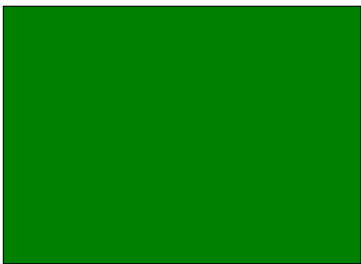
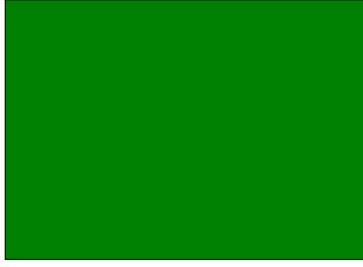


Annex B

Environmental Management Programme



**Environmental Management Programme
for the Bhangazi Cultural Heritage
Lodge, iSimangaliso Wetland Park, South
Africa**

22 July 2021


ERM Reference: 0282731

Bhangazi Community Trust

Environmental Management Programme for
the Bhangazi Cultural Heritage Lodge,
iSimangaliso Wetland Park, South Africa

22 July 2021

Prepared by: Stephanie Gopaul
Samantha Moodley

For and on behalf of Environmental Resources Management
Approved by: Phillip Johnson

Position: Partner
Date: July 2021

This report has been prepared by Environmental Resources Management the trading name of Environmental Resources Management Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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ACRONYMS

BA	Basic Assessment
BAR	Basic Assessment Report
BID	Background Information Document
CA	Competent Authority
CRR	Comments and Responses Report
DAFF	Department of Agriculture Forestry and Fisheries
DEA	(National) Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DEDTEA	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ERM	Environmental Resources Management Southern Africa (Pty) Ltd
EKZN Wildlife	Ezemvelo KZN Wildlife
GN R	Government Notice Regulation
ha	hectares
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IUCN	International Union for Conservation of Nature
KZN	KwaZulu-Natal
LCA	Landscape Character Areas
mamsl	metres above mean sea level
MSDS	Material Safety Data Sheet
NEMA	National Environmental Management Act
NWA	National Water Act
PPE	Personal Protective Equipment (PPE)
SDF	Spatial Development Framework
SDI	Spatial Development Initiatives
SIP	Strategic Integrated Project
STP	Sewage Treatment Plant
ToR	Terms of Reference
UNESCO	United Nations Educational, Scientific and Cultural Organization
WUL	Water Use Licence
WULA	Water Use Licence Application

1 INTRODUCTION

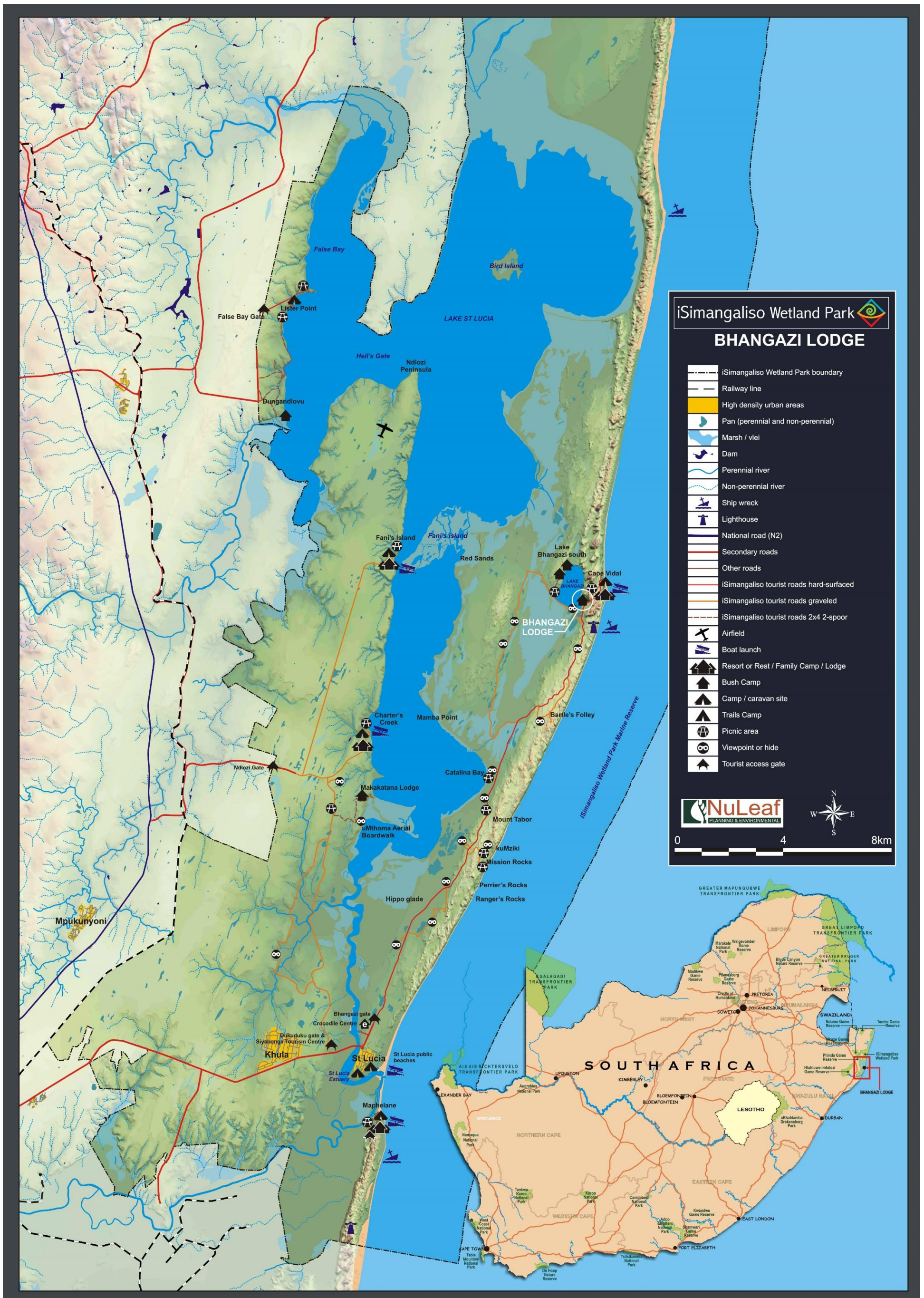
The following Environmental Management Programme (EMPr) has been prepared by Environmental Resources Management Southern Africa (Pty) Ltd (ERM), for Bhangazi Community Trust (Bhangazi). This EMPr has been compiled in support of the application for Environmental Authorisation (EA) for the Bhangazi Cultural Heritage Lodge in the iSimangaliso Wetland Park, KwaZulu-Natal, South Africa.

The Bhangazi Community Trust is proposing to develop a Cultural Heritage Lodge that will include 22 tourist accommodation units along the lake shore, 5 staffing quarters away from the lake shore, parking facilities, numerous activities to accommodate day and overnight visitors, and a restaurant. The proposed development is located on the south eastern bank of Bhangazi Lake and is approximately 2 km south west of Cape Vidal. The site falls within the iSimangaliso Wetland Park (a World Heritage site) within the uMkhanyakude District Municipality.

The Project triggers activities listed under Government Notice Regulation (GN R) 324 and GN R 327 of the Environmental Impact Assessment (EIA) Regulations (April, 2017) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998). The investigation and assessment of the potential impact of these activities must follow the Basic Assessment (BA) process in order to acquire an EA from the competent authority, the National Department of Environment, Forestry and Fisheries (DEFF¹), prior to commencement of the Project.

¹ Formerly the Department of Environmental Affairs (DEA)

Figure 1-1 Locality of the Bhangazi Site within KZN and South Africa



1.1 EMPR SCOPE AND OBJECTIVES

The primary objective of this EMPr is to facilitate appropriate environmental management and mitigation measures during all phases of the Project, to minimise potential environmental impacts that may arise. The EMPr for the Project is therefore required in order to:

- Assist in continuing compliance with South African environmental legislation, and Bhangazi Community Trust's corporate responsibility;
- Provide a mechanism for ensuring that measures identified in the Basic Assessment (BA) are implemented to mitigate potentially adverse environmental impacts;
- Provide assurance to regulators and stakeholders that their requirements with respect to environmental and socio-economic performance will be met; and
- Provide a framework for compliance auditing and inspection programs.

1.1.1 Regulatory Requirements

An EMPr for the Project is required as part of the BA process undertaken for the Project in terms of the EIA Regulations promulgated in terms of Chapter 5 of the NEMA, as amended. The EMPr is a live document that is legally binding on the applicant as a condition of approval of the Project by the DEFF, in addition to other conditions that may be stipulated in the EA, if granted.

This EMPr has therefore been developed in accordance with Section 24N of the NEMA and Appendix 4 of GN R 326 of the EIA Regulations (April, 2017).

1.1.2 Bhangazi's Safety, Health and Environmental Policy

The Bhangazi Lodge Safety, Health and Environmental Policy ensures that Bhangazi is committed to living and acting in accordance with the values to adhere to sound economic, environmental and social responsibilities of society and business at large. It is the responsibility of the site SHE Delivery Specialist to implement the Policy. Their duties include:

- The investigation and prevention of incidents;
- The provision of environmental and safety training;
- The monitoring of environmental performance;
- The collection of relevant statistics; and

- Liaison with the relevant regulating authorities.

This EMP is therefore compliant with the Bhangazi Safety, Health and Environmental Policy.

1.2 PROJECT APPLICANT

The proponent for this application is:

Mbizeni Development Corporation (Pty) Ltd

Contact Person: Mrs Joice Siphwe Gumedede

Postal Address: PO Box 1387

Mtubatuba

3935

Physical Address: Jacaranda Avenue, Link Building,
Office No 4, Mtubatuba

Tel: 035 550 0068

Fax: 035 550 0068

Email: Bhangazicomunitytrust@telkomsa.net

1.3 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment (BA) for the proposed Bhangazi Cultural Heritage Lodge.

ERM is a global environmental consulting organisation employing over 4,000 people with 140 offices in 40 countries worldwide. Founded in 1971, ERM has built an organisation based on the supply of a full range of environmental and social policy, scientific, technical, and regulatory expertise. ERM's primary focus is to provide quality work and service to our clients in these areas.

ERM has been involved in many projects in Africa over the past 30 years and in 2003, ERM established a permanent presence in Southern Africa to meet the growing needs of our clients. The African ERM offices are based in Cape Town, Johannesburg, Durban, Maputo and Nairobi. ERM Southern Africa has a staff complement of 160 comprising dedicated environmental professionals offering skills in the full range of sustainability, environmental and social impact services. More specifically, the team assembled for this Project possesses all the relevant expertise and experience to undertake this BA.

The EAP for the applicant is:

EAP and Contact Person: Mrs Stephanie Gopaul (Project Manager)

Person:

Postal Address: Postnet Suite 59

Private Bag X21
Westville
3630
Physical Address: 17 The Boulevard, Westway Office Park,
Westville,
Durban
Tel: +27(0) 31 265 0033
Fax: +27 (0) 31 265 0150
Email: Stephanie.Gopaul@erm.com

As part of its supplier development initiative, ERM has appointed Thembeke Environmental Consulting (Pty) Ltd to facilitate the basic assessment process under ERM's supervision. Thembeke Environmental Consulting (Pty) Ltd is a 100% black women owned environmental management consultancy, providing a tailored, integrated and complete solution to a variety of clients in both the public and private sectors. The company's extensive experience in the environmental sector has been developed through practical involvement in projects. The company offers personalised attention on every project and aims to deliver a quality and efficient service by using highly skilled and motivated professionals and fostering good relationships with stakeholders.

Thembeke Environmental's contact details are as follows:

Tel: +27(0) 71 678 1951
Email: info@thembeke-env.co.za
Samantha@thembeke-env.co.za

Please refer to Annex A for the team Curriculum Vitae.

1.4 COMPETENT AUTHORITY

The Competent Authority (CA) in terms of the Environmental Impact Assessment (EIA) Regulations (December 2014) is the National DEFF.

Postal Address: Department of Environment, Forestry and Fisheries
Attention: Director: Integrated Environmental
Authorisations
Private Bag X447
Pretoria
0001
Physical Address: Department of Environment, Forestry and Fisheries
Attention: Director: Integrated Environmental
Authorisations
Environment House
473 Steve Biko Road
Arcadia
Pretoria
Tel: 012 399 9372
Email: EIAAdmin@environment.gov.za

Tel: 012 399 9389
Email: ZLanga@environment.gov.za
Tel: 012 399 9389

2 PROJECT BACKGROUND

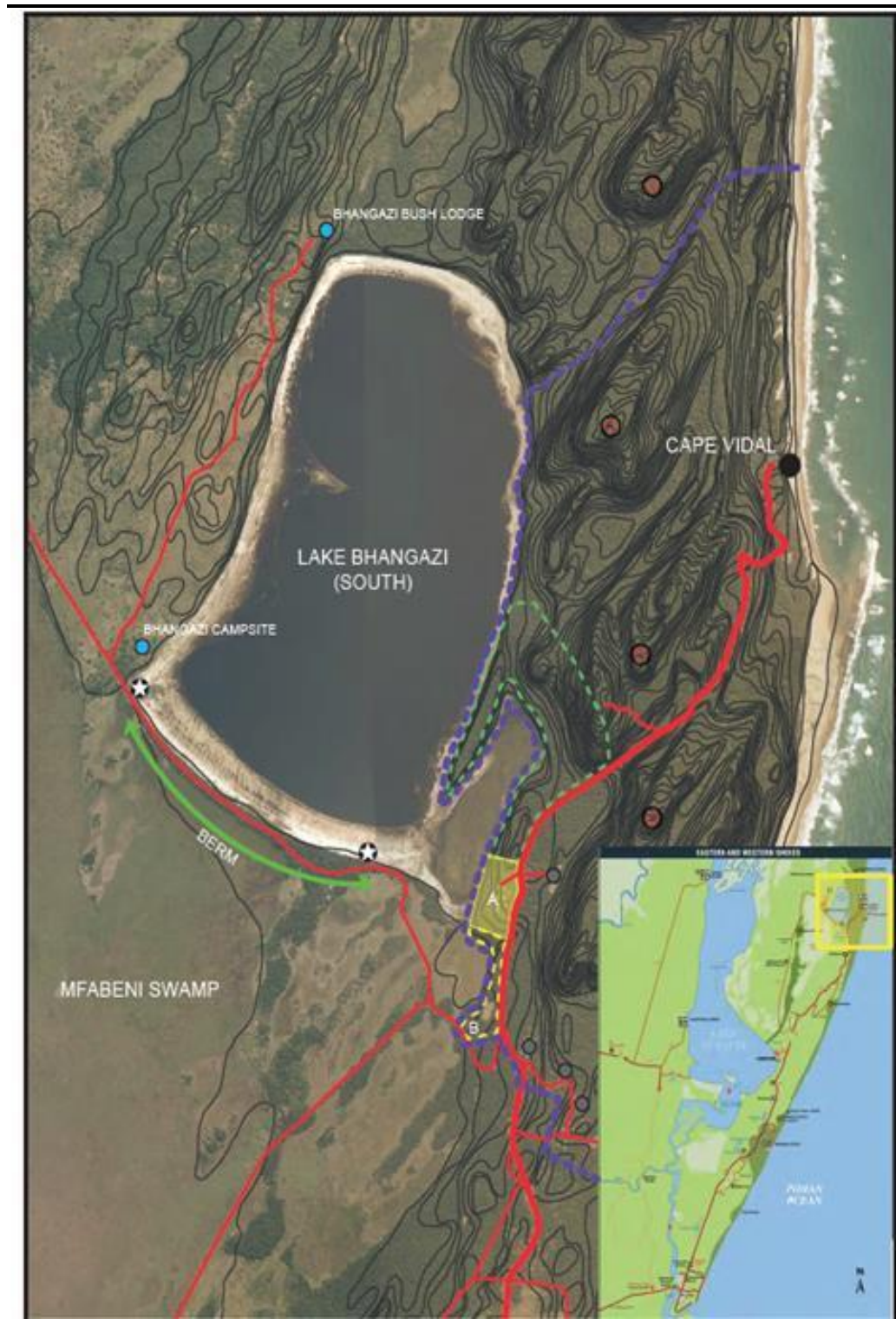
2.1 OVERVIEW OF THE BHANGAZI SITE (ISIMANGALISO WETLAND PARK)

The iSimangaliso Wetland Park is a World Heritage Site located in the coastal and inland areas of north-eastern KwaZulu-Natal. It was established in November 2000 in terms of Regulations published under the World Heritage Convention Act (No 49 of 1999). Between the 1950s and 1970s, the Bhangazi Community who lived on the Eastern Shores was forcibly removed. The land claim for this area has been settled through cash compensation, an allocation of community levies, and traditional access rights to graves on higher ground to the north-west of the Bhangazi Lake. Development rights to a portion of land, which comprises the Bhangazi Heritage Site on the south-east of Lake Bhangazi South, have also been granted. The institution formed by the former-claimants is the Bhangazi Community Trust.

2.2 SITE LOCATION

The Bhangazi site falls within the uMkhanyakude District Municipality. The site is about 30 km north of St Lucia and 2 km south-west of the beach at Cape Vidal. The proposed site is 9.94 ha in extent, divided into two areas: a northern portion of 5.06 ha earmarked for development and a southern no-development zone of 4.88 ha. It lies along the fringe of a small south-eastern extension of Lake Bhangazi, just west of the St Lucia road before it crosses the coastal dune belt to Cape Vidal (see Figure 2-1). The Heritage site also lies adjacent to the Cape Vidal road, a popular tourist destination. Lake Bhangazi is the only permanent fresh water source in the area. The natural berm separating the Mfabeni Swamp and the Bhangazi Lake is a unique geomorphological feature of high ecological importance. The area provides an extremely important habitat for a number of plant and animal species, including hippopotamuses (*Hippopotamus amphibius*) and crocodiles (*Crocodylus niloticus*). The vegetation in the area consists primarily of coastal forest and secondary grasslands, providing a habitat for many birds and other fauna, including the endangered Red Duiker (*Cephalophus natalensis*) and Samango Monkey (*Cercopithecus mitus*), which breed in this area.

Figure 2-1 Site Location within the iSimangaliso Wetland Park



In terms of the agreement between the Bhangazi Community Trust and iSimangaliso, signed in March 2006, "the primary purpose of the Bhangazi Heritage site is for the interpretation of the cultural heritage of the Bhangazi community; where an interpretive centre (museum) is the central component of the site concept and design. The proposed development will comprise a tourism facility including overnight chalets, a restaurant and an interpretation/ education centre with all necessary support facilities including

parking. The facilities will be located adjacent to Lake Bhangazi, which is within the iSimangaliso Wetland Park.

Table 2-1 *Property description*

Province	KwaZulu-Natal
District Municipality	uMkhanyakude
Local Municipality	Mtubatuba Local Municipality
Ward Number(s)	n/a
GPS Coordinates	28°06'48.2"S 32°32'11.0"E
Farm Name And Number	n/a
Portion Number	n/a
SG Code	n/a
Current Zoning	<ul style="list-style-type: none"> • Terrestrial Component: <ul style="list-style-type: none"> ○ Wilderness ○ Restricted ○ Controlled • Marine Component: <ul style="list-style-type: none"> ○ Wilderness ○ Sanctuary ○ Restricted ○ Controlled
Centre coordinates	28°06'48.2"S 32°32'11.0

2.3 *PROJECT DESCRIPTION*

Considering the preferred/ target market, the characteristics of the site, the sensitivity of the area and the need to keep capital costs low, the facilities will consist of a light-footprint lodge that uses standard safari tents on raised timber decks that blend into the natural environment thus minimizing visual disturbance.

The proposed lodge will include:

- Ten x 2-bed units with the option of catered and self-catering;
- Eight x 4-bed family units with the option of catered and self-catering;
- Trail camp - four x 2-bed units with a communal braai area;
- The restaurant, pool complex and recreational deck, situated towards the centre of the proposed lodge.
- Five staff quarters each with a footprint area of up to 50 m² and single storey in height.
- The parking arrangements for the project include:
 - Visitors parking (18)
 - Chalet parking (13)
 - Bus parking (2)
 - Staff parking (3)
 - Lodge vehicles (2)
 - Game drive (1)

- The reception is located within the day visitors /gathering area.

Given the need to optimize views, the accommodation units will be sited between the 25- and 15-metre contour lines below the current development footprint with views to the west and northwest across Lake Bhangazi. This will require innovative placing and stiling along the slope to ensure minimal disturbance to the forest.

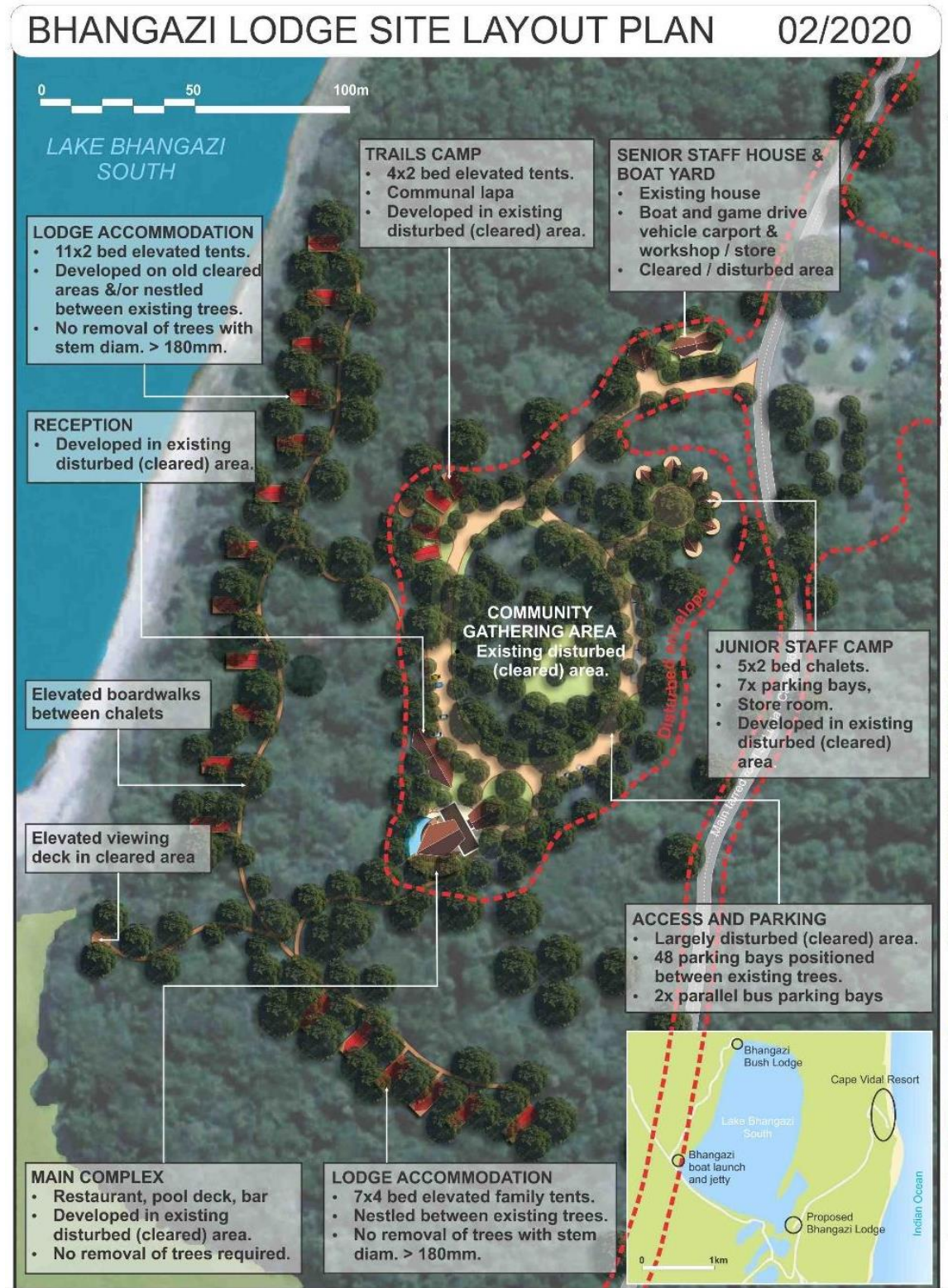
The self-catering units will be configured with en-suite bathrooms, kitchenettes and dining areas while the trail camp units will be linked to a communal kitchen and braai area. A variety of self-catering units will be established which provide for families and couples.

A jetty will also be constructed on Lake Bhangazi South for the operation of boat tours to be offered from the lodge. The approximated coordinates are: 28°07'44,81" S, 32°31'56,03" E. The Bhangazi Camp Site will also serve as a storage area for canoes and associated equipment that will be used for canoeing on the lake.

Service infrastructure will also need to be developed and will include parking, on-site housing for sufficient employees to ensure efficient operation; back-of-house storage, administration facilities; workshops, etc.

A restaurant consisting of a lounge, all-day bar and dining area, sundowner deck as well as a recreational pool deck area, are proposed in the south-western corner of the site. It will be located and orientated in such a way as to maximize views whilst limiting visibility from the adjoining Wilderness zone. This facility will cater to both overnight guests as well as day visitors.

Figure 2-2 Bhangazi Cultural Heritage Lodge Layout Plan



The Trust also has the mandate to develop activities aligned with the operational conditions developed by iSimangaliso. Based on their agreement, these activities should have a cultural heritage focus and could include, for example, guided walks leading to culturally significant sites. All activities developed by the Trust will need to abide by the Park Rules developed by iSimangaliso.

There are currently five cottages as well as a main guest house on the site, that have historically been used for tourism accommodation, each accommodating between eight and 20 people. The cottages and the house are in a state of disrepair and will be demolished.

2.3.1 *Associated Infrastructure*

Access Roads

The development will be accessed via the Eastern Shores Bhangazi Gate and Cape Vidal tar road, where the lodge will have its own access off the existing road. Cape Vidal is approximately 26 km from the Bhangazi Gate. This will be gravel road with a width of 3.5 m.

The previously proposed dual access roads (off the Cape Vidal road) have been consolidated and restricted to only one access road in and out of the facility. The access road coordinates are as follows:

- Start: 28°8'16.12"S; 32°32'42.93"E
- Middle: 28°8'16.48"S; 32°32'41.47"E
- End: 28°8'17.24"S; 32°32'40.52"E:

Municipal Services

Potable water is available from the St Lucia to Cape Vidal pipeline and storage facilities. Power is supplied via the Eskom grid.

2.4 **PROJECT PHASING**

The Project will require the development of the units located along the western edges of the site:

- 10 x two bed units; and
- 4 x four bed units.

A restaurant area will also form part of the proposed development. To accommodate the phasing in of this development an interim reception/office area as well as a pool has been incorporated into the restaurant building. Interpretive displays can be accommodated along the walls of the restaurant. The service area and staff quarters will also form part of this development.

Further to this, the development will include the interpretation centre, visitors' area with its associated activities such as braai and picnic area. It will also include the introduction of a much larger second pool area for the visitors to enjoy. The larger family chalets located along the southern boundary of the site will also be developed which will comprise 4 x four bed units.

Construction is anticipated to span 12-18 months in total (although certain components are likely to be completed in a shorter timeframe). The envisaged commencement of construction is late 2020 / early 2021.

3 *IMPLEMENTATION OF THE EMPR*

Bhangazi Community Trust is committed to providing resources and establishing the systems and components essential to the implementation and control of the EMPr. These include appropriate human resources and specialized skills, training programs, communication procedures, documentation control and a procedure for the management of change.

3.1 *PRINCIPLES OF THE EMPR*

The aim of implementing an EMPr is to ensure that all activities attributed to the project, with irreversible impacts are avoided, and measures are taken to minimise or rectify impacts where possible. The EMPr also provides guidance on-going monitoring and management of these impacts by highlighting the need to for recording good or bad performances and compliances. The implementation of this EMPr is aimed at ensuring that all activities attributed to the project, with irreversible impacts are avoided, and measures are taken to minimise or rectify impacts where possible. The EMPr also provides on-going monitoring and management of these impacts by documenting good or bad performances and compliances with the EMPr.

The objectives of the EMPr include:

- Ensuring that all associated activities are undertaken in a way that minimises identified potential negative effects on the surrounding environment;
- Ensuring that appropriate environmental management measures are assimilated in the final development plans;
- Ensuring that relevant environmental management are well stipulated, understood and documented for all relevant parties;
- Ensuring that the suitable record keeping and reporting structures are put in place to ensure that implementation of the stipulated environmental management measures are monitored in the long-term; and
- Ensuring that the roles and responsibilities for the management of various aspects are clearly defined and understood.

3.2 *PROJECT EMPR STAFF ORGANISATION*

The Project will have dedicated personnel competent on the basis of appropriate education, training, and experience that will manage and oversee the Environmental, Health and Safety (EHS) aspects over the Project lifecycle.

Bhangazi will however retain the primary responsibility for meeting environmental commitments throughout the Project development.

The key environmental management roles during the construction and operation phases of the Project include, but are not limited to: the Project Developer (Mbizeni Development Corporation (Pty) Ltd which is the commercial arm of the Bhangazi Community Trust), the Project Manager (PM), Contractors, the Project Environmental Officer (EO), the Safety Manger and representatives of the Project authorities (i.e. DEFF and the iSimangaliso Wetland Park Authority). For ease of reference in this EMPr, the Project Developer will be referred to as Mbizeni Development.

During construction, Bhangazi Community Trust will delegate responsibility of the EMPr implementation to construction contractors. In the same way, Bhangazi may engage contractors for certain operational aspects and would delegate the same responsibility. Mbizeni will manage and monitor the Contractor's implementation of the EMPr through contractual mechanisms and regular direct oversight. Mbizeni will have a supervisory PM on the site and an EO will also be appointed to monitor the project's compliance with the EMPr and other conditions of approval (i.e. Environmental Authorisation (EA), Water Use Licence (WUL) etc.). Furthermore, the Project authorities including DEFF and the eThekweni Municipality will also be involved in the oversight of the Project and EMPr implementation, primarily through the compliance monitoring activities.

3.2.1 Key Staff Obligations

Project Developer/Project Manager

For the purpose of this EMPr, the Project Developer refers to Mbizeni Development, who is thus ultimately responsible for compliance with all conditions of approval of Project development or any aspect thereof by any Project authority.

Mbizeni Development undertakes to manage all activities associated with the Bhangazi Cultural Lodge Project in a manner that minimises adverse effects on the environment and the public, maximises socio-economic benefits for the area and protects the health and safety of employees, contractors, visitors and the general public. To this end, Mbizeni Development will:

- Ensure that all relevant approvals and permits have been obtained prior to the start of the construction and decommissioning phases;
- Ensure that the EMPr forms an integral part of the contract documents entered into with all contractors;
- Educate personnel, contractors and visitors with regard to the EHS requirements applicable in general to the Project site, prior to accessing the site;

- Appoint a suitably qualified or experienced EO prior to the start of construction activities on the Site for:
 - Undertaking monthly internal EMPr compliance audits to ensure that all conditions of the approval are being complied with; and for on-going compliance monitoring during the operational phase;
- Appoint a competent PM to oversee all aspects of the expansion activities of the Project; and
- Monitor, evaluate and report performance in safety, health and environmental protection to the relevant management level within Mbizeni.

Construction Manager

The Construction Manager refers to the person who is responsible for overseeing all aspects of the construction and decommissioning phases activities. Key obligations and responsibilities of the Construction Manager include, but are not limited to:

- Ensuring that the planning design requirements as set out in this EMPr and any other conditions stipulated by relevant Project authorities are implemented prior to expansion activities;
- Supporting the EO in ensuring that the conditions of the EMPr are adhered to and promptly issue instructions requested by the EO to the Contractor(s);
- Supporting the EO in making decisions and finding solutions to environmental problems that may arise during the Project lifecycle;
- Reviewing and approve construction method statements with input from the EO;
- Ordering the removal of person(s) and/or equipment not complying with the specifications (as required by the EO or otherwise); and
- Provide input into the EO's on-going internal review of the EMPr.

Contractor(s)

Contractor(s) will be appointed by Mbizeni Development for the expansion activities of the Project. This entity refers to any company or individual appointed by Mbizeni to undertake any aspects of the Project. The Contractor(s) will:

- Enter into a contractual commitment with Mbizeni to adhere to the requirements of this EMPr;
- Appoint an EO who will oversee that contractor's compliance with the EMPr and environmental licencing;
- Familiarise themselves with the requirements of this EMPr and educate all sub-contractors', employees, suppliers, agents etc. accordingly;
- Prepare method statements describing how techniques, practices and methods will be employed that ensure the fulfilment of these requirements;
- Undertake additional mitigation, management and remedial measures following the receipt of a written instruction from Mbizeni Development to do so;
- Take all reasonable and practical measures to prevent the occurrence of accidents that may compromise the integrity of the environment and/or the health and safety of all persons on site, of all persons on neighbouring land and of the general public;
- Cooperate in EMPr compliance audits by the project EO, external auditors and/or relevant government bodies and provide the necessary information to this effect; and
- Report to Mbizeni Development or its representative all incidents including but not limited to environmental damage, injuries and/or loss of or damage to Mbizeni Development's physical assets or corporate image;
- In the event of an incident as described above occurring, present a detailed plan to:
 - Restore the environmental conditions, in so far as it is possible to do so, to a state similar to that existing before the incident;
 - Address any injuries caused in a manner satisfactory to the injured party or parties and Mbizeni Development; and
 - Prevent the future occurrence of similar incidents.

Project Environmental Officer (EO)

The project EO will:

- Undertake at least weekly inspections (with frequency determined by the nature of the on-site activities as may be appropriate) to monitor compliance of all parties with the requirements of the EMPr;
- Provide the appropriate level of management within Mbizeni Development with monthly reports on environmental compliance and performance;

- Advise/recommend on actions or issues impacting on the environment to the PM, who shall issue any required site instructions to the Contractors;
- Develop an environmental awareness and training programme describing the manner in which:
 - The applicant intends to inform its employees and contractors of any foreseeable environmental risks which may result from their work; and
 - Risks must be dealt with in order to avoid pollution or degradation of the environment identified during the BA process and which emerge during the project.
- Review and approve construction method statements together with the Construction Manager for those activities that are identified as having a significant environmental risk.;
- Assist the Contractors in finding environmentally responsible solutions to problems that may arise;
- Recommend to the PM the removal of person(s) and/or equipment not complying with the EMPr;
- Undertake photographic monitoring during the decommissioning and construction activities (berth areas and common areas will not be photographed due to National Key Point requirements);
- Keep records of all activities/ incidents concerning the environment;
- Take immediate action on the site to stop works where significant and irreparable damage is being inflicted on the environment, and inform the Construction Manager immediately of the occurrence and action taken; and
- Undertake regular internal review of the EMPr and make recommendations regarding its updating to the Construction Manager and PM.

In addition to the obligations and/or responsibilities described above, the EO has the authority to recommend to the DEFF and the iSimangaliso Wetland Park Authority that works be stopped if in his/her opinion serious harm to, or impact on the environment is likely to occur or has occurred and such actual or potential harm or impact is in contravention of the EMPr, and which is or may be caused by expansion activities.

The EO will be responsible for the compilation of a final compliance audit report for the Project, completed when all expansion activities related to the Project have terminated and the site has been cleared of all construction

related debris, materials or equipment not forming part of the permanent works. The final compliance audit report will be submitted to the DEFF in order to achieve “environmental closure” for the construction phase of the Project.

3.3 CONTRACTOR METHOD STATEMENTS

Method Statements will be required for specific activities that are identified to pose a significant risk to the environment and/or which require site specific detail beyond that contained in the EMP or when requested by the Construction Manager.

A Method Statement is a “live document” in that changes can be implemented by the Contractor(s) and the project EO, as circumstances unfold. A Method Statement describes the scope of the intended work in a step-by-step description, in order for the project EO and the Construction Manager to understand the Contractor’s intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks. Method Statements must be developed based on the risk assessments of the contractors’ activities.

3.4 TRAINING AND ENVIRONMENTAL AWARENESS

Mbizeni Development will develop an environmental awareness and training programme describing the manner in which:

- The applicant intends to inform its employees and contractors of any foreseeable environmental risks which may result from their work; and
- Risks must be dealt with in order to avoid pollution or degradation of the environment identified during the BA process and which emerge during the project.

3.5 COMMUNICATION

Channels of communication must be established between Bhangazi/Mbizeni, the Contractor(s) and external stakeholders. Mbizeni Development shall establish and maintain procedures for:

- Internal communication between the various levels and functions of the Project staff organisation; and
- Receiving, documenting and responding to relevant communication from external interested parties.

A complaints procedure must be established and maintained to record any complaints or comments received from the public during the construction, decommissioning and operational phases. The complaints procedure should be underpinned by the following principles and commitments:

- Disseminating key information to directly impacted stakeholders;

- Seeking to resolve all grievances timeously; and
- Maintaining full written records of each grievance case and the associated process of resolution and outcome.

The responsibility for resolution of grievances will lie with Mbizeni Development and its Contractor(s) where applicable.

3.6 RECORD KEEPING

Mbizeni will control EHS documentation, including Project licenses, approvals, this EMP; associated procedures; checklists, forms and reports, through a formal procedure. The document control procedure will describe the processes that the Project will employ for official communication of both hardcopy and electronic documents and the requirement for electronic filing, document tracking and version control numbers.

Mbizeni's EO is responsible for maintaining a master list of applicable Project EHS documents and for communicating this list to the appropriate parties.

The Contractor(s) will be required to develop a system for maintaining and controlling its own EHS documentation. All Project records and documentation will be kept on site where required. Relevant documentation will be backed up on Project Place (Mbizeni Development's project management database). A records register will be maintained indicating document formats (hard or soft copy) and will be archived for the life of the Project.

3.7 CHECKING AND CORRECTIVE ACTION

Checking includes inspections and monitoring as well as audit activities to confirm proper implementation of the EMP as well as effectiveness of its mitigations. Corrective actions include response to incidents, non-compliances, and non-conformances. Actions also include those intended to improve performance and prevent future non-conformances.

3.7.1 Inspection

Site inspections will be conducted weekly on an ad hoc basis (internally) and formally once every month, in an effort to monitor compliance and implement conditions stipulated in this EMP.

3.7.2 Monitoring

Monitoring activities shall include the recording of information to track compliance with the EMP. The main objectives of the monitoring program will be to:

- Comply with regulatory requirements pertaining to emission, discharges, etc.;

- Monitor changes in existing physical, biological and social characteristics of the environment, compared to the baseline;
- Determine the effectiveness of the control and mitigation/ enhancement measures and provide a basis for recommending additional or alternative measures;
- Verify that all project management plans are appropriate and relevant to their respective project activities and phases; and
- Provide accountability and a sense of ownership through the Project lifecycle.

The DEFF requires monitoring activities as part of an EMP. The monitoring plan has therefore been incorporated into the list of EMP commitments in *Section 6*.

3.7.3 *Auditing*

Mbizeni Development will conduct regular audits to monitor compliance with the Project EMP. The Contractors' performances towards meeting these requirements will also be assessed. Audits will be undertaken as follows during the Project:

- **Internal audit:** The project EO shall use this EMP as a basis to develop a checklist for monthly auditing. The EO will undertake weekly inspections and audit the Contractors' performance on a monthly basis.
- **External audit:** A suitably qualified independent third party Environmental Control Officer (ECO) will review the project EO's internal audit reports and undertake a monthly audit of the site's compliance with the EMP and other environmental controls.

Both the internal and external audits will include, at a minimum, the following:

- Completeness of applicable EHS documentation, including planning documents and inspection records;
- Conformance with monitoring requirements;
- Efficacy of activities to address any non-conformance with monitoring requirements; and
- Training activities and record keeping.

4 WASTE

4.1 WASTE MANAGEMENT PRINCIPLES

During the project, Mbizeni Development will evaluate measures to:

- a. Avoid the generation of waste and where such generation cannot be avoided, minimise the toxicity and amounts of waste that are generated;
- b. Reduce, re-use, recycle and recover waste;
- c. Where waste must be disposed of, ensure that the waste is treated and disposed in an environmentally sound manner;
- d. Manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts;
and
- e. Prevent the waste from being used for an unauthorised purpose.

An appointed EO shall conduct regular inspections of the Project site and activities related to the various phases pertinent to the expansion in order to identify any concerns and address these accordingly.

In addition to health & safety inductions, all subcontractors and workers must be inducted on the site-specific EA and EMPr requirements applicable. Toolbox talks must include an environmental component and records of training, including an attendance register, must also be kept on site.

The contractor is required to provide and maintain a method statement for “solid waste management” including (but not limited to) the following:

- Details on littering;
- Good site housekeeping;
- All rubble must be periodically removed;
- Do not bury waste on site;
- Waste separation;
- Hazardous waste;
- General waste;
- Reusable construction material;
- Recyclable waste;
- Demarcate an area for waste storage;
Sufficient closed containers to be provided;
- Dispose of hazardous waste material at a licenced disposal site; and
- Safe disposal certificates to be provided to Mbizeni and the EO.

The Contractor must provide method statements for the “handling and storage of oils and chemicals” which must include (but not limited to) the following:

- Dangerous and toxic materials must be clearly labelled;
- Store chemicals that react with each other separately;
- Chemicals must be stored in appropriate containers;
- Storage of hazardous chemicals requires secondary containment;
- Drip trays must be placed under all vehicles.

Contractors must provide and maintain a method statement for “cement and concrete batching” which must include (but not limited to) the following:

- Wear and use appropriate Personal Protective Equipment (PPE) during cement mixing;
- Store cement bags in a demarcated hazardous area;
- Visible remains of concrete (solid or from washings) must be physically removed and disposed as waste to a registered landfill site;

- Dedicate an area for cement mixing which must be on a hard surface (not soil);
- Demarcate area with a berm (soil or other item).

5.1 *DUST*

The contractor must provide and maintain a method statement for “dust control” which must include (but not be limited to) the following:

- Details of the source of water to be utilized must be included;
- Appropriate PPE including dust masks must be used when necessary;
- Employ dust mitigation measures e.g. wetting soil surface before conducting dust generating activities;
- Dust suppression must not involve chemicals.

5.2 *STOCKPILES*

The following general recommendations apply to stockpiled material and it is the duty of the contractor to enforce these:

- Stockpiled material must be placed on easily accessible areas without any environmental damage;
- Stockpiles to be stabilised if signs of erosion are visible. This can be done using berms, silt traps, etc, where necessary;
- Topsoil stockpiles must be monitored for invasive vegetation and demarcated as no-go areas.

5.3 *SPILLS/LEAKS*

The following general recommendations apply to spill and leaks, and it is the duty of the contractor to enforce these:

- Appropriate spill kits must be available on site;
- A spills register must be maintained on site. This must include details of the corrective action taken;
- Leaks/ spills of 10 litres (ℓ) or more and/or that cause water pollution must be reported immediately to the EO;
- Leaks and/or spills must be appropriately cleaned up;

- Appropriate spill kits must be available on site;

The procedure for responding to a spill/leak of manageable volume, involves mobilising site personnel to stop the leak/spill at the source. Containment is the next step in the process and if there is a fire risk or a need to control vapours, then foam will be used to blanket the spill. Absorbents and neutralizers may also be used and when the situation is stabilised and confirmed as safe, then the spilled product is pumped into a mobile slop drum/ tank stored on site until removed by a contractor. Where foam, neutralizers or absorbents are used to respond to a spill, the waste is treated and disposed of in accordance with the Waste Management Method Statement or Waste Management Plan. The incident is then recorded in detail and kept on file.

5.4 *HEALTH AND SAFETY*

The following general recommendations apply to health and safety and it is the duty of the contractor to enforce these:

- The construction site must be fenced off to prohibit unauthorised access and site access must be strictly controlled;
- All employees, contractors and sub- contractors must wear appropriate PPE;
- The site and crew must be managed in accordance with applicable and relevant Occupational Health and Safety Act (Act No. 85 of 1993);
- Emergency procedures in place prior to commencing work and to include but not be limited to: fire, spills, accidents to employees, use of hazardous substances and materials;
- Appropriate health and safety signage must be displayed on site.

5.5 *EMERGENCY SYSTEMS FOR MAJOR ENVIRONMENTAL INCIDENT MANAGEMENT*

Substances that are health and safety hazards will be stored appropriately on site. This will be in bunded and lined areas, and in areas that are slightly raised above the ground where possible. This is to prevent potential, soil, and ground- and surface water contamination. In the event of a major incident or spill, the spilled product (should it be outside of bunded or lined areas) will be contained as far as practicable to prevent the lateral spread of product to other areas of the site.

If a major incident in the form of a tank fire or a loss of containment were to occur, the Emergency Response Procedure would be activated and firefighting and/or inter-bund drainage may be required depending on the nature of the

incident. Suitable licensed liquid waste removal contractors would remove the spillage waste from the site and undertake the necessary treatment offsite.

6 ENVIRONMENTAL MANAGEMENT PROGRAMME

This section covers the environmental specifications and recommendations required during the following phases of the Project:

- Planning and Design Phase - Table 6-1 and
- Operation Phase- Table 6-3

The EMPr outlines the following:

- Affected receptor;
- Potential impact to the receptor;
- Project activities resulting in the potential impact;
- Proposed mitigation/ management and monitoring measures;
- Parameters for monitoring;
- Timing/frequency for implementation of mitigation / management and monitoring measures; and
- Responsibility for implementation.

6.1 PLANNING AND DESIGN PHASE

Impact mitigation and management measures identified for this Phase are included in Table 6-1 below and must be incorporated into the overall Project design.

Table 6-1 Planning and Design Phase: Environmental Management Programme

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/ Frequency	Responsibility
6.1.1	Licencing and permitting requirements	Deviation from licence permitting conditions, or improper implementation of conditions.	<ul style="list-style-type: none"> • Construction Planning • Site establishment 	The developer must ensure that all licencing, permits or certificates required for the project are in place prior to the commencement of any activities on site.	<ul style="list-style-type: none"> • EMPr • Licences/permits 	Pre-construction	Mbizeni Development;
6.1.2		Destruction of "heritage" structures	<ul style="list-style-type: none"> • Demolition of structures that are older than 60 years. 	A heritage specialist undertake a site walk through to determine if there are structures older than 60 years that will be demolished to make way for the Cultural Lodge facilities. The developer would then need to obtain a demolition permit prior to any such activity. The permit will need to be submitted to the Provincial Heritage Resources Authority (i.e. the KwaZulu-Natal Amafa and Research Institute), in compliance with Section 34 of the National Heritage Resources Act (Act No. 25 of 1999).			
6.1.3	Biodiversity	Loss of Forest	<ul style="list-style-type: none"> • Planning of the construction activities. • The development of the Cultural Lodge will require further loss of presently untouched 	As detailed in the Method Statement (agreed to with DEFF and DAFF), the following will be done: <ul style="list-style-type: none"> • Demarcating suitable development envelopes; • Demarcating boardwalk alignment; • Marking protected trees and trees exceeding 180 mm in diameter; • Identifying possible pruning or thinning requirements; • Identifying possible tree specimens to be transplanted, and marking them accordingly; 	<ul style="list-style-type: none"> • Visual • Layout • Training Register; • Contract tender document • Induction presentation • <u>Forest Ecologist's Root damage mitigation and tree pruning protocol</u> 	Pre-construction	Construction Manager, Plant Relocation Specialist

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
			forest in the area.	<ul style="list-style-type: none"> Where practicable, identifying and demarcating proposed construction access, lay-down, storage and mixing areas. 	<ul style="list-style-type: none"> <u>South African Wood Preservers Association (SAWPA)'s Timber Decking Substructure Regulations and Preservative Treatment guidance note (July 2018),</u> 		
6.1.4				It is recommended that only plants indigenous to the region be used for rehabilitation and that tree planting be considered where possible. Ideally the trees used will be saplings relocated by the Relocation Specialist.	<ul style="list-style-type: none"> Visual 	Planning phase Pre-construction	Construction Manager Project Architects Plant
6.1.5				A landscape plan must be produced for the site. The plan must be aligned with the site layout as well as the iSimangaliso Wetland Park requirements.	<ul style="list-style-type: none"> Landscape Plan 		
6.1.6				All contractors appointed to carry out the various components of the project must be made fully aware of the environmental requirements and these requirements must be a part of the contract tender document and addressed in the site induction.	<ul style="list-style-type: none"> Training Register; Contract tender document, Induction presentation 	Pre- and during Construction	EO
6.1.7	Socio-Economic	Potential grievances that could arise from the impact of construction.	The grievances could stem from noise or dust nuisance experienced by the local communities.	Disseminating key information to directly impacted stakeholders, particularly of the construction start, duration and completion. When construction commences, the responsible parties should seek to resolve all grievances timeously and maintain full written records of each grievance case and the associated process of resolution and outcome.	<ul style="list-style-type: none"> Complaints register 	Pre- and during Construction	Contractor(s) Construction Manager Mbizeni Development
6.1.8		The proposed project will provide the	Planning for construction labour and staff	The approach and method of recruitment must be shared with the entire community so that everyone is aware of how, where and when to apply for	<ul style="list-style-type: none"> Recruitment Policy 	Planning Phase	Construction Manager

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/ Frequency	Responsibility
		community with a form of income to be managed through the Trust as well as (limited) job opportunities for members of the community during the construction and operation phases.	for the Lodge once operations commence.	opportunities and what the minimum requirements for employment are.			
6.1.9				Opportunities for employment must be offered to the community first before filling from other towns and villages.	• Recruitment Policy	Planning Phase	Construction Manager
6.1.10				The Trust must get assistance in the management of funds generated from the development to ensure that benefits are realised and that they reach the community as a whole.		Planning Phase	Construction Manager

6.2 CONSTRUCTION PHASE

Impact mitigation and management measures identified for this Phase are included in Table 6-2 below and must be incorporated into the overall Project design.

Table 6-2 Construction Phase: Environmental Management Programme

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.1	Biodiversity	<ul style="list-style-type: none"> • Loss of Further Forest • Potential Loss of Forest Canopy and Understory 	<ul style="list-style-type: none"> • The development of the Cultural Lodge will require further loss of presently 	Only areas required for construction are to be cleared in line with the site layout.	<ul style="list-style-type: none"> • EO Report, • Construction Plans 	Construction	EO
6.2.2				At the time of site clearing the appointed EO must be on site so as to ensure that the protected features are left intact.			

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.3			untouched forest in the area.	As far as possible, building flexible structure shapes to fit around larger trees.	<ul style="list-style-type: none"> • CEMP, • Rehabilitation Plan 	Construction	EO, Construction Manager
6.2.4		• Accommodation units will be constructed on raised platforms	Placing of raised platforms and boardwalks in old camp sites, with open understory and where the ground has already been disturbed.				
6.2.5			Cleared sites must be rehabilitated and revegetated as soon as possible on completion of construction			Construction and post-construction	EO, Construction Manager
6.2.6			<u>Construction of boardwalks and platforms.</u>	<ul style="list-style-type: none"> • <u>Where necessary, flexible structures should be built to fit around larger trees for the construction of platforms for the accommodation units. In addition, and as far as practicable, platforms should be placed in the old camp sites, with open understory.</u> • <u>Adherence to the root damage mitigation protocol recommended by the Forest Vegetation Specialist (see Annexure E). This includes:</u> <ul style="list-style-type: none"> ○ <u>Root proximity to trunk and extent of root removal. The closer to the trunk that roots are cut, the more significant and severe the damage will be to your tree. Never remove more than 25% of a tree's roots. The tree will likely die or fall, or both.</u> ○ <u>Drainage: try to ensure disturbed area has adequate drainage to avoid water pooling round tree roots.</u> ○ <u>Re mulching and filling in around root. Keep topsoil after the holes are dug to use as mulch over and around disturbed areas. The mulch helps condition the soil, moderates soil temperatures, maintains moisture, and reduces competition from weeds and grass.</u> 	<ul style="list-style-type: none"> • <u>CEMP,</u> • <u>Rehabilitation Plan</u> • <u>Forest Ecologist's Root damage mitigation and tree pruning protocol</u> • <u>South African Wood Preservers Association (SAWPA)'s Timber Decking Substructure Regulations and Preservative Treatment guidance note (July 2018),</u> 	<u>Construction and post-construction</u>	<u>EO, Construction Manager</u>

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
				<ul style="list-style-type: none"> ○ <u>Damaged Bark, trunk wounds, and pruning. Where bark has been damaged along the trunk or on major limbs, remove loose bark to avoid areas where water can accumulate beneath bark . Pruning should be neat and cut at clean 45-degree angles, avoid spiting of limbs.</u> ○ <u>Wound Dressings. Wound dressings were once thought to accelerate wound closure, protect against insects and diseases, and reduce decay. However, research has shown that dressings generally do not reduce decay or speed closure and rarely prevent insect or disease infestations. Most experts recommend that wound dressings not be used. If a dressing must be used for cosmetic purposes, use only a thin coating of a nontoxic material.</u> ○ <u>Time of root pruning. Tree roots should preferable be cut during late winter when the tree is metabolically least active (avoid pruning spring/early summer). After cutting, minimise the time that the roots are exposed to prevent drying, and keep the soil moist.</u> 			
6.2.7			<u>Installation of Bio-Sewage System</u>	<ul style="list-style-type: none"> • <u>Disturbed areas are to be covered with thick layer of forest mulch and revegetated as soon as possible with indigenous, shade tolerant ground cover (e.g. <i>plectranthus</i>, <i>Clivia spp.</i>).</u> • <u>As far as possible, the areas where the boardwalks are to be constructed are to be used as paths for movement into the forest and construction activities.</u> 	<ul style="list-style-type: none"> • <u>CEMP,</u> • <u>Rehabilitation Plan</u> • <u>Forest Ecologist's Root damage mitigation and tree pruning protocol</u> 	<u>Construction and post-construction</u>	<u>EO, Construction Manager</u>

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
				<ul style="list-style-type: none"> • <u>As far as possible, excavations in the undisturbed forest are to be done manually.</u> • <u>Minimise exposure at any one time by clearing and filling as soon possible.</u> • <u>Activities like cement mixing are to be restricted to the disturbed areas outside of the forest.</u> • <u>Reinforcement barriers are to be installed around the below ground mini-collection tanks.</u> 			
6.2.8		Disturbance to the Fauna of the Area	The loss of feeding and/breeding habitat in the area as well as the increase of human presence will result in the disturbance of fauna in the area.	Traffic calming measures such as speed humps must be installed.	• Visuals	Construction	Mbizeni Development
6.2.9	An appropriate speed limit must be implemented and speed signs put around site.			EO, SHEQ Manager			
6.2.10	All power and telephone lines should be buried and may not be strung between buildings.			• Visuals	EO, Construction Manager		
6.2.11	Biodiversity	Increase in the Level of Alien Plant Infestation of the Area	Clearing an area for new development results in the increase of alien plant growth.	From the outset of the lodge construction process a programme of alien weed control must be set in place. This process will be included in the terms of reference of the tender document for construction contractors, and will include a mandatory initial training component for the successful bidders.	<ul style="list-style-type: none"> • Alien Weed Control Programme; • Training long and register 	Weekly	ECO Construction Manager
6.2.12	Trucks transporting natural materials to site are to be washed down prior to leaving source to remove any alien invasive seeds.			<ul style="list-style-type: none"> • Alien Weed Control Programme; • Training long and register 	Weekly	ECO Construction Manager	
6.2.13	Limit construction to the footprint prescribed in the site layout, and (as far as practicable) build where prior clearing of understory has occurred. This will minimise vegetation clearing.			• Construction EMP	Weekly	ECO Construction Manager	

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility		
6.2.14				A rehabilitation plan must be produced for the decommissioning phase to prevent the establishment of alien invasive species and to encourage forest re-growth.	<ul style="list-style-type: none"> • Alien Weed Control Programme • Rehabilitation Plan 				
6.2.15	Biodiversity	Increase in the Level of Solid Waste on site.	There is a risk of localised pollution due to spill of containers or bins on site. The increase of people on site also increases the risk of littering	Routine patrols through the area around the lodge grounds. This area must include both Concession Areas A and B, and a strip around them of at least 200 m in width around them.	Traffic Accommodation Plan	Weekly	ECO		
6.2.16		Inappropriate management of hazardous and general waste could result in pollution both on site and along the transport route to the final disposal site(s).	The construction and decommissioning activities will result in the generation of general and hazardous waste.	To promote the "4Rs" (Reduce, Reuse, Recycle and Reclaim) waste management concept, all waste must be sorted and managed as appropriate, either for reuse, recycling or disposal. The promotion of the 4Rs concept must be included in the Method Statement for waste management.	CEMP Waste Method Statement	Construction	Construction Manager EO SHEQ Manager		
6.2.17				Solid and liquid wastes must not be mixed.					
6.2.18				Method Statements for loading and unloading, and transport of wastes must be developed.					
6.2.19				All waste must be handled and stored in accordance with its class (hazardous or non-hazardous) and all personnel collecting, handling, transporting or disposing of waste must be trained in the proper procedures for dealing with the said waste class.	CEMP Waste Method Statement; Training Register			Construction and post-construction	EO SHEQ Manager
6.2.20				Waste skips must be placed around site, with clear labels of the type/class of waste that is to be disposed of in each skip.					

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.21				Industrial size skips to be used for larger waste. If this is not possible, the waste should be stored in a bunded area that is inaccessible to animals and protected from rain.			
6.2.22				Training regarding proper methods for transporting, transferring and handling hazardous substances that have the potential to impact surface- and groundwater resources.			
6.2.23				Transport vehicles must cater for the type, class and quantity of waste being transported in terms of its composition, load capacity, covering, etc.	Visual	Construction	EO SHEQ Manager Construction Manager
6.2.24				Vehicles carrying hazardous wastes must be labelled appropriately.	Visual	Construction	Construction Manager; EO, SHEQ Manager
6.2.25				No burning of waste at work sites will be permitted	Visual	Construction	EO, SHEQ Manager
6.2.26				Staff must be trained on waste management measures to be implemented, including how to respond to a pollution incident.	CEMP Induction registers	Construction	EO, SHEQ Manager
6.2.27				No smoking allowed in the vicinity of fuel, lubricants/ oils, chemicals, hazardous waste and hazardous material stores and handling areas.	Signage Emergency Response Procedure, Visual observations	Construction	EO SHEQ Manager
6.2.28				Safety signs depicting "No Smoking", "No Naked Lights" and "Danger" are to be placed around site. And designated smoking areas must be set up where practicable.			
6.2.29				Good housekeeping to be maintained on site.			

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility	
6.2.30	Biodiversity Aquatic Environment Humans	<ul style="list-style-type: none"> • Potential contamination of the ground and water resources • Risks to health and safety 	The storage of chemicals, fuels, paints and hazardous materials during construction.	Hazardous chemical signage is to be used where hazardous goods are being stored; hazardous materials to be clearly labelled and fencing and controlled access to limit unauthorised access.	Signage	Construction	EO, SHEQ Manager	
6.2.31				The volume capacity of storage tanks or containers must be displayed. The product contained within the tank must be clearly identified using the emergency information system (and Material Safety Data Sheets (MSDS) must be available on file).	Signage, Emergency Response Procedure, Visual observations			Construction
6.2.32				Fuel, lubricants / oils, chemicals, hazardous waste and hazardous material stores and handling areas must be provided with secondary containment capable of holding 110% of the total capacity of the all tanks / vessels. The containment must be checked daily and debris removed. The storage of such substances must not be within 100 m of any wetland or the lake.				
6.2.33				Any electrical or petrol-driven pump must be equipped and positioned, so as not to cause any danger of ignition of the product.				
6.2.34				Provide collection systems (i.e. drip trays or impervious linings) under machinery or equipment that may dispense or leak hydrocarbons / hazardous substances (i.e. generators and pumps).	Visual	Construction		EO, SHEQ Manager
6.2.35				Hazardous and dangerous material storage areas will be equipped with emergency spill response equipment.	Emergency Response Procedure, Emergency spill response equipment (e.g. spill kits)	Construction		EO, SHEQ Manager
6.2.36				Concrete mixing must only take place at agreed specific areas on site and runoff from the area must not be allowed to flow off site into the surrounding forest, grassland or wetlands.	Visual			

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.37				A preventative maintenance program must be instituted that includes inspection schedules to confirm and maintain the mechanical integrity and operability of storage vessels, and associated containment areas and process equipment for fuel, lubricants / oils, chemicals, hazardous waste and hazardous materials.	Preventative Maintenance Program; Inspection Schedules	Construction	EO, SHEQ Manager
6.2.38.				The loading and unloading of hazardous materials and fuels will be confined to an area that is provided with secondary containment and in line with hazardous material handling procedures.	Visual	Construction	EO, SHEQ Manager
6.2.39				Maintain an inventory of all dangerous and hazardous goods onsite, together with all relevant MSDSs for all contaminants on-site. These will include human health effects of chemicals handled and will be included in the required training for all employees handling or otherwise exposed to the contaminants.	MSDS; Training attendance register; Handling and response procedure	Construction	EO, SHEQ Manager
6.2.40				All appropriate personal protective equipment, handling and response procedures must also be identified in the MSDS or otherwise recommended by the suppliers/manufacturers and followed by all Project staff.			
6.2.41				For all hazardous substances stored on the site, the contractor must provide Method Statements detailing the substances/ materials to be used, together with the storage, handling and disposal procedures of the materials. This will include (but not limited to) methods for refuelling of vehicles, machinery and equipment	Waste method statement	Construction	EO, SHEQ Manager
6.2.42				Transportation vehicles and tanks suitable for the materials being transported must be used. These vehicles and tanks must be maintained in adequate	Visual; Spill response kit;	Construction	EO, SHEQ Manager

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
				<p>condition to insure proper handling and safety of chemicals.</p> <p>All vehicles must be equipped with spill response kits appropriate to the materials being transported. The Contractor will be required to maintain these in good condition and working order.</p> <p>Drivers must be trained in spill and emergency response and must have a means of communicating with the site, their administrative offices and emergency personnel for the entire transportation route.</p>	Training attendance register		
6.2.43				Up-to-date emergency contact information and monitoring sheets and manifests documenting the volume, phase and characteristics of the chemical being transported must be carried with each shipment.	Emergency Response Procedure, Monitoring sheets	Construction	EO, SHEQ Manager
6.2.44				<p>In the event of a hazardous spill, whether accidental, deliberate or through negligence, on site or during transportation of these substances to/from the site, the Contractor shall:</p> <ul style="list-style-type: none"> • Immediately implement actions to stop or reduce and contain the spill. • Report the spill to the EM and arrange implementation of the necessary clean-up procedures. • Collect contaminated soil, water and other materials and dispose of it at an licensed approved waste disposal site. <p>All spills or accidents involving such materials are to be recorded.</p>	Spill response register/record	Construction	EO, SHEQ Manager Construction Manager

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.45				Spill kits must be provided and maintained at the fuel or chemical storage location.	Emergency Response Procedure Visual observations	Construction	EO, SHEQ Manager
6.2.46				Development, implementation and regular training and testing of a Spill Response Plan.	Training register	Construction	EO, SHEQ Manager
6.2.47	Aquatic Environment Soil	Accidental release of pollutants will impact on the water quality and therefore on aquatic fauna and flora.	Construction of the jetty will be on the lake shore and into the lake which will directly disturb fauna and flora in the area.	Awareness raising of staff to prevent killing/ injury of animals/ fish and prevent collection of plant material adjacent to the lake.	CEMP Training registers; Environmental awareness material (posters etc)	Throughout life of project	EO SHEQ Manager
6.2.48				Awareness raising to include protocol for dealing with wild animals encountered on site.	Visual	Construction	EO, SHEQ Manager
6.2.49				Staff accessing the lake must be limited to the team required for construction of the jetty.	Visual	Construction	EO, SHEQ Manager, Construction Manager
6.2.50				No breaks are permitted to be taken at the lake. A designated eating area must be provided on the main site.	Visual	Construction	EO, SHEQ Manager
6.2.51				All wood must be treated off-site prior to construction. Substances used for treating materials must not leach into the water over time.	CEMP Water Monitoring Reports; Visual (designated area)	Construction	EO, SHEQ Manager

Number	Issue/Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
					for treating wood)		
6.2.52				One path from the main site down to the water's edge must be established.	Visual	Construction	EO, SHEQ Manager
6.2.53				No hazardous materials are to be stored near the lake (all materials to be stored at the main site in a bunded area).	Visual	Construction	EO, SHEQ Manager
6.2.54				Prevent the integrity and capacity of the bunded areas being compromised by rainwater and stormwater ingress.	Visual	Construction	EO, SHEQ Manager
6.2.55				A rehabilitation plan must be produced for the decommissioning phase.	Rehabilitation plan	During life of project	EO Construction Manager
6.2.56		Stormwater/ Erosion Control during Construction and Decommissioning Activities	Clearing of vegetation during the construction phase to construct walkways and platforms for the units	<ul style="list-style-type: none"> Stormwater management is to be built into the construction plans. Stormwater/ run-off attenuation features must be established during the construction phase to control stormwater movement across the site. 	visual	Construction	EO
6.2.57	Areas must not be cleared too far in advance of construction.			Visual	Construction	EO, Construction Manager	
6.2.58	Cleared areas must be rehabilitated and revegetated as soon as practical after completion of works (continuous process as construction proceeds)			Visual	Construction	EO, Construction Manager	
6.2.59	Allowance must be made for drainage of water around sewerage collection tanks.			Visual CEMP Stormwater Management Plan	Construction	EO	
6.2.60	Should erosion gullies form, these must be rehabilitated and additional erosion protection measures implemented						

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.2.61				If soil is washed from site, this should be recovered without further damage to the existing environment	Rehabilitation Plan		
6.2.62	Visual	<ul style="list-style-type: none"> Impact of the Proposed Development on General Landscape Character; Potential visual impact on visitors on Lake Bhangazi and its southern and western shores including the impact on visitors at the View Sites Lookout Sites to the south of the Lake 	The development of the Cultural lodge could change the general landscape character of the area	Undertake a detailed tree survey within the proposed development area. Confirm location, species, trunk girth, height, crown diameter and condition of trees. This should be done in line with the Method Statement agreed to with DEFF and DAFF.	Tree Survey Report	Prior to construction	Tree Relocation Specialist, EO
6.2.63				Locate units and infrastructure to minimise loss of canopy trees and forest edge vegetation.	Visual	Construction	EO
6.2.64				Locate all units to ensure that rooflines do not break through the forest canopy	Visual	Construction	Mbizeni, Architects Construction Manager
6.2.65				Staggering units rather than setting them out in a continuous line should be implemented as per the site layout plan.	Visual	Construction	Mbizeni, Architects Construction Manager
6.2.66				<ul style="list-style-type: none"> Plan lighting carefully in order to minimise lighting levels and light pollution of the surrounding natural landscape. Consider the following; <ul style="list-style-type: none"> The use of motion sensor triggered lighting along paths and within common areas to ensure that only lighting that is absolutely necessary is switched on; The use of shielding to prevent light spill outside the areas that it is necessary to light; The use of minimal lighting both from a power perspective and the number of fittings in order to ensure the safety of visitors and staff; 	Visual	Construction	EO Construction Manager

Number	Issue/ Receptor	Potential Impact	Project Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
				<ul style="list-style-type: none"> Ensure that all structures are designed to minimise light spill into surrounding areas. This is to address the concern relating to the use of tented structures is that light glow tends to shine through some tent fabrics. 			
6.2.67				Ensure that non-reflective finishes are used for all external components within the development. Consider the use of non-reflective finishes on all external glass	Visual	Construction	Mbizeni, Architects Construction Manager
6.2.68				Ensure that all colours used for external finished blend into the surrounding natural environment.			

6.3 OPERATION PHASE

Impact mitigation and management measures identified for this Phase are included in Table 6-3 below and must be incorporated into the overall Project design.

Table 6-3 Operation Phase: Environmental Management Programme

Number	Issue/ Receptor	Potential Impact	Operational Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.3.1	Biodiversity	Disturbance to the Fauna of the Area	The loss of feeding and/breeding habitat in the area as well as the increase of human presence will result in the disturbance of fauna in the area.	The gardens around the lodge should be fairly dense in terms of their shrubbery and ideally there will be some stands of vegetation which are also at least 2 m tall.	Visual	Operations	Mbizeni Development
6.3.2				Leaf litter must be allowed to accumulate on the ground as numerous birds and small mammals forage in leaf litter.	Visual	Operations	Mbizeni Development
6.3.3				Use of chemicals such as herbicides and insecticides must be kept to a minimum and ideally should not be used at all.		Operations	Mbizeni Development

Number	Issue/ Receptor	Potential Impact	Operational Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.3.4				Large windows should have bird warning stickers on them. People should be encouraged to walk on well-defined roads, paths, and walkways.	Visual Signage	Operations	Mbizeni Development
6.3.5				There may be no resident dogs or cats on the site.	Visual	Operations	Mbizeni Development
6.3.6				If there is to be access to the wetlands and lake, it must be very tightly controlled. People must be confined to boardwalks and to fixed viewing points.	Visual Signage	Operations	Mbizeni Development
6.3.7				Notices in lodge rooms should inform guests of the risk of the presence of wild animals and provide information on correct behaviour.	Notice	Operations	Mbizeni Development
6.3.8	Biodiversity	Risk of nutrient enrichment of wetlands in the area and of Lake Bhangazi south	Should the STP not be maintained or designed correctly, there may be a potential for the discharge of water which does not meet the Discharge Water Quality Standards specified in the iSimangaliso Wetland Wastewater Treatment and Disposal - Guideline and Protocol	The project planners/ architects must, as a matter of priority, make a firm statement of how it is intended to deal with waste water and sewage. This statement should be subjected to review and acceptance by the park management.	Waste Management Plan	Pre-construction, to be implemented during operations	Mbizeni Development Architects
6.3.9				An appropriate specialist must compile all available data relating to the chemistry and biology of Lake Bhangazi South. The compiled information must be available to serve as a benchmark for the system.	Lake Bhangazi Analysis Report	Operations	Mbizeni Development
6.3.10				The methods used for the Cape Vidal Camp, and the degree of their success or otherwise, must be taken into consideration.	Cape Vidal Method Statement	Operations	Mbizeni Development
6.3.11				Discharge of effluent water at any place where it might make its way back into the wetlands near the lodge site or into the lake is prohibited.	Visual Stormwater Management Plan iSimangaliso Wetland Park: Integrated Management Plan	Operations	Mbizeni Development

Number	Issue/Receptor	Potential Impact	Operational Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.3.12				It is very strongly recommended that the lodge be operated on a conservancy tank system and that the waste be taken to the treatment works at the town of St Lucia.	Waste Management Plan iSimangaliso Wetland Park: Integrated Management Plan	Operations	Mbizeni Development
6.3.13	Biodiversity	Increase in the level of solid waste on site.	There is a risk of localised pollution due to spill of containers or bins on site. The increase of people on site also increases the risk of littering	Routine patrols through the area around the lodge grounds. This area must include both Concession Areas A and B, and a strip around them of at least 200 m in width around them.	Traffic Accommodation Plan Waste Management Plan iSimangaliso Wetland Park: Integrated Management Plan	Daily grounds cleaning plus monthly patrols through a wider area. Fortnightly inspections of the waste handling and disposal facilities	Mbizeni Development
6.3.14			Visitors using areas outside of the chalets for leisure activities.	Any cooking on site must be done in a designated area with well-maintained cookers with fire extinguishers present. No open fires will be permitted.	Lodge and visitor policies		
6.3.15	Biodiversity	Increase in the Level of Alien Plant Infestation of the Area	Clearing an area for new development results in the increase of alien plant growth.	From the outset of the lodge construction process, a programme of alien weed control must be set in place and maintained throughout the operational phase as well.	Alien Weed Control Programme; iSimangaliso Wetland Park: Integrated	Monthly	Mbizeni Development

Number	Issue/Receptor	Potential Impact	Operational Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
					Management Plan		
6.3.16				From the outset a monitoring programme must be set in place to check for the appearance of alien weed species. Where found they must be eradicated immediately with the preferred method of control being hand weeding rather than through use of herbicides.	Weed Alien Species Monitoring Report, Written Agreement with EKZN Wildlife, iSimangaliso Wetland Park: Integrated Management Plan	Biannually in October and April	Consultant/ party appointed by Mbizeni Development
6.3.17				The area covered by the monitoring programme must include both Concession Areas A and B, and a larger strip around them. The extent of this strip must be negotiated with Ezemvelo KZN (EKZN) Wildlife and the iSimangaliso Wetland Park Authority.			
6.3.18	Visual Impact	Impact of the Proposed Development on General Landscape Character	The development of the Cultural lodge could change the general landscape character of the area	Strict controls should be enforced to ensure that visitors and staff stick to specific circulation routes. The opening up of additional tracks particularly between visitor units and the lake edge must be prevented.	Visual	Operations	Mbizeni Development;
6.3.19				Strict controls to be enforced to ensure that vehicles only park/ use allocated parking areas and roads/ tracks within the development area	Visual	Operations	Mbizeni Development;
6.3.20				Reinforce the forest edge vegetation as necessary with appropriate planting particularly around areas that have been cleared for access and to allow views from units to ensure that it appears as continuous as possible. This might include the planting of low edge species in areas where openings are made for views out of the development;	Visual	Operations	Mbizeni Development;
6.3.21				Undertake regular weed and alien vegetation control.	Visual	Monthly	Mbizeni Development;
6.3.22				Do not allow pruning or removal of woody vegetation without authorisation from the Park Authority.	Proof of authorisation		Park Authority

Number	Issue/ Receptor	Potential Impact	Operational Activities	EMPr Mitigation / Management / Monitoring Measures	Parameters for Monitoring	Timing/Frequency	Responsibility
6.3.23				Any proposed changes to the development that would require amendment to the circulation system, relocation or addition of structures should be approved by the Park Authority. DEFF and DAFF (where applicable)	Proof of authorisation		Park Authority, DAFF, DEFF

7.1 THE EMPR AS A LIVE DOCUMENT

When considered necessary, the EMPr should be revised and updated to incorporate issues identified through emergencies, incidents, monitoring or audits. The Bhangazi Trust should be cognisant of the fact that the EMPr is a dynamic document, and revisions and updates made to it will ensure that the operation activities are planned and implemented taking identified environmental issues into account.

7.2 CONCLUDING RECOMMENDATIONS

In implementing the proposed project, and this EMPr, the following is recommended:

- Maintaining the existing infrastructure- like the storm water management system, roads, fences and other structures.
- Managing the operational areas in accordance with the iSimangaliso Wetland Park management plans, the regional integrated and spatial development plans, and implementing the environmental protection measures detailed therein.
- Implementing the EMPr to guide the pre-construction, construction and operational activities, and to provide a framework for the on-going assessment of environmental performance.
- Maximising the employment of local people and the procurement of local resources during operations to ensure maximum benefit to the provincial/ local economy.
- A suitably qualified licence holder employee must be mandated with the task of monitoring compliance, and correct implementation of all mitigation measures and provisions as stipulated in the licence, EMPr and standard operation procedures.

The contact details of relevant personnel must be provided in the table below (*Table 8-1*) **prior to the commencement of the Project**. The signatures of the Mbizeni Development PM, Construction Manager, SHEQ manager, Contractor(s) and EO will signify that the mitigation, management and monitoring measures of this EMP_r will be adhered as stipulated in this EMP_r.

Table 8-1 *Relevant Contact Personnel*

Name	Contact Person	Contact Numbers
Mbizeni Development Project Manager (PM) <i>(for construction and decommissioning phases)</i>		
Construction Manager <i>(for all phases)</i>		
SHEQ Manager <i>(for all phases)</i>		
Environmental Officer (EO)		
Contractor		
Contractor		
Contractor		

SIGNATURES

Mbizeni Development Project Manager (PM)

Signature

Date

Mbizeni Development SHEQ Manager

Signature

Date

EMO

Signature

Date

Contractor

Signature

Date

Contractor

Signature

Date