

ENVIRONMENTAL MANAGEMENT PLAN (EMP)



**FOR THE CONSTRUCTION AND OPERATION OF A
MULTI-PURPOSE CENTRE IN THE OMATJETE
VILLAGE, ERONGO REGION**

JANUARY 2021



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| DOCUMENT INFORMATION | | |
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| Location | Omatjete, Erongo region | |
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¹ EAP – Environmental Assessment Practitioner

EMP – Muzine group (PTY) LTD, Construction of multi-purpose centre, Omatjete village, Erongo region

Executive Summary

Economic activities such as the proposed construction of multi-purpose which include residential and tourism outlets, retail and office development forms part of the building blocks for socio-economic development and significantly contributes the local economic chain.

In-addition to employment creation, the Muzine group was also established with the full realization that for economic empowerment to be truly meaningful the benefits of empowerment must be broad-based and enjoyed at the grassroots level

However, such developmental activities should be conducted in a thoughtful and forward-looking manner. In other words, such activities should consider environmental and social sustainability of the land and surroundings. Hence, it is imperative that the principles and best environmental practices should be adopted for the construction of the Muzine multi-purpose center.

ACRONYMS

| | |
|-------|---|
| BID | Background Information Document |
| DEA | Department of Environmental Affairs |
| DSR | Draft Scoping Report |
| EA | Environmental Assessment |
| EAP | Environmental Assessment Practitioner |
| ECC | Environmental Clearance Certificate |
| ECO | Environmental Compliance Officer |
| EIA | Environmental Impact Assessment |
| EMA | Environmental Management Act (No. 7 of 2007) |
| EMP | Environmental Management Plan |
| I&APs | Interested and Affected Parties |
| MEFT | Ministry of Environment, Forestry and Tourism |
| PPE | Personal Protective Equipment |
| SM | Site Manager |
| TEC | Tortoise Environmental Consultancy |

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1. INTRODUCTION

1.1. Environmental Management Plan (Context)

This document constitutes the Environmental Management Plan (EMP) for the construction of a multi-purpose centre in the Omatjete village

The EMP has been developed in accordance with the Environmental Management Act (Act No.7 of 2007), and any other relevant / applicable legislation.

The contents of this document are binding to all parties with who have a role to play in the **design, construction / upgrades and Operations** of the Muzine group (PTY) LTD multi-purpose centre, *as defined in Section 5 and 6, respectively.*

Location: GPS Coordinates Latitude -21.04630 and Longitude 15.50437

1.2. Motivation for Developmental Activities

Economic activities such as the Muzine group (PTY) LTD forms part of the building blocks for socio-economic development and significantly contributes the local economic chain.

In-addition to employment creation, the Muzine group was also established with the full realization that for economic empowerment to be truly meaningful the benefits of empowerment must be broad-based and enjoyed at the grassroots level.

1.3. Environmental versus Economic Development

Namibia's economy is highly dependent on a healthy environment and striking a balance in meeting demands for socio-economic development and environmental sustainability.

Henceforth, it is of utmost importance that the environment and development sectors should work together and identify synergies in order to ensure that developmental activities such as the construction of the multi-purpose centre are conducted in an environmentally friendly manner.

1.4. Environmental management plan (EMP) Context

This document constitutes the Environmental Management Plan (EMP) for the construction of a multi-purpose centre. The property refers to a portion of land within the designated boundaries of the Omatjete Settlement and is currently vacant. There are no existing structures on the designated land and various bushes and trees occupy most of the site.

1.5. What is an EMP?

The Environmental Management Plan (EMP) is a tool used to mitigate potential environmental risks associated with the proposed project / activity, and provides a risk management strategy and logical framework for implementation of the proposed multi-purpose centre construction, in order to mitigate potential environmental and social impacts identified during the EIA process, in accordance with the provisions of the Environmental Management Act (Act No.7 of 2007), EIA Regulations of 2012 and any other relevant / applicable legislation.

As a result, the EMP recommends mitigation measures in order to ensure that the recommended multi-purpose centre construction and associated activities are conducted in an environmentally friendly manner, and in accordance with the provisions of the Environmental Management Act and EIA regulations

Furthermore, the EMP outlines specific roles and responsibilities for role-players against which they can be evaluated and non-compliance is punishable.

1.6. Purpose of the EMP

The purpose of the EMP is to identify potential environmental and social impacts associated with the construction of the multi-purpose centre, in-order to ensure compliance to the EMP.

The aim of the EMP is to ensure that the activities undertaken during the construction of the multi-purpose centre are conducted in accordance with the following:

- i. Environmental Management Act (No. 7 of 2007),
- ii. EIA regulations of 2012 (GN: 30), and
- iii. Best environmental practices (benchmarks)
- iv. Any other applicable legislation (*as presented in Table 3.1 to 3.3*)

The EMP provides environmental guidelines to be followed throughout the lifespan of the multi-purpose centre activities and comprise of the following:

- a) Environmental Aspects,
- b) Management Objective,
- c) Mitigation Measures / Actions Required,
- d) Monitoring Indicators, and
- e) Party Responsible

1.7. Objective

The objective of the EMP is to prevent / minimize (where possible), unacceptable and adverse environmental, social or economic impacts that may arise from the proposed development. Overall, the EMP aims to prevent any negative impact/s (real, potential or perceived) that may result from the proposed multi-purpose centre operation activities.

1.8. EMP Scope

The EMP does not only focus, and it is not limited to the margins of the water sources, but it includes the bigger picture, and serve as the guiding tool to protecting the natural, bio-physical and socio-economic environment on both the specific site in the surrounding area. The bigger picture is important because, some impacts may not be confined to the margins of the borrow pit.

1.9. Possible adjustments to the EMP

The EMP is an open-ended document and maybe considered inconclusive. In other words, the EMP should allow room for adjustments if new information becomes available at a later stage, in which new / additional mitigation measures may become necessary.

The necessity of possible adjustments to the EMP at a later stage may be attributed to:

- a) Lack of information at the time of drafting the initial EMP,
- b) Evolution or addition of new activities, or
- c) Unintended omission of potential impacts during the initial EIA scoping exercise and development of the initial EMP.
- d) Development of industry best practice.

This implies that, in-addition to the information contained herein, any other relevant information that may surface during the construction phase, through

internal monitoring or auditing by the Environmental Compliance Officers (ECOs), can be added to the EMP (evolution of activities), and such changes or inclusions will be binding to the proponent and all contractors / sub-contractors.

1.10. Implementation Framework and Accountability to the EMP

For effective implementation of the EMP, the Institutional roles are presented below. However, the specific roles and responsibilities are defined and broken down as presented in Sections 4 and 5, respectively.

Table 1-1: Role players, Institutional Framework

| Role-player | Company / Institution | Role |
|--|--|---|
| Proponent | Muzine Group (PTY) LTD | Compliance to the EMP |
| Environmental Consultant | Tortoise Environmental Consultants (TEC) | Development of the EMP |
| Environmental Compliance Officer/s (ECO) | Ministry of Environment, Forestry & Tourism (MEFT) – Department of Environmental Affairs (DEA) | Monitoring Compliance to EMP: <ul style="list-style-type: none"> ➤ Un-announced spot checks, ➤ Corrective measures, warning, penalties / fines, license suspension, etc |
| Public | Interested and affected parties (I&APs) | Report to the ECOs, any activity of environmental concern (e.g Pollution, safety risks, etc) |

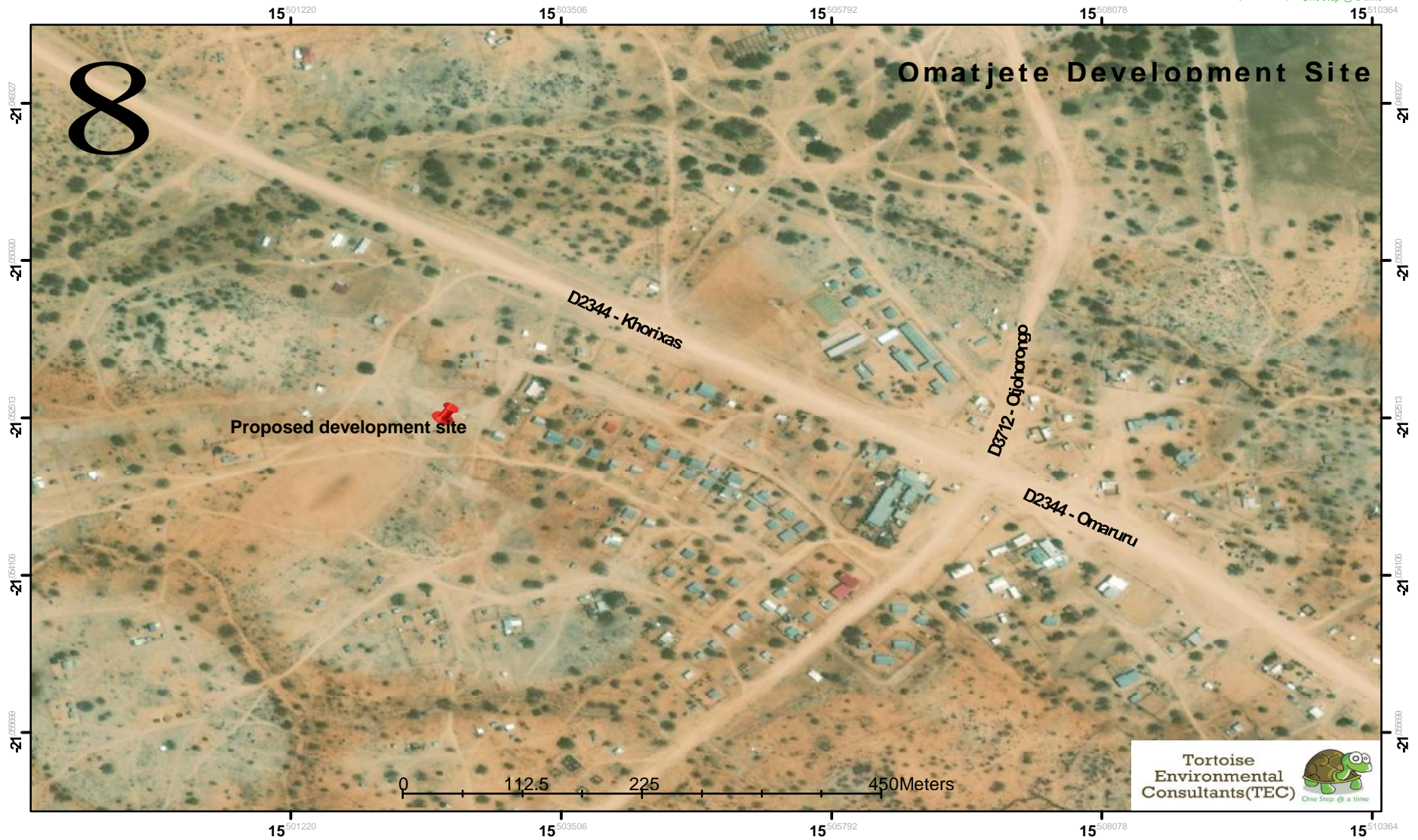
2. PROJECT INFORMATION

2.1 Project Location

The property refers to a portion of land within the designated boundaries of the Omatjete Settlement and is currently vacant (Figure 1). This land roughly measures approximately 6000 square meter of consolidated ervens and is located within the business zoned ervens of the Settlement. The land is easily accessible from the main road.

There are no existing structures on the designated land and various bushes and trees occupy most of the site. The property is located within the communal jurisdiction of the Zeraua Traditional Authority and all relevant permissions have been obtained as attached hereto.

Muzine Group intends to start with development as soon as all permissions and leases are in place. The developer will lease the land in its current state and undertake to render all necessary services to allow effective business development. Site clearing and land preparatory work should start as soon as possible.



2.2 Proposed Development Concept

A multipurpose development that will include tourism, residential, retail and office space was proposed. The business idea is to create a multipurpose and friendly environment where the residents can live, work and shop.

2.3 Residential and tourism outlets

It was proposed to develop entry-level and relatively cheap residential units to address the urgent need for accommodation needs of employed persons in the Omatjete Settlement especially those in the public Service who are on temporary assignment to the area. The units will cover approximately 1000 m² of building area and mostly include bachelor, one and two bedroom units. Our market research has found that there is a huge demand for affordable housing for teachers, police officers and other employed persons in the area. The above residential development can also be increase should there be a great enough need for the residential units. The business idea is to divide the residential development into a tourism aspects that will cater for transit clients on the C22 road.

2.4 Retail

We proposed a total of 2 000m² of building retail space under roof covering various key outlets based on the specific needs of the residents of the Omatjete Settlement. Typical anchor tenants i.e. Bulit-it and Choppies will be approached and should take the largest segment of the allocated land space. Various other national tenants also expressed interest. The idea is to include a formal restaurant and fine dining outlet on the allocated land.

2.5 Offices

The remaining 1000m² of building space under roof is to be used for the development of office space that can be rented out to Government and private sectors clients. The final designs will depend on how quickly the developer can find tenants for these areas. Office space will include a conference facility.

The side elevation and development model of the multi-purpose centre is illustrated as follows:



3 COMPLIANCE AND LEGAL FRAMEWORK

This chapter outlines the regulatory framework applicable to the proposed rezoning and construction of a multi-purpose centre in the Omatjete village. Tables 3.1 to 3.4 provides an overview of applicable policies, plans and list of applicable national legislation.

3.3 Compliance to the EMP

The EMP is binding to the proponent, and all contractors / sub-contractors. This implies that each and every entity that may have any kind of engagement or involved in / with the rezoning and business operation activities should comply with the EMP throughout the project lifespan.

3.4 Environmental Management Act (No.7 of 2007)

Section 27 of the Environmental Management Act 2007 (Act No. 7 of 2007) (EMA) provides a list of activities that may not be undertaken without an Environmental Clearance Certificate (ECC) (herein referred to as: listed activities). The proposed expansion of the hospital triggers the following listed activities.

The EMP should conform to the provisions of the Environmental Management Act (EMA), Act No. 7 of 2007 and EIA regulations of 2012 (Government Notice: 30).

The EIA Regulations defines a '*Management Plan*' as:

"...a plan that describes how activities that may have significant impacts on the environment are to be mitigated controlled and monitored."

3.5 EMP Requirements

Table 3-1: EMP Requirements as outlined in Section 8 of the EIA Regulations

| Requirement |
|--|
| (j) a draft management plan, which includes – (aa) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the |

environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;

(bb) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and

(cc) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.

3.6 Listed Activities

Listed Activities may not be undertaken without an Environmental Clearance Certificate (ECC), and hence an Environmental Impact Assessment (EIA) is required.

As the organ of state responsible for management and protection of its natural resources, the MET: DEA is committed to pursuing the principles of environmental management. The EMP provides a list of activities that require an EIA and the proposed rezoning is among the listed activities or activities that may not be conducted without at ECC. The purpose of listed activities for projects is to ensure that the associated impacts on the environment are carefully considered.

The proposed continuation of multi-purpose centre activities triggers a number of Listed Activities as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

Table 3-2: Listed Activities triggered by the proposed project

| Activity | Applicability |
|--|---|
| 5. Land use and Development activities | The project entails the construction of Multi-purpose centre in the Omatjete village, Erongo region |
| 5.1 Zoned open space to any other land use | |

3.7 Extended developmental and Legal Framework

In addition to the EMA and the Environmental Assessment Policy, there exists a host of legal and policy documents and guidelines that must be considered when undertaking an EIA as indicated in table 3.2, below.

The proponent has the responsibility to ensure that the operations conform to all other National developmental plans and legal framework.

Table 3-3: Policies, Plans and Strategies

| Policy / Plan | Relevance | Applicability to the Proposed Project |
|---|---|--|
| 5th National Development Plan (NDP) and Vision 2030 | Outlines the country's National Development Plans (NDPs), in line with the Harambee Prosperity Plan (HPP) and vision 2030 | The proposed project is a development that forms part of the bigger picture of achieving economic progression, social transformation and environmental sustainability. Agriculture as a pillar for social well-being, through food production, household income and improved livelihood |

Table 3-4: Other Legal Instruments / National Statutes

| National Statutes | Relevance | Applicability to the Proposed Project |
|--|--|--|
| Environmental Assessment Policy (1995) | Promotes Sustainable development and Environmental Conservation emphasize the importance of environmental assessments as a key tool towards environmental sustainability | Environmental Protection |
| Soil Conservation, 1969 (Act 76 of 1969) and the Soil Conservation | Makes provision for the prevention and control of soil erosion | Monitor and apply the soil conservation mechanisms |

| National Statutes | Relevance | Applicability to the Proposed Project |
|---|--|--|
| Amendment Act (Act 38 of 1971) | | |
| Forest Act 12 of 2001 Forest Act Regulations 2015 | To provide for the protection of the environment and the control and management of forest. Relevant sections: - Approval required for the clearance of vegetation on more than 15 hectares (Section 23, subsection 1 (b)). - Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (Section 22, subsection 1 (b)) | Forestry permits maybe required for vegetation clearing |
| Public Health Act (Act No. 36 of 1919) | Advocates for Public Health and safety | Protective clothing |
| The Occupational Safety and Health Act No. 11 of 2007 | Advocates for employee and public safety, and health | In the working context "SAFETY" implies "free from danger" |
| National Heritage Act, No. 27 of 2004. | The Act provides provision of the protection and conservation of places and objects with heritage significance. | Refer to handling procedures presented in the Scoping Report |

4 ROLES AND RESPONSIBILITIES

This section outlines the roles and responsibilities of the key personnel responsible for the day-to-day management of activities to ensure effective implementation of the EMP.

4.3 Roles and Responsibilities

Assignment of responsibilities is necessary to ensure that key procedures are followed. Ultimately, the overall responsibility for the implementation of the EMP lies with the proponent (**Muzine group (PTY) LTD**).

To ensure accountability, it is necessary to assign responsibilities. The key role-players for project implementation are;

- a) The **Environmental Compliance Officer (ECO)** representing the Ministry of Environment, Forestry and Tourism (MET), or an appointed independent environmental officer, who is responsible for monitoring and auditing.
- b) **The Proponent: Muzine Group (PTY) LTD.**
- c) **The Site Manager** the person responsible for the management and operations of the multi-purpose centre activities

4.3.1 The Environmental Compliance Officer (ECO):

The ECO refers to the party responsible for the environmental monitoring and auditing to ensure that the provisions of the EMP are complied with.

The ECO shall have adequate environmental knowledge to understand and interpret the EMP and pertaining environmental aspects associated with the project. The specific tasks of the ECO are as follows:

- To undertake all monitoring and auditing activities in-order to ensure compliance with the EMP.
- Conduct inspections and monitoring at reasonable intervals (e.g. every month, quarterly or annually), throughout the duration of the project. Depending on the risks, some projects may require regular inspections.
- Issue compliance or non-compliance orders to the proponent, contractors / sub-contractors.
- Compile compliance Reports pertaining to any non-compliance incident/s, and a Rehabilitation Report following the conclusion a specific activity.

- Liaise closely with all key stakeholders i.e. the Site Manager and the Environmental Commissioner.
- Provide guidance on any environmental management issues, incidents or emergencies that may arise throughout the project lifespan.
- Assist in providing recommendations for remedial action in the event of non-compliance.
- Auditing or monitoring activities may involve investigation, as well as structured observation, measurement, and evaluation of environmental data over a period of time.

4.3.2 The Proponent (Muzine group)

The proponent, hereinafter referred to as Muzine group (PTY) LTD, shall assume overall responsibility to ensure implementation of the EMP and will be held accountable against the remedial measures outlined herein. It is recommended that the client should appoint a Site Manager who will be responsible for monitoring of daily operations.

The specific responsibilities of The Proponent are as follows:

- Appoint a Site Manager (SM) to oversee the daily onsite activities.
- Liaise closely with the SM and ECO on any environmental management issues, incidents or emergencies.
- Ensure that all activities on and around the site are conducted in accordance with the requirements of the EMP at all times.
- Ensure that all sub-contractors and visitors to the site are conversant with the requirement of the EMP, relevant to their roles on site.
- Shall develop a **communication strategy** between The Proponent, Project Manager, workers, the ECO and any other relevant stakeholder.
- Shall develop an **organisational structure** to ensure that:
 - There are clear channels of communication;
 - There is an organisational hierarchy for effective implementation of the EMP; and
 - Conflicting or contradictory instructions are eliminated;
 - Ensure that all instructions and official communications regarding environmental matters shall follow the organisational structure as determined
 - Ensure that that EMP requirements are assigned to specific people / positions with the capacity and experience required for implementation.

4.3.3 The Site Manager:

The **Site Manager (SM)** should:

- Ensure that each team recruited to work at the sites, adheres to the EMP;
- Ensure that a **copy of the EMP is kept on site at all times and as it may be requested by authorities conducting spot checks at any time.**
- Ensure that all staff attend an induction session before commencement of any work on site and that they are adequately informed of the requirements of the EMP;
- Take special care to prevent irreversible damage to the environment

4.4 Instructions

All instructions and official communications shall follow the organisational structure as determined by the Proponent. Based on the adopted structure, it is essential that responsibilities outlined are assigned to specific parties with adequate capacity and experience required to implement the EMP.

4.5 Disciplinary Actions

The EMP is a legally binding document. Non-compliance with the EMP may result in disciplinary action being taken against the Proponent. Such actions may take the form of;

- Financial penalties, Legal action, fines, and/or Suspension of work.

The disciplinary action shall be determined according to the nature and extend of the non-compliance, and exact penalties are to be weighed against the severity of the incident.

5 POTENTIAL IMPACTS AND MITIGATION MEASURES

5.3 Approach to mitigation measures

The EMP has been categorised into different socio-economic and environmental themes and for each theme, specific aspects have been identified and for each aspect, specific mitigation measures have been recommended.

Table 5.1: EMP Impact Identification Themes and Associated Aspects

| EMP Themes | Specific Aspects |
|------------------------------------|--|
| A – Staff induction | Induction |
| | Site Demarcation |
| | Communication |
| B – Health and Safety | General safety at work place |
| | Road Safety |
| | Ablution facilities |
| | Dust and Noise |
| C – Pollution and Waste Management | General waste: <i>Material waste (off cuts), concrete rubble, garden & domestic waste,</i> |
| | Vehicle emissions (smoke) |
| | Oil Spills |
| D – Environment | Water |
| | Air Pollution |
| | Noise Pollution |
| E – Cultural Heritage | Heritage resources / artefacts |
| F – Socio economic | Employment opportunities for Locals |
| | Working hours |
| | HIV / AIDS |
| | Security |

SECTION A: STAFF INDUCTION

Table 5.2: Mitigation measures pertaining to staff Recruitment and Induction

| Potential Sources of Impacts: | | | | |
|--|--|---|--|--------------------------|
| <ul style="list-style-type: none"> ✓ Workers working without employment contracts (recipe for labour disputes) ✓ Lack of adequate induction to inform the workers the Do's and Don'ts ✓ No formal orientation of the construction process and workers are often disoriented ✓ Poor Communication ✓ No presentation of the EMP and workers are not aware of the content and risks associated | | | | |
| Aspect | Environmental and Social Management Objective | Mitigation Measures | Indicators for Monitoring and Compliance | Responsible Party |
| Recruitment | To ensure that all workers have employment contracts (Labour Act No. 11 of 2007) | Formalize recruitment of all staff with Contracts, stating nature of employment, duration and remuneration to protect both parties and avoid labour disputes later on | Copy of staff contracts | Site Manager |
| Staff Induction | To ensure that all staff / employees are conversant with the requirements of the EMP | Induction for all workers on the provisions of the EMP before work commencement, covering but not limited to: Safety, Health and Environmental (SHE) measures, emergency response, reporting of incidents, HIV/AIDS awareness, alcohol and substance abuse, etc | Induction Minutes and Attendance Register, Signed by each and every staff member Staff members appointed at a later stage should also undergo induction | Site Manager |

| | | | | |
|----------------------|--|--|---|--------------|
| | | Staff operating equipment (such as trucks, loaders, jack hammers, compressors etc.) shall be adequately trained and sensitized against potential hazards Conduct Quarterly induction reviews and reflect on workers conduct | Quarterly minutes | |
| | Availability of the EMP on site for ease of reference | Ensure that a copy of the EMP is kept on site and accessible by team leaders | Availability of EMP on site and accessibility by team leaders | Site Manager |
| | Punitive measures for staff, to ensure compliance | Adopt a disciplinary system to discipline staff for non-compliance, for offences such as littering, speeding, safety risk both to themselves and to others, not using ablution facilities, etc. | Number of fines issued daily / per month | Site Manager |
| Communication | Ensure effective communication throughout the construction period (project lifespan) | Develop a communication strategy (Channel & medium of communication) All correspondence should be written and signed off by witnesses (e.g Site Manager / team leaders) | Communication Strategy Letters, e-mail, Notices, Minutes | Site Manager |
| Notice Board | To warn the public of the construction activities | Erect a notice board at the site entrance to notify the public | Visible notice board | Site Manager |

SECTION B: OCCUPATIONAL HEALTH AND SAFETY

Table 5.3: Mitigation measures pertaining to Health and Safety

| Potential Sources of Impacts: | | | | |
|--|---|--|--|-----------------------|
| <ul style="list-style-type: none"> ✓ Inadequate training of employees ✓ Safety hazards may occur if equipment is not handled in the correct manner ✓ Employees not receiving the correct Personal Protective Equipment (PPE) for their specific responsibilities. ✓ Employees not adhering to safety rules implemented at the site ✓ Noise generated by construction vehicles and equipment | | | | |
| Aspect | Environmental and Social Management Objective | Mitigation Measures | Indicators for Monitoring and Compliance | Responsibility |
| General Occupational Health and Safety of the employees (injuries) | To ensure safe working conditions and adhere to the Health and Safety Regulations, Government Notice 156/1997 (GG 1617) | <p>Develop a Health and safety Plan</p> <p>Identify potential hazards and minimize workers' exposure to hazards</p> <p>Provide adequate personal protective equipment for all workers</p> <p>Provide training to all workers on relevant aspects of occupational health and safety</p> | <p>Hazard risk report</p> <p>Safe work condition audit</p> <p><i>On-going</i></p> <p>Personal protective equipment issue (Distribution register)</p> <p>Adequate protective gear for all staff</p> | Site Manager |

| | | | | |
|------------------------------------|---|--|---|--------------|
| | | <p>Provide fire extinguishers and train staff on how to use them</p> <p>Assign designated area for storage of construction material so that it does not pose danger to the staff</p> | <p>Training schedule and attendance register</p> <p>Availability fire extinguishers and evidence training (e.g minutes, training pictures etc</p> | |
| Accidents and incidents | To ensure safe working conditions | <p>Document and report occupational injuries, illness and fatalities, including near misses.</p> <p>Investigate causes and take appropriate action to eliminate risks where possible</p> <p>Provide adequate access to first aid and medical assistance in cases of work-related accidents or injuries</p> | <p>Accidents and incidents register (including near misses)</p> <p>Root causes analysis report</p> <p>Incident review (cause and elimination of hazard)</p> <p>First aid kit availability and adequacy audit report</p> | Site Manager |
| Physical Hazards to workers | To ensure safe working conditions | Eliminate physical hazards to workers and mitigate any risks | Hazards risk report | Site Manager |
| Road Safety | To prevent traffic hazards / inconveniences from earth moving machinery during construction period (if any) | <p>Signage to warn multi-purpose centre ists about the presence of earth moving machinery (if any)</p> <p>All trucks transporting construction materials (e.g sand / gravel) should</p> | Public Complaints / Incident report/s | Site Manager |

| | | | | |
|----------------------------|---|--|--|---------------------|
| | | <p>be covered with suitable material (e.g net, tarpaulin, canvas etc)</p> <p>Adhere to traffic rules and speed limits both onsite</p> | | |
| Ablution Facilities | <p>To reduce health risks and environmental pollution and ensure healthy working environment with appropriate and user-friendly ablution facilities</p> | <p>Ensure adequate, hygienic (clean) and user-friendly ablution facilities for all staff. Mobile chemical toilets are recommended</p> <p>Ablution facility should be environmentally friendly</p> <p>Waste should be discharged in accordance with the Omatjete village council discharge regulations. No faecal waste should be discharged on site</p> <p>Acts of excretion and urination, other than at the toilet facility provided, shall be strictly prohibited.</p> <p>Appoint a cleaner or rotate cleaning responsibilities among workers. If necessary, designate Male and female toilets</p> <p>Provide toilet paper at all times, to avoid the use of other items (e.g</p> | <p>Availability of toilets, cleanliness / hygiene and provision for toilet papers</p> <p>Incidents or complaints of waste discharge into the environment</p> | <p>Site Manager</p> |

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| | | <p>newspapers) that may block sewerage pipes</p> <p>Inspect ablution facilities regularly (daily)</p> | | |
| Dust and Noise | <p>To mitigate dust and noise impacts to both employees and the public</p> <p>To minimise noise disturbances during the construction phase.</p> | <p>Use dust suppression measures to mitigate dust impacts,</p> <p>Provide dust masks and ear muffs to all employees operating in a dusty or noisy environment</p> <p>Alert the public / neighbours of dust or noisy undertakings prior to carrying out such activity</p> <p>Schedule activities that will generate the most noise during times of the day/ normal working hours that will result in least disturbance to adjacent industries.</p> <p>Regular maintenance of vehicles and equipment.</p> <p>Working hours should be restricted to normal working hours</p> | <p>Incident Report</p> <p>ECO to verify implementation of the mitigation measures proposed in this EMP and compile the report</p> | <p>Site Manager</p> |

SECTION C: POLLUTION AND WASTE MANAGEMENT

Table 5.4: Mitigation measures pertaining to waste management

| Potential Sources of Impacts: | | | | |
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| <ul style="list-style-type: none"> ✓ Disregard of the pollution impacts (often considered insignificant e.g littering, oil spills etc) ✓ Poor management, storage and disposal of concrete and cement or spillages from equipment used for construction (e.g. cement mixers), and general spillage of contaminated wash or wastewater ✓ Leaking and/or spillages of fuels, greases and oils ✓ Leaking or broken sewerage pipes ✓ Storage of unwanted waste | | | | |
| Aspect | Environmental and Social Management Objective | Mitigation Measures | Indicators for Monitoring and Compliance | Responsible Party |
| Vehicle emissions | Reduce greenhouse gas (GHG) emissions from poorly maintained or malfunctioning equipment (vehicles / machinery) | All vehicles and equipment shall be kept in good working order and serviced regularly (in accordance with the servicing frequency of the specific machinery), in order to prevent emission of poisonous smoke etc | Vehicle servicing records Reports of smoke emissions from machinery | Site Manager |
| Oil Spills | Ensure waste oil is managed appropriately and pollution is prevented at all costs | Provide concrete bunding for oil / fuel storage and transfer on site. The bunding should be bigger than the oil / fuel storage tank/s to allow a bit of working space around tank/s (e.g 20% bigger than the tank/s) | Concrete bunding at all fuel storage and handling locations | Site Manager |

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| | | <p>Waste oil should not be stored onsite indefinitely and should be recycled (transfer to oil recycling companies)</p> <p>If an oil spill occurs, collect the contaminated soil, store in drums and dispose at appropriate waste disposal site (e.g Village council disposal site)</p> | <p>Drums or containers for oil recycling and proof of oil transfer to recycling companies</p> | |
| Solid Waste | To prevent pollution and maintain a clean environment | <p>Classify waste into different categories e.g Material waste (waste oil, Domestic Waste (food, cans, plastics, tissues etc)</p> <p>All waste produced on site should be disposed as per Local authority regulations</p> <p>Ensure waste collection and removal from the site and dispose at appropriate waste disposal sites</p> | <p>Scattered waste, Littering and any other unsightly waste at the site (eyesore)</p> | <p>Site Manager / dedicated Waste Disposal Officer</p> |
| Waste Water | To avoid effluent discharge into the environment | <p>Connect toilets to the Village Council water reticulation system</p> <p>Be on the lookout and repair any leaking or broken sewer pipes (regardless of how small it maybe perceived)</p> | <p>Connection to village council sewer system</p> <p>No leakage of sewer pipes</p> | <p>Site Manager or dedicated Plumber</p> |

SECTION D: ENVIRONMENT

Table 5.5: Impacts pertaining to environment and cultural heritage

| Potential Sources of impacts: | | | | |
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| <ul style="list-style-type: none"> ✓ Disregard of environmental values, concerns and recommendations ✓ Lack of knowledge amongst workers and Proponents in terms of how their actions may impact on the environment ✓ Soil erosion due to the clearance of vegetation, excavations ✓ Loss of topsoil due to lack of rehabilitation and restoration measures ✓ Lack of adequate storm water management and drainage systems | | | | |
| Aspect | Environmental Objective | Mitigation Measures | Indicators for Monitoring and Compliance | Responsible Party |
| Ecological disturbances (both fauna and flora) | Remove plants only as necessary (if it obstructs the activity) | Acquire permits from relevant authorities for the removal of protected plants | Regular review of photographic records, before & after construction | Site Manager |
| Storm water | To ensure adequate storm water management and to prevent soil erosion | The site must have an adequate and effective storm water management system in place Storm water measures should be inspected on a regular basis | Regular Site inspections Shortcomings must be addressed | Site Manager |

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| | | in order to ensure that the storm water structures (eg gutters) are functional and not causing soil erosion. Where necessary, place culverts underneath road foundations. | | |
| Water Pollution | To prevent contamination of storm water | Contaminated runoff must be prevented from entering the streams, measures include oil and grease traps, cleaning up spills immediately and proper disposal of contaminated material. | Drainage system/channel in place | Site Manager |
| Accidental spills of hazardous chemical substances including fuel, greases and oils used onsite. | To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical substances including fuel, greases and oils used onsite. | <p>Identify all hazardous chemical substances used onsite including fuel, greases and oils. Train staff on the use of chemicals</p> <p>Keep a stock inventory register of all chemicals in the store.</p> <p>Proper storage of chemicals in a lockable, well ventilated building.</p> <p>Ensure adequate access control for the storage area.</p> | ECO to verify implementation of the mitigation measures proposed in this EMP and compile the report | Site Manager |

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| | | <p>Storage areas for hazardous chemicals should comply with standard fire safety regulations. Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals.</p> <p>Appropriate equipment to deal with emergency spill incidents is must be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water.</p> <p>Chemicals are to be properly labelled and handled in a safety conscious manner.</p> <p>Personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).</p> | | |
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| | | <p>Immediately clean all spillage of fuels, lubricants and other petroleum-based products.</p> <p>No hazardous chemicals must be discarded in the sewage or storm water system.</p> <p>Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.</p> | | |
| <p>Pollution due to poor waste management. Nuisance caused by odours and unsightly waste onsite</p> | <p>To prevent soil, storm and groundwater pollution due to poor waste management</p> | <p>Building and demolition waste must be disposed of at a licensed landfill site. If applicable, Steel should be taken to a licensed recycling facility.</p> <p>The management of waste must be in accordance with the regulations of the village council Solid Waste policy (if available)</p> <p>Installation of sufficient waste bins, skips or bulk containers. Containers must be present on site at all times.</p> | <p>Regular site inspections Internal audits against this EMP must be conducted every 3 months and records kept onsite Shortcomings must immediately be addressed</p> | <p>Site Manager</p> |

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| | | <p>All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner.</p> <p>Containers (bins, skips or bulk containers) utilized for the disposal of general and hazardous waste must be demarcated accordingly.</p> <p>Waste material may only be temporarily stored at areas demarcated for such storage practices.</p> <p>General waste shall be stored in a manner that prevents the harboring of pests.</p> <p>General waste material should be stored or disposed of separately from hazardous waste material (e.g., oil, diesel), into appropriately demarcated bins Skips or bulk containers should be removed to a licensed landfill site on a weekly basis or more often if required.</p> | | |
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| | | No littering is permitted and site clean-ups must be undertaken regularly. | | |
| Pollution due to unsanitary conditions | To prevent soil, stormwater and groundwater pollution from unsanitary conditions onsite. | <p>Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers.</p> <p>Ablating anywhere other than in the toilets shall not be allowed.</p> <p>Ablution facilities are to be serviced weekly or more frequently if required.</p> | | Site Manager |
| Soil and groundwater pollution from leaking or broken sewerage pipes. | To prevent soil, stormwater and groundwater pollution from leaking or broken sewerage pipes | <p>Ablution facilities should be maintained to prevent blockage and leakages.</p> <p>Should toilets become blocked, it should be reported and the cause investigated. This could be due to a blocked or broken pipe leading from the toilets to the sewerage system.</p> <p>Create employee awareness about the proper use of ablution facilities and hygiene. No cigarette butts, fats, oils, paper towels etc. may be disposed of into toilets or wash basins.</p> | <p>Regular site inspections.</p> <p>Internal audits against this EMP must be conducted every 6 months and records kept onsite.</p> <p>Shortcomings must immediately be addressed</p> | Site Manager |

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| | | Toilets should have properly closing doors and be supplied with toilet paper and air refresher. | | |
| Decommissioning Phase | | Removal of all left overs, parts and pieces that do not form part of the final infrastructure | | Site Manager |

SECTION E: CULTURAL HERITAGE

Table 5.6: Potential impacts pertaining to cultural heritage

| Sources of impacts: | | | | |
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| ✓ Disregard of Cultural Heritage and artefacts | | | | |
| Aspect | Socio-Economic Objective | Mitigation Measures/ | Indicators for Monitoring and Compliance | Responsible Party |
| Heritage Resources / artefacts | Reduce the impacts of construction and associated earthworks on heritage resources / artefacts | Heritage remains or artefacts discovered on site must be reported to the National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61 240461) | Sighting report/s of heritage resources / artefacts | Site Manager |
| | | No artefacts must be removed or be interfered with prior to authorisation from the Namibian National Heritage Council (NHC) Recovery of heritage remains or artefacts discovered and removal thereof should be directed by the National Museum | | |

SECTION F: SOCIO-ECONOMIC

Table 5.7: Mitigation Measures pertaining to Socio Economic Impacts

| Sources of impacts: | | | | |
|---|--|--|---|--------------------------|
| <ul style="list-style-type: none"> ✓ Unfair labour practices ✓ Lack of awareness among the employees ✓ Unwillingness to support the locals | | | | |
| Aspect | Socio-Economic Objective | Mitigation Measures / Management Actions | Indicators for Monitoring and Compliance | Responsible Party |
| Employment opportunities for Locals | Promote benefits to the local community Promote benefits to local communities whilst preventing negative impacts. | Recruit locals for unskilled labour Positions should only be filled by non-local persons if it can be demonstrated that no suitable local persons must be identified (e.g., through local advertising) to fill these positions. Where possible, procure materials from local suppliers | Employee structure and proportion of local employment | Site Manager |
| Alcohol and Drug use | Prevent alcohol and drug use onsite | Ban and warn the employees against the use of alcohol and drug onsite | Drunk / Misbehaving employees | Site Manager |

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| | | Provide awareness on the dangers and health impacts of alcohol and drug use | Monitor presence of alcohol onsite | |
| Long working hours | Adhere to the Labour Act No. 11 of 2007 | Operate within the prescribed working days and hours as per the Namibian Labour laws and regulations. Provision for overtime or compensatory time off for long hours worked | Verification of working hours against the labour Act | Site Manager |
| Internship for students | Provide internships to students from Technical institutions (e.g. NIMT, VTC etc.) | Provide internships opportunities where possible Advertise for student internships with NIMT, VTC etc. | Student internship register, trade etc. | Site Manager |
| HIV / AIDS | Provide HIV / AIDS awareness to employees | Provide HIV / AIDS awareness at induction Avail Condoms in Toilets at site | Availability of condoms onsite | Site Manager |
| Security | Orientation of workers about security for both equipment and themselves | Orientate all staff about the security of equipment and themselves & provide contact numbers for Police and other emergency services e.g., Ambulance | Proof of security orientation and emergency contact numbers | Site Manager |

6 CONCLUSION

The EMP recommends measures to be implemented by Muzine group (PTY) LTD (or any other Proponent / sub-Proponent appointed by the proponent), in order to manage the multi-purpose centre construction activities and operations in an environmentally friendly manner, and in accordance with the provisions of the Environmental Management Act and EIA regulations.

In-addition, the aim of the EMP is to ensure legal compliance to prevent environmental fatal flaws as mitigation for any impacts arising from the construction process at the end of the construction phase.

The Proponent has the sole responsibility to ensure that the EMP is implemented, and will be liable for penalties, if non-compliance against the EMP is detected. Therefore, the proponent, Proponent / sub-contractor:

- Should appoint a Site Manager to fulfil the EMP requirements,
- Read the EMP (particularly the site manager) and ensure that he/she is fully conversant with provisions of the EMP,
- Ensure implementation of the recommended mitigation measures, and
- Communicate defaults / challenges to the Environmental Compliance Officer (ECO)

It is recommended that an Environmental Control Officer (ECO) should monitor the construction process (periodic and unannounced EMP audits), in-order to ensure that compliance and mitigation measures prescribed in the EMP are adhered to.

7 APPENDICES

7.3EAP CV