



THE PROPOSED RESTORATION AND MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND

Revised Maintenance Management Plan

June 2021

Prepared for:



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Today's Impact | Tomorrow's Legacy

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QUALITY AND REVISION RECORD

QUALITY APPROVAL

	Capacity	Name	Signature	Date
Author	Environmental Consultant	Megan Smith		26/06/2021
Reviewer	Environmental Consultant	Elana Mostert		26/06/2021

This report has been prepared in accordance with Enviroworks Quality Management System.

REVISION RECORD

Revision Number	Objective	Change	Date
1	Client review	Comments and inputs incorporated	13/01/2021
2	Internal review	General	14/01/2021
3	Client review	Comments and inputs incorporated	27/01/2021
4	Internal review	Changes based on the comments received during public participation	18/05/2021
5	Internal review	Format and general comments	22/05/2021
6	Internal review	Changes based on the comments received during public participation	26/06/2021

DISCLAIMER

“Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time and budget. Discussions are to some extent made on reasonable and informed assumptions built on bona fide information sources, as well as deductive reasoning. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage during the impact assessment phase. The author does not accept responsibility for conclusions made in good faith based on own databases or on the information provided. Although the author exercised due care and diligence in rendering services and preparing documents, he accepts no liability, and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by the authors and by the use of this document. This report should therefore be viewed and acted upon with these limitations in mind.”

LIST OF ACRONYMS AND ABBREVIATIONS

BSQW		Blue Stone Quarry Wall
DFFE	-	Department of Forestry, Fisheries and the Environment
DEO	-	Designated Environmental Officer
DWS	-	Department of Water and Sanitation
ECO	-	Environmental Control Officer
EIA		Environmental Impact Assessment
EPC	-	Engineering Procurement Contractor
HWC	-	Heritage Western Cape
I&APs	-	Interested and Affected Parties
NEMA	-	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	-	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NHRA	-	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NSBA	-	National Spatial Biodiversity Assessment
NWA	-	National Water Act, 1998 (Act No. 36 of 1998)
MMP		Maintenance Management Plan
SAHRA	-	South African Heritage Resources Agency

1 APPLICANT DETAILS

Please see below the relevant contact details of the Applicant/Proponent of the Maintenance Management Plan.

Application Name	Robben Island Museum
Contact Person	Vusimuszi Bila (Senior Project Manager: Infrastructure Facilities Management)
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2 INTRODUCTION

This Maintenance Management Plan (MMP), amongst others, describes the mitigation measures and identifies the specific role players that will be responsible for implementation of the mitigation measures, to ensure that impacts on the environment are minimised during all phases of the proposed restoration and maintenance of the Blue Stone Quarry Wall (BSQW) on Robben Island during the lifetime of the wall.

2.1 NEMA Regulations Report Compliance

There are no formal requirements for a MMP within the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA). Therefore, Appendix 4 of the NEMA, Environmental Impact Assessment (EIA) Regulations, 2017 (as amended) has been used as a guideline to compile the MMP. The requirements have been used as a best practice and “Duty of Care” principle as per of Section 28 of the National Environmental Management Act, 1998 (Act 107 of 1998).

The table below lists the relevant requirements, indicates whether the relevant information is included in this report or not, and provides cross-references as to where the relevant information can be found in this report.

Table 1: Environmental Management Programme requirements as per Appendix 4 of the NEMA EIA Regulations, 2014 (as amended).

Reg.	MMP Content	Included (Yes, No or N/A)	Report Section Reference
(a)	A draft environmental management programme must comply with section 24N of the Act and include -		
	details of: (i) the person who prepared the environmental management programme; and	Yes	Chapter 3
	(ii) the expertise of that person to prepare an environmental management programme;	Yes	Chapter 3
(b)	A detailed description of the aspects of the activity that are covered by the MMP as identified by the project description;	Yes	Chapter 4
(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 should be avoided, including buffers;	Yes	Chapter 2
(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; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and, (v) where relevant, operation activities;	Yes	Chapter 9

Reg.	MMP Content	Included (Yes, No or N/A)	Report Section Reference
(f)	<p>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—</p> <ul style="list-style-type: none"> (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and, (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable; 	Yes	Chapter 7 and 9
(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	YES	Chapter 6 and 9
(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	YES	Chapter 9
(i)	An indication of the persons who will be responsible for the implementation of the impact management actions;	YES	Chapter 9
(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	-	-
(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	YES	Chapter 9
(l)	A program for reporting on compliance, taking into account the requirements as prescribed by Regulations;	YES	Chapter 6
(m)	<p>An environmental awareness plan describing the manner in which –</p> <ul style="list-style-type: none"> (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and, (ii) risk must be dealt with in order to avoid pollution or the degradation of the environment; and, 	YES	Chapter 7
(n)	Any specific information that may be required by the Competent Authority.	-	-

2.2 Report Layout

The table below summarises the content layout of this report.

Table 2: Summary of report content layout.

Chapter	Chapter Heading	Content Summary
1	Introduction	Provides a brief background to the proposed project and explains the compliance of this report with regards to NEMA.
2	Map of the Proposed Activity	Provides a Sensitivity Map of the area surrounding the proposed project as well as a map showing the locality of the proposed project.
3	Environmental Assessment Practitioner	Provides details of the EAP who prepared this MMP and provides information on the expertise of the EAP.
4	Project Description and Listed Activities Covered by this MMP.	Provides a brief project description, a list of proposed maintenance activities and the NEMA Listed Activities triggered.
5	Summary of the Main Impacts Identified During the Maintenance Activities.	Summarises the biophysical, social, economic and cultural impacts of the proposed maintenance activities.
6	Persons Responsible for Implementing this MMP.	Provides information on the persons who will be responsible for implementing this MMP, and explains requirements with regards to on-site communication, site instruction entries, method statements, and record keeping.
7	Environmental Awareness Plan	Provides information on environmental awareness and risk training, and basic rules of conduct. Also provides an environmental risk plan.
8	Specialist assessments	Provides conclusive results from specialist assessments conducted.
9	Impacts and Mitigation Measures	Provides mitigation measures for the various impacts of the maintenance activities.
10	Emergency Response Plan	Provides information on the emergency response plan.
11	Incident Register	Stipulates the content requirements for incident registers.
12	Rehabilitation Measures	Provides rehabilitation measures.

3 MAP OF THE PROPOSED ACTIVITY

The Figure 1 and 2 below presents the location of the proposed restoration works. Figure 3 illustrates the general environmental sensitivity of the site. The entire quarry and adjacent areas are categorised as Ecological Support Areas in the Western Cape Spatial Biodiversity Plan (2017). Therefore, the area is of high conservation importance. No “no-go” areas have been included in the Figure 3 because they are included in the more detailed site layout map (Figure 4). Detailed drawings and contours of the wall are located in Appendix A and D.

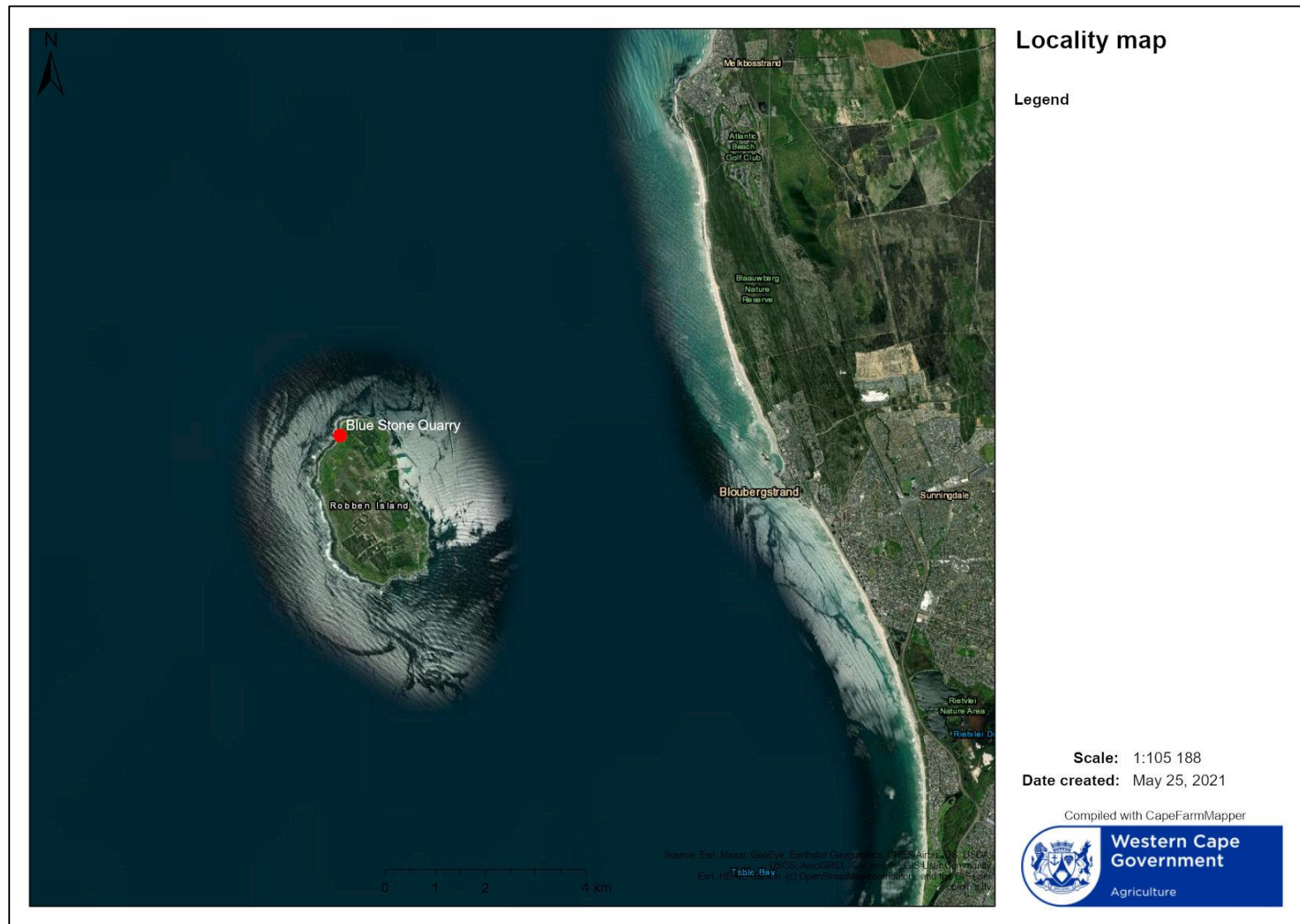


Figure 1: General locality map showing the position of the Blue Stone Quarry on Robben Island



Figure 2 Fine scale locality map, showing the Blue Stone Quarry and direct surrounds



Figure 3 General sensitivity map of the proposed area including areas of conservation concern from the Western Cape Biodiversity Spatial Plan (2017) where “BSP” means Biodiversity Spatial Plan and “ESA” means Ecological Support Area.

4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

This Maintenance Management Plan was prepared by Megan Smith from Enviroworks. The sections below provide the details of the EAP and explain the EAP's expertise to prepare this MMP (Please see the EAP's full CV in Appendix B).

4.1 Details of the EAP

Business name of EAP:	Enviroworks
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Postal address:	Suite 1064, Private Bag X2, Century City
Postal code:	7441
Telephone:	0769658002
E-mail:	megan.smith@enviroworks.co.za
Fax:	086 601 7507

4.2 Expertise of the EAP

Name of EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Megan Smith	MSc Biological Sciences (UCT)	IAIA: 6459	>1 year
Name of EAP (Reviewer)	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Elana Mostert	MSc. Ecology (SU)	IAIA: 5631	4 years

5 PROJECT DESCRIPTION AND LISTED ACTIVITIES COVERED BY THIS MMP

5.1 Brief Project Description

Robben Island World Heritage Site, located off the coast of the Western Cape region of South Africa, has been on the World Heritage List since 1999, and is recognised as a place of Outstanding Universal Value (OUV).

The OUV of Robben Island is anchored on several landmarks associated with the use of the Island by the state for political imprisonment and isolation of people who were considered as undesirable. These landmarks include the Blue Stone Quarry (BSQ) located on the northwest coast of the Island. Prisoners using hand tools mined dolomite in the quarry for the construction of many buildings on the Island. The prisoners also built the stone wall or dyke which flanks the Quarry on the seaside. The wall was originally built to prevent the ingress of seawater into the quarry area.

The Quarry and Stone Wall are, therefore, highly treasured as heritage and are significant to the Island's history of imprisonment with hard labour. BSQ and Wall, and the prison precincts are the foundations for the statement of Outstanding Universal Value (OUV). Subsequently, placing Robben Island on the UNESCO World Heritage list as a site of memory and conscience.

Quarry activities began in 1963 and ceased in 1978 as a result of pressure from the International Committee of the Red Cross who advocated for the rights of prisoners. The BSQ was consequently closed, and the Department of Correctional Services took over maintenance of the site until 1997 when the responsibility was transferred to Robben Island Museum.

The BSQ Wall was made from materials available on the site which included quarry stone waste, sand, seashells and beach pebbles. As a result of the flimsy nature of some of the construction materials the wall was sometimes breached by the sea and thus required to be constantly watched and repaired.

In September 2001, a maritime storm destroyed a middle section of the wall resulting in a deluge of seawater into the quarry. The tidal action created a gap in the wall approximately 15m wide. In 2012, there was another severe tidal event and a large section of the wall collapsed extending the breached section to 82m. Currently, the breached section of the wall can be described as a pile of stones with a 1:4 gradient slope on the side facing the sea.

Responding to the disaster, Robben Island Museum has prepared a remedial plan which requires the following tasks to be undertaken (based on the 2020 Implementation Plan, Appendix A):

- Reinstating the breached section of the BSQ wall (approximately 77 m long).

- Repairing damaged sections of the walls that are currently standing.
- Repairing the Quarry Revetment ring walls.
- Repairing any future damages within the next five years to walls and associated infrastructure.

Robben Island Museum adheres to conservation guidelines as set out in international conservation charters such as the Burra Charter for Places of Cultural Significance (1999). The aim of the project is to maintain the integrity of the BSQ by means of restoration. Suitable debris from the collapsed wall will be recycled. Additional stones may be required to strengthen the wall and to compensate for an anticipated shortfall of façade stones. These stones will be sourced from an already existing stockpile adjacent to the site (Figure 4).

To cut the stones in the stockpile to the right size and shape to place in the wall, a jackhammer will be used. A site, such as a warehouse, will be allocated at the harbour of Robben Island for this purpose. Material will be moved around the site using wheelbarrows, and to and from the warehouse by means of a 4x4 vehicle.

5.2 NEMA Listed Activities Triggered

The NEMA EIA Listed Activities (as per the NEMA EIA Regulations Listing Notices 1, 2 and 3 of 2014, as amended) that will likely be triggered by the proposed maintenance are listed in the table below.

Table 3: Listed Activities applicable to this application.

Listed Activity	Project Activity / Component
Government Notice Regulation No. 324 of 2017 (Listing Notice 1)	
Activity 19A	<p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—</p> <ol style="list-style-type: none"> I. the seashore; II. the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater; or III. the sea; — <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p style="text-align: center;">(a) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p>

Please note that “Maintenance” in this Maintenance Management Plan refers to the following definition as per NEMA (Act 107 of 1998):

“Means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint”.

Because the proposed restoration works are expected to maintain the Blue Stone Quarry in structure on the same location, capacity and footprint, the proposed works are considered “maintenance”.

5.3 Anticipated Restoration and Maintenance Activities and Site Layout Plan

This document deals with the reconstruction activities to restore the BSQ Wall and other aspects of the Quarry as part of the overall maintenance of the BSQ. Based on the restoration Implementation plan (2020), compiled by Archaeological and Heritage Services Africa (Pty) Ltd, (Appendix A), the following restoration activities are proposed:

- Reconstruction/restoration of an experimental wall 5m long on the northern end of the breached section.
- Complete restoration/reconstruction of the remainder of the breached section (c. 77 m long).
- Stabilization of the west face of western wall (82 m long).
- The erection of temporary wooden boardwalks for the movement of personnel and wheelbarrows.
- Repair damaged sections of the standing walls.
- Repair of the Quarry revetment ring walls.

Robben Island Museum aims to maintain the historical integrity of the BSQ wall and thus, will be reconstructing the breached section and other damaged areas using restoration methodologies recommended in international conservation charters such as the *Burra Charter for Places of Cultural significance (1999)*. Suitable debris from the collapsed wall will be recycled while new material such as tie stones or large barrier stones will be added to strengthen the wall (as stipulated in Section 4.1). These stones will be sourced from the already existing rock stockpiled adjacent to the quarry (Figure 4) No concrete or heavy machinery will be used as part of the restoration work.

The stones from the stockpile will be transported to and from the site by a 4x4 vehicle to be reshaped or resized by a jackhammer at a warehouse at the harbour. Jackhammering will be strictly prohibited on the site at all times. The stockpile will be accessed from the road by a singular foot path which has been demarcated in Figure 4.

To avoid conflict with any African Penguins that be accessing their southern route (as depicted in the 2021 Avifaunal Assessment Report), the adjacent stockpile of imported rocks will only be accessed in the middle of the day, when the penguins are least active in using their access route. Times to access the stockpile will be between 11:00 and 13:00 every day.

A maximum of 15 personnel will be on site at any point in time. These staff members will be transported to and from the site via a minibus or a 4x4 vehicle. No ablution facilities will be located on the site because the staff will be transported to off-site ablution facilities as needed. A small (approximately 10 m²) laydown area has been allocated for the personnel to have refreshments. The area was identified because it is already disturbed. No clearance of vegetation will be required for this lay down area. Moreover, no kitchen facilities, chairs or tables will be required. Should shade be required for the personnel a gazebo will be set up, avoiding any additional impacts to the surrounding environment.

Please note that vehicles will have **one** area where they are allowed to turn around. This area is demarcated in Figure 4 and has been chosen based on the disturbed nature of the site.

As per the recommendations of the avifaunal specialists and the Implementation Plan (2020), the restoration activities are expected to begin mid-winter 2021 and continue uninterrupted up to a year (please see the detailed timeline in the 2020 Implementation Plan). The works will take place between 09:00 and 17:00 every day to ensure the movement of penguins are avoided. One access and exit road for the vehicles is recommended by the avifaunal specialists. Vehicles are expected to access the site via the North through Cornelia Road to avoid disturbing any Penguins as they cross the road at the quarry.

After the above-mentioned restoration activities are completed, a period of monitoring and evaluation of the restored wall will continue annually. If maintenance works are necessary, it will be carried out, based on the avifaunal specialist recommendations, after a survey of the avifauna breeding areas has been conducted. The goal of this will be to ascertain when the best time will be to conduct maintenance work to avoid times that any sensitive bird species may be breeding within or directly adjacent to the quarry. Maintenance activities will apply restoration methodologies recommended in international conservation charters such as the Burra Charter (1999) for places of Cultural significance. It is expected that the maintenance works be minor maintenance work and is not expected to result in an expansion of the existing footprint or affected relevant structures.

During maintenance activities, the following activities may also occur:

- The installation of temporary wooden boardwalks for the movement of the personnel and wheelbarrows.

The general site layout plan of the proposed maintenance including the environmental “no-go” areas, a lay down area, and access roads is illustrated in Figure 4. No-go areas, access routes and areas of bird activity are also included in figure 4 and are as per the Avifaunal Assessment Report in Appendix C.

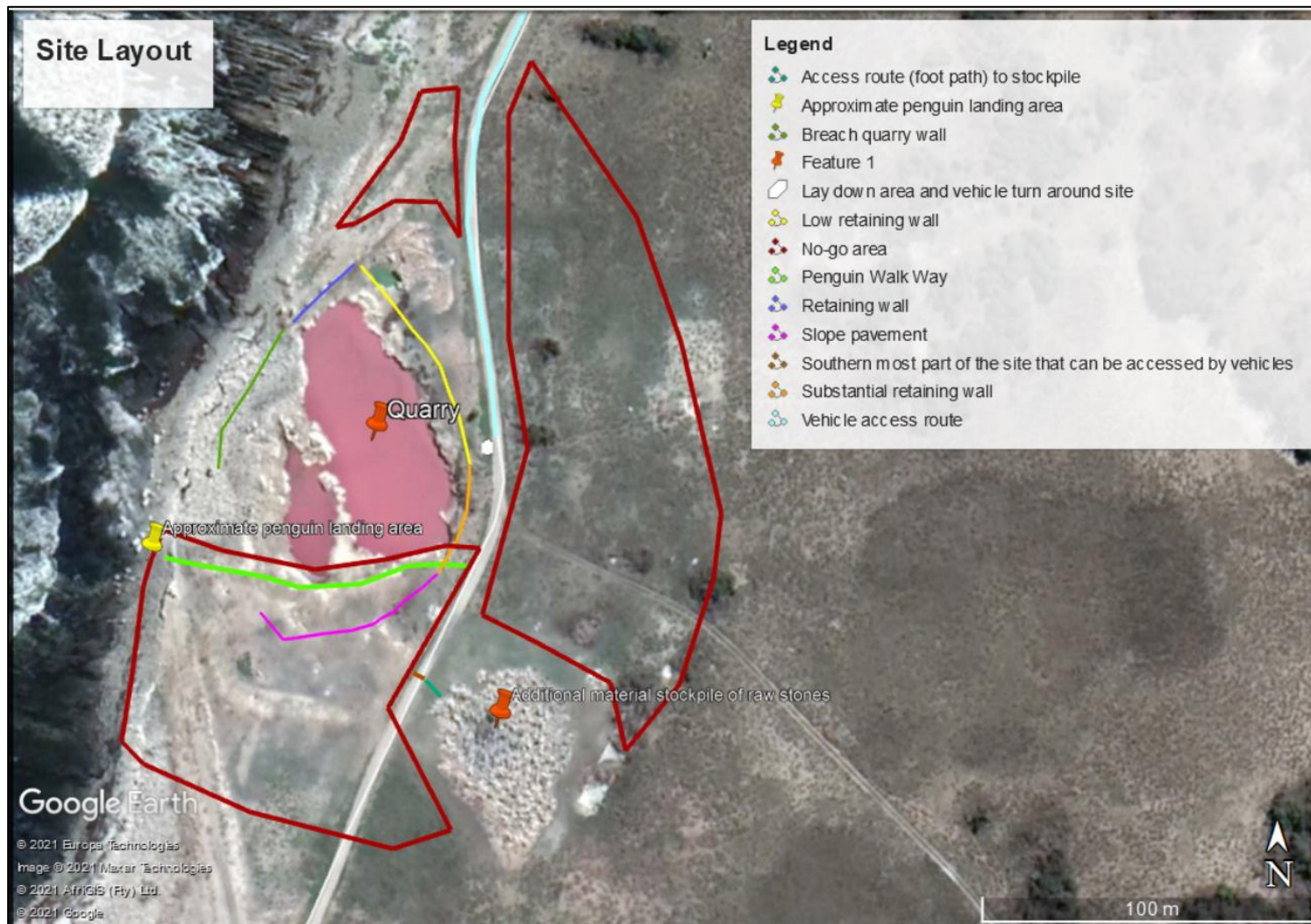



Figure 4 General site layout plan including lay down area (demarcated as a white spot) and no-go areas (demarcated in orange lines). Please note that the penguin pathway is only approximate. Please see Appendix C for an accurate location of the penguin pathway.

6 SUMMARY OF THE MAIN IMPACTS IDENTIFIED DURING RESTORATION AND MAINTENANCE ACTIVITIES

The main impacts that have been identified as part of proposed project are detailed in the table below (Table 4). These impacts include those identified by specialists who conducted assessments in 2021 (Please see Appendix C for the avifaunal specialist assessment report).

Table 4 Summary of the main impacts identified during restoration and maintenance activities.

Impact	Description
Noise	Maintenance and/or restoration activities will generate a certain amount of noise due to the movement of vehicles. There are however no human receptors in the area, the noise may be a nuisance to the local bird population in the area.
Waste	Small amounts of domestic waste will be generated. Lack of proper management of the waste on site may lead to wind-blown litter.
Wastewater Management & Stormwater Runoff	Petrochemical leaks from vehicles may result in small spills that can leach into the soil and surface water if not management correctly.
Ecology - Fauna	The removals of rocks, from the old stockpile, to be used for the dry packing (and reinstatement of the wall) may result in temporary disturbance for locally indigenous fauna such as snakes
Ecology - Avifauna (based on Appendix C)	<ul style="list-style-type: none"> • The restoration of the BSQW has potential for impacts on African Penguins with regards to altering their natural walkways and access to/from the ocean. • The restoration of the BSQW has potential to impact on Cape Cormorants with regards to their use of the rock stockpile as a nesting site. Cape Cormorants mainly use the breakwater areas on Robben Island for their nests and there are other places around the island that they use too, so the removal of the rock stockpile should not have too much of an impact on this species. • Temporary disturbance to the remaining bird species including: <ul style="list-style-type: none"> ○ African Black Oystercatcher <i>Haematopus moquini</i> (Near Threatened)

	<ul style="list-style-type: none"> ○ Swift Terns <i>Sterna bergii</i> (Although impact is expected to be minimal/negligible) ○ Kelp Gull <i>Larus dominicanus</i> ○ Hartlaub’s Gull <i>Chroicocephalus hartlaubii</i> ● Vehicle strikes kill penguins and disturb movement of birds, can maim one of a breeding pair to have a detrimental impact on caring for chicks or future breeding. A maimed bird has a very slight likelihood of survival. ● Movement and noise of personnel on the site may result in the disturbance of the avifaunal species.
<p>Cultural Heritage</p>	<ul style="list-style-type: none"> ● The restoration of the BSQ wall and subsequent maintenance activities will positively impact the cultural heritage of the Blue Stone Quarry by preserving the historical integrity of the quarry. ● Movement of vehicles may damage the heritage importance of the Blue Stone Quarry and surrounding heritage elements (located in Figure 5) if vehicles are not restricted to designated roads. <p>Please see below areas where Heritage Sensitivity occur. Vehicle movement associated with the proposed activities may affect these areas should the vehicles not be restricted to the designated road.</p> 

	<p>Figure 5 Locality of important heritage structure elements within the Blue Stone Quarry Wall that must be avoided (taken from Alternative Construction Options Assessment, 2015).</p> <p>Please note the area of the areas of each of the sensitive heritage aspects:</p> <ul style="list-style-type: none">• Concrete Platform: 3x8 m• Drilled stone: 2 m long.• Loading Bay: One large bluestone boulder (extent not known but approximately 2x2 m).• Concrete Platform: 2x2 m.• Knaplyn: Rows of blue stones (extent unknown).• Shed foundation: 2x6 m.• Shed floor: Extent not known, but approximately 3x3 m.
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7 PERSONS RESPONSIBLE FOR IMPLEMENTING THIS MMP

The “Responsibility” columns in the impact and mitigation tables provided below indicate which team member(s) are responsible for implementation of the identified mitigation measures; these team members include the following:

- Restoration/maintenance implementation contractor(s)/manager.
- Applicant; and the
- Designated Environmental Officer

The sections below list further supplementary measures, which must also be implemented by the relevant team members.

The **restoration/maintenance implementation Contractor** will:

- Keep a copy of MMP available on site.
- Give orientation to field staff on the MMP.
- Ensure that all problems identified during environmental inspections, are addressed, and rectified as soon as reasonably possible.

The RIM **Restoration and/or Maintenance Project Managers** will:

- Have the authority to stop work and issue fines.
- Receive reports from the ECO and report to the Client (RIM).
- Enforce contractor obligations to the MMP; and,
- Support the ECO in his/her roles and responsibilities.

The **Environmental Control Officer** will:

- Meet with the contractor and project manager to hand over the site and go through the content of the MMP, including the “do’s and don’ts” of the project, to ensure that the parties understand their responsibilities to the MMP.
- Be accountable for monitoring and auditing activities to ensure compliance with the MMP.
- Work in collaboration with all stakeholders
- Will make professional judgements on any matter brought before her/him without fear or prejudice.

- May, in the event of there being a serious threat to or impact on the environment, correspond with the contract project manager to stop work.
- Complete an ECO checklist after each site inspection and distribute this to the project team within 5 working days

The **Applicant**, will be responsible to prevent negative environmental impacts, and as such will:

- Maintain all facilities and infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts;
- Amend this MMP and submit to the designated EAP for approval should there be a change in the maintenance activities in the scope of work or impacts;
- Not construct any additional buildings, infrastructure, etc. without performing an environmental impact assessment where listed activities of the 2014 NEMA EIA Regulations (as amended) are triggered; and,
- Immediately remedy any activities that contribute to negative environmental impacts.

7.1 On-site Communication

The following sections describe the site communication measures that will need to be implemented.

7.1.1 Site Instruction Entries

The Site Instruction book must be used for the recording of general site instructions as they relate to the works on site. It must also be used for the issuing of **stop work orders** for the purposes of immediately halting any particular activities of the contractor in lieu of the environmental risk that they may pose.

7.1.2 Method Statements

Method statements from the Contractor will be required for specific sensitive actions on request by the authorities or the ECO.

A method statement forms the baseline information on which work in sensitive environments takes place and is a “live document” allowing for modifications to be negotiated between the Contractor and ECO / Engineer, as circumstances unfolds.

A method statement describes the scope of the intended work, step-by-step, in order for the ECO and Applicant to understand the Contractor’s intentions. This will enable them to assist in devising any mitigation measures, which would minimise environmental impacts during these tasks. For each

instance wherein it is requested that the Contractor submit a method statement to the satisfaction of the ECO, the format must clearly indicate the following:

- **What** – a brief description of the work to be undertaken.
- **How** – a detailed description of the process of work, methods and materials.
- **Where** – a description/sketch map of the locality of work (if applicable); and
- **When** – the sequencing of actions with due commencement dates and completion date estimates.

All method statements will form part of the MMP documentation and are subject to all terms and conditions contained within the MMP main document.

7.1.3 Record Keeping

All records related to the implementation of this MMP (e.g., site instruction book, method statements, environmental reports) must be kept together in an office where they are safe and can be retrieved easily. These records must be kept for two years and must at any time be available for scrutiny by any relevant authorities.

7.2 Monitoring

Several monitoring actions are proposed which would be undertaken by various project role players. For detail on these actions, “Responsible Person/Party”, and “Monitoring Frequency” associated with the identified mitigation measures, refers to the “Monitoring” column in the impact assessment below (Chapter 10).

7.3 Performance Assessment and Reporting on MMP Compliance

A suitably qualified Environmental Control Officer (ECO) must be appointed by the Applicant to oversee the implementation of the mitigation measures described in this MMP.

The ECO may not be someone appointed by the contractor or other party involved with this project, other than the Applicant.

The following applies, amongst others, to the ECO’s role:

- The ECO must undertake **bi-monthly site visits** during phases when **restoration activities and maintenance activities occur**.
- The ECO must **report to** the Applicant only.

- The ECO must present an **environmental site induction/awareness training session** to all personnel before work on site commences, as are also described below; and
- After completion of the maintenance activities, an ECO inspection must be undertaken by the ECO, to determine compliance with the MMP. Hard and electronic copies of the report must be submitted to the Client.

The ECO can recommend the stopping of works if in his/her opinion there is a serious threat to, or impact on the environment, caused directly from the maintenance operations. This authority is to be limited to emergency situations where consultation with the Applicant is not immediately available. In all such work stoppage situations the ECO is to inform the Engineer and Applicant of the reasons for the stoppage as soon as possible.

Upon failure by the Contractor or employee(s) to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the Applicant to have the contractor's representative or any employee(s) removed from the site or 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.

7.3.1 ECO Site Inspection Reports

The ECO site inspection reports (also called "ECO checklists") will report on the compliance of the mitigation measures contained in the MMP. The report must be submitted to the Applicant, within five (5) working days of the ECO site inspection and must be made available to the Contractor. Copies of the inspection reports must be kept on site.

The contractor's meeting minutes must reflect environmental queries, agreed actions and dates of eventual compliance. These minutes form part of the official environmental record.

7.3.2 Photographs

It is recommended that photographs are taken of the site prior to, during and immediately after restoration and/or maintenance activities as a visual reference. These photographs must be stored with other records related to this MMP. If captured in digital format, hard copies, in colour, must be kept with all other records relevant to the implementation of this MMP.

8 ENVIRONMENTAL AWARENESS PLAN

8.1 Environmental Awareness and Risk Training

All contractor team members involved in work on site are to be briefed on their obligations towards environmental controls and methodologies in terms of this MMP, prior to work commencing. The briefing will usually take the form of an on-site talk and demonstration by the ECO. The education/awareness programme must be aimed at all levels of management within the contractor team. See “basic rules of conduct” below.

8.1.1 Basic Rules of Conduct

The following list represents the basic *Do's* and *Don'ts* towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

NOTE: ALL new site personnel must attend an environmental awareness/induction presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ECO.

DO:

- Ensure litter is not produced and that waste management is correctly implemented.
- Report all fuel spills immediately and stop the spill from continuing.
- Comply with all safety procedures.
- Prevent excessive dust and noise.
- Drive at the recommended 40 km per hour or carefully below this speed limit to ensure that roadkill incidents are avoided.
- Stop if you see a bird on the road – do not proceed until the bird has moved / been moved from the road.
- Demarcate no go areas and keep within the designated working area.

DO NOT:

- Damage any vegetation outside of the development footprint.
- Disturb any wildlife unnecessarily.
- Do not exceed the speed limit of 40km/h.
- Do not interfere with, disturb, chase, hunt, trap, poison, feed, injure or kill any fauna.
- Do not bring any dog on site.

- Do not litter - report dirty or full facilities, i.e., full dustbins and dirty or blocked toilets.
- Do not pick, damage, or remove any flora, except for what is permitted under this Maintenance Management Plan.
- Do not make fires.
- Do not smoke on site.
- Do not enter no-go areas.
- Do not allow waste, litter, oils or foreign materials into any storm water channels or drains or watercourses or the sea.
- Do not litter or leave food lying around.

9 SPECIALIST ASSESSMENTS

An avifaunal assessment (Appendix C) was conducted, and a status quo report prepared arising from comments received during initial Public Participation Process. Based on the assessment, the following mitigation measures were recommended:

- Work on the wall restoration should start as soon as practically feasible (i.e. in midwinter 2021), and should be completed as soon as possible. The 2021 breeding season for Swift Terns and Hartlaub's Gulls is underway. This year they chose to nest in the centre of the island between the runways of the airstrip and the village, a substantial distance from the BSQ. Thus, commencing work in winter 2021 will not impact these species.
- Working hours should be between 09h00 and 17h00. Professor Peter Barham, representing the Earthwatch Project, has provided the information that c. 90% of penguin movement takes place after 17h00 (when penguins return from their diurnal foraging trips) and before 09h00 (when penguins leave the colony to gather food). There should be no human presence in the quarry overnight. If there are still penguins using the route through the scree of the breach during working hours, they will quickly learn the alternative route that crosses the wall.
- Work should commence at the north end of the breach and work southward. This starting point is c. 100 m from the crossover point. It is recommended that the team of labourers works consistently as a single unit only at one point of the breach at a time, so that the penguins will become habituated to regular and consistent activity. The small number of penguins that enter and leave the colony during the day are then likely to undertake their trips to and from the sea uninterrupted by the labourers. No one should be allowed to access the quarry from the south. The perimeter road should be closed opposite the crossing. An

absolute “no-go” area should be established, and roped off. The northern edge of the no-go area should run from a point on the wall approximately 30 m north of the penguin crossing, and then eastward across the pools in the quarry, and as far as the paved road. The southern edge should be about 30 m south of the penguin route (but this is hardly needed, because no one should be in this area.)

- Under the circumstances of 2021, access to the quarry should be from the north along Cornelia Road. The centre of gravity of penguin breeding activity has shifted away from the “forest” on either side of Cornelia Road towards the centre and west of the island. Most of the material that is going to be used for the restoration is already in the quarry; the additional traffic that will be generated along Cornelia Road during construction is not going to be a significant increase on current volumes. Approaching from the south involves a longer route that, in spring and summer, will disturb breeding Kelp Gulls and Swift Terns. It will also cause unnecessary traffic at the point where penguins cross the paved road on their routes to and from their nests and the quarry.
- Once work commences, it needs to continue unbroken, without interruption until completion. This will mean that, in early spring, when the Cape Cormorants and Kelp Gulls are selecting which part of the island they will breed in the spring/summer of 2021/22, they will be able to take into account the human presence in the quarry and select their breeding sites accordingly. The Cape Cormorants breed on the breakwater of Murrays Bay Harbour in most years.
- As explained above, it is recommended totally exclude people from accessing the breakwater of Murrays Bay Harbour in the winter and spring of 2021. Implementation of this offsite mitigation measure will reduce the likelihood of onsite biodiversity conflict. If any maintenance needs to be done on the breakwater it needs to be completed by the end of June 2021. This will encourage the Cape Cormorants to return to the breakwater for the upcoming breeding season.
- Consideration should be given to reconstructing the dry-stone wall in such a way that it provides breeding opportunities for Leach’s Storm Petrel. Mr Bruce Dyer, of Oceans and Coasts, DEFF, will be able to provide designs.
- The penguins have recently established walkways and a crossing point on the southern side of the Blue Stone Quarry. It is recommended to keep these walkways intact so that penguins can easily and safely navigate to and from the sea at the Blue Stone Quarry site.

Overall, the risks to the two endangered species (African Penguin and Cape Cormorant) posed by this project are medium to high, so it will be imperative that all the mitigation measures and

recommendations listed above be put in place and are strictly adhered to keep impacts to a minimum. In that context it is recommended that an independent bird monitor be stationed on the island with the power to stop work if there are any infringements or unnecessary disturbance to endangered birdlife. The SANCCOB penguin ranger's advice and experience will also be invaluable to the project.

Based on the avifaunal assessment, it is concluded that:

"It is our [the avifaunal specialists] reasoned opinion that the restoration of the BSQ Walls can commence, given that all recommendations are taken into account."

10 IMPACTS AND MITIGATION MEASURES

Because no regulations exist for the compilation of the Maintenance Management Plan, Appendix 4 of the NEMA EIA Regulations, 2014 (as amended) have been used as a guideline to compile the MMP. Appendix 4 of the NEMA EIA Regulations, 2014 (as amended) states that the impacts of pre-construction, construction, and operational activities must be noted, and mitigation measures suggested. There are no pre-construction or construction activities that will take place during the proposed development as defined in the Project Description. However, the restoration and subsequent maintenance activities are considered operational activities because they will take place during the operational phase of the Blue Stone Quarry Wall. Several potential environmental impacts that may arise during the restoration and/or maintenance activities, which will occur during the lifetime of the Blue Stone Quarry Wall, have been identified. These are outlined in the following table below, and guidelines and mitigation measures are provided. The Contractor must familiarise himself with the requirements of the MMP.

10.1 Mitigation measures for environmental impacts associated with proposed maintenance activities.

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBER ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1.1	<p>Aspects: Legislative compliance.</p> <p>Impact: Non-compliance with South African environmental legislation.</p> <p>Objective: Ensure compliance with all triggered environmental legislation.</p> <p>Target: Commence site establishment with all permission and approvals received and on hand.</p> <p>Mitigation/Management Measures:</p> <p>a. The Applicant must have the following permits and/or plans on commencement:</p> <ul style="list-style-type: none"> Maintenance Management Plan approved by the DFFE. Health and Safety Plan. Marine TOPS permit issued by DFFE (Ordinary Permit for the initial restoration works) for any harassment related work where harassment is as per the definition in the Threatened and Protected Species Regulations (2017). Please note that should any maintenance activities be required after the initial wall restoration; an Ordinary or Standing Marine TOPS permit must be applied for beforehand. 	Applicant	<p>Monitoring Action:</p> <p>Obtain copies of all permits; Record Keeping</p> <p>Responsible Person/Party:</p> <p>The Applicant/ ECO</p> <p>Monitoring Frequency:</p> <p>Once off</p>	
1.2	<p>Aspects: Demarcation of working and laydown area.</p> <p>Impact: Negative impact on the environment of unmanaged and unplanned placement of Infrastructure.</p> <p>Objective: To ensure acceptable impact and management of environmental issues at the main site and storage site during restoration and/or maintenance by proper planning of layout of infrastructure placement.</p> <p>Target: All areas not demarcated for maintenance and/or restoration must remain vegetated and the impact must be minimised.</p>	Applicant/ Implementation Contractor	<p>Monitoring Action:</p> <p>Records of the Site Layout must be present on site, photographs.</p>	

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p><u>Mitigation/Management Measures:</u></p> <ul style="list-style-type: none"> a. The contractor may not deface, paint, damage or mark any features situated in or around the site. b. Littering is strictly prohibited. c. The contractor must ensure that all personnel, labourers, and equipment always remain within the demarcated restoration and/or maintenance sites. d. Access to the stockpile may only be done between 11:00 and 13:00 every day. e. Facilities may not be used as staff accommodation. f. Temporary boardwalks must be installed with the appropriate heritage specialist present. g. All sanitation facilities must be accessed off-site. h. Shade for personnel may only be provided via a gazebo that will have no additional environmental impact. i. Designated vehicle passing areas and turning circles must be clearly demarcated, in consultation with specialists and SANCCOB representatives, and adhered to at all times. 		<p><u>Responsible Person/Party:</u></p> <p>Contract Manager Project (DEO)/ ECO</p> <p><u>Monitoring Frequency:</u></p> <p>Bi-monthly for the ECO and daily for the DEO</p>	
1.3	<p><u>Aspects:</u> Restoration programme / schedule</p> <p><u>Impact:</u> Order and timing of maintenance activities and associated impacts.</p> <p><u>Objective:</u> To provide a clear indication of the order by which key restoration and/or maintenance activities will transpire.</p> <p><u>Target:</u> Anticipate timing of impacts to coordinate the availability of any specialists and/or authorities who may be required to conduct site inspections.</p>	Implementation contractor/ Applicant	<p><u>Monitoring Action:</u></p> <p>Meetings; Risk Register; ECO Audit Checklist; Photographs</p> <p><u>Responsible Person/Party:</u></p>	
	<p><u>Mitigation/Management Measures:</u></p>		<p><u>Responsible Person/Party:</u></p>	

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.</p>		<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
<p>a. Draw up and sign off a project schedule with all contributing parties and service providers to commit to a timeline during which time maintenance milestones will be completed.</p> <p>b. Should circumstances/ incidents arise which may pose a risk to the project schedule, the restoration/ maintenance implementation contractor and ECO are to keep records of this, and the latter communicate this in the ECO Monthly Audit Checklist.</p> <p>c. Work on the wall restoration should start as soon as practically feasible (i.e., in midwinter 2021), and should be completed as soon as possible.</p> <p>d. Work must commence at the north end of the breach and work southward. This starting point is c. 100 m from the crossover point.</p> <p>e. The team must work consistently as a single unit only at one point of the breach at a time.</p> <p>f. Working hours must be between 09h00 and 17h00.</p> <p>g. Should any changes in the working hours be suggested by the avifaunal specialist or other specialists such as Earthwatch and SANCOBB, the ECO, or RIM's environmental manager, based on changes to penguin behaviours or any other avifaunal behaviour, these changes must be discussed, considered, and agreed upon as far as practically possible.</p> <p>h. No personnel or vehicles may be present at the quarry at night.</p> <p>i. Once work commences, it needs to continue unbroken (i.e., continued presence at the restoration site between working hours), without interruption until completion.</p> <p>j. There must be total exclusion of people accessing the breakwater to the harbour in winter and spring of 2021 (to be implemented by the Applicant only)</p>		<p>Contract Project Manager / ECO / DEO</p> <p>Monitoring Frequency:</p> <p>Bi-monthly for the ECO and daily for the DEO.</p>		

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1.4	<p>Aspects: Communication with landowners</p> <p>Impact: Disturbance of existing land use.</p> <p>Objective: Maintain a conflict-free relationship with landowners/users.</p> <p>Target: No complaints received from landowners/users of affected property.</p> <p>Mitigation/Management Measures:</p> <p>a. Landowners are to be aware and in agreement of site access arrangements.</p> <p>b. Landowner must provide consent to the site supervisor of the contractor prior to entering the maintenance footprint area for safety purposes.</p>	Applicant/ Implementation contractor	<p>Monitoring Action: Meetings; Risk Register.</p> <p>Responsible Person/Party: Contract Implementation Manager (DEO) / ECO</p> <p>Monitoring Frequency: Once-off</p>	
1.5	<p>Aspects: Surface Water Management.</p> <p>Impact: Minimal impact on surface water.</p> <p>Objective: Ensure sound environmental management regarding surface water during all phases of the project.</p> <p>Target: Surface water remains unpolluted during the maintenance activities.</p>	Implementation manager/ contractor	<p>Monitoring Action: Photographs; ECO Audit Checklist/ DEO environmental</p>	

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROB BEN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p><u>Mitigation/Management Measures:</u></p> <p>a. Contamination of quarry water or any other surface or stormwater is strictly prohibited.</p> <p>b. Refuelling of the vehicles is strictly prohibited.</p> <p>c. No water courses may be used to clean equipment, or for bathing.</p> <p>d. Drip trays must be placed beneath all vehicles that are stationary.</p>		<p>checklist, photographs</p> <p><u>Responsible Person/Party:</u> ECO/Implementation manager (DEO)</p> <p><u>Monitoring Frequency:</u> Bi-monthly for the ECO, but daily for the DEO</p>	
1.6	<p><u>Aspects:</u> Fire Prevention.</p> <p><u>Impact:</u> Damage to the surrounding environment due to a veld fire</p> <p><u>Objective:</u> No damages to the surrounding environment due to the veld fires.</p> <p><u>Target:</u> No damages to the surrounding environment due to the veld fires.</p> <p><u>Mitigation/Management Measures:</u></p> <p>a. The Contractor will be held responsible for any damage to structures or property on or neighbouring the Site because of any fire caused by personnel.</p>	Implementation contractor	<p><u>Monitoring Action:</u> Photographs; ECO Audit Checklist; Incident's register, DEO daily environmental checklist.</p>	

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND.</p>		<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
		<p>Responsible Person/Party: Implementation manager (DEO)/ECO</p> <p>Monitoring Frequency: Bi-monthly for the ECO and daily for the DEO.</p>		
<p>1.9</p> <p>Aspects: Waste Management</p> <p>Impact: Disturbance by incorrect waste management</p> <p>Objective: To manage waste in a manner that prevents detrimental impacts on the environment. Ensure sound environmental management regarding waste management during all phases of the project.</p> <p>Target: Ensure sound environmental management regarding waste management during all phases of the project.</p> <p>Mitigation/Management Measures:</p> <ul style="list-style-type: none"> a. Littering is prohibited. b. Under no circumstances is waste to be burnt or buried on-site. c. The only general waste that will be generated from the personnel will be from food packaging during their refreshment intervals. Therefore, each staff member must keep their keep their waste until it can be disposed of 	<p>Implementation contractor</p>	<p>Monitoring Action: ECO to take photographs of the site; Safe Disposal Receipt; ECO Audit Checklist/ DEO daily checklist.</p> <p>Responsible Person/Party:</p>		

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	correctly (in a waste bin) off-site. By removing waste bins on site, it will prevent any incidents of general waste as a result of waste bins falling over or blowing open.		ECO & DEO Monitoring Frequency: Bi-monthly for the ECO and daily for the DEO.	
1.10	<p>Aspects: Ecology</p> <p>Impact: Detrimental impacts on Fauna and Avifauna in the area</p> <p>Objective: To ensure that appropriate steps are taken to prevent detrimental impacts on Vegetation, Fauna and Avifauna in the area</p> <p>Target: Minimise the impact of vegetation, fauna, and avifauna in the area.</p> <ol style="list-style-type: none"> Ensure appropriately trained individual deals with all bird incidents. Bird incidents must be handled according to the incident response plan. Designated vehicle passing areas must be clearly demarcated, in consultation with specialists and SANCCOB representatives, and adhered to at all times. Under no circumstances should a single-lane road become a double lane width roadway. A list of emergency numbers for bird related incidents should be kept on site at all times. 	Implementation contractor/ Applicant	<p>Monitoring Action: ECO , Bird/Penguin monitor, and DEO to take photographs of the site and monitor Ecological impacts; ECO Audit Checklist;</p> <p>Responsible Person/Party:</p>	

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.</p>	<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
<p>f. All bird related incidents must be reported to Mr Andile Mdluli (AndileM@robben-island.org.za) (or any other appointed independent bird monitor), SANCOBB representative and the RIM Environmental Manager, Sabelo Mdlala (sabelom@robben-island.org.za)</p> <p>g. Movement of vehicles, equipment and materials should be kept to a minimum.</p> <p>h. The number of personnel on site should be limited to 15 people at one point in time.</p> <p>i. Litter is strictly prohibited.</p> <p>j. Keep strictly to the speed limit of 40km/h on the island and slow down even further to 20km/h in the vicinity of nesting sites and penguin crossings.</p> <p>k. The road must be checked for any penguins or chicks crossing the road before a vehicle accesses the site.</p> <p>l. Adequately train drivers to be perceptive for birds using roads and to adhere to traffic rules.</p> <p>m. Vehicles are strictly restricted to road and may not drive on the vegetation areas adjacent to the road unless for the vehicle turn around area shown in Figure 4.</p> <p>n. Vehicle most must be restricted to three times a day as practically possible.</p> <p>o. Penguins, other birds and any other form of wildlife (e.g., tortoises) have the right of way on the island.</p> <p>p. During breeding times of the birds, staff must ensure the roads are clear of chicks and other birds before using the road.</p> <p>q. No extensive of use of construction vehicles.</p> <p>r. A designated Environmental Officer must be on site daily and submit weekly environmental reports to the ECO. These reports will consist of a checklist where daily environmental related checks will be listed and will need to be implemented.</p>		<p>ECO & DEO & Bird/Penguin monitor</p> <p>Monitoring</p> <p>Frequency:</p> <p>Daily by the DEO and penguin monitor, but bi-monthly by the ECO.</p>	

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.</p>		<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
<ul style="list-style-type: none"> s. Use spotters to guide vehicles on the road and usher any avifauna off the road. t. Insert temporary speedbumps on the road to enforce speed limits. u. Train staff to be perceptive of all birds’ nests and eggs to avoid stepping on the nests and eggs. v. Harassing (or any direct contact with wildlife) as per Threatened or Protected Species Regulations (2017) definition of any wildlife unnecessarily is strictly prohibited. w. A Marine TOPS (Threatened or Protected Species) permit must be applied for, for the removal of rocks from the old stockpile because will be seen as “harassment” (as per Threatened or Protected Species Regulations (2017) definition) of threatened bird species. x. The use of a jackhammer is strictly prohibited on site. y. The personnel are prohibited from loud singing or shouting. z. Work on the wall restoration should start as soon as practically feasible (i.e., in midwinter 2021), and should be completed as soon as possible. aa. Working hours must be between 09h00 and 17h00. bb. Work should commence at the north end of the breach and work southward. This starting point is c. 100 m from the crossover point. cc. It is recommended that the team of labourers works consistently as a single unit only at one point of the breach at a time, so that the penguins will become habituated to regular and consistent activity. 				

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND.</p>		<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
<p>dd. No one may be allowed to access the quarry from the south. The perimeter road should be closed opposite the crossing. An absolute “no-go” area, approximately 30 m on either side of the penguin route, should be established, and roped off.</p> <p>ee. Should the stockpile need to be accessed, this may only be done between 11:00 and 13:00 every day to avoid conflict with penguins (as per the recommendations of the avifaunal specialist).</p> <p>ff. An independent bird monitor (in particular, MrAndile Mduli) must be stationed on the island with the power to stop work in consultation with the ECO if there are any infringements or unnecessary disturbance to endangered birdlife.</p> <p>gg. Should bird monitoring for the proposed works be beyond the scope of Mr Mduli’s work, Robben Island Museum are expected to appoint a new independent bird monitor.</p> <p>hh. Once work commences, it needs to continue unbroken, without interruption until completion.</p> <p>ii. As a corollary to the above, it is recommended to exclude people from accessing the breakwater to the harbour in winter and spring of 2021. If any maintenance needs to be done on the breakwater it needs to be completed by the end of June 2021. This will encourage the Cape Cormorants to return to the breakwater for the upcoming breeding season (This is specifically under the responsibility of the Applicant and not the Implementation Contractor).</p> <p>jj. Consideration should be given to reconstructing the dry-stone wall in such a way that it provides breeding opportunities for Leach’s Storm Petrel.</p> <p>kk. It is recommended to keep the penguins’ walkways intact so that penguins can easily and safely navigate to and from the sea at the Blue Stone Quarry site.</p>				

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.</p>		<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
	<p>ll. No-go zones must be maintained and adhered to.</p> <p>mm. Should any maintenance works take place after the initial restoration works, a detailed survey of the location of bird breeding areas must take place.</p> <p>nn. The site must be monitored for signs of erosion. Should any erosion take place, erosion preventative measures must be installed in liaison with the ECO.</p> <p>oo. The occurrence of alien invasive vegetation must be monitored.</p> <p>pp. There may only be on entry and exit way to the rock stockpile as indicated in the site layout map.</p> <p>qq. Only one vehicle turn around site may be used. This site is demarcated in Figure 4.</p> <p>rr. Ensure that a snake handler is on site and permanently based on the island.</p> <p>ss. All vegetated areas must remain intact.</p> <p>tt. All access routes must be strictly adhered to.</p> <p>uu. Smoking is strictly prohibited on site.</p> <p>vv. Before rocks in the adjacent stockpile are used/removed, checks for reptile fauna must be completed and any species must be carefully translocated to a suitable habitat by a trained snake handler.</p> <p>ww. Should the next boxes be installed in the wall, the nest boxes should be monitored for potentially unwanted inhabitants such as rats.</p>			
<p>1.11</p> <p>Aspects: Cultural/Heritage Aspects</p> <p>Impact: Damage and destruction of vertebrate fossils and valuable artefacts during maintenance activities.</p> <p>Objective: To prevent any destruction of valuable artefacts.</p>	<p>Implementation Contractor</p>	<p>Monitoring Action: ECO to take photographs of site;</p>		

<p>PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND.</p>	<p>RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p>MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p>COMPLIANT? (for use by ECO)</p>
<p>Target: No destruction of any vertebrate fossils and artefacts.</p> <p>Mitigation/Management Measures:</p> <ul style="list-style-type: none"> a. Appropriate temporary boardwalks must be constructed to facilitate movement within and around the quarry but minimising impacts. b. Under not circumstances may the heritage elements in Figure 5 be disturbed. c. Contractors and workers to be informed of the protected status of island and the BSQ. d. Any artefacts found must be left in-situ, reported to the heritage consultant for assessment and removed if necessary. e. Artefacts to be handed over to Robben Island Museum. f. No debris and waste allowed to be dumped at sea or on shore and must be removed from site. g. Inform contractors and workers of legal implications of theft of artefacts. h. Stones and sand to be sensitively removed by hand and carefully stacked for repacking wall. This must be done under supervision of a heritage practitioner. i. All vehicles and equipment must stay on tar road. j. All no-go areas must be adhered to. k. Surrounding rocks and pebbles used for restoration and maintenance should be moved with due care and under supervision of a heritage practitioner. 		<p>ECO Audit Checklist; DEO daily environmental checklist</p> <p>Responsible Person/Party: ECO & DEO</p> <p>Monitoring Frequency: Bi- Monthly for the ECO and daily for the DEO</p>	

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBERN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1.12	<p>Aspects: Soil contamination during restoration/maintenance activities as a result of the leaks from vehicles.</p> <p>Impact: Pollution of soil contamination by petrochemicals</p> <p>Objective: Prevent soil pollution.</p> <p>Target: No record of pollution or site contamination by hazardous waste.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> All personnel must receive induction on how to report leaks or spills from the vehicles, contain them and treat them accordingly. All vehicles must remain on the paved road. Access to the vegetation area is strictly prohibited. Drip trays must be placed beneath all vehicles that are stationary. Spills must be cleaned up immediately to the satisfaction of the environmental control officer (“ECO”) and the spill, together with the polluted soil, must be disposed of at an appropriate hazardous waste disposal facility. All vehicles should be checked daily for fuel leaks. There must be a strict adherence to section 30 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”) pertaining to the control of incidents. In the event of a significant spill or leak of hazardous substances used during the proposed activities, such an incident(s) must also be reported to the Directorate: Pollution and Chemicals Management in accordance with section 30 of the NEMA, 1998. 	Implementation Contractor	<p>Monitoring Action: Incident Register; Photographs; ECO Audit Checklist; DEO environmental checklist</p> <p>Responsible Person/Party: DEO & ECO</p> <p>Monitoring Frequency: Bi-monthly for the ECO and daily for the DEO.</p>	
1.15	<p>Aspects: Training and Socio-Economic Aspects during Restoration and/or Maintenance.</p> <p>Impact: Environmental damage</p> <p>Objective: To ensure that staff have adequate environmental training.</p>	Implementation Contractor	<p>Monitoring Action: Incident Register; Photographs; ECO</p>	

PROPOSED MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBEN ISLAND.		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p>Target: All staff are adequately trained to prevent environmental damage.</p>				
<p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> a. The ECO must verify that all direct and subcontracted site personnel have a basic level of environmental awareness training that has been offered to them. b. Staff must be trained in the relevant safety and emergency response procedures. c. All staff must undertake environmental awareness training to understand the environmental sensitivities of the site provided by the ECO. d. The Heritage or restoration specialist that compiled the Implementation plan/ECO must be available to explain more difficult and technical environmental issues at project commencement. e. The ECO must ensure that all site staff have been informed of the details of the MMP document. f. Regular ‘reminder’ sessions must be included within the weekly/monthly toolbox talks being run by project manager to ensure that staff are reminded about environmental and safety issues and emergency procedures. 		<p>Audit Checklist; Toolbox talk registers; induction registers</p> <p>Responsible Person/Party: DEO & ECO</p> <p>Monitoring Frequency: Bi-monthly for the ECO, weekly for the DEO.</p>		

11 EMERGENCY RESPONSE PLAN

The following table is provided to assist the ECO and Contractor/ Infrastructure Management with remedial work options and problem solving:

Observation or Event	Action by Inspector or Observer	Action by Restoration and/or Maintenance Contractor
Spillage of diesel on soil	Report to Contractor/ Infrastructure Management/ and record the incident. Also check: - That the source causing the spillage has ceased.	Action will be required as soon as possible (ASAP) by following the next steps: <ul style="list-style-type: none"> - Remove the contaminated soil - Store the contaminated soil in a closed, non-permeable container. - Discarded the soil as hazard waste off-site. - There must be a strict adherence to section 30 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”) pertaining to the control of incidents. - In the event of a significant spill or leak of hazardous substances used during the proposed activities, such an incident(s) must also be reported to the Directorate: Pollution and Chemicals Management in accordance with section 30 of the NEMA, 1998.
Bird incident (e.g. roadkill)	Report to Contractor/ Infrastructure Management, the seabird ranger, SANCOBB representative and a local vet or wildlife care facility if necessary (for example SANCOBB: Tel: +27 (0)21 557 6155	Action will be required as soon as possible (ASAP) by following the next steps <ul style="list-style-type: none"> - Ensure the potential harm of the bird has been stopped. - Do not further pick up or carry the bird unless instructed to do so. - Transport the animal to the nearest avifaunal rehabilitation centre or veterinary clinic.

Observation or Event	Action by Inspector or Observer	Action by Restoration and/or Maintenance Contractor
	Emergency After Hours : Tel: +27 (0) 78 638 3731. ECO contact details: Enviroworks Tel: +27 21 527 7084 Email: info@enviroworks.co.za	
Snake incidents	Report to Contractor/ Infrastructure Management, the resident snake handler and environmental manager (Sabelo Mdlala: sabelom@robben- island.org.za).	Action that will be required as soon as possible: <ul style="list-style-type: none"> - Keep the victim calm and as still as possible - Remove rings and tight clothing - Apply pressure bandages - Report immediately to the nearest hospital.

12 INCIDENT REGISTER

INCIDENT REGISTER: PROPOSED RESTORATION AND MAINTENANCE OF THE BLUE STONE QUARRY WALL, ROBBER ISLAND					
NAME OF PERSON REPORTING THE INCIDENT	INCIDENT	DATE OF INCIDENT IDENTIFIED	HOW WAS INCIDENT ADDRESSED?	DATE OF RECTIFICATION	SIGNATURE

13 REHABILITATION MEASURES

The rehabilitation phase follows completion of restoration and/or maintenance works and entails site clean-up following the removal of the Contractor from site.

Key aspects within this process only include the:

- Handling of inert waste and contractor equipment

13.1 Rehabilitation Measures

Inert waste
<ul style="list-style-type: none">• Domestic waste must be completely removed from the site and disposed of correctly.• All equipment must be removed from site including wheelbarrows, tools, and temporary board walks.

14 APPENDICES

Appendix A – Blue Stone Quarry Wall Implementation Plan (2020)

Appendix B1 – Curriculum Vitae of the EAP

Appendix B2 - Curriculum Vitae of the Review EAP

Appendix C – Avifaunal Assessment Report (2021)

Appendix D – Contours of the Blue Stone Quarry

Appendix E – Public Participation Plan

Appendix F- Public Participation Report

Appendix G -Minutes for the pre-application meeting held on 14 December 2020 (and any other correspondence with DFFE)