggers activities in Listing Notice 1 and Listing Notice 3 of the Environmental Impact Assessment Regulations, 2014 (as amended, 2017) published in terms of the national Environmental Management Act (Act 107 of 1998) (NEMA) and therefore requires an environmental authorisation to be issued before development can commence. The competent authority for the application is the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism.

- ***National Environmental Management: Waste Act 59 Of 2008***

The waste hierarchy must be followed at all times. Reduce, reuse, recycle; discarding of waste must be the last option. All waste must be correctly transported and safely disposed at a licensed landfill site. Material from the conservancy tank must be correctly transported to a licensed wwtp site / licensed landfill site as appropriate.

- ***National Environmental Management Act: Biodiversity Act (Act 10 of 2004)(NEMBA)***
- ***The National Forests Act (Act 84 of 1998)***
- ***Environmental Conservation Act (Act 73 of 1989) (ECA)***
- ***Conservation of Agricultural Resources Act (Act 43 of 1993) (CARA)***
- ***Provincial Nature and Environmental Conservation Ordinance No 19 of 1974 (PCNO)***

NEMBA and CARA provides a list of Alien invasive species requiring removal (NEMBA supersedes CARA).

Collection and translocation of NEMBA threatened or protected species (TOPS) or species listed in the Nature Conservation Ordinance No. 19 of 1974 will require the relevant permits to be in place.

Search and rescue by a suitable specialist will need to be carried and required permits be in place irrespective of whether an Environmental Authorisation and accompanying EMP is required.

Disturbance / removal of trees protected in terms of the National forest Act (i.e., Milkwoods) will also require a permit.

- ***National Heritage Resources Act 25 of 1999***

Should any buried archaeological resources, human remains or burials be uncovered during the course of development activities, work must cease in the vicinity of these finds. **Eastern Cape Provincial Heritage Resources Authority (ECPHRA) must be contacted immediately in order to determine an appropriate way forward.**

**Chance Fossil Finds Protocol (CFFP):** A Chance Fossil Finds Protocol, as incorporated into this draft Environmental Management Programme (EMP), **is to be used to guide on-site personnel during all ground-disturbing activities.**

- ***National Environmental Management: Integrated Coastal Management Act (Act 204 of 2008) as amended (NEM: ICMA)***

Section 28(1) of NEMA contains duty of care and provides that every person who causes or has caused or may cause significant pollution of the environment must put in place reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring 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 to the environment. Section 58 of ICMA contains a duty of care in response of the coastal environment; environment in s28 NEMA must be read as including coastal environment

**Statutes are amended periodically; it is the Applicant's responsibility to ensure a competent person (EAP or similar) identifies relevant legislation relevant to the proposed activity**

## **4. COMPLIANCE WITH THE EMPr AND REPORTING**

The Holder of the Environmental Authorisation (EA) is responsible for ensuring compliance with the conditions of the Environmental Authorisation (if issued) and this Environmental Management Programme (EMPr). An independent Environmental Control Officer (ECO) shall be appointed to monitor compliance with the EMPr throughout the construction phase.

### **4.1. Documentation**

An Environmental File must be kept on site in order to record compliance with the EMPr and include:

- Copy of the EMPr;
- Copy of the EA;
- Permits as and if required
- Reports submitted to ECPHRA
- Communications Register – including records of complaints,
- Audit reports including written Corrective Action Instructions.
- Incident Register
- Waste Documentation such as, but not necessarily limited to: Waste transport and Disposal records
- Service slips of any chemical ablution facilities
- Material Safety Data Sheets (MSDSs) for any hazardous substances used during construction and operations

### **4.2. Emergency Response**

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

The Environmental Emergency Response Plan is to 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.

### **4.3. Incident / complaint Register**

The Applicant will put in place an Environmental Register and will ensure that the following information is recorded for all complaints / incidents:

- Nature of complaint / incident.
- Causes of complaint / incident.
- Party/parties responsible for causing 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 to prevent reoccurrence of the complaint / incident.
- Timeframes 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.
- Copies of all correspondence received regarding complaints/incidents.

#### **4.4. Monthly Audit Report**

Monthly external audits are recommended for duration of construction including pre-construction and post construction report. Conditions of EA (if issued) and EMPr requirements will be audited.

Non compliances will be identified and actions / recommendations provided with timeframes to address the non-compliance.

The ECO shall undertake the following audits:

- A pre-construction audit prior to commencement of site clearing or construction activities;
- Monthly compliance audits throughout the construction phase;
- Additional inspections where required following environmental incidents, complaints or significant non-compliances; and
- A post-construction (close-out) audit following completion of construction and rehabilitation.

Audit reports shall assess compliance with the Environmental Authorisation, this EMPr and any other applicable environmental legislation. Where required by the Environmental Authorisation, environmental audit reports shall be submitted to the Competent Authority within the prescribed timeframes.

Monthly audit reports shall include, as a minimum:

- Compliance with the conditions of the Environmental Authorisation;
- Compliance with the mitigation measures contained in the EMPr;
- Findings of the site inspection;
- Details of any environmental incidents or complaints;
- Photographic evidence where applicable;
- Outstanding actions from previous audits;
- Corrective actions required, responsible persons and implementation timeframes.

Compliance shall be assessed using the following ratings:

- Not Applicable (N/A): The requirement is not applicable to the activity or phase being audited.
- Compliant (C): The requirement has been fully complied with.
- Non-compliant (NC): The requirement has not been complied with and corrective action is required.

A non-compliance may be issued where:

- A condition of the Environmental Authorisation or EMPr has not been complied with;
- Environmental legislation has been contravened;
- An environmental incident has occurred or has the potential to result in significant environmental harm.

Where the ECO determines that an environmental incident is significant (for example, where irreversible or substantial environmental damage has occurred or is likely to occur), the incident shall be immediately reported to the Holder of the Environmental Authorisation and, where required, the relevant competent authority.

A Stop Works may be issued where continued work is likely to result in significant environmental damage or where there is a serious breach of the Environmental Authorisation or EMPr. The relevant activity shall cease immediately and may only recommence following written authorisation from the ECO.

#### **4.5. Corrective Actions**

The Holder of the Environmental Authorisation and/or Contractor shall implement all corrective actions within the agreed timeframes. The ECO shall verify that corrective actions have been completed satisfactorily and formally close out the Non-compliance.

Where corrective actions are not implemented within the agreed timeframes, the ECO shall notify the Holder of the Environmental Authorisation and, where required, the Competent Authority.

Where environmental damage has occurred, the responsible party shall undertake rehabilitation and bear the cost of any clean-up, remediation, monitoring or rehabilitation required by the Competent Authority.

#### **4.6. Environmental Offences**

Failure to comply with the conditions of the Environmental Authorisation, this EMPr or applicable environmental legislation may result in enforcement action by the Competent Authority in accordance with the National Environmental Management Act (Act No. 107 of 1998) and other applicable legislation, including directives, administrative enforcement, criminal prosecution and/or penalties as provided for in law.

## 5. ENVIRONMENTAL MANAGEMENT PROGRAMME

It is important that mitigation measures are strictly adhered to and that all measures are taken to reduce the disturbance footprint wherever possible to minimize negative impacts.

### PLANNING AND DESIGN – site selection and development area – dune instability and coastal erosion

- The proposed raised structural design of the dwelling is recommended to allow continued natural sand movement beneath the structure and minimise disturbance to the dune system. Foundation depths and structural support columns shall be designed by a suitably qualified engineer, taking into account the geomorphological recommendations and site-specific ground conditions.
- Obtaining further geotechnical data and comprehensive structural engineering analysis regarding foundation depth within the development footprint will provide valuable insights to enhance the foundation design process.
- No footpaths to be created on the erf or in surrounding coastal areas; formal footpaths should be used at all times; the walkway is intended to concentrate pedestrian movement by residents and their visitors, thereby reducing the likelihood of informal trampling and the creation of multiple footpaths through the sensitive dune vegetation
- The structures should be constructed in a south-easterly direction.
- Reintroducing pioneer dune vegetation; Encourage dense indigenous vegetation cover on the property
- DFFE Oceans and coasts recommends that the lookout point, and elevated walkway should not extend to, or be positioned above, the foredune, and must be located landward of this sensitive feature to ensure the protection of dune stability and coastal processes. Alternative 2 is recommended (Appendix A2 of FBAR).
- During planning and design phase, ensure that no concentrated stormwater runoff is discharged onto the south-eastern dune slope or frontal dune area to minimise erosion and disturbance to the coastal dune system. A stormwater management plan is to be compiled by a suitably qualified civil engineer detailing the stormwater management infrastructure (including roof drainage and gutter system) and demonstrating that runoff from the proposed development will be directed towards the north-western (road-side) portion of the erf.
- Install rainwater harvesting tanks to capture runoff from roof surfaces.
- It is recommended to encourage smaller dunes to form to store sand and form a buffer during erosive events on Erf 1363 where necessary. Parabolic dunes move westward and can threaten infrastructure with sand inundation. The best way to mitigate its development is to stabilise the bare sand immediately towards the east of the area affected by sand inundation through a network of hummock dunes. This should be initiated with anchored brushwood clumps (alien tree biomass that does not contain seeds; ~1 to 5 m diameter brush packs) at roughly 5 to 10 m spacings in a grid-type pattern. 5 m spacings should be used where blowouts are to be rehabilitated and larger 10 m spacings where dune hummocks are to be established. The brushwood area should be planted with indigenous sand-binding pioneer dune vegetation that will allow some sediment movement but will reduce the rate of transport.

- The private landowner should not clear dune vegetation and replant with lawns outside of the accepted fire break corridor; lawn grass has very shallow roots compared to the natural deeper-rooted dune vegetation, and it changes local near-ground wind profiles (accelerating sand transport). The longer roots of the indigenous dune vegetation help to anchor and stabilise the dunes, especially near the beach-dune interface where dune erosion is often a problem. Properties close to the beach should aim to have dense indigenous dune vegetation around their perimeter to slow any erosional threats despite the obstruction of the view.

### **Sewage Treatment**

- Septic tanks are not recommended; conservancy tank must be suitably sized for number of persons expected and managed correctly
- A service level agreement must be in place for regular servicing of tanks
- Proof of service is to be kept of record for life of operation
- The proposed on-site conservancy tanks should be constructed, operated and maintained and sealed at all times according to the design specifications to prevent leakage and emptied regularly to prevent overtopping,
- Care should be taken, particularly during rainfall events and flooding events when conservancy tanks may be inundated to prevent nutrient-rich water from flowing into surrounding dune system

## **5.2 Construction and decommissioning as appropriate**

### **Preconstruction and preoperational Planning requirements - inadequate planning and Non-compliance with Conditions of the Environmental Authorisations**

- An Environmental Control Officer (ECO) should be appointed prior to the start of construction phase to ensure all preconstruction requirements required in terms of the EA (if attained) are in place
- Prior to commencement of construction, during the site establishment phase, the ECO must work closely with the design and construction team (i.e. architect, appointed contractor, resident engineer, site surveyor as applicable) to ensure designs, location of structures, location of construction laydown areas and no-go areas are aligned to conditions of EA (if attained) prior to start of construction.
- Carry out flora and fauna search and rescue prior to the start of construction;
- Ensure permits are in place timeously – allow at least 3 months before commencement.
- Environmental Awareness and training– Ensure all labour are informed and plant operators are aware of risks, issues, do's and don'ts and no-go areas
- ECO to audit the site monthly during construction
- The development area is to include:
  - First storey will be raised and have an estimated footprint of 181.88 m<sup>2</sup>
  - Raised decking with an estimated development footprint of 43.8 m<sup>2</sup>
  - Raised walkway (estimated width of 1 meter; estimated length of 5.5 meters) leading to a raised timber platform (33 m<sup>2</sup>) equipped with safety poles
  - The overall development area of 329.9 m<sup>2</sup>.
  - Rainwater harvesting (proposed 2700 liters)
  - Stormwater management measures will be designed by a suitably qualified engineer during the detailed design phase. The type, sizing and footprint of the stormwater management infrastructure is to be informed by the final engineering design. It is recommended that stormwater runoff is collected

and directed towards the north-western (roadside) portion of the erf and discharged in a controlled manner to the municipal stormwater system, where appropriate. It is recommended that no concentrated stormwater runoff is to be discharged onto the south-eastern dune slope or frontal dune

area. Measures are to be implemented to prevent erosion, scour and sediment transport associated with stormwater discharge.

- Placement of conservancy tank and suitable service vehicle access to tank; conservancy tank to be sized by suitably qualified engineer.
- Placement of electrical reticulation requirements; solar power is recommended instead of unreliable and high impact coal power
- Placement of waste management area recommended to manage waste and recyclables
- Laydown area for contractors are to be rehabilitated at end of construction stage as required.

The sequence of events recommended is as follows:

- Approval of final designs of dwelling
- Contractor laydown area selected taking into account dune area and small size of site; sequence of events and planning prior to construction is recommended to take place in conjunction with the appointed ECO and landowner. The area should include areas for waste management facilities, hazardous substances facilities. Ablution facilities, area for subsoils, areas for topsoils and vegetation; areas for building material required
- Pegging of dwelling, access, walkway, lookout point, laydown area
- Application for permits if required; Search of SCC within pegged areas and rescue
- Laydown area established (include waste management facilities, hazardous substances facilities. Ablution facilities, area for subsoils, areas for topsoils and vegetation; areas for building material required; site office as required; no housing of contractors on site permitted.
- Construction and Installation of services and stormwater management measures as per engineer recommendations
- Rehabilitation of laydown area and any disturbed areas - Rehabilitation with indigenous thicket vegetation to take place as required

### **Site clearing, excavations, construction, installation - Loss of heritage, archaeological, palaeontological resources**

- The project proponent/representative must notify ECPHRA of the date of commencement of the project
- A chance finds procedure (CFP) (Annexure 1 of this EMP) must be adhered to. It must outline stop-work procedures, emergency protection measures, reporting protocols, contact details for ECPHRA and approved heritage specialists, guidance on recognising heritage materials and graves.
- The CFP must be available on site at all times (Annexure 1)
- Induction / Pre-construction training to be done with construction workers on importance of notifying site foreman and ECO and landowner to any potential findings of palaeontological / archaeological resources
- Heritage induction and training for all ground crew, must include identification of archaeological, palaeontological, historical, and burial-related material. This ensures lawful heritage compliance during all phases of the project.
- There must be heritage monitoring during vegetation clearing and excavations; Monitoring during excavations to be done on ongoing basis by the construction team and any sites exposed to be reported to the ECO and landowners and include photographs and coordinates, who must report the find to the ECPHRA.
- Steps provided by ECPHRA in the CFP regarding the find to be followed.
- If any heritage resources, including graves or human remains, are encountered they must be reported to ECPHRA immediately.

### **Unnecessary loss of vegetation and disturbance to fauna**

- Search and rescue to be carried out prior to construction and relevant permits applied for.
- Relocate flora and retain suitable species for rehabilitation, store and reuse / dispose as required.
- Ground-dwelling animals /nests / eggs must be searched for prior to commencement of construction.
- No clearing outside of the identified development area is to take place. No go areas include the remaining area outside the designated dwelling footprint and laydown area.
- The importance of No-go areas must be clearly communicated to site workers and contractors through a site induction, which is required each time new workers enter the site. No stockpiling, dumping, littering or traversing this sensitive area is permitted and should be cordoned off for the duration of the construction period. Fines should be imposed for non-compliance to this condition / measure.
- No animals are to be harmed or killed during the course of operations. Workers are NOT allowed to snare any faunal species. Contractual fines to be imposed on any employee who is found attempting to harm fauna on site or in surrounding areas.
- If any animals are seen on site, a photo / video should be taken if possible (to assist in identification) and all fauna encountered on site should be reported to the ECO immediately. This is important when:
  - An animal is harmed or compromised in any way during construction.
  - Any animal with limited mobility is found on site (e.g. tortoises, moles, chameleons).
  - Any potentially dangerous animal is encountered. This includes any potentially venomous animal (e.g. snakes, scorpions)
  - For any assistance with snake removals/relocations, identifications or bite treatment contact the African Snakebite Institute.
- As far as possible, work should be undertaken by hand using spades, pickaxes etc. However, it is acknowledged that some use of heavy vehicles for safe construction of dwellings will be required; this must be restricted as far as practically possible and remain within development area at all times.
- Check delineated footprints area not exceeded

### **Stormwater Runoff Causing Erosion**

- Stormwater runoff is recommended to be collected and directed towards the north-western (road-side) portion of the erf and that no stormwater runoff is discharged onto the south-eastern dune slope or frontal dune area
- During the construction phase it may be necessary to construct temporary stormwater containment and control measures (e.g. temporary cut-off berms) to prevent erosion and sediment-laden water causing erosion and dune impacts.
- All erodible areas within the construction site should be stabilized using appropriate (best practice) methodologies and erosion protection works and all disturbed areas should be rehabilitated with appropriate indigenous vegetation.
- Particular attention should be given to prevention of damage to the adjacent dune systems and to stabilizing any sign of erosion, preferably by establishing dense stands of suitable indigenous vegetation acting as sand traps.
- Ensure that heavy machinery does not compact soil or disturb vegetation outside of these demarcated footprint areas
- Ensure stockpiled materials and other mobile materials are banded with sandbags to prevent their loss during rainfall and covered / wetted to prevent windblown dust.
- Ensure that construction activities do not cause any preferential flow paths and concentrated surface runoff during rainfall events.

- Do not blanket clear the site; ensure that vegetation clearing is conducted in parallel with the construction progress of the planned sequence of events to minimise erosion and runoff.
- Reduce transport of sediment from development area through use of mulch fencing/ biodegradable coir logs / soil saver biodegradable matting
- Consider that materials, temporary toilets, leaked fuel and litter can be washed away during heavy rainfall and must therefore be bunded, secured, covered or surrounded by sandbags as appropriate. The ECO must inspect these areas for compliance.
- Check weather reports for rainfall predictions on a weekly and daily basis. Postpone work during rainfall and ensure the site has been prepared to prevent wash off of materials as required
- Progressively place back subsoil, then topsoil and mulch and revegetate exposed areas once construction has been completed in the area with suitable indigenous vegetation.

## **Soil and coastal dune disturbance**

- Construction disturbance to be strictly confined to the development area footprint.
- Earthworks associated with the proposed development is to be limited primarily to the north western portion of the erf to establish a level platform for the garage and driveway.
- The site should be cleared in a phased manner and suitably stockpiled / reused within boundaries of the erf (i.e., filling, levelling, rehabilitation) as required.
- The estimated volume of excavation is approximately 253 m<sup>3</sup>; excavated material shall be reused on site as far as practicable for controlled backfilling and localised regrading beneath and adjacent to the raised dwelling, thereby reducing the need for off-site disposal and loss of sand in the area.
- The excavated sand is recommended to be deposited on the low-lying eastern part of Erf 1363 to stabilise the dune face where the construction will take place and act as a sand store for future coastal sand transport processes. The specialist has confirmed that there is sufficient space to place the sand between the secondary dune and the spur extending to the east.
- The infill should be revegetated to slow erosional processes and stabilise the dunes.
- Cover stockpiles with shade cloth to prevent loss of soil/ erosion / dust generation.
- Stockpile soil at a maximum 1.5-meter height
- Practice 'first out, last in' for soil excavated. Topsoil (250mm) is highly valuable for use in landscaping at the end of the construction activity. Replace subsoil first, followed with the stored topsoil and composted vegetation.
- No driving on the south / south eastern dune area of the site should take place and
- Limit worker movement to the active construction area away from the south eastern area of the erf; workers are not to traverse the erf to the coastal area
- Hand-tools are to be used as far as practically possible and recommended to only be used for installation of the walkway and platform.

## **AIS Displacing indigenous flora and fauna; decrease of natural runoff in catchment area**

- Ensure the site kept is free of AIS seeds and plants
- Ensure topsoil that is purchased is weed free
- Check for weed regrowth in stockpiles and within development area and pull-out plant as soon as it is detected to avoid expensive AIS management in the long term; make use of guideline provided during training to identify the common AIS in the area.
- All AIS within the site construction footprint to be removed on an ongoing basis (as required ) by the appointed construction team per construction activity and for 3 months following end of construction activity.

- Any required removal of AIS within this footprint / any required rehabilitation with suitable indigenous vegetation / grass seed will remain the responsibility of the appointed contractor; Budget for this task must be included in the quote to landowner for carrying out the required scope of works.
- All AIS removed must be placed in a designated area on site and removed offsite as quickly as possible to a suitably licensed general waste site.
- When removing AIS ensure the area is not left bare and use mulch, indigenous seeds and plants local to the area, to hold soil in place (have mulch, seeds, seedlings ready prior to clearing)

| AIS common in area                                                                                                                         | Biological control                                                                                                                                                                           | Mechanical control                                                                                                             | Chemical control                                                       | Specific management measure                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Western coastal rooikrans (<i>Acacia cyclops</i>)</p> | <p>Seed feeding weevils (<i>Melanterius servulus</i>) – reduces seed production; Midge - (<i>Dasineura diels</i>) induces galls on the ovary, introduce and can control seed production.</p> | <p>Hand pulling seedlings; Pulled out either by hand or using a tree popper. This is the most preferred method of control.</p> | <p>YES – after cutting apply herbicide to stumps to prevent growth</p> | <p>Plants MUST be pulled out roots and all for this method to be effective. Minimise soil disturbance to reduce seed germination.</p> <p>Regular follow-up treatments are necessary to control seedlings and regrowth.</p> |
|  <p>Castor Oil Plant (<i>Ricinus communis</i>)</p>      |                                                                                                                                                                                              | <p>Yes – hand remove prior to seed, bag and dispose</p>                                                                        | <p>Yes</p>                                                             |                                                                                                                                                                                                                            |

## General Waste pollution and Hazardous Waste pollution

The following hazardous materials require strict management and disposal:

- Chemical pollutants (e.g. hydrocarbons, paint and cleaning fluids) associated with site-clearing, pile-driving for stilts and earth-moving machinery could wash into the watercourse.
- Hazardous materials & chemical pollutants stored on site and used in construction could accidentally spill or be washed into the surrounding environment
- Uncured concrete and dry cement powder could contaminate the watercourse – e.g. due to heavy rains during construction. It is important to note that uncured cement is highly alkaline and could significantly raise the pH of any water in contact with it to levels lethal to aquatic life.

## **Waste management**

- Waste management must follow waste hierarchy – avoid, reduce, reuse, recycle, dispose
- Construction waste streams shall be separated where practicable and include:
  - excavated material not reused on site;
  - construction rubble (concrete, bricks and masonry);
  - general domestic waste generated by construction personnel; and
  - hazardous waste (e.g. waste oils, paint containers, contaminated absorbent material and cement-contaminated waste).
- A designated waste management area is recommended to be established within the north-western (road-side) construction area. No waste storage or disposal is to occur within the south-eastern dune area.
- A waste management area to be designated on site and include appropriate waste management facilities for collection, separation and storage of waste streams (secure facilities with lockable lids for small general waste items; skip for rubble with tarpaulin for covering; hazardous material storage area; emergency response spill kits, required drip trays, cement mixing containers; hazardous waste storage receptacle; and sanitation (cleaning drinking, washing water and toilets as required).
- Keep rubble separate from stockpiles of soils.
- Under no circumstances may solid waste be burnt or buried on site / surrounding area;
- No Littering; consider implementing fines for litter
- All solid waste collected must be disposed of at a registered waste disposal site on a regular basis; waste materials must be removed from site as quickly as possible and not stockpiled on site. Waste disposal records must be kept on record.
- The site shall be kept free of litter throughout the construction period, and all construction waste shall be removed upon completion of the works.
- An incident/complaints register must be established and maintained on-site. Corrective action must be undertaken immediately if a complaint is received.

### **Hazardous materials management**

- Only the minimum quantities of fuels, oils, paints, solvents and other hazardous materials required for construction shall be stored on site.
- Hazardous materials shall be stored in sealed containers within a secure, roofed and bunded storage area.
- Refuelling and maintenance of construction equipment shall take place only within designated areas using drip trays and spill containment measures.
- Cement mixing shall be undertaken in suitable mixing trays to prevent contamination of surrounding soils and the adjacent dune environment.
- Drip trays shall be placed beneath stationary plant and equipment where there is a risk of hydrocarbon leakage.
- Spill kits shall be available on site at all times. Any spills shall be contained immediately, contaminated material removed, and disposed of at an appropriately authorised hazardous waste facility.
- Machinery and equipment shall be maintained in good working order to minimise leaks and pollution.

## **Water Quality – Elevated Nutrient and Bacterial Levels through incorrect sewage management on site**

- Adequate ablution facilities must be provided for all construction staff and strict supervision provided to ensure sewage contamination of the site does not take place.

- Ablution facility to be provided as necessary at a ratio of 1:10; ablution facility must be secured to prevent being blown over and must be placed within development / laydown area;
- Ablution facility to be regularly serviced registered company on a regular basis. Service slips to be kept on record by site manager for audit purposes.
- The proposed on-site conservancy tank should be constructed according to the design specifications
- Ensure items that can cause blockages / malfunctioning of system is not flushed down toilets.

## **Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment**

- No cigarette butts or burning substances are permitted to be released into the environment. All cigarette butts to be extinguished first and then disposed of in a waste receptacle provided.
- No burning of waste – put in place waste management measures to ensure waste is moved off site timeously, particularly AIS slashed material which can be a fire risk if it is not chipped and spread.
- Fire response measures to be in place at risk areas along site (I,e fire extinguishers, fire emergency response water)
- If a fire is detected it must be attended to immediately.
- Fire emergency response measures and associated training to be in place.
- Ensure emergency numbers are on hand for fire response in the area.
- Contractors are encouraged to be in close contact with South African weather Services at all times to receive early warning details of floods, droughts, high winds and potential fires in the area and plan accordingly

## **Traffic and road - Personnel vehicles, construction vehicles, deliveries / collections, machinery**

- Entrance to the site only permitted from designated access point provided by landowner
- Ensure strict access control to and from the construction site at all times.
- All construction vehicles are to be monitored to ensure they are not overly full so the likelihood of spillage of debris is prevented. Ensure any debris spilled onto roads is cleared up.
- Any loose materials transported to / from site must be covered.
- Surrounding area and roads should be monitored for debris and materials associated with the proposed development and cleaned up as soon as such becomes apparent.
- All materials to be delivered in a safe manner at designated delivery area located within footprint of the development site; ensure sufficient space is allocated in the construction site plan to provide safe turning for larger trucks.
- Speed travelled by construction vehicles must be kept to a minimum and speed limits enforced; contractors and service providers are to travel slowly and avoid collisions with wildlife.
- No transport of construction machinery / materials to or from the site to take place on public holidays or weekends.
- Contractor to minimise trips to and from site as far as practically possible.
- All vehicles are to be in good working order and equipped with spare parts (tyre etc) to avoid breakdowns along the private road and disrupting other users of the road.

## **Visual and Noise impacts**

- Sufficient notice to be given to the residents with an indication of a work schedule and expected work commencing on their households
- Working hours to be restricted to daytime hours (i.e. 8 am – 5 pm)

- No major construction work to take place after hours or on Sundays or on public holidays.
- A complaints register should be kept to document complaints and the corrective action taken.
- Keep working area as small as possible in identified developable area.
- No loud music to be allowed on site.
- All vehicles and machinery must be kept in good working condition.
- Ensure good housekeeping by putting in place required mitigation measures (soil, waste management as applicable)

## **Income generation**

- Use local reputable contractor
- Use local materials, where possible.
- Make use of local services where required and possible
- Do not pay any cash wages on site to minimise criminal risk to employees
- Ensure requirements of Health And Safety Act and Labour Act are in place as required

## **5.3 Operational phase**

### **Dwelling within dynamic coastal area - AIS and indigenous flora and erosion and dune stability**

- The landowners are to responsible for the vegetation maintenance per land portion and to resume ongoing AIS clearing and revegetation as required.
- When removing AIS ensure the area is not left bare and use mulch, indigenous seeds and plants local to the area, to hold soil in place (have mulch, seeds, seedlings ready prior to clearing)
- Follow working for water guidelines / ARC guidelines –  
Working for water: [wfw@dwaf.gov.za](mailto:wfw@dwaf.gov.za)  
National Department of Agriculture: [Declaredweedsandinvaders@nda.agric.za](mailto:Declaredweedsandinvaders@nda.agric.za)  
Agricultural Research Council for biocontrol: [www.arc.agric.za](http://www.arc.agric.za)

### **Water Quality – Elevated Nutrient and Bacterial Levels**

- The proposed on-site conservancy tanks should be constructed, operated and maintained according to the design specifications to prevent leakage and emptied regularly to prevent overtopping.
- Care should be taken, particularly during rainfall events and flooding events when conservancy tanks may be inundated due to high groundwater levels, to prevent nutrient-rich water from flowing into the surrounding area.
- Ensure disposal of items that can cause blockages / malfunctioning of system is not flushed down toilets.
- Ensure the waste is regularly pumped out whenever the tank is full by a licensed hauling company ('Honey Sucker Service' to remove the content to the closest Wastewater Treatment Works once the tank is full). Keep proof of service on record

### **Stormwater Runoff Causing Erosion**

- Avoid creating informal footpaths through dune vegetation; the proposed walkway lookout point is recommended for recreational use and cleaning surfing equipment to minimise disturbance to dune vegetation and dune sands.
- Maintain dense indigenous ground cover across disturbed areas to promote soil stability and minimise erosion.

- Stormwater management infrastructure shall be inspected and maintained regularly to ensure effective operation and to prevent erosion, scour and sediment mobilisation.
- Any disturbed areas resulting from maintenance activities shall be rehabilitated promptly with indigenous vegetation.

### **General Waste pollution and hazardous materials**

- Domestic waste shall be stored in suitable refuse bins and collected as part of the municipal refuse collection service.
- No waste shall be burnt, buried or dumped on the property.

### **Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment**

- No fires beyond boundary of portion
- No cigarette butts or burning substances are permitted to be released into the environment. All cigarette butts to be extinguished first and then disposed of in a waste receptacle provided.
- No burning of waste
- Fire response measures to be in place
- If a fire is detected it must be attended to immediately.
- Ensure emergency numbers are on hand for fire response in the area.
- Regularly check South African weather Services at all times to receive early warning details of floods, droughts, high winds and potential fires in the area and plan accordingly

### **Placement of structures and infrastructure within a sensitive coastal dune environment**

- No footpaths to be created on the erf; the walkway is intended to concentrate pedestrian movement by residents and their visitors, thereby reducing the likelihood of informal trampling and the creation of multiple footpaths through the sensitive dune vegetation
- Limit dune vegetation disturbance as much as possible from cutting, harvesting and developing multiple pathways.
- Reintroduce pioneer dune vegetation; Encourage dense indigenous vegetation cover on the property
- Encourage smaller foredunes to form to store sand and form a buffer during erosive events. Parabolic dunes move westward and can threaten infrastructure with sand inundation. The parabolic dunes are dependent on sand supply and therefore the best way to mitigate its development and propagation is to stabilise the bare sand immediately towards the east of the area affected by sand inundation through a network of hummock dunes. This should be initiated with anchored brushwood clumps (alien tree biomass that does not contain seeds; ~1 to 5 m diameter brush packs) at roughly 5 to 10 m spacings in a grid-type pattern. 5 m spacings should be used where blowouts are to be rehabilitated and larger 10 m spacings where dune hummocks are to be established. The brushwood area should be planted with indigenous sand-binding pioneer dune vegetation that will allow some sediment movement but will reduce the rate of transport. The brushwood will accumulate sand with the hope of creating a network of hummock dunes that can trap sand on the seaward side (foredune area), slow the wind velocity along the foredune surface and the blowout and act as a buffer against sea surges. It is important to leave a strip of unvegetated foredune that can erode and build up frequently as this will prevent steep dangerous dune cliffs from forming during storm events.
- The private landowner should not clear dune vegetation and replant with lawns outside of the accepted fire break corridor; lawn grass has very shallow roots compared to the natural deeper-rooted dune vegetation, and it changes local near-ground wind profiles (accelerating sand transport). The longer roots of the indigenous dune

vegetation help to anchor and stabilise the dunes, especially near the beach-dune interface where dune erosion is often a problem. Properties close to the beach should aim to have dense indigenous dune vegetation around their perimeter to slow any erosional threats despite the obstruction of the view.

- Should monitoring identify localised dune erosion or vegetation loss on the property, Implement dune rehabilitation measures consistent including the establishment of pioneer dune vegetation and, where appropriate, the use of brush packing and sand-trapping measures to promote dune stabilisation and reduce erosion.
- Should post-construction monitoring identify that the elevated walkway or lookout platform is adversely affecting sediment transport, dune dynamics, erosion or localised sand accumulation, appropriate corrective measures shall be implemented. Such measures may include modification, partial removal or complete removal of the structure, as recommended by a suitably qualified geomorphological specialist and agreed with the competent authority, where required

## **Climate Change**

- As per mitigation measures for construction and operational phase

## 6. EMP Targets – Planning, Construction, Operations

### **Aspect:** Planning Activities

**Impact:** Noncompliance to conditions of Environmental Authorisation can have financial implications and lead to delays in the project. Insufficient budget, planning and responsibility allocated for environmental management will result in unmitigated impacts.

**Responsibility:** Holder of EA, engineers, architect, town planners as applicable

**Monitoring Frequency:** Prior to commencement of construction and as required during the planning and detailed design phase.

**Implementation Period:** From receipt of the Environmental Authorisation until commencement of construction.

The following is a summary checklist that can be used to ensure compliance to mitigation measures for planning phase:

#### **Targets:**

- ✓ EA in place
- ✓ Final designs approved
- ✓ Final plans approved
- ✓ ECO appointed
- ✓ Local contractor appointed
- ✓ EMPr and EA distributed to construction team
- ✓ Training completed
- ✓ EM file in place
- ✓ Search and Rescue and required Permits in place
- ✓ Notice submitted to DEDEAT and DWS and ECPHRA

### **Aspect:** Construction Activities

**Impact:** Noncompliance to conditions of Environmental Authorisation can have financial implications, loss of indigenous plants and animals, spread of alien invasive plants, erosion and polluting activities. Insufficient budget, planning and responsibility allocated for environmental management will result in unmitigated impacts.

**Responsibility:** Holder of EA, contractor / s, specialist / s, ECO, as applicable

**Monitoring Frequency:** Daily by the Contractor; monthly ECO compliance audits; additional inspections where required.

**Implementation Period:** Throughout the construction phase until completion of rehabilitation and close-out.

The following is a summary checklist that can be used to ensure compliance to mitigation measures for construction activities

#### **Targets:**

- ✓ EM file kept updated
- ✓ ECO monthly audit reports
- ✓ Necessary training provided as per scope of work and records kept i.e., toolbox talks
- ✓ Working hours: Restrict to weekdays between 08:00 to 17:00; Saturday 08:00 to 13:00; no Sundays or public holidays
- ✓ No blanket clearing of vegetation.
- ✓ Designated footprint and demarcated laydown area, no unnecessary disturbance to vegetation (2meter disturbance); Laydown, stockpiles areas, waste management area, Pegs / tape / screening material as required for demarcation of site clearing footprint
- ✓ No go areas designated

- ✓ Subsoils reused where necessary; excess is disposed correctly
- ✓ No disturbance of indigenous plants outside development footprint
- ✓ No AIS in construction footprint
- ✓ No disturbance to fauna
- ✓ Ablution facilities (Ratio of 1:10)
- ✓ No litter on site; no burying of waste taking place
- ✓ No refuelling on site; no service of vehicles on site
- ✓ Drip trays, spill kits, general and hazardous waste bins in place
- ✓ Mixing containers and plastic liners (cement) in place
- ✓ Water cart / shade cloth for dust control in place
- ✓ Fire prevention training provided, and records kept
- ✓ Sand bucket for disposal cigarettes
- ✓ Fire response measures in place; emergency numbers on hand
- ✓ Code of conduct in place
- ✓ Incident / complaint register in place
- ✓ Records of waste management / toilet service
- ✓ External monthly audits carried out and kept on record
- ✓ Close out audits and any actions required
- ✓ No waste at end of construction; disturbed areas revegetated

#### **Aspect: Operational Activities**

**Impact:** Noncompliance to conditions can result in unnecessary loss of indigenous plants, erosion and coastal risk

**Responsibility:** Holder of EA

**Monitoring Frequency:** Ongoing during operation of the dwelling, with inspections after significant storm events and maintenance activities, and corrective action undertaken where required.

**Implementation Period:** Throughout the operational life of the development.

The following is a summary checklist that can be used to ensure compliance to mitigation measures for operational activities

- ✓ No fires
- ✓ No additional paths created
- ✓ Dense indigenous vegetation in place and maintained
- ✓ No AIS
- ✓ No disturbance to coastal processes and dune as a result of walkway and platform
- ✓ Stormwater controls are effective

#### **Project Aspects to be completed by construction team**

| Aspect                    | Nature / Description                                                                            | Required |   | Notes |
|---------------------------|-------------------------------------------------------------------------------------------------|----------|---|-------|
|                           |                                                                                                 | ✓        | ✗ |       |
| Scope of work             | Description of scope of work and accompanying method statement / s                              | ✓        |   |       |
| Designs / Plans completed | As required for scope of work                                                                   |          |   |       |
| Environmental Training    | Environmental training required (i.e. excavations – archaeology; ongoing – litter; AIS; no -go) |          |   |       |
| Health and safety         | As required – HS File, first aid etc.                                                           |          |   |       |

| Aspect                                                                  | Nature / Description                                                                                                   | Required |   | Notes |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------|---|-------|
|                                                                         |                                                                                                                        | ✓        | ✗ |       |
| Workforce                                                               | Number of workers required?                                                                                            |          |   |       |
|                                                                         | Required environmental management training (i.e. waste, soil management etc)                                           |          |   |       |
|                                                                         | Local labour                                                                                                           |          |   |       |
| Suppliers                                                               | Local suppliers                                                                                                        |          |   |       |
| Transport and traffic                                                   | Transport required for site workers?                                                                                   |          |   |       |
|                                                                         | Access and parking requirements                                                                                        |          |   |       |
| Site clearing                                                           | Area to be cleared                                                                                                     |          |   |       |
|                                                                         | Permits on hand; Plants removed and stored                                                                             |          |   |       |
| Vegetation management                                                   | No disturbance to vegetation outside footprint                                                                         | ✓        |   |       |
|                                                                         | Remove alien invasive from footprint as required                                                                       | ✓        |   |       |
|                                                                         | Pegs / screening material for designating footprint                                                                    |          |   |       |
| Topsoil management                                                      | Top 300 mm soil with indigenous vegetation intact                                                                      |          |   |       |
|                                                                         | Stockpile separately                                                                                                   |          |   |       |
|                                                                         | Compost separately as mulch elsewhere in landscaping / public open space area                                          |          |   |       |
| Earthworks and subsoil management, erosion control / heritage resources | Area and depth to be excavated                                                                                         |          |   |       |
|                                                                         | Volume of material to be excavated per component                                                                       |          |   |       |
|                                                                         | Duration of earthworks component                                                                                       |          |   |       |
|                                                                         | Where will excavated material be stored on site; subsoils covered; Rocks for landscaping; excess for landfill;         |          |   |       |
|                                                                         | Shade cloths / water cart – dust control                                                                               |          |   |       |
|                                                                         | Monitoring by team during excavations for heritage resources                                                           | ✓        |   |       |
| Building material and equipment                                         | Nature of required materials and equipment                                                                             |          |   |       |
|                                                                         | Storage requirements / laydown areas for materials / equipment                                                         |          |   |       |
|                                                                         | Hazardous materials / substances – sealed containers, bunded area, non-permeable flooring, secure, equipped with roof. |          |   |       |
| Waste management                                                        | Ablution facilities – Required? Number? Service Provider? Record of service to be kept                                 | ✓        |   |       |
|                                                                         | General waste bins                                                                                                     |          |   |       |
|                                                                         | Drip trays, cement mixing trays, plastic liners,                                                                       |          |   |       |
|                                                                         | Spill kits, hazardous waste bins                                                                                       |          |   |       |
|                                                                         | Skip                                                                                                                   |          |   |       |
|                                                                         | Service providers (waste / ablutions)                                                                                  |          |   |       |
|                                                                         | Construction rubble – designated area / skip as required                                                               |          |   |       |
|                                                                         | General waste – General waste bins with lids and labelled / storage area                                               |          |   |       |
|                                                                         | Hazardous waste – drip trays / spill kits / storage area                                                               |          |   |       |
| Drinking water and lunch area                                           | Quantity required? Lunch area provided? Source of drinking water?                                                      |          |   |       |
| Existing structures                                                     | Location of existing structures / infrastructures that may be in construction footprint                                |          |   |       |
| Working hours                                                           | Working hours – no Sundays, no public holidays, no night time.                                                         | ✓        |   |       |

## 7. PROJECT RESPONSIBILITIES

Responsibility for the implementation of this EMPr rests with the Holder of the Environmental Authorisation (EA), who shall ensure that adequate financial and human resources are available to implement the mitigation measures contained in this EMPr. The Holder of the EA shall appoint suitably qualified personnel, including an independent Environmental Control Officer (ECO), to monitor compliance with the EMPr and conditions of the Environmental Authorisation throughout the planning, construction and operational phases, where applicable.

**Table 1: Responsibilities for Implementation and Monitoring of the EMPr**

| ROLE                                          | RESPONSIBILITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Applicant / Holder of EA (if attained)</b> | <ul style="list-style-type: none"> <li>Overall responsibility for compliance with the EA and EMPr.</li> <li>Ensure adequate resources are available to implement the EMPr.</li> <li>Appoint a suitably qualified independent ECO.</li> <li>Appoint specialists where required (e.g. palaeontologist, search and rescue specialist).</li> <li>Ensure contractors, engineers and other appointed persons are aware of and comply with the EMPr.</li> <li>Remove any contractor or personnel repeatedly failing to comply with the EMPr.</li> <li>Notify DEDEAT at least 14 days prior to commencement of activities.</li> <li>Submit all required documentation to the relevant authorities.</li> </ul> |
| <b>Contractor / s / Subcontractor/s</b>       | <ul style="list-style-type: none"> <li>Comply with the EA and EMPr at all times.</li> <li>Ensure all employees receive environmental induction and toolbox talks.</li> <li>Prevent unnecessary environmental damage.</li> <li>Implement all mitigation measures.</li> <li>Correct environmental non-compliances identified by the ECO.</li> <li>Promptly remediate environmental incidents within their control.</li> <li>Maintain a clean site.</li> <li>Ensure stockpiles, waste and stormwater controls are managed appropriately.</li> <li>Respond to complaints where applicable.</li> <li>Be responsible for environmental non-compliance by site personnel.</li> </ul>                         |
| <b>Environmental Control Officer (ECO)</b>    | <ul style="list-style-type: none"> <li>Undertake pre-construction, monthly construction and close-out inspections.</li> <li>Monitor compliance with the EA and EMPr.</li> <li>Prepare compliance audit reports.</li> <li>Advise the Applicant and Contractor on environmental matters.</li> <li>Recommend corrective actions where non-compliances are identified.</li> <li>Verify rehabilitation and close-out requirements.</li> <li>Ensure environmental training has been undertaken.</li> <li>Advise on amendments to the EMPr where required.</li> </ul>                                                                                                                                        |
| <b>DEDEAT</b>                                 | <ul style="list-style-type: none"> <li>Issue and administer the Environmental Authorisation.</li> <li>Ensuring that the Applicant, Contractor, and ECO are compliant with the provisions of the EA and EMPr.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>DEDEAT</b>                                 | <ul style="list-style-type: none"> <li>Issuing any SCC permits for fauna and smaller plants listed in terms of NEMBA or the PCNO</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                               |                                                                                                                                                                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ECPHRA</b>                 | <ul style="list-style-type: none"> <li>Issuing of permits required for any discovered artefacts during excavation / site clearing activities</li> </ul>                                                                                              |
| <b>DFFE: Forestry</b>         | <ul style="list-style-type: none"> <li>Provide permits, where required, for activities affecting protected tree species and monitor compliance with permit conditions.</li> </ul>                                                                    |
| <b>DFFE: Oceans and Coast</b> | <ul style="list-style-type: none"> <li>Provide specialist comments and recommendations relating to the protection of the coastal environment, dune system and coastal processes in accordance with the Integrated Coastal Management Act.</li> </ul> |

**Table 2: Project Team and Responsible Parties (To be completed prior to commencement of construction)**

| <b>Responsibility</b>                           | <b>Role</b> | <b>Name of Responsible Party</b> | <b>Contact details</b> |
|-------------------------------------------------|-------------|----------------------------------|------------------------|
| <b>Applicant</b>                                |             |                                  |                        |
| <b>Engineer / s</b>                             |             |                                  |                        |
| <b>Contractor / s</b>                           |             |                                  |                        |
| <b>Site Manager</b>                             |             |                                  |                        |
| <b>External Environmental control Officer</b>   |             |                                  |                        |
| <b>Heritage consultant</b>                      |             |                                  |                        |
| <b>Permits SCC (DEDEAT)</b>                     |             |                                  |                        |
| <b>Permits Protected Trees (DFFE: Forestry)</b> |             |                                  |                        |
| <b>DEDEAT officer</b>                           |             |                                  |                        |
| <b>ECPHRA official</b>                          |             |                                  |                        |
| <b>External auditor (operations)</b>            |             |                                  |                        |
| <b>Service providers</b>                        |             |                                  |                        |

## **8. AMENDMENTS TO THE EMPr**

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

Any major 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 DEDEAT. Any amendments to the EMPr will require approval from the DEDEAT.

## **9. 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 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 EMPr. They shall know and understand the specifications of the EA and EMPr and shall be able to assist other staff members in matters relating to the EA and EMPr.

## **10. CODE OF CONDUCT**

All personnel shall attend an environmental induction prior to commencing work to ensure they are aware of the environmental sensitivities of Erf 1363, including the coastal dune system, protected Milkwood trees, approved development footprint and environmental management requirements contained in the EMPr.

- DO NOT disturb, remove or damage indigenous dune vegetation outside the approved development footprint.
- DO NOT damage, prune or remove the protected Milkwood trees or any other protected vegetation unless authorised by the relevant permit.
- DO NOT create informal footpaths through the dune vegetation. Access shall be restricted to the approved construction access routes and designated work areas.
- DO NOT disturb, capture, injure or kill any indigenous wildlife, or damage nests, burrows or other animal shelters.
- DO NOT feed wildlife.
- DO NOT introduce pets onto the site.
- DO NOT litter or leave waste on site. All waste shall be placed in the designated waste receptacles.
- DO NOT burn, bury or illegally dump any waste or vegetation on or adjacent to the site.
- DO NOT allow cement, concrete, fuels, oils, chemicals or any other pollutants to enter the surrounding dune vegetation or soils.
- DO NOT undertake refuelling, servicing or maintenance of plant and equipment outside the designated areas.
- DO NOT set fires or undertake open-flame activities unless specifically authorised.
- DO NOT generate unnecessary noise, shouting or hooting that may disturb neighbouring residents or wildlife.
- DO NOT trespass onto neighbouring private properties or disturb adjacent undeveloped dune areas.
- DO NOT exceed the applicable speed limits on public roads and drive slowly when accessing the site to minimise dust generation and protect pedestrians and wildlife.
- DO NOT operate defective vehicles or machinery that are excessively noisy or leaking fuels, oils or hydraulic fluids.

- DO NOT carry firearms or other dangerous weapons onto the site unless specifically authorised by law.
- DO NOT operate plant or equipment unless appropriately trained and authorised to do so.
- ALL personnel shall wear the required personal protective equipment (PPE) at all times.
- ALL work shall remain within the approved development footprint and associated construction areas.

## 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:** Development of Residential Dwelling - Erf 1363, Paradys Strand, Kouga Local Municipality, Eastern Cape

**DEDEAT REF:** Ec08/C/Ln1&3/M/18-2026

### APPLICANT:

Signed: ..... Date: .....

### CONTRACTOR:

Signed: ..... Date: .....

### EXTERNAL ENVIRONMENTAL CONTROL OFFICER

Signed: ..... Date: .....

## **ANNEXURE 1: HERITAGE CHANCE FIND PROTOCOL**



EASTERN CAPE  
PROVINCIAL HERITAGE  
RESOURCES AUTHORITY

SOUTH AFRICA

# EASTERN CAPE PROVINCIAL HERITAGE RESOURCES AUTHORITY (ECPHRA)

NATIONAL HERITAGE RESOURCES ACT NO. 25 of 1999 (NHRA 1999)

## ECPHRA CHANCE FINDS PROTOCOL (CFP)

### 1. Purpose

This protocol provides procedures to follow when archaeological, paleontological or heritage resources are unexpectedly discovered during construction or development activities in the Eastern Cape. It ensures compliance with the National Heritage Resources Act (Act 25 of 1999) and protection of cultural heritage.

### 2. Definitions (see NHRA Section 2 for more details)

- *Chance Find*: Any unexpected discovery of archaeological materials, human remains, fossils, or heritage objects during project activities.
- *Archaeological Material*: Includes stone and bone tools, artefacts, bone, shells, pottery, metal, glass, beads, historical artifacts, ruined or disused structures and buildings, pigment or rock art (engravings / paintings), monuments and memorials, wrecks (maritime or aircrafts) and associated artefacts.
- *Palaeontological Material*: Preserved bones, animal & plant fossil remains and trace fossils.
- *Burial Grounds & Graves*: Stone packed, marked & unmarked graves, human remains, associated grave goods, and historical cemeteries.

### 3. Legal Framework

#### 3.1. National Heritage Resources Act (Act 25 of 1999):

- o Section 35: Archaeology, palaeontology and meteorites.
- o Section 36: Burial grounds and graves.
- o Section 37: Public monuments and memorials

#### 3.2. Eastern Cape Provincial Heritage Resources Authority (ECPHRA) guidelines.

### 4. Scope

The CFP applies to all project phases where clearing, excavation, grading, or earthworks occur. This must be executed by:

- o All contractors,
- o Subcontractors,
- o Environmental Control Officer (ECO) and project personnel
- o All personnel involved in ground disturbance activities – vegetation clearing, excavation and earthworks.

## 5. Types of Finds and Actions

Archaeology and Palaeontology:

- Secure the find in-situ in place by cordoning it off and notify an archaeologist and/or palaeontologist and ECPHRA.

Human Remains:

- Treat as highly sensitive and secure the find; notify an archaeologist, ECPHRA and South African Police Services (SAPS) immediately.

Structures / Rock Art:

- Stop work, protect the area and notify an archaeologist and ECPHRA.

## 6. Responsibilities

6.1. Site Manager / Contractor:

- Immediately stop work in the affected area.
- Secure the find to prevent disturbance.

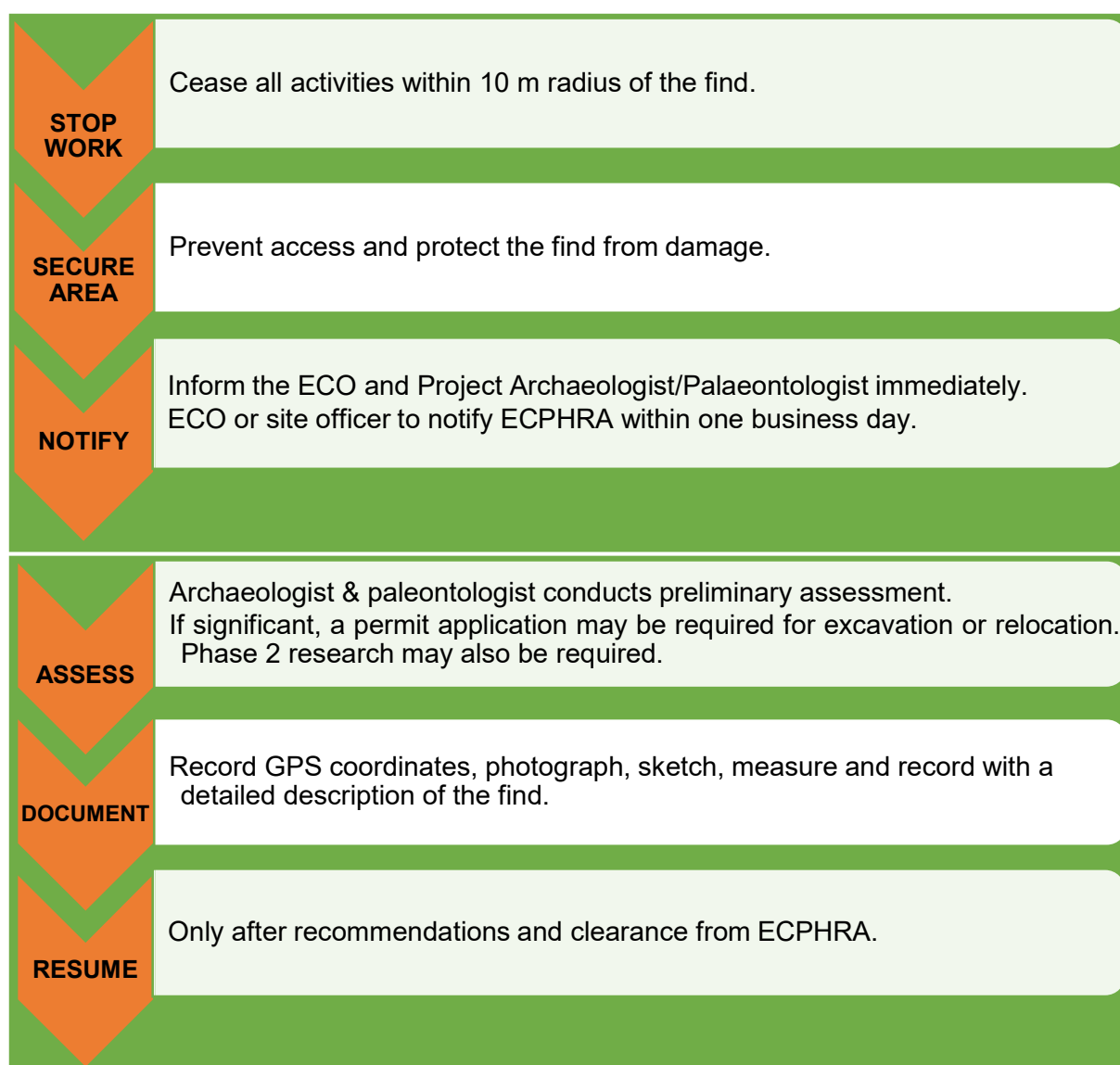
6.2. Environmental Control Officer (ECO):

- Notify the Project Archaeologist/Palaeontologist and ECPHRA.

6.3. Project Archaeologist and/or Palaeontologist:

- Assess the find and recommend mitigation measures.

## 7. Procedure



## 8. Training before work commences

All personnel (ground staff and contractors) must receive training on the kinds of heritage finds that may be uncovered. Induction on this chance finds protocol must also be included in the training.

## 9. Emergency Contacts

- 9.1. Eastern Cape Provincial Heritage Resources Authority (ECPHRA)  
Address: 16 Commissioner Street, Old Elco Building, East London, 5201  
(043) 492 1940/1/2 or 081 434 3544 / [lungiswam@ecphra.org.za](mailto:lungiswam@ecphra.org.za)  
Website: [www.ecphra.org.za](http://www.ecphra.org.za)  
OR [Ayanda.mncwabe-mama@ecsrac.gov.za](mailto:Ayanda.mncwabe-mama@ecsrac.gov.za) / (043) 492 1370 / 077 603 3035

9.2. Project archaeologist / palaeontologist who undertook the HIA and are familiar with the site (if possible).

9.3. SAPS (for human remains).

## **TRAINING GUIDE FOR CONTRACTORS**

This short guide ensures that all contractors understand and know how to implement the *Archaeological & Fossil Chance Find Protocol*:

### 1. Induction Training:

- All site personnel must receive training before starting work.
- Training should cover legal requirements, chance finds protocol, identification of heritage materials, and reporting procedures.

### 2. Recognising Heritage Materials:

- Archaeological: Stone and bone tools and artefacts, bone, shells, pottery, metal and glass artefacts, beads, historical artefacts, ruined or disused structures and buildings, pigment or rock art (engravings, paintings), monuments and memorials, wrecks (maritime or aircraft) and associated artefacts.
- Palaeontological: Preserved remains of plants and animals and other remains such as trace fossils.
- Burial Grounds & Graves: Stone packed, marked and unmarked graves, human remains, associated grave goods, and historical cemeteries.

### 3. Immediate Actions on Discovery:

- Stop work within a 10m radius minimum.
- Secure the area and prevent access.
- Notify the Environmental Control Officer (ECO), Project Archaeologist and Palaeontologist and ECPHRA.
- For human remains, notify ECPHRA and SAPS immediately.
- Document the find with GPS coordinates and photographs.
- Further mitigation measures may be necessary.

### 4. Resumption of Work:

- Only after clearance/permission from ECPHRA.



## HERITAGE ON SITE

### STOP • PROTECT • REPORT

*The Heritage on Site – Induction Training Guideline* was formulated by the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) to practically implement the legal obligations under the **National Heritage Resources Act (Act 25 of 1999)** and related environmental legislation, which require the identification, protection, and lawful management of heritage resources during development. Sections 35, 36, 37 and 38 of the Act, which make it a legal offence to damage graves particularly those over 60 years old, monuments and memorials, archaeological material, and palaeontological finds without authorisation.

Most heritage resources are not visible on ground surfaces and can be uncovered during vegetation clearing, construction and earthworks. When this occurs, all work must cease in the vicinity of the find (minimum 10m radius) and the find must be reported. **The heritage induction training ensures that site workers, contractors, and managers understand their legal duty to stop work, protect the find, and report the finds to an archaeologist, palaeontologist and ECPHRA** thereby preventing unlawful damage, avoiding project delays and legal penalties while ensuring compliance as we safeguard irreplaceable heritage resources.

**The following guidelines can be placed at site offices,** notice boards, induction office, common rooms **and** contractor briefing areas.

#### **A. WHAT IS HERITAGE?**

Heritage includes objects, places, and remains from the past that are legally protected. On construction sites, heritage may include the following:

Stone and bone tools and artefacts, bone, shells, pottery, metal and glass artefacts, beads, historical artefacts

Old foundations, ruined or disused structures and buildings

Graves (marked or unmarked)

Rock paintings or engravings and pigment

Fossils and trace fossils in rock or soil

Wrecks (maritime or aircraft) and associated artefacts

## B. WHERE COULD YOU FIND IT?

**NOTE:** Heritage finds are often situated underground or are unmarked. If you are clearing, digging, cutting, or drilling, you may uncover heritage.

Heritage finds often appear during:

Vegetation clearing

Earthworks & trenching

Bulk services excavation

Road construction

Excavation

Mining quarrying and blasting

## C. IF YOU FIND SOMETHING - STOP!

IMMEDIATE ACTION REQUIRED:

|    |                                                                            |
|----|----------------------------------------------------------------------------|
| 1. | <b>STOP WORK</b> in the affected area                                      |
| 2. | <b>DO NOT TOUCH, MOVE, OR COLLECT ANYTHING</b>                             |
| 3. | <b>MARK &amp; SECURE THE AREA</b> (cones/tape)                             |
| 4. | <b>REPORT</b> to the Site Manager or EAP and archaeologist/palaeontologist |
| 5. | <b>REPORT to ECPHRA</b>                                                    |
| 6. | <b>WAIT FOR INSTRUCTION</b> from ECPHRA                                    |

**WARNING:** *Damaging, disturbing, or removing heritage resources, graves older than 60 years, archaeological and palaeontological finds, and monuments and memorials without a permit is a **criminal offence** under the National Heritage Resources Act (Act 25 of 1999) and may result in a **fine and/or imprisonment**.*

## D. PLEASE DO NOT:

|    |                                                               |
|----|---------------------------------------------------------------|
| 1. | Take items as souvenirs                                       |
| 2. | Rebury or cover up finds                                      |
| 3. | Continue construction work within the area without permission |

## E. GRAVES & HUMAN REMAINS

Graves are extremely sensitive.

If human remains are suspected:

- **STOP WORK IMMEDIATELY**
- **SECURE** the area, minimum 10 m radius
- **NOTIFY** Site Manager or ECO and archaeologist
- **CONTACT** ECPHRA and SAPS

They may look like:

Stone-packed mounds and mounds

Shallow pits

Old cemeteries

Rocks/stones placed in an upright position

Areas with different coloured soils, vegetation, topography and shape

**LEGAL NOTICE:** *Not reporting graves may have legal implications. All graves and human remains older than 60 years are protected by law.*

*In terms of the National Heritage Resources Act, 1999 (Act 25 of 1999), no person may damage, disturb, exhume, or relocate any grave or human remains without a permit from the heritage authority. Disturbing a grave is a criminal offence and may result in a fine and/or imprisonment.*

## F. FOSSILS & OLD BONES

These may include:

- bones
- shells
- fossil wood and plants
- tracks or impressions

Fossils are protected — even if found by accident.

**Fossils are often found:**

In rock cuttings

During vegetations clearing, trenching and excavation

During blasting

In hard layers below soil

## G. WHY THIS MATTERS

✓ Required by law (NHRA Act 25 of 1999)

✓ Prevents project delays

✓ Avoids fines & legal action

✓ Respects communities and history

✓ Protects irreplaceable resources

**ONCE DESTROYED, HERITAGE IS LOST FOREVER**

## H. WHO TO CONTACT

### REPORT ALL HERITAGE FINDS TO:

- Site Manager / Contractor
- Environmental Control Officer (ECO)
- Archaeologist/Palaeontologist
- Eastern Cape Provincial Heritage Resources Authority (ECPHRA)

Tel: 043 492 1942 / 1370 or 077 603 3035

Email: [lungiswam@ecphra.org.za](mailto:lungiswam@ecphra.org.za) /

[ayanda.mncwabe-mama@ecsrac.gov.za](mailto:ayanda.mncwabe-mama@ecsrac.gov.za)

Website: [www.ecphra.org.za](http://www.ecphra.org.za)

- Nearest SAPS (South African Police Service) – for graves

### REMEMBER...

#### **IF IN DOUBT - STOP AND REPORT**

*You will never be punished for reporting a suspected heritage find, but you can be prosecuted for ignoring it.*

## **RECORDING FORM**

|                                                                              |                                                                                          |                                                                        |  |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--|
| Name of project:                                                             |                                                                                          |                                                                        |  |
| Date & time of discovery:                                                    |                                                                                          |                                                                        |  |
| GPS coordinates:                                                             | Lat:<br>Long:                                                                            |                                                                        |  |
| If no co-ordinates available, describe the location:                         |                                                                                          |                                                                        |  |
| Type of find (tick):                                                         | Archaeology <input type="checkbox"/><br><br>Grave/Human remains <input type="checkbox"/> | Fossils <input type="checkbox"/><br><br>Other <input type="checkbox"/> |  |
| Description of situation in which the discovery was found:                   |                                                                                          |                                                                        |  |
| Description of context in which the discovery was found:                     |                                                                                          |                                                                        |  |
| Description and condition of discovery identified:                           |                                                                                          |                                                                        |  |
| Depth of find in hole                                                        |                                                                                          |                                                                        |  |
| Photographs (tick as appropriate and indicate the number of the photographs) | Digital image of vertical (side) section                                                 |                                                                        |  |
|                                                                              | Discovery from different angles                                                          |                                                                        |  |
|                                                                              | Wider context of the find                                                                |                                                                        |  |
| Temporary storage (where it is located and how it is conserved)              |                                                                                          |                                                                        |  |
| Name of Person Identifying the finds:                                        |                                                                                          |                                                                        |  |

|                    |  |
|--------------------|--|
| Contact:           |  |
| Recorder Name:     |  |
| Contact:           |  |
| Photographer Name: |  |
| Contact:           |  |

## **EXAMPLES OF FINDS**

**This guide is not intended to be extensive or exhaustive. The materials are examples of what you may find.**

### **1. ARCHAEOLOGICAL MATERIAL**

#### **A. ROCK ART PAINTINGS & ENGRAVINGS**



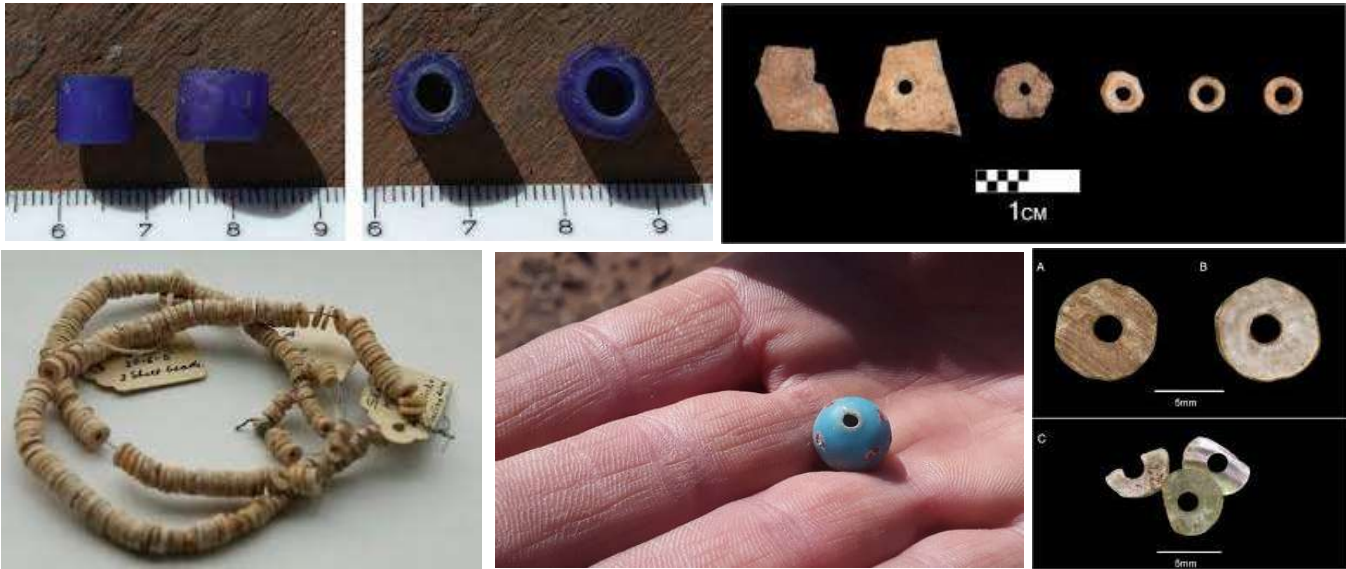
## B. STONE & BONE



### C. POTTERY & CERAMICS



D. BEADS & SHELL BEADS



## E. METAL



## F. GLASS



## **G. SHELL MIDDENS**



## **H. STRUCTURES (Stone Walling, Stelae, etc.)**



## I. BURIAL GROUNDS AND GRAVES



## Maritime



## 2. PALAEONTOLOGICAL MATERIAL

### A. PLANT FOSSILS



## B. ANIMAL FOSSILS



### C. TRACE / PRINT FOSSILS



## D. INVERTEBRATES



### 3. METEORITES

Look out for meteorites especially if there has been a “sighting” / falling meteorite reported in your area.



*Thank you for assisting ECPHRA in protecting our heritage.*

## **ANNEXURE 2: CV of EAP**

# Claire De Jongh

## Curriculum Vitae

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Current</b>                   | Environmental Assessment Practitioner                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Current Location</b>          | Port Elizabeth, South Africa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Date of birth</b>             | 13 July 1983                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Year of Birth</b>             | 1983                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Specialisation</b>            | Environmental Management and compliance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Nationality</b>               | South African                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Years of experience</b>       | 17 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>HDI status and gender</b>     | South African Female                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Languages</b>                 | English (Excellent – Reading, Writing, Speaking, Presenting)<br>Afrikaans (Fair – Reading, Writing, Speaking)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Contact Details</b>           | +27846074743 / clairejarvis@hotmail.co.za                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Career Profile</b>            | <p>Claire's career in the environmental field spans 17 years. Her work over the years has included:</p> <ul style="list-style-type: none"><li>• Project coordination, authority liaison, specialist team management</li><li>• Application for Environmental authorisations, Waste management licences, Water use licence, Coastal Water Discharge (as required) and compilation of Basic Assessment Reports and Scoping and environmental impact Reports and Environmental management programmes reports; Rehabilitation strategies and implementation; Environmental training</li><li>• Compliance audits to conditions of authorisation and ECO related work; Environmental monitoring, Review of management plans, methods statements, procedures</li><li>• Environmental management systems; Aspect / impact registers and implementation of environmental management systems in line with ISO14001</li><li>• Environmental awareness education; Management, coordination and implementation of environmental and social development projects</li></ul> |
| <b>Career History</b>            | <ul style="list-style-type: none"><li>• Independent and Freelance Environmental Assessment Practitioner (current)</li><li>• CEN Integrated Management Unit   February 2015 to May 2025   Senior Environmental Consultant (Full time)</li><li>• Ethical Exchange sustainability Services (Pty) Ltd   June 2011 to January 2015   Environmental Consultant</li><li>• BSc Honours (Environmental Monitoring and Modelling)   2009 to 2011</li><li>• WESSA (BushPigs Outdoor Environmental Education Centre)   2007 to 2009   Environmental Education Programme Coordinator</li><li>• Green Gain Consulting 2005 to 2007   Environmental Consultant: EMS; Training</li></ul>                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Education and Courses</b>     | <p>BSc (Hons) Environmental Monitoring and Modelling, 2012.<br/>BSc Environmental Management: Zoology Stream, 2007.<br/>IEMA Accredited Environmental Auditor Training Course: Aspects International, 2011.<br/>Environmental Awareness and Legal Liability Course, 2006 (2 days).<br/>Field Guiding Association of South Africa (FGASA) Level 1.<br/>ICDL, 2004, (Microsoft word, excel, access, PowerPoint, outlook).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Professional Affiliations</b> | <p>EAPASA Registered EAP (Number 2021/3519)<br/>SACNASP: Certificated Natural Scientist (Registration 115390).<br/>Member of the International Association for Impact Assessment (IAIA).<br/>Member of the Field Guiding Association of South Africa (FGASA).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Main Sectors of Expertise</b> | Waste water treatment, Residential, Eco-tourism, Agriculture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Areas Worked</b>              | Predominantly Eastern and Western Cape; Throughout South Africa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Professional Competency Statement:

Claire's career in the environmental consulting field spans 17 years. Claire has been involved in a number of environmental impact assessment projects. Her roles have included being the Environmental Assessment Practitioner (EAP), with responsibilities including compilation of regulated EIA's (i.e. scoping reports, EIA reports, Basic assessments, and Environmental Management Programme reports), undertaking environmental assessments, carrying out the legislated public participation process, compiling fauna screening reports, and incorporating specialists into the EIA team. Claire has been involved in environmental compliance audits and has acted as Environmental control officer and compiled the required audit protocols and audit reports. Claire has compiled environmental management systems compliant with ISO14001.

Claire has worked extensively throughout South Africa, with majority of work being in the Eastern and Western Cape provinces. Claire's strengths lie with understanding and application of environmental legislation, data collection and collation, research, compilation of reports, accuracy, effective communication, and effective time management.

## List of Experience:

### Environmental Impact Assessments, EMP's, Water Use license applications

- NEMA application: Upgrading of Woodlands WWTW (2025 – current)
- NEMA application: Expansion of citrus, Tregaron Farming, Sundays River Valley (2025 – current)
- NEMA application: Proposed residential development, Albertinia, Western Cape (2025 – current)
- NEMA application: Proposed WWTW, Umzawwethu. Oyster Bay WWTW, KKLM and Zutari, 2025 (2025 – current)
- Screening of Kwanomzamo WWTW, KKLM and Zutari (2025 – current)
- Revision of OEMPr: Addo Lodge, Mantis (2025)
- NEMA Section 24G application: Cape St Francis, Soundprops cc (2025 – current)
- NEMA Section 24G EA application -Zandhoogte light industrial, Western Cape (2024 – current)
- NEMA Section 24G EA application -Outeniqua Game Farm, Western Cape (2024 – current)
- Elliotdale WWTW: Integrated EA and WML and EMP for Elliotdale WWTW and upgrading of sewage infrastructure (2024 - current)
- EMPr – Kingsway resort, 2024
- EMPr – Fairview, Erf 4256, 2024
- NEMA Section 24G EA application – illegal pumping activities, Sundays River (2023 to current)
- NEMA application: Residential development, erf 2074, Plettenberg Bay (2024 - 2025)
- NEMA application: Residential development, erf 7614, Knysna (2024 - 2025)
- NEMA: Expansion of Residential 1 dwelling, erf 1220, St Francis Bay (2024 - 2025)
- NEMA application – Maintenance Management Plan, Jeffreys Bay coastal area on behalf of Kouga LM (2023 – 2024)
- WULA Process for Addo Eco lodge, Addo, Eastern Cape (2023 – 2024)
- Estuary management plan, review; Seekoei Estuary Management, 2024
- Maintenance management plan and DWS General Authorisation for upgrade of Bay Dunes Sewer Pump Station, Mossel Bay on behalf Of Mossel Bay Municipality, Western Cape (October 2023 – February 2024)
- NEMA: Fuel storage facility in Nelson Mandela Bay Municipality, Eastern Cape (2023) (project halted – S24G for site required)
- NEMA: Expansion of fuel storage facility in NMBM, Eastern Cape (2023 to 2024).
- NEMA: Port Alfred Reverse Osmosis Project: 5MI reverse Osmosis project, Ndlambe Local Municipality, Eastern Cape (2020 - 2022). (project halted)
- NEMA: Addo Lodge Addo, Eastern Cape (2021 - 2022).
- Operational EMP for renewal of air emissions license application, Langkloof Bricks (2021)
- Construction EMP: Somerset East Powerlines: for installation of H frame poles and overhead powerlines between substation and Industrial Park (2021)
- NEMA EA and NEMWA WML: Expansion of Clarkson WWTW and upgrading of sewage infrastructure (2018 – 2022)
- NEMA S24 G assessment report (2018 to 2019); Coega Kamma Citrus Farm 717, Addo:
- NEMA Scoping and Environmental Impact Assessment: 150 ha citrus and irrigation on behalf of Coega Kamma Citrus (2019 – 2023)

- NEMA: Basic Assessment and EMP for housing project on behalf of developer, Erf 168, Walker Drive, Port Elizabeth (2018 – 2020)
- NEMA Section 24G Application Oyster Bay Lodge: on behalf of landowner, Eastern Cape (2018 – 2020)
- NEMA Basic Assessment and EMP for residential development, Erf 3783, Summerstrand, Port Elizabeth (2018 – 2019)
- NEMA Basic assessment, Kwandwe Staff Village: Kwandwe, Makana Municipality, Eastern Cape (2017 - 2018)
- Feasibility study: Screening assessment of properties on behalf of NMBM (2016)
- Wells Estate Conservancy Tanks: Basic Assessment process for Expansion project on behalf of NMBM (2016)
- Driftsands Waste Water Treatment Works: Integrated Environmental and Waste Management License; Coastal Water Discharge Permit; Water Use License Application for Expansion project on behalf of NMBM (2016 - 2017)
- Sundays River Citrus Corporation: Basic Assessment process for Expansion projects at Summerville and Hermitage on behalf of SRCC (2015 – 2017)
- Walmer Cosmo/ Erf 1953: Basic Assessment process for integrated residential development on behalf of Privivox cc, Eastern Cape (2015 - 2016)
- Milkwood Gardens / Erf 1953: Amendment Application for change of ownership; update construction and environmental management programmes on behalf of Own Haven (2015 – 2017)
- Sardinia Bay: Basic Assessment process for public access facilities at Sardinia Bay on behalf of NMBM, Eastern Cape (2015 - 2016)
- Sardinia Bay Public Access Facilities: Amendment Application for change of site (2016 – current)
- Bayethe Luxury tents: Basic Assessment Process on behalf of Bayethe Lodge, Eastern Cape (2015 – 2016)
- Bayethe: NEMA 24G rectification for luxury tents on behalf of Bayethe Lodge, Eastern Cape (2015 - 2017)
- Cascades Iron Ore Mine: EIA process on behalf of Mkhombi Mining, Mpumalanga (2014).
- Zuurberg Road Upgrade: Basic Assessment process on behalf of the Department of Rural Development and Land Reform, Eastern Cape (2014).
- New Largo Colliery: EIA process, state of the environment report, closure and rehabilitation plan and waste management license on behalf of Anglo American Inyosi Coal, Mpumalanga (2011 to 2015).
- Mobile Water Treatment Plant: Waste management license for a mobile water treatment plant to supply water to the Phola-Kusile Coal Conveyor, on behalf of Anglo American Inyosi Coal, Mpumalanga I (2011 to 2015).
- Monitoring Weirs: Basic assessment process and Environmental Management Programme for monitoring weirs as part of reserve determination required by DWA, for Anglo American Inyosi Coal, Mpumalanga (2012 to 2014).
- Phola-Kusile Coal Conveyor: Environmental impact assessment and environmental management programme on behalf of Anglo American Inyosi Coal, Mpumalanga (2011 to 2014).
- St Albans: Public Participation Process carried out on behalf of Department of Public Works, Eastern Cape (2014).
- Grootegeluk Mine Backfill Conveyor System: Environmental impact assessment and EMP amendment, on behalf of Exxaro Coal, Limpopo (2011).

## **ECO, Monitoring, Auditing Environmental Management Systems**

- Addo citrus Eb en Vloed Farm 171, ECO for construction phase (May 2024)
- Kingsway Development, Gamtoos River, Compliance audit to ROD (April 2024 to current)
- Expansion Fuel storage facilities, Motherwell: ECO for construction phase (February 2024 to current)
- ECO and Compliance audit for non-compliant start of business development on erf 4256, Fairview; ongoing ECO for start of construction phase (February 2024 to current)
- Upgrading of Clarkson WWTW: ECO for construction phase (2023 – current)
- Addo Ecolodge: ECO for construction phase (2023 – current)
- Upgrading of Pumpstations, Motherwell and Stanford, NMBM: ECO for construction phase (2022 – 2024)
- St Francis Bay Residential Development, Kouga Local Municipality: ECO for construction phase (2022 – current)
- The Edge Hospital, NMBM: ECO for construction phase (2021 – 2022)
- River Oaks Residential Development, NMBM: ECO for construction phase (2021 – 2023)
- Coegakop Wellfield, NMBM: ECO for construction phase (2021 – current)
- Erf 3783, Summerstrand: ECO for construction phase (2019 – current)
- Sardinia Bay Public Access Facilities: ECO for construction of parking area (2018)
- Sardinia Bay Public Access Facilities: ECO for demolition of structures within 100m of HWM (2016 – 2017)
- Coega Manganese Terminal Air Quality Monitoring: Coordination of PM10, PM2.5 and dustfall baseline monitoring for the proposed Manganese Terminal at Coega, Eastern Cape (2013 - 2015).
- Tharisa Mine: External Compliance audit in terms of WUL and EA, North-West (2013).

- Formalchem: Land Contamination Monitoring and Assessment: Coordination of Land contamination Assessment for mothballed glue manufacturing company in Berlin, Eastern Cape (2012-13).
- Formalchem: Remediation plan and progress report prepared for DEA on behalf of client, Eastern Cape (2012-2014).
- Elitheni Coal Mine: Compilation of legal audit protocol (EMP, Water use license, waste management license, environmental authorisation), Eastern Cape (2013).
- Pikitup Roodepoort Waste Site: Site audit and report compilation, Gauteng (2009).
- Sun International: Compilation of aspects / impacts register and environmental management system for entire Sun International Group, all SA provinces (2006 - 2007).
- Sun International: Environmental management system training for the environmental managers, all SA provinces (2006 - 2007).
- Lonmin Platinum: Compilation of aspect impact register and environmental management system, North West (2006).

### **Fauna screening assessments**

- Ebb en Vloed Farm 717, Addo, Eastern Cape, 2022
- Eco-Lodge and supporting facilities, Addo, Eastern Cape, 2022
- Portion 32 of Farm Goedgeloof No.745 and Erf 1382 in St Francis Bay, 2021
- Africamps, Portion 0 of Farm Hayterdale No. 406, Addo, 2019
- Clarkson Sewage Network and Waste Water Treatment Works, 2018

### **Guidelines, Environmental Awareness, Education and Training**

- Part of team responsible for development of Albany Thicket Ecosystem Guidelines on behalf of SANBI (2017 – 2019)
- Part of team responsible for development of Savanna Ecosystem Guidelines on behalf of SANBI (2017 – 2019)
- Development of sustainable educational programmes (2009 - 2014).
- ZAMA: Coordination of corporate social sponsorships, Eastern Cape (2012 - 2013).
- Environmental Education: Coordination and development of environmental education programmes, Limpopo (2007-09).
- Richards Bay Minerals: Basic environmental awareness training at Richards bay Minerals, kwaZulu Natal (2005).
- Dairybelle: Environmental awareness training for employees of all Dairybells, all SA provinces (2006 - 2007).
- Tiger Brands: Environmental awareness training for employees of all Tiger brands, all SA provinces (2006 - 2007).

### **Administration and engagement**

- Engagement with relevant government authorities, stakeholders and clients
- Management of specialist teams
- Compilation of tenders and proposals for Environmental services
- Report writing, GIS and map compilation, Presentations and Training

### **Environmental Studies (BSc and BSc Honours)**

- Undergraduate - Animal Behaviour: Behaviour of the Marsh Owl. Achieved 100 % (2003).
- Honours - The abundance of the South African Lepidopteran pest organism, *Busseola fusca*, found on genetically modified Bt maize, conventional pesticide- sprayed maize, and polyculture-farmed maize, to determine the best practice farming method with regards to pest control. Achieved 97 % (2011)

**Environmental Assessment  
Practitioners Association  
of South Africa**



**Registration No. 2021/3519**

**Herewith certifies that**  
  
**CLAIRE ELIZABETH DE JONGH**  
  
**is registered as an**  
  
**Environmental Assessment Practitioner**

**Registered in accordance with the prescribed criteria of Regulation 15. (1)  
of the Section 24H Registration Authority Regulations  
(Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the  
National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).**

**Effective: 01 April 2026**

**Expires: 31 March 2027**

*Chairperson*

*Registrar*

