



Ecosense

Consulting Environmentalists
Konsulerende Omgewingskundiges

58 Wedderwill Sir Lowry's Pass
Phone : 021 1610258
E-mail: kozette@ecosense.co.za
Web : www.ecosense.co.za

ENVIRONMENTAL MANAGEMENT PROGRAM

**Pedestrian path to connect the existing
Hermanus Cliff Path via Poole's Bay,
Hermanus**

NOVEMBER 2021

**Prepared by:
Ecosense**

**Prepared for:
Cliff Path Action Group**

IMPORTANT NOTE REGARDING THE STRUCTURE OF THIS EMPr DOCUMENT:

This EMPr has been divided into a number of Sections, as indicated below:

Section 1	Introduction	Provides background information regarding the site, the proposed project and the EMPr.
Section 2	Implementation of the EMPr	Provides details regarding the implementation of the EMPr.
Section 3	Planning Phase Requirements	Provides environmental requirements for the pre-construction planning and design phase of the project.
Section 4	Construction Phase Management Plan (CEMP) and CEMP appendices	Provides environmental management procedures to be implemented just prior to and during the construction phase of the project. This is incorporated into a Construction Phase Environmental Management Plan (CEMP) and which can be used as a stand-alone module/document to be incorporated into construction contract documentation.
Section 5	Operational Phase Management Plan (OEMP) and OEMP Appendices	Provides environmental management procedures to be implemented during the operational phase of the project. This is incorporated into an Operational Phase Environmental Management Plan (OEMP), which can be used as a stand-alone module/document to guide ongoing maintenance.
Section 6	Decommissioning phase requirements	Provides environmental requirements for the decommissioning phase of the project (if applicable).
Section 7:	References	References other professional's documents used to source information and background to this EMPr.
Section 8:	EMPr Appendices	Appendices general to the EMPr (excluding Appendices to the CEMP and OEMP documents)

A detailed Table of Contents follows:

TABLE OF CONTENTS

1. INTRODUCTION	7
1.1. BACKGROUND.....	7
1.2. THE AFFECTED ENVIRONMENT AND ANTICIPATED ENVIRONMENTAL IMPACTS.....	8
1.3. OBJECTIVES OF THE EMPr.....	9
1.4. EMPr AUTHOR.....	12
1.5. INTERPRETATIONS.....	12
2. IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME	13
2.1. LEGAL STATUS.....	13
2.2. KEY LEGISLATION APPLICABLE TO THE DEVELOPMENT.....	13
2.3. FINANCING OF ENVIRONMENTAL CONTROL.....	14
2.4. REVIEW OF THE EMPr.....	14
2.5. MONITORING AND AUDITING	14
3. PLANNING AND DESIGN PHASE REQUIREMENTS	15
3.1. PROJECT PLANNING REQUIREMENTS.....	15
3.2. PROJECT DESIGN REQUIREMENTS	15
3.3. DEVIATIONS FROM THE APPROVED PROJECT PLANS/CHANGE IN OWNERSHIP	16
4. CONSTRUCTION PHASE MANAGEMENT PLAN (CEMP).....	18
4.1. INTERPRETATIONS.....	18
4.2. IMPLEMENTATION OF THE CEMP.....	19
4.3. DISPUTE RESOLUTION.....	24
4.4. CONTRACTUAL CONFLICTS	25
4.5. ECO APPOINTMENT SUSPENSION.....	25
4.6. AUTHORITY INSPECTIONS	25
4.7. COMMUNITY RELATIONS.....	25
4.8. PENALTIES	25
4.9. REVIEW OF THE CEMP	26
4.10. NOTIFICATION OF CONSTRUCTION START.....	26
4.11. MANAGEMENT SPECIFICATIONS.....	26
4.12. IMPACT MANAGEMENT OUTCOMES.....	26
5. OPERATIONAL PHASE MANAGEMENT PLAN (OEMP)	32
5.1. INTERPRETATIONS.....	32
5.2. RESPONSIBILITIES AND ORGANISATIONAL STRUCTURE	32
5.3. LEGAL STATUS/ENFORCEMENT.....	34
5.4. FINANCING OF ENVIRONMENTAL CONTROL.....	34
5.5. MONITORING	34

5.6.	<i>REVIEW OF THE OEMP</i>	34
5.7.	<i>AUDITING AND REVIEW OF THE OEMP</i>	35
5.8.	<i>MANAGEMENT SPECIFICATIONS</i>	35
5.9.	<i>IMPACT MANAGEMENT OUTCOMES</i>	35
6.	MAINTENANCE MANAGEMENT PLAN	36
6.1.	<i>PERSONAL DETAILS</i>	36
6.2.	<i>AUTHORITY ENGAGEMENT</i>	37
6.3.	<i>PUBLIC PARTICIPATION</i>	38
6.4.	<i>MANAGEMENT SPECIFICATIONS</i>	38
6.5.	<i>DECLARATION</i>	40
6.6.	<i>MMP appendices</i>	41
7.	DECOMMISSIONING PHASE REQUIREMENTS	44
8.	SOURCES & REFERENCES	44
9.	EMPr APPENDICES	44

FIGURES

Figure 1:	<i>Locality Plan/Aerial view</i>
Figure 2:	<i>Construction Phase Environmental Management Organisational Structure</i>
Figure 3:	<i>Operational Phase Environmental Management Organisational Structure</i>

TABLES

Table 1:	<i>Construction Phase Impact Ratings</i>
Table 2:	<i>Operational Phase Impact Ratings</i>
Table 3:	<i>Applicable Environmental Legislation</i>

EMPr APPENDICES (excluding those appendices contained within the CEMP and OEMP modules)

Appendix 1	<i>Site Layout Plan</i>
Appendix 2	<i>Environmental Authorisation (once issued)</i>

EMPR CONTENT CROSS REFERENCE

The EIA Regulations prescribe the required content in an Environmental Management Programme (as per Appendix 4 of GN 982, as amended). These requirements and the sections of this document where it is contained are set out below:

Content of an Environmental Management Programme (EMPr)	Section Reference
1. An EMPr must comply with section 24N of the Act and include:	
(a) details of: (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	<ul style="list-style-type: none"> • Section 1.4. • EMPr Appendix 2.
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	<ul style="list-style-type: none"> • Section 1.1. • Section 1.2.
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	<ul style="list-style-type: none"> • Figure 1. • CEMP Appendix 1
(d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including:	
(i) planning and design;	<ul style="list-style-type: none"> • Section 3.
(ii) pre-construction activities;	<ul style="list-style-type: none"> • N/A
(iii) construction activities;	<ul style="list-style-type: none"> • Section 4 • Section 1.3, Table 1
(iv) rehabilitation of the environment after construction and where applicable post closure; and	<ul style="list-style-type: none"> • Section 6.4.
(v) where relevant, operation activities;	<ul style="list-style-type: none"> • Section 6.4. • Section 1.3, Table 2
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	<ul style="list-style-type: none"> • Section 4.12 • Section 5.9
(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to:	
(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	<ul style="list-style-type: none"> • Section 4.11 • Section 6.4.
(ii) comply with any prescribed environmental management standards or practices;	<ul style="list-style-type: none"> • Table 3 • Section 4.11. • Section 6.4.
(iii) comply with any provisions of the Act regarding closure, where	<ul style="list-style-type: none"> • N/A

applicable; and	
(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	<ul style="list-style-type: none"> • N/A
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	<ul style="list-style-type: none"> • Section 2.5. • Section 4.2.1.4 • Section 4.6. • Section 4.11. • Section 5.5.
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	<ul style="list-style-type: none"> • Section 4.2.2.1. • Sections 4.11.17. • Section 5.5.
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	<ul style="list-style-type: none"> • Section 4.2.1. • Section 4.11. • Section 5.2. • Section 5.5.
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	<ul style="list-style-type: none"> • Section 4.2 • Section 4.11 • Section 6.4
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	<ul style="list-style-type: none"> • Section 2.5. • Section 4.2. • Section 4.6. • Section 5.3. • Section 5.5.
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	<ul style="list-style-type: none"> • Section 2.5. • Section 4.2.2. • Section 4.6. • Section 4.9. • Section 5.3. • Section 5.5. • Section 5.6 • Section 5.7.
(m) an environmental awareness plan describing the manner in which:	
(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	<ul style="list-style-type: none"> • Section 4.2.3. • CEMP Appendix 2
(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	<ul style="list-style-type: none"> • Section 4.2.3. • CEMP Appendix 2
(n) any specific information that may be required by the competent authority.	<ul style="list-style-type: none"> • MMP Section 6

1. INTRODUCTION

1.1. BACKGROUND

Ecosense has been appointed by Cliff Path Action Group to compile an Environmental Management Program (EMPr) dealing with environmental management of the extension of the Hermanus Cliff Path by formalizing the Poole's Bay connection path (see **Figure 1 Site Locality Plan**).



Figure 1: Locality Plan and site layout plan

The project entails a concrete pedestrian path built just below the high-water mark (HWM) in Poole's Bay with elevated, level and stepped sections.

The only material considered strong enough to withstand rough sea conditions is concrete (e.g. tidal pools and harbour walls). It would be finished with a rough aggregate, to encourage staining and seaweed/mussel shell growth. A boardwalk would cross a wetland and stream along the way.

Because the walk would be built on the seaward side of the HWM (except for a few metres on the western end where it would join the existing Cliff path), there would be times when it would not be safely accessible, and appropriate signage would be required to advise the public to be aware of sea conditions before using this part of the walk. Less agile persons would also be warned of the nature of the walk, being inaccessible to wheelchairs as a result of the required stepped areas and crossings over gully areas.

This document serves to meet the requirements of the Department of Environmental Affairs and Development Planning (DEA&DP), who require an EMPr that indicates environmental mitigation for the project as part of the environmental impact assessment process and submission.

This EMPr includes a Maintenance Management Plan (MMP) for any potential future remedial or maintenance activities on site as it is located below the HWM on the seashore, which constitute listed activity 19A of GN 983, as amended, in terms of NEMA EIA Regulations, which is to be agreed to by the DEA&DP. The path also crosses a small stream and will be located in proximity to wetlands near the site, activities within which would constitute listed activity 19 of GN 983, as amended.

The EMPr meets the specific content requirements for EMPr's as described in Appendix 4 of the 2014 EIA Regulations (GN. No R982). As required, the document deals with applicable design, construction, operational and decommissioning phase aspects of the project, which will require management to maintain or improve the quality of the natural and man-made environment, as well as activities on site, which may have potentially negative impacts on the surrounding environment.

The EMPr is intended for use by the Applicant, the applicant's principal agent/s and the appointed contractor/s during construction, and management agency (if applicable) during the post development (operational) phase and DEA&DP for all phases of the project.

1.2. THE AFFECTED ENVIRONMENT AND ANTICIPATED ENVIRONMENTAL IMPACTS

1.2.1. Topography and soils

The proposed site is located along the seashore, below the HWM in the area of Poole's Bay, along a stretch of coastline that is largely rocky with several areas best described as cliffs. There is also a single bay where the substrate consists largely of pebbles and the terrain is gentler.

The project involves minimal earthworks and the erosion risk associated with construction is considered very low.

1.2.2. Water courses

Two small unmapped wetlands have been identified near the site. Wetland 1 was classified as a channelled valley bottom wetland (which becomes a stream when it reaches the beach), while Wetland 2 was classified as a hillslope seep (locations indicated in CEMP plan).

The use of concrete in the stream channel poses a risk of water quality impairment (uncured concrete in contact with freshwater results in an increase in pH (alkaline conditions). This is toxic for most aquatic organisms when at significant levels and the risk is greatest when wash-downs and slurries enter the water. The impacts of cement rich runoff/spills can be mitigated through use of pre-cast elements being brought to site (as opposed to on-site batching/pouring), containment of the working area and contaminated run-off. This is addressed in the CEMP. The location of the stream in relation to the sea and the diluting factor during a relatively short construction time, however, will result in negligible impact.

The use of petrochemicals for small portable plant on site could also pose a risk to the stream and stormwater runoff and management is similarly addressed in the CEMP.

1.2.3. Flora

The vegetation type that occurs naturally in the site area is Overberg Sandstone Fynbos, which is listed as Critically Endangered on the National list of Ecosystems that are threatened and in need of protection (GN 1002 of 2011) that was published in terms of the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA).

The area where the connection path is located however falls below the HWM and there is minimal vegetation that would be impacted. The CEMP addresses containment of the work activity impact footprint to prevent/minimize damage to nearby vegetation.

1.2.4. Fauna

The construction project is not anticipated to have significant negative impact on faunal communities in the area of the site. If however, any fauna is found within the work area that is at risk of injury and cannot move off on their own, these will be rescued and relocated as per the provisions of CEMP.

1.2.5. Heritage Resources

No significant negative impact on heritage resources has been identified on the site. Should any shipwreck or other resources be discovered, SAHRA needs to be notified.

1.2.6. Surrounding land uses

The site is surrounded as follows:

- **North:** Private properties and HWM of the sea
- **South:** The sea
- **East & West :** Coastal public property and the existing cliff path

1.3. OBJECTIVES OF THE EMPr

The EMPr aims to achieve the following broad outcomes:

- To provide a structure or framework within which the environmental management requirements will be implemented, audited and reported on, in order to ensure that potential negative impacts on the environment are minimised.
- To set out the mitigation measures and environmental specifications which are required to be implemented during the various phases of the development in order to minimise the extent of environmental impacts, to manage environmental impacts and where possible to improve the condition of the environment.
- To state standards and guidelines that are required to be achieved in terms of environmental legislation and authorization conditions.
- To provide a clear indication of the environmental management requirements of each of the role players involved.

EMPr aims to achieve the following more specific outcomes:

During the Construction phase

- Controlled Access and Construction Traffic
- Effective Site Demarcation and adherence to avoidance of No-Go Areas

- Effective management of fuel and plant, even if minimal and not permanently on site
- Appropriate Housekeeping and Waste Management
- Available Emergency Procedures
- Properly managed Concrete and Cement Works
- Properly managed Paints/Hazardous Substances

During the Operational phase i.e. the physical presence of the footpath

- Controlled Access when required (e.g storm events or spring high tides)
- Effective Alien Invasive Plant Management
- Effective Waste Management
- Ensuring safety and awareness of path users

During Maintenance

- Continued Infrastructure maintenance
- Effective Site Demarcation and adherence to avoidance of No-Go Areas
- Effective management of fuel and plant
- Appropriate Housekeeping and Waste Management
- Utilisation of Local labour
- Available Emergency Procedures
- Properly managed Concrete and Cement Works
- Properly managed Paints/Hazardous Substances

In order to achieve the above outcomes, the impacts and risks identified through the basic assessment process must be managed through the management actions specified in Section 4.11 and 5.8. The impacts are set out in Table 1 and 2 below.

Table 1: Construction Phase Impact Rating

Table 2: Operational Phase Impact Rating

1.4. EMPr AUTHOR

Kozette Myburgh, who facilitated the Basic Assessment process for this development, holds a Masters (LLM) Degree in Environmental Law; MPhil in Community and Development (University of Stellenbosch); BA majoring in Anthropology and African Politics (UNISA). She has more than 10 years' experience in environmental impact assessment and management, and is registered with EAPASA (registration no 2019/1346).

1.5. INTERPRETATIONS

For the purposes of this EMPr the following general acronyms and definitions shall apply:

Applicant (Developer)	Cliff Path Action Group (NPO)
EA	Environmental Authorisation – issued by DEA&DP
CEMP	Construction phase Environmental Management Plan
DEMP	Decommissioning Phase Environmental Management Plan
DEA&DP	Department of Environmental Affairs and Development Planning
HWM	High-Water Mark (of the sea)
OEMP	Operational Phase Environmental Management Plan
Environment	The aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms.
Environmental Management Plan	Environmental Management Plans forming part of the overarching Environmental Management Program (EMPr), namely the Construction Phase Environmental Management Plan (CEMP), the Operational Phase Environmental Management Plan (OEMP) and the Decommissioning Environmental Management Plan (DEMP).
Structure	Means any man-made feature affixed to the ground or attached to something located on the ground, including but not limited to fences, walls, berms, levees, fill, storage tanks, shelters or buildings.

2. IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

This EMPr document describes mitigation measures in detail, identifying specific people or organisations to undertake specific tasks, in order to ensure that impacts on the environment are minimised during the various phases of the development.

As the organisational structure and role players are different for each of the four principal phases of the project, this will be detailed under the respective sections/management plans (sections 3,4,5 and 6) of this EMPr dealing with each of these.

2.1. LEGAL STATUS

By virtue of the fact that this document has been compiled as part of the application towards gaining an Environmental Authorisation for the project by DEA&DP, there exists a legal obligation for the specifications of this EMPr to be complied with, if and once the Environmental Authorisation has been issued. This EMPr includes all relevant documentation contained or referred to within it, along with any amendments or appendices to this document.

2.2. KEY LEGISLATION APPLICABLE TO THE DEVELOPMENT

The following is a list of key laws that are applicable to the project. All relevant approvals and permits, or any other management requirements in terms of this, or any other legislation applicable to the project, as well as any future amendments to such legislation, are to be complied with. It should be noted that this is not a comprehensive list of all legislation that may apply, only those deemed most relevant to this context.

Table 3: Applicable Environmental Legislation

ACT, ORDINANCE, BY-LAW	SECTION	DESCRIPTION	RELEVANCE TO THIS PROJECT
National Environmental Management Act (No 107 of 1998)	24 and 24D	List of activities requiring authorisation before commencing	Environmental approvals and conditions are made in terms of this Act (refer to the Environmental Authorisation). If any additional listed activities are planned, or substantive design changes are made, then permission to commence needs to be applied for.
	S 28 (1)	Duty of care responsibilities	Responsible for the duty of care of natural assets
National Environmental Management: Waste Act (No 59 of 2008)	Chapter 4 Pt 3 and 5	Regulates waste management in order to protect health and the environment.	Calls for reduction, re-use, recycling and recovery of waste, sets out requirements for storage, collection and transportation of waste.
National Water Act (No 36 of 1998)	S 19	Pollution prevention	Prevent pollution of water sources e.g. via storm water
	S 21 /22	Definition of Water Uses in terms of the Act and sets out permissible water uses and licensing requirements	Altering the bed, banks, course or characteristics of a water course (such as the no-perennial stream crossed by the new path) may constitute a Water Use requiring authorisation by DWS.

ACT, ORDINANCE, BY-LAW	SECTION	DESCRIPTION	RELEVANCE TO THIS PROJECT
National Environment Management: Biodiversity Act (No. 10 of 2004)		Alien & Invasive Species Regulations (<i>2014</i>), National List of Invasive Species (<i>2016</i>), National List of Prohibited Alien Species (<i>2016</i>), National List of Species that are Threatened or Protected, Activities that are Prohibited & Exemption from Restriction (<i>2016</i>)	Alien invasive vegetation as listed must be removed from the project area. Listed threatened plant/animal species shall be protected.
Environment Conservation Act (No 73 of 1989)		Noise Control Regulations for the Province of the Western Cape.	Legislation that governs noise limits
Occupational Health and Safety Act (No 85 of 1993)	All	Primarily aimed at ensuring the health and safety of persons at work, residents and visitors. Specifies the basic systems that need to be in place and measures that need to be taken.	Construction staff and site visitors needs to be protected from health and safety risks on site.
Hazardous Chemical Substances regulations (25 August 1995)	9A(1)	Storage and handling of hazardous chemical substances	Need to ensure the safety of people working with hazardous chemicals (specifically fuels), as well as safe storage, use and disposal of containers.
National Heritage Resources (Act No. 25 of 1999)	S 44(1)	Preservation and protection of heritage resources	Protection of possible heritage resources that may be found on site.

2.3. FINANCING OF ENVIRONMENTAL CONTROL

Financing of environmental control requirements outlined in this document is the responsibility of the Applicant during the construction phase and a managing agency (to be confirmed) during the operational phase, unless where another party has been identified as the responsible party e.g. the contractor in the CEMP. Details are provided under the respective environmental management plans comprising this EMPr.

2.4. REVIEW OF THE EMPr

This document should be seen as a "live" document, with the ability that it may be reviewed and updated with consent of the DEA&DP, should new information become available. This will ensure that it remains relevant to the requirements of the site and the environment.

The environmental management plans (CEMP and OEMP) contained in this EMPr may be reviewed and amended as detailed in each of those plans.

2.5. MONITORING AND AUDITING

The implementation of the environmental management plans (CEMP and OEMP) contained in this EMPr must be monitored and externally audited as detailed in each of those plans, to ensure that the management specifications are correctly implemented and that there is proper record keeping and reporting to support this.

3. PLANNING AND DESIGN PHASE REQUIREMENTS

3.1. PROJECT PLANNING REQUIREMENTS

The following requirements must be considered during the planning phase:

- A Coastal Engineer must sign off on the final design.
- A Five year projected maintenance budget shall be compiled upon finalisation of detailed design to be included with the financial guarantee for the proposed project, as per condition of the EA. This budget shall be confirmed and revised as necessary after completion of construction.
- Construction work must be undertaken as follows to be sensitive to local ecological issues:
 -). Intrusive work which cause loud noise and vibration - February to June
 - Non intrusive work, e.g. finishing July- January
- Due to the location of the development being below the HWM, construction activities can only be undertaken during low tide conditions.
- Limited access to site means that construction work will need to be hand work and equipment (e.g. portable generators/pumps) and material will have to be carried to site and waste materials carried from the site.
- Minimal storage area is available on site – materials will need to be brought in mostly as needed and unused materials and equipment must be removed from site daily.
- Construction companies considered for the project shall be capable, BEE compliant and local (based in the Hermanus/Overstrand municipal region) as far as practically possible, with as many as possible local community members being employed.
- The project must be commenced with within 3 years of the issue of the Environmental Authorisation by the DEA&DP.

3.2. PROJECT DESIGN REQUIREMENTS

The following requirements must be considered during the design phase:

- Concrete should be used as material of choice as this section of the coast is rather rough and most structures would not be able to withstand the conditions.

Conceptual design

- Long sections of elevated pathway and continuous concrete platforms should be kept to a minimum. Columns should not exceed +-2m in height above footings.
- Keep interventions as close to the ground as possible, to allow natural vegetation to soften the edges and re-establish within the new micro-climates introduced by the proposed structures (refer to Figure 70).
- The proposed walkway should be designed to fit into the surrounding landforms, stepping down as the natural topography steps down.
- The route should avoid visually prominent and exposed areas as far as possible, and new structures must be sited to avoid visually sensitive, steep slopes (greater than 1:4) or elevated promontories, ridgelines, and crests.
- Proposed structures must be designed to blend with the natural setting so that the landscape appears to flow through the site, and structures should not appear to be imposed atop it.
- The scale of structures should be appropriate for their use, and low-key, sloping walkways without balustrades should be favoured over steps and elevated walkways wherever possible.

Colours materials and finishing:

- The colour palette for materiality and finishes must draw on the colouring of the natural environment (refer to Figure 73).
- If natural material such as stone is used, the stone must be locally sourced and match the colouring (and, if possible, the geological origins) of the site and receiving environment.
- Materials and finishes may not consist of bright colours or highly reflective surfaces. The use of exposed metal must be kept to a bare minimum, and any potentially shiny or reflective surfaces must be avoided altogether, or covered with matte, non-reflective finishes.
- Where possible, use rocks and existing landscape features as steps instead of pouring new steps out of concrete (Refer to Figure 73).
- Concrete finishes should imitate the local examples (tidal pools, fisherman's bridges etc.) in construction method and mix, allowing the weathering process to blend the structures into the landscape over time (Refer to Figure 74). Black aggregate, for example, is not an appropriate material to be included in the cement mix.
- The use of timber balustrades is supported but should be used sparingly. Timber elements should not be stained or varnished darkly but be allowed to weather naturally as far as possible (maintenance allowing).
- The metal modular unit proposed in Alternative 2 (Rectagrid) is acceptable in terms of visual appropriateness, and the project team should consider the possibilities of reducing the size and bulk of the columns and footings where these structures are specified (see Figure 77 of Visual study)
- Widening/tapering the bases instead of meeting the footings at right angles;
- Reducing the mass of the column into slimmer or rounded columns (but remain wary of creating a profusion/pattern of columns in the landscape);
- Curving the edges of the columns into an ovate shape to avoid rectilinear surfaces and edges, which are not unprecedented in the receiving environment, but should be softened to imitate the natural weathering of the surrounding sandstone
- Signage should however remain visually unobtrusive, located against a backdrop to avoid silhouette effects on the skyline.
- Signs should be fixed to the proposed structures or embedded in the landscape where possible to avoid the proliferation of poles.
- Lighting must be kept to a minimum where necessary for safety and security
- All lighting shall be located and controlled so as to avoid direct illumination, glare or reflection onto any adjoining property or the landscape surrounding the proposed development.
- Provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the light source.
- Low level 'bollard' type lights or limited downlighting on steps and pathways may be appropriate to illuminate key portions of the route for safety and security reasons.
- No post top lighting, flood lights, peripheral/boundary security lights or uncovered luminaires of any kind should be allowed.
- Lighting should preferably be movement activated.

Other aspects

- The wetland area boardwalk design must allow light permeability and sufficient height for plants to grow.
- For user safety, warnings shall be posted regarding the danger during high tide, since the path is located just below the HWM of the sea.

3.3. DEVIATIONS FROM THE APPROVED PROJECT PLANS/CHANGE IN OWNERSHIP

Any significant changes to, or deviations from, the project description set out in the Environmental Authorisation which is based on the environmental Basic Assessment Report (*Ecosense 2021*)

submitted, must receive written approval from DEA&DP before such changes may be effected. The Applicant will be responsible for making such application in good time.

DEA&DP shall also be notified within 30 days thereof, of any changes of ownership and/or project applicant / developer. Conditions of authorization and the contents of this EMPr must be made known to the new developer and are binding on the new developer.

4. CONSTRUCTION PHASE MANAGEMENT PLAN (CEMP)

This document is applicable to all Contractors undertaking construction work on the project and must be included in their tender and contract documentation.

4.1. INTERPRETATIONS

For the purposes of this CEMP the following acronyms and definitions shall apply:

CEMP	Construction Phase Environmental Management Plan
DEA&DP	Department of Environmental Affairs and Development Planning
DWS	Department of Water and Sanitation
EA	Environmental Authorisation – issued by DEA&DP
HWM	High-Water Mark (of the sea)
MSDS	Material Safety Data Sheet
SAHRA	South African Heritage Resource Agency - the statutory body responsible for heritage resource management

Applicant (Developer)	Cliff Path Action Group (NPO)
Bund	Enclosure under and around a storage facility to contain any spillage
Batch Plant	Site for the mixing and production of concrete or plaster, and associated equipment and materials
Contractor	The principal persons / company undertaking the construction of the development: <ul style="list-style-type: none"> • The main contractor as engaged by the Applicant; • Nominated sub-contractors • Selected sub-contractors; and • Any other contractor from time to time engaged by the Applicant directly in connection with the construction part of the works.
Environment	The aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms.
Environmental Management Program	The overarching document that contains the individual environmental management plans for this project, including this Construction Phase Environmental Management Plan (CEMP).
Environmental	The individual or company appointed by the Applicant to ensure the

Control Officer	implementation of the CEMP and suitable environmental management practices on site for the duration of the construction phase of the project.
Licensed Landfill Site	Dumpsite for waste that has been licensed in terms of the National Environmental Management: Waste Act 59 of 2008 or previously under the Environment Conservation Act No 73 of 1989
"No-go" Areas	Areas identified as being environmentally sensitive in some manner and delineated on plan, and on the site with pegs or fencing and which are out of bounds to unauthorised persons. Authorisation must be obtained from the ECO prior to entry.
Principal Agent	Person representing the Applicant or his implementing agent on site and who is responsible for the technical and contractual implementation of the works to be undertaken. This is usually the Engineer, but may be any other person, such as a project manager or architect, authorized by the Applicant to fulfil this role.
Site	The boundary and extent of development works and infrastructure, including any areas off the main site on which works are to be carried out in order to allow the development to proceed successfully.
Structure	Means any man-made feature affixed to the ground or attached to something located on the ground, including but not limited to fences, walls, berms, levees, fill, storage tanks, shelters or buildings.
Stormwater	Water resulting from natural precipitation and/or accumulation and includes rainwater, groundwater and spring water, but excludes water in a water or wastewater reticulation system.
Works	The construction operations and all related and incidental works, such as site works, earthworks, installation of services, construction of buildings, rehabilitation etc., carrying to completion of the development.

4.2. IMPLEMENTATION OF THE CEMP

This CEMP document describes mitigation measures in detail, identifying specific people or organisations to undertake specific tasks, in order to ensure that impacts on the environment are minimised during the construction phase of this project. The CEMP is applicable to all construction works comprising the development of this project, including works outside of the site boundaries that form part of the project works. It is an open-ended document implying that information gained during construction activities and/or monitoring of procedures on site could lead to changes in the CEMP.

The Applicant shall appoint an ECO who will monitor and facilitate compliance with the CEMP and other conditions of approval as they relate to environmental matters.

All identified responsible parties are expected to co-operate closely to minimise or avoid unnecessary environmental impacts.

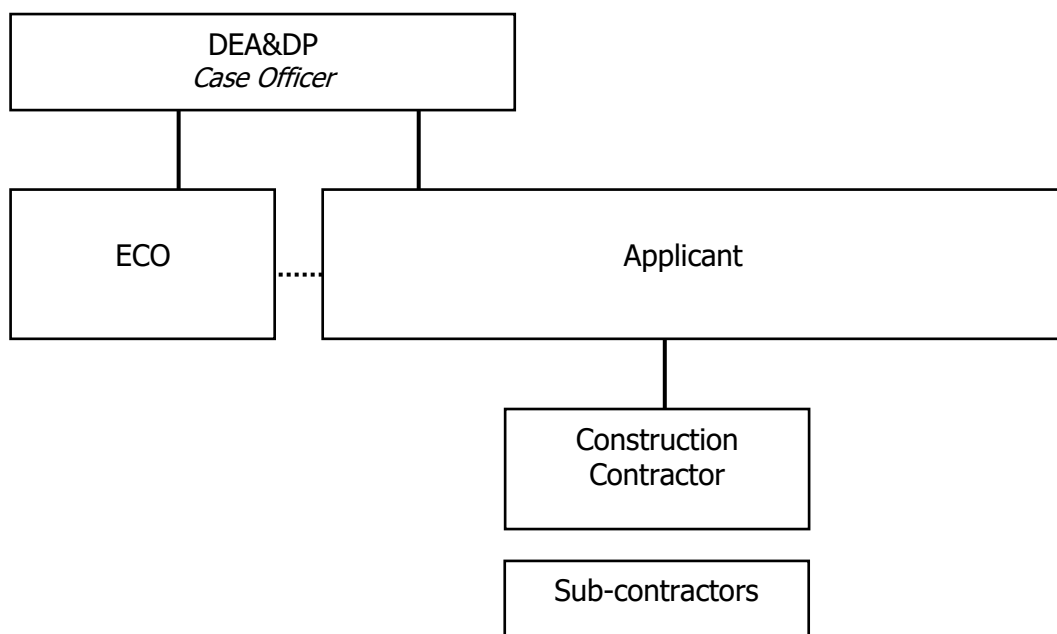
Non-compliance penalties are described in this CEMP and the CEMP is thus **to be included into the official contract documentation of each of the principal contractors appointed to the project**. The Applicant and Contractor are obliged to inform the ECO immediately of events that have/will cause serious environmental damage or of any breaches of the Environmental Authorisation. The ECO in turn will on behalf of the Applicant immediately inform DEA&DP (within 24 hours) and the Principal Agent of such events and the measures taken to address them.

4.2.1. Responsibilities and Organizational Structure

The key role-players during the construction phase of the development, for the purposes of environmental management on site include, but are not limited to: the Applicant, the Principal Agents for construction work, the Principal Contractor/s (direct appointments by the Applicant), the ECO and representatives of the relevant Authority/ies.

Lines of communication and reporting between the various parties are illustrated in **Figure 2** that follows. Details of the responsibilities of each of the key role-players have been provided in the section that follows.

Figure 2: CONSTRUCTION PHASE ORGANISATIONAL STRUCTURE FOR ENVIRONMENTAL MANAGEMENT



KEY:

- - Advisory role
- - Responsible/reports to

4.2.1. 1 The Applicant

The Applicant is ultimately responsible for compliance with all conditions of approval of the development or any aspect thereof by any authority as it relates to his activities on site.

With respect to the construction phase of the Development, the Applicant is to:

- ensure that all relevant approvals and permits have been obtained prior to the start of construction activities on site;
- ensure that the requirements as set out in this CEMP and the Environmental Authorisation issued by DEA&DP and any other conditions of approvals by the relevant Authorities are adhered to and implemented by the Developer and any person on their behalf incl. agents, employees, contractors etc.;
- appoint a suitably qualified (minimum diploma in Natural Sciences) or experienced (minimum 3 years) Environmental Control Officer approved by DEA&DP prior to the start of construction activities on site, and for the duration of the construction phase;
- ensure that DEA&DP is given at least one week's written notice prior to the construction start including name and contact details of proposed ECO (for their approval);
- provide all principal contractors working on the project with a copy of this CEMP as part of tender contract documentation to allow the contractors to cost for its requirements within their respective construction contracts.

4.2.1. 2 The Principal Agent

For the purposes of this document "The Principal Agent" refers to the engineer or any other person such as the project manager, architect etc., authorised by the Applicant, to be responsible for the technical and contractual implementation of the works/part of the works to be undertaken.

The responsibilities of the Principal Agent are to:

- ensure that the requirements as set out in this CEMP and by the relevant Authorities are adhered to and implemented (on the behalf of the Applicant);
- assist the ECO in ensuring that the conditions of the CEMP are being adhered to and promptly issuing instructions requested by the ECO, to the Contractor. All site instructions pertaining to environmental matters issued by the Principal Agent are to be copied to the ECO;
- assist the ECO in making decisions and finding solutions to environmental problems that may arise during the construction phase;
- reviewing and approving construction method statements with input from the ECO;
- ordering the removal of person(s) and/or equipment not complying with the specifications or issuing a stop works order (as required by the ECO or otherwise);
- issuing of penalties for transgressions of environmental site specifications;
- providing input into the review of the CEMP.

4.2.1. 3 The Contractor

For the purposes of this document "The Contractor" refers to any directly appointed (by the Applicant) company or individual undertaking the implementation of the works.

The Contractor is to:

- ensure implementation of all applicable Environmental Management Specifications, including all additional requirements related with approved method statements, during all works on site, failing

which penalties, as outlined in the environmental management specifications may be imposed by the Principal Agent;

- ensure that all of its sub-contractors, employees, suppliers or agents etc. are fully aware of the environmental management requirements detailed in the Environmental Management Specifications;
- liaise closely with the Principal Agent and the ECO and ensure that the works on site are conducted in an environmentally sensitive manner;
- inform the Principal Agent as well as the ECO should environmental issues on site go wrong, e.g. dumping, pollution etc.;
- carry out instructions issued by the Principal Agent, on request of the ECO, required to fulfil his/her compliance with the CEMP.

4.2.1. 4 Environmental Control Officer

The ECO's duties, *inter alia*, must be to facilitate compliance with the CEMP through monitoring and proactive and open communication channels with the project/site management and, when necessary, enforcing the environmental requirements.

The ECO's responsibilities include the following:

- monitoring and verifying that the CEMP and Environmental Authorisation/s issued by DEA&DP is adhered to by inspecting the Site and surrounding areas regularly (minimum fortnightly) during period of active construction with regard to compliance with the CEMP and taking action if the specifications are not followed;
- to environmentally educate and raise the awareness of the Contractor and his staff as to the environmental requirements relating to the Site and to facilitate the spread of the correct attitude during works on Site.
- reviewing and approving construction method statements together with the Principal Agent (if and when required);
- assisting the Contractor in finding environmentally responsible solutions to problems;
- Keeping a register of complaints and report these first to the Principal Agent for action / follow-up;
- recommending the issuing of penalties for transgressions of environmental site specifications to the Principal Agent;
- completing a monthly summary report detailing levels of compliance to be forwarded to the project team and case officer at DEA&DP;
- keeping a photographic record of progress on Site from an environmental perspective;
- undertaking a continual internal review of the CEMP and making recommendations to the Principal Agent.

The ECO has the authority to recommend to the Applicant and DEA&DP that works be stopped, if in his/her opinion serious harm to, or impact on, the environment is imminent, is likely to occur or has occurred and such actual or potential harm or impact is in contravention of this CEMP, and which is, or may be, caused by construction, or related works. This would only take place in urgent / emergency cases, or when there is conflict with the Principal Agent. This is to be reported on and minuted at the project team site meetings.

Upon serious failure by the Contractor or Contractor's employee(s) to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the Principal Agent and the project management team to have the Contractor's representative or any employee(s) removed from the site or have work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the Contractor.

The ECO will be responsible for the compilation of a final closure checklist for the project, completed when all works related to the project as undertaken by the Applicant have been completed and the site has been cleared of all construction related debris, materials and/or equipment not forming part of the permanent works. This, together with a final written report will be submitted to DEA&DP in order to achieve "environmental closure" of the project.

4.2.2. Monitoring and Reporting

4.2.2.1. ECO Inspections and Reporting

The ECO shall inspect the site minimum fortnightly during period of active construction and will maintain on file, site inspection reports that record environmental compliance with the CEMP for record keeping purposes. In addition, the ECO shall take digital photographs during every inspection showing work progress and environmental concerns and keep these on record.

4.2.2.2. Site Memo Entries

Site memos, stipulating recommended actions may be required to improve compliance with the CEMP by the Contractor and will be issued by the ECO to the Principal Agent and the Contractor.

Comments made by the ECO in the Site Memos are advisory and all Site Instructions required for work that has cost implications beyond the agreed scope of contract may only be issued by the Principal Agent. Site Memo's will also be used for the issuing of stop work orders for the purposes of immediately halting any particular activity(ies) of the Contractor deemed to pose immediate and serious risk of unnecessary damage to the environment.

4.2.2.3. Site Meetings

The ECO may attend project site meetings with the principal agent and principal contractor/s during times of active construction on site, to facilitate the transfer of information and to update all parties on the environmental compliance of the project as a whole and record any additional requirements.

Where required, the ECO may call for a site meeting with particular members of the project team to discuss a specific issue on the site. Feedback from such meetings will be given at the project site meetings.

4.2.2.4. Reporting

All significant environmental notes and compliance issues will be summarised in a report with photographs at least monthly by the ECO and submitted to project team and, if requested to do so, the Case Officer at DEA&DP.

4.2.3. Environmental Education Programme

The ECO shall arrange for a presentation to all permanent site staff of the principal contractors to familiarise them with the environmental aspects of the CEMP within 2 weeks of establishment on site. This presentation must take cognisance of the level of education, designation and language preferences of the staff. General site staff would commonly receive a basic environmental awareness presentation / lecture highlighting general environmental "do's and don'ts" and how they relate to the site. Management on site e.g. site agents and foremen, who require more detailed knowledge about the environmental sensitivities on site and the contents and application of the CEMP document

itself will benefit from a separate presentation dealing with these issues. The ECO may call upon the services of a specialist environmental education translator should this be required.

No more than 20 people shall attend each course. The cost shall be the Applicant's responsibility and the venue and logistics for this / these course(s) for the Contractor's responsibility. The ECO shall keep a register of all personnel attending the Environmental Education Program.

The contractor shall further to this present important environmental requirements (per **Appendix 1 of this CEMP**) as part of the compulsory Health and Safety induction meetings presented to all new site staff and sub-contractors that have not attended the ECO's training session.

The ECO reserves the right to present additional dedicated environmental inductions for the duration of the contract for any employees including sub-contractor staff, should such additional lectures be deemed necessary by the ECO i.e. in terms of poor compliance by a certain team, problem aspects or failure of the principal contractor to adequately present lectures.

4.2.4. Method Statements

The Contractor may be required to provide Method Statements prior to work commencing on aspects of the project deemed or identified to be of greater risk to the environment and/or which may not be covered in sufficient detail in the CEMP, when called upon to do so by the Principal Agent or ECO.

A Method Statement describes the scope of the intended work in a step-by-step description in order for the ECO and the Principal Agent to understand the Contractor's intentions. This shall include the timing, location and method and proposed mitigation for the activity contemplated. This will enable them to assist in devising any additional mitigation measures, which would minimise environmental impact during these tasks.

All Method Statements are to be to the satisfaction of the ECO, Principal Agent and where practical and deemed necessary, shall be endorsed as being acceptable by the environmental representative of the Relevant Authority. Signatures on the finalised method statement of the relevant parties shall confirm this. Changes to, and adaptations of, Method Statements can be implemented with the prior consent (and signature) of all parties.

Approved Method Statements shall be readily available on the Site and shall be communicated to all relevant personnel and sub-contractors. The Contractor shall carry out the works in accordance with the approved Method Statement.

4.3. DISPUTE RESOLUTION

Any disputes or disagreements between the Contractor and the Principal Agent shall be resolved as per the relevant dispute resolution clauses contained within the construction contract documentation.

Where any disputes or disagreements arise between the Principal Agent and the ECO, specifically with regard to environmental management on Site and which cannot be resolved, then the matter will be referred to the case officer at DEA&DP for clarification and their decision is binding on all parties.

4.4. CONTRACTUAL CONFLICTS

In the event of any conflict occurring between the environmental management provisions of the CEMP and the project specifications contained within other project documentation, this shall immediately be brought to the attention of the ECO and Principal Agent and resolved in writing for the record.

4.5. ECO APPOINTMENT SUSPENSION

The ECO shall immediately advise the DEA&DP of suspension of the ECO's services for any reason during the course of the construction contract. The Applicant shall provide the DEA&DP with details of an alternative ECO if applicable.

4.6. AUTHORITY INSPECTIONS

Officials from DEA&DP e.g. environmental management inspectors, and other government officials e.g. Department of Labour inspectors, Heritage Western Cape officials etc. shall be given access to the property for the purpose of assessing and/or monitoring compliance with the conditions contained in the Environmental Authorisation, issued permits or legislation, at all reasonable times.

A copy of the Environmental Authorisation must be kept by the Principal Contractor on the construction site at all times and must be produced to any authorised official of DEA&DP who requests to see it and must be made available for inspection by any employee or agent of the Applicant who undertakes work at the property.

4.7. COMMUNITY RELATIONS

The Principal Contractor shall be responsible for responding to third party or public queries and/or complaints relating to construction operations. The Applicant shall be responsible for dissemination of information to the community and the media.

The Contractor shall notify the ECO and the Principal Agent of any complaints lodged. The Contractor shall be responsible for maintaining a Complaints Register to record complaints received and action taken. This register will be made available to the Applicant, ECO, the Principal Agent and the relevant authority.

4.8. PENALTIES

A schedule of penalties for CEMP non-compliance (not necessarily an exclusive list) is included in the CEMP management specifications.

Where the Contractor inflicts damage upon the environment or fails to comply with any of the environmental specifications contained within this CEMP, he may be liable to pay a penalty for breach of the conditions of the environmental specifications which form part of the works contract.

- The Contractor is deemed NOT to have complied with this Specification if:
 - within the boundaries of the site, site extensions and haul / access roads there is evidence of contravention of the Specification;
 - environmental damage ensues due to negligence;
 - the Contractor fails to comply with corrective or other instructions issued by the Principal Agent/ESM within a specific time;
 - the Contractor fails to respond adequately to complaints from the public.

Penalties shall be issued per incident for the Contractor's responsibility at the discretion of the Principal Agent in consultation with the ESM. The amount of the penalty shall be determined by the Principal Agent in consultation with the ESM. Where there are ranges, the penalty amount shall depend on the severity and extent of the damage done to the environment. The Principal Agent shall inform the Contractor of the contravention and the amount of the penalty, and will deduct the amount from monies due under the Contract.

Payment of any penalties in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law e.g. NEMA 24F.

All monies collected through penalties shall be held by the Applicant and be accounted for. A summary page is to be included with the monthly payment certificates as a record of penalties issued to date. Penalty funds shall be allocated to the Cliff Path Action Group, ring-fenced for maintenance of cliff path, and payment must be confirmed prior to environmental closure being granted for the project.

4.9. REVIEW OF THE CEMP

The project team is to constantly assess the practicality and effectiveness of the CEMP and report any problems and suggested amendments to the ECO. Any substantial changes, updates or upgrades of the CEMP must be approved by the ECO and be sent by the ECO to the DEA&DP case officer for approval.

4.10. NOTIFICATION OF CONSTRUCTION START

One week's notice, in writing, must be given to DEA&DP, before commencement of the *initial* construction activity on the site (thus entrenching the EA within its validity period). This must include confirmation of the appointment of an ECO for the project and their contact details. This must be undertaken by the Applicant or on his behalf by the appointed environmental consultant.

4.11. MANAGEMENT SPECIFICATIONS

The management specifications applicable to the construction phase of the development follow in the Site Construction Environmental Management plan that follows in CEMP Appendix 1 (to be printed in A1 format).

4.12. IMPACT MANAGEMENT OUTCOMES

The mitigation measures as detailed in the annotated CEMP that follows in CEMP Appendix 1 are to ensure that impacts on the environment are minimised during the Construction phase. The outcome of successful implementation and monitoring of these specifications would result in reduced or insignificant impact on the various aspects identified in Table 1 above.

CEMP Appendix: 1

Site Environmental Management Plan

Insert CEMP plan here

CEMP Appendix: 2

Basic Environmental Education Content



Ecosense

Environmental Awareness Induction Training

Please add the following environmental awareness points as part of your SHE induction presentations to new staff at the site:

Basic Environmental Awareness:

1. Why follow environmental site rules?

- Constitution of South Africa = "We have a right to a clean and healthy environment". Preserve environment for future generations.
- Rules form part of Construction phase Environmental Management Plan – legally binding thus fines, disciplinary action and even removal of staff from site for non-compliance.

2. No – Go Areas

- Stay out of restricted areas unless you have specific authorisation to work there e.g. vegetation next to the work area and neighbouring properties. Fines for non-compliance!

3. Hazardous substances

- Hazardous substances to be used handled and stored safely in accordance with instructions of the Material Safety Data Sheet.
- No oils, fuels or chemicals or polluted wash water or mop up products containing these to be thrown out on site. Must be placed into sealed containers for removal from site.

4. Fire

- No fires and burning of wastes are allowed on site.
- No smoking near vegetated areas.

5. Waste Control

- Clean work areas daily. Waste must be disposed of in the bins provided on site.
- Plastics and litter that can blow around shall **immediately** be put into bags/bins.
- All food waste shall be secured against scavenging animals and removed from site daily.
- Rubble to be removed from site minimum weekly.
- Do not mix clean rubble with rubbish!
- Explain recycling programme.

6. Concrete

- All concrete mixing at dedicated plastic lined batching sites or in mortar trays. Concrete spills must be cleaned up immediately. No cement or cement contaminated water may enter the environment.

7. Public

- Be considerate of public nearby – limit nuisance, traffic disruptions, inconsiderate parking.

8. Animals

- Severe penalties for anyone caught trapping, removing an animal from site.
- Report problem wild animals e.g. nesting birds, snakes or trapped or injured animals to site management for rescue.
- Do not feed any wild animal. Keep food resources e.g. staff lunch packs, food refuse out of reach of wild animals
- Know first aid procedure in case of a snake bite.

9. Material storage/stockpiles

- Maintain stockpile covers and screens.
- No stockpiling outside of site/in no-go areas.

10. Machinery

- Drip trays placed under portable plant e.g. pumps, generators.
- Report all leaking machinery and oil/fuel spills immediately. Spills to be treated and machinery to be fixed or remove from site.

11. Toilets

- Use designated facilities for ablutions only.
- Report blocked or leaking construction toilets.
- Keep toilets clean. Only use toilet paper!

12. Water wastage

- Do not waste water!

13. Archaeology

- Any suspected archaeological finds to be reported to site manager immediately and worked stopped in the area until further notice.

5. OPERATIONAL PHASE MANAGEMENT PLAN (OEMP)

5.1. INTERPRETATIONS

For the purposes of this OEMP the following acronyms and definitions shall apply:

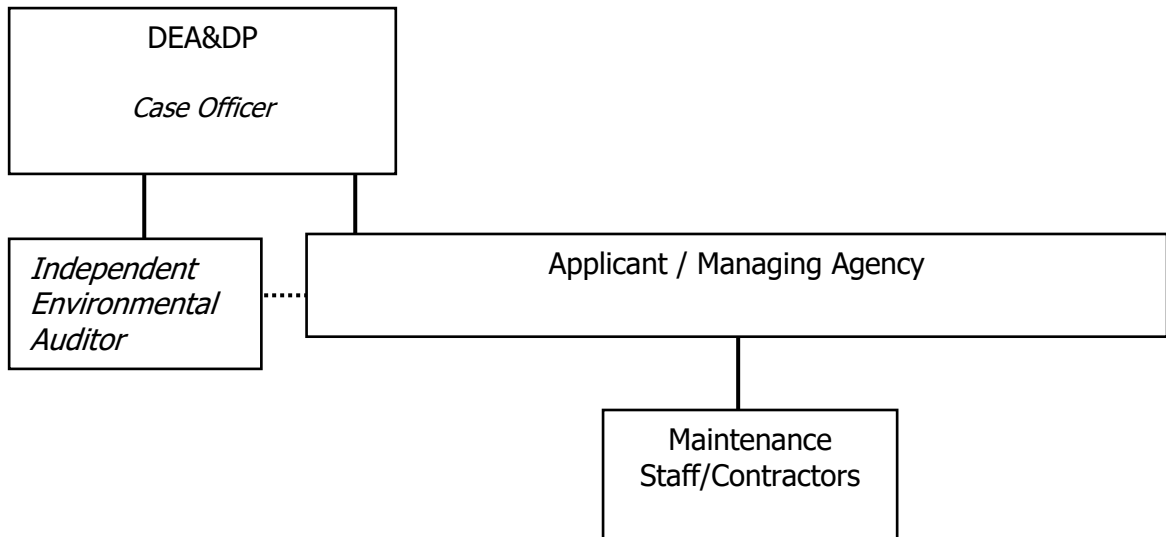
DEA&DP	Department of Environmental Affairs and Development Planning
EA	Environmental Authorisation – issued by DEA&DP
HWM	High-Water Mark (of the sea)
OEMP	Operational Phase Environmental Management Plan
Environment	The aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms.
Environmental Management Plan	Environmental Management Plans forming part of the overarching Environmental Management Programme (EMP), namely the Construction Phase Environmental Management Plan (CEMP), the Operational Phase Environmental Management Plan (OEMP) and the Decommissioning Environmental Management Plan (DEMP).
Site	The Pool's Bay connection path
Management Agency	Staff/agency employed to undertake maintenance activities on site. E.g. municipality, Cliff Path NGO, other designated entity
Locally Indigenous	Plant and animal species that are naturally occurring in areas of similar habitat type.
Structure	Means any man-made feature affixed to the ground or attached to something located on the ground, including but not limited to fences/walls, berms, levees, fill, storage tanks, shelters or buildings.
Stormwater	Water resulting from natural precipitation and/or accumulation and includes rainwater, groundwater and spring water, but excludes water in a water or wastewater reticulation system.

5.2. RESPONSIBILITIES AND ORGANISATIONAL STRUCTURE

This OEMP document describes mitigation measures in detail, identifying specific people or organisations to undertake specific tasks, in order to ensure that impacts on the environment are minimised during the operation of the development.

The organisational structure for the site is depicted in **Figure 3** below.

Figure 3: OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT ORGANISATIONAL STRUCTURE



KEY:

..... - Advisory Role

———— - Reports/Responsible to

The requirements of this OEMP will come into effect once the construction phase of the project has been completed and the ECO has issued a closure report for the construction phase.

The responsible parties are expected to co-operate closely to minimise or avoid unnecessary environmental impacts.

In the context of this document the specific responsibilities of each of the role players are as follows:

5.2.1. Management Agency

- Maintain the pathway in a safe and serviceable condition.
- Ensure compliance by all parties under their control with requirements of the OEMP as well as with conditions imposed by DEA&DP, or any other authority with respect to ongoing environmental management of the development, such as the monitoring and enforcement of the OEMP.
- Finance the environmental management requirements as outlined in the OEMP using funds as raised.

5.2.2. DEA&DP

- Liaise with the Management Agency regarding any situations or issues of concern to DEA&DP pertaining to environmental management at the development.
- Approve proposed changes to the OEMP resulting from the review or as a result of an external environmental audit or OEMP review.

5.3. LEGAL STATUS/ENFORCEMENT

By virtue of the fact that the Environmental Authorisation issued by DEA&DP for this development is based on the premise that this OEMP will be implemented to mitigate potential negative environmental impacts during the operational phase, there exists a legal obligation for the specifications of this OEMP to be complied with. This OEMP includes all relevant documentation contained or referred to within it, along with any amendments or appendices to this document.

It must be noted that the DEA&DP may request to inspect the development at any time and also to request documented proof of compliance with all Environmental Authorisation requirements that pertain to the operational phase of the development. Failure to comply with the conditions constitutes a prosecutable offense.

5.4. FINANCING OF ENVIRONMENTAL CONTROL

Financing of environmental control requirements outlined in this document, as they relate to the operational management of the pathway infrastructure, is the responsibility of the Management Agency.

The Management Agency is to determine and allocate the required funding to ensure that all the environmental requirements relevant to the property can be implemented as required by the OEMP. Key budget items shall be tabled with adequate fund allocation and must be demonstrated to the external auditor during external audits.

5.5. MONITORING

The Management Agency Site Manager will carry the responsibility of monitoring the implementation of the OEMP on site by all relevant parties. The Management Agency may wish to appoint an environmental consultant for periodic environmental monitoring/auditing and consultancy with regard to the implementation of the OEMP.

5.6. REVIEW OF THE OEMP

The relevance of the OEMP specifications to the site conditions and environmental legislative context shall be evaluated on an ongoing basis by the implementers of the OEMP. Any requested OEMP amendments must be submitted to DEA&DP for their consideration and (written) approval. Proposed OEMP amendments will be in the form of an appendix, to be attached to the original document. Once approved by DEA&DP, the Management Agency is to make the approved changes to the OEMP documentation, and management practices on site. Any individual or organization in possession of the document, are to be provided with a copy of any such appendices produced. These appendices are to provide a clear reference to which sections/specifications within the document have been updated.

5.7. AUDITING AND REVIEW OF THE OEMP

If called upon to do so by DEA&DP, external audits of the implementation of the OEMP are to be undertaken by a suitably qualified and experienced independent environmental auditor contracted by the Management Agency, per the terms of reference required by DEA&DP.

5.8. MANAGEMENT SPECIFICATIONS

Since the operational phase of the development would consist solely of maintenance activities and would be located below the HWM of the sea, the specifications as set out in Section 6.4 for the (to be) adopted maintenance Management Plan, as a requirement of the Regulations must be implemented for the operational phase of this development.

5.9. IMPACT MANAGEMENT OUTCOMES

The mitigation measures as detailed in the MMP that follows are to ensure that impacts on the environment are minimised during the Operational phase and /or as a result of maintenance to infrastructure (the operational phase of the development is intrinsically linked to maintenance). The outcome of successful implementation and monitoring of these specifications would result in reduced or insignificant impact on the various aspects identified in Table 2 above.

6. MAINTENANCE MANAGEMENT PLAN

This Maintenance Management Plan (MMP) is submitted with the signed declaration (see below) for agreement to a Maintenance Management Plan in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 (as amended).

6.1. PERSONAL DETAILS

DEA&DP REGION 1 (City of Cape Town Metropolitan and West Coast District) <input type="checkbox"/>	DEA&DP REGION 2 (Cape Winelands District, Overberg District) <input checked="" type="checkbox"/>	DEA&DP REGION 3 (Eden & Central Karoo Districts) <input type="checkbox"/>
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Name of person/authority who will undertake responsibility for the activity:	Cliff Path Action Group		
Contact person (if other):	Jobre Stassen		
Postal address:	24 Monmouth Avenue, Claremont		
Telephone:	()	Postal code:	7708
Fax:	()	Cell:	0828964527
Email:	jobre@iafrica.com		
Name of person who has prepared the MMP:	Kozette Myburgh and Christine Rabie from Ecosense CC		
Contact Person (if other):	Kozette Myburgh		
Postal address:	PO Box 1426 Knysna		
Telephone:	(021 161 0258)	Postal code:	6570
Fax:	(086) 547 4221	Cell:	082 783 9860
E-mail:	kozette@ecosense.co.za		
Name of landowner(s) on whose behalf the plan has been developed:*	Republic of South Africa		
Contact person(s):	Rowena Crowe		

Postal address:	CapeNature		
Telephone:	(021)	Postal code:	
Fax:	(086)	Cell:	
E-mail:			
Municipality for proposed project:	Overstrand Municipality		
Farm name(s), erf(s) and portion number(s) etc*:	Coastal Public Property		
Magisterial District or Town:	Hermanus		
Name(s) of watercourse(s) in question:	Seashore / Unnamed stream / wetland		
<p>*In instances where there is more than one landowner, please attach a list of landowners with their full names, contact details, farm name, farm number, portion number, Erf number, coordinates and signed declaration confirming approval for development and responsibility of the MMP</p>			

6.2. AUTHORITY ENGAGEMENT

The following authorities have been consulted to provide input based on the proposed maintenance activities:

Authority	Required involvement
Department of Water and Sanitation	Comment on BAR and EMPr
Catchment Management Agency	Comment on BAR and EMPr, Issuing Water Use Authorisation
CapeNature	Comment on BAR and EMPr
SANParks	Not required
District Municipality	Comment on BAR and EMPr
Local Municipality	Comment on EIR and EMPr
Irrigation Board / Water Users Association	Not required
Heritage Western Cape	Not required refer to SAHRA
Department of Agriculture, Forestry and Fisheries	Not required
Department of Environmental Affairs & Development Planning	Comment on BAR and EMPr
Other (please list):	
Department of Environmental Affairs (Coastal Strategies)	Comment on BAR and EMPr

6.3. PUBLIC PARTICIPATION

This MMP is an outcome of the Basic Assessment Process undertaken for the proposed development. The Public Participation Process was carried out in compliance with the regulations set out in Chapter 6 of Government Notice No. R. 326 of the National Environmental Management Act (NEMA) (Act No.107 of 1998). Steps were taken to allow ample opportunity for members of the public and key stakeholders to be involved and participate in the environmental process.

Those authorities indicated above were all provided with a copy of the Basic Assessment Report and given 30 days in which to provide comment. The content of the MMP was circulated with the BAR and in line with the DEA&DP's Information document, the following is confirmed:

(i) Given written notice to the owner or person in control of that land if the person undertaking the maintenance activity is not the owner or person in control of the land.	<i>For any development below the HWm, Cape Nature issues a Seashore lease in terms of the Seashore Act on behalf of the Republic of South Africa, which is the landowner</i>
(ii) Given written notice to adjacent landowners (up to 500m upstream and downstream from furthest upstream and downstream maintenance site and opposite side of the banks) of the development of the MMP.	<i>Evidence of letters to stakeholders along Pooles Bay included in the Comments and Responses Report of the BAR The project would have no influence 500m upstream as it is located on the seashore</i>
(iii) Stakeholder meeting held for adjacent landowners, in which MMP is presented. This must include an opportunity for adjacent landowners to provide comment.	<i>An open day was held in December 2020 and another end 2021. Since this MMP is included in the BAR and subject to comprehensive public participation, a specific stakeholder meeting is not deemed necessary</i>
(iv) Given written notice to any organ of state having jurisdiction in respect of any aspect of the activity(ies) proposed within the development of the MMP.	<i>Evidence of letters to Organs of State included in the Comments and Responses Report of the BAR</i>
(v) Provided written notice and confirmation to the relevant Water Users Association (WUA) or Irrigation Board (IB) of the development of the MMP, if applicable.	<i>Evidence of letters (as applicable) included in the Comments and Responses Report of the BAR, although the work on the property will not be applicable to a Water User Association or affect irrigation board infrastructure.</i>

6.4. MANAGEMENT SPECIFICATIONS

This MMP is applicable to the ongoing maintenance of the infrastructure on the site, all of which would be located below the HWM of the sea, thus on the seashore. Two wetland areas would be traversed, to which this MMP is also applicable.

6.4.1. Infrastructure maintenance

The path infrastructure shall be kept in a stable, sound and serviceable condition in order to maintain safety of users and minimise risk of loss of infrastructure during storm/high tides.

The CEMP management specifications contained within this EMP shall be applicable to any construction work required as part of maintenance work. An ECO shall be appointed for maintenance construction work only if the work scope is longer than 2 weeks.

The five-year maintenance budget for the project shall be reviewed and updated every five years.

6.4.2. Alien Invasive Plant Management

The area within 2 meter width of the new cliff path shall be kept free of alien invasive plants as listed in the Alien Invasive Species Regulations (2016 and any subsequent amendments) of the National Environmental Management: Biodiversity Act (of 2004). These shall be pulled out by hand as seedlings and the plants removed from the area for disposal.

6.4.3. No-go areas

Maintenance workers and staff shall not access private properties at any time and signage shall be installed and maintained to discourage public access into private properties from the pathway and trampling of vegetation.

Two wetland areas landward of the HWM on Erf 12257 and Erf 1248/1249 are also no-go areas and shall not be entered.

6.4.4. Safety

Safety/indemnity signage must be installed and maintained to make path users aware of safety risks due to terrain and location within the HWM of the sea.

6.4.5. Local labour

Wherever possible, local labour shall be used for maintenance work.

6.4.6. Interpretative signage

Interpretative signage, encouraging environmental/conservation awareness is encouraged.

6.4.7. Aesthetics

Signage and infrastructure shall be aesthetically pleasing (and thus maintained in good condition). Litter shall be controlled – through periodic litter clean ups and/or provision of litter bins.

6.5. DECLARATION

THE PERSON THAT WILL BE UNDERTAKING THE MAINTENANCE

- I, in my **personal capacity** or **duly authorised** (please circle the applicable option) by (name of legal entity) thereto hereby declare that I/we:
- Request an agreement to the application and regard the information contained herein to be true and correct for this Maintenance and Management Plan,
- Am fully aware of my responsibilities in terms of the National Environmental Management Act of 1998 ("NEMA") (Act No. 107 of 1998) and that, notwithstanding an agreement to this Maintenance Management Plan, I/we shall comply with any other statutory requirement applicable, which may include, but not limited to the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983), the National Water Act, 1998 (Act 36 of 1998) and the Environmental Impact Assessment Regulations, 2014 ("EIA Regulations") in terms of NEMA;
- Am fully aware that the proposed maintenance constitutes a listed activity in terms of the NEMA EIA Regulations, 2014, and that an environmental assessment for environmental authorisation may be required for any other listed activities not included as part of this MMP;
- Acknowledge that any activity undertaken that does not form part of the agreed and adopted Maintenance Management Plan, will be subject to the Section 24(F) of NEMA and that appropriate enforcement and compliance requirements will follow;
- Shall undertake only those tasks described in the Maintenance and Management Plan, failing which environmental authorisation will be required, where applicable;
- Shall provide the competent authorities with access to all information at my disposal that is relevant to this request;
- Shall be responsible for any costs incurred in complying with environmental legislation;
- Hereby indemnify the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of, inter alia, any loss or damage to property or person as a consequence of undertaking this maintenance management plan; and
- Am aware that a false declaration is an offence in terms of regulation 48(1)(a) GN No. R. 982 of 4 December 2014, as amended.

Signature of the applicant:

Date:

Name of institution/company:

NOTE: SINCE THIS IS THE DRAFT MMP FOR COMMENT, THIS DOCUMENT WILL BE SIGNED UPON FINALISATION AND SUBMISSION

6.6. MMP appendices

The MMP Appendices follow.

MMP Appendix 1	Reporting for intent to undertake maintenance activities – Form A
MMP Appendix 2	Reporting for completion of maintenance activities – Form B

MMP APPENDIX 1: REPORTING FOR INTENT TO UNDERTAKE

REPORTING FOR INTENT TO UNDERTAKE MAINTENANCE ACTIVITIES – FORM A				
Section A: Landowner Details				
Name	Surname	Farm No.	Erf No.	Today's Date
Section B: Details of proposed maintenance activity				
WUA/GA reference number and DEA&DP reference number for MMP.	Activity Type:	Reference code (<i>make reference to MMP</i>)	Footprint area (m ²)	Volume of material (m ³)
Equipment to be used:	Description of method for planned activity:			Date when work will commence:
Date of last flood event for site:	Note any further damage and comments regarding the state of the site			
Section C: Photographs of activity location before maintenance				
Before A Coordinates: S E				
Before B Coordinates: S E Date of photos taken:				

MMP APPENDIX 2: REPORTING FOR COMPLETION OF MAINTENANCE ACTIVITIES – FORM B

REPORTING FOR COMPLETION OF MAINTENANCE ACTIVITIES – FORM B				
Section A: Landowner Details				
Name	Surname	Farm No.	Erf No.	Today's Date
Section B: Details of proposed maintenance activity				
WUA/GA reference number and DEA&DP reference number for MMP.	Activity Type:	Reference code (<i>make reference to MMP</i>)	Footprint area (m ²)	Volume of material (m ³)
Equipment that was used:	Description of method for completed activity and if commence date changed			Date activity completed
Date of last flood event for site:	Note any challenges or difficulties experienced in following the MMP method statement			
Section C: Photographs of activity location after maintenance				
After A				
Coordinates: S E				
After B				
Coordinates: S E				
Date of photos taken:				

7. DECOMMISSIONING PHASE REQUIREMENTS

The proposed project would not have operational phase activities to be decommissioned or closed. Should the path need to be demolished, required actions would need to take place within the scope of the Construction Environmental Management Plan.

8. SOURCES & REFERENCES

- a) *Basic Assessment Report for a Proposed pedestrian path to connect the existing Hermanus Cliff Path via Poole's Bay, Hermanus, Ecosense cc 2020, 2021.*

9. EMPr APPENDICES

General EMPr Appendices follow:

EMPr Appendix 1	<i>Environmental Authorisation issued by DEA&DP</i>
EMPr Appendix 2	<i>Curricula Vitae of EAP(s) who compiled the EMPr</i>

EMPr Appendix: 1

Environmental Authorisation issued by the Competent Authority

<insert EA once issued>

EMPr Appendix: 2

Curriculum Vitae

Curriculum Vitae

Kozette Myburgh

Profile

Experienced environmental planner, auditor and manager. Excellent technical writing skills, training and consulting services.

Relevant experience

Ecosense CC (2007-current); Bluepebble CC (2021-current) Integrated environmental management through conducting environmental authorisation processes including basic assessments, Scoping /EIRs, Waste licenses, Water Use Authorisations, compliance audits and due diligence investigations.

Stellenbosch University (2003-2006) Research and administrative management.

Prior experience (1992-2002) Worked in administrative positions for Provincial and Local government, as well as private sector in Human Resources and Financial Management.

Selected projects (Environmental Authorisation applications)

Community, Government Housing and Sporting Facilities:

Environmental Consultant for City of Cape Town Professional Team for Human Settlement Department (various housing development projects)

Maroela North development and biodiversity offset, Kraaifontein

Garies Landfill site

Kalkfontein Informal Settlement Upgrade

Jack Muller and Danie Uys Park – revitalisation and wetland rehabilitation, Bellville

Nuwe Begin (WCape Provincial housing pilot project), Blue Downs, Cape Town

Commercial/Industrial/Educational Developments:

Melkbos Apartments, Melkbosstrand

Fair Cape biodigester, Durbanville, Cape Town

Journeys End wine Cellar and effluent treatment plant, Sir Lowry's Pass

Consol Glass Cullet Processing Plant, Bellville

Meerlust Bottling and storage facility, Stellenbosch

Synergy school, Sunnysdale, Cape Town

Infrastructure Developments:

Scholtz River stormwater infrastructure, Greyton

Haute Cabriere bridge upgrade, Franschhoek

Bloubos Road Extension, Strand

Soetrivier Weir, Strand

Greenways Stormwater, Strand

Penhill sewer system installation, Cape Town

Ceres Nduli new reservoir and Groenplaatjies water pipeline upgrade, Ceres

Scholtz River flood attenuation, Greyton

Department of Public works Correctional Facility WWTW's, Helderstroom and Buffeljagsriver

Telkom masts Pringle Bay farms; Altria, Atlantis

Flood damage repairs (various applications for Theewaterskloof Municipality)

Telkom mast

Vanrhynsdorp prison storm water, Vanrhynsdorp

R300 Ring Road Toll project, Cape Town

Agriculture / Aquaculture Developments:

Molapong Aquaculture development, Saldanha

Spier berms and wetland rehabilitation, Stellenbosch

Vergenoegd Agricultural Development, Worcester

Hondeklipbaai Abalone Farm, Hondeklipbaai

Lakenvlei Farm Dam, Ceres

Spier berms and wetland rehabilitation, Stellenbosch

Woodlands Farm Dam, Humansdorp

Current Position

- Director: Environmental Impact Assessment

Year of birth

- 1973

Nationality

- South African

Language

- English – fluent
- Afrikaans - fluent

Qualifications

- N4 Certificate – Human Resources Management
- Certificate in Social Impact Assessment
- BA (Anthropology, African Politics)
- MPhil Community and Development
- LL.M Environmental Law (Professional Masters)

Professional Registrations

- EAPASA (2019-1346)

Key skills

- Process facilitation
- Impact assessment
- Environmental management
- Public participation
- Monitoring and evaluation
- Project management