Annexure E

Environmental Management Programme (EMPr)

DRAFT ENVIRONMENTAL MANAGEMENT **PROGRAMME (EMPr)**

Proposed residential development on Portion 20 (Remaining Extent) of the Farm Lilyvale 2313, Bloemfontein

Proponent: MDA Ref No: **DESTEA Ref No: NEAS Ref No:** Date:

Peyper Developments (Pty) Ltd 40880 EMS/12(ii)(a),19,28(ii),15,12/23/03 FSP/EIA/0000506/2023 August 2023

Town & Regional Planners, Environmental & Development

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1. INTRODUCTION

1.1 **Project description**

The proposed development will consist of a relatively large area with an extent of 24.5467 hectares situated on Portion 20 (Remaining Extent) of the Farm Lilyvale 2313, Bloemfontein. The site is largely surrounded by existing residential areas with high density residential areas towards the eastern side of the proposed development (Shellyvale). The proposed development is a high value, medium density residential unit development. The provision of services will be undertaken in accordance with the Services Agreement reached between the Applicant and the Mangaung Metropolitan Municipality.

There is currently only one existing entrance (De Bruin Street) for the development. The existing entrance is located on the southwestern side of the proposed development. Should authorization be granted, an additional entrance will also be situated on the south-western side of the development.

The provision of services will be undertaken in accordance with the Services Agreement reached between the Applicant and the Mangaung Metropolitan Municipality.

All Open Spaces will be zoned as "Private Open Space" implying that the maintenance thereof will be the responsibility of the Body Corporate of the proposed development.

Please refer to the map in Annexure A of the EIA Report for an indication of the locality of the proposed development. The site development plan in Annexure B of the EIA Report should also be included in this EMPr, as well as the final design plans.

1.2 Applicant details

Peyper Developments (Pty) Ltd 101 Olympus Drive Helicon Heights BLOEMFONTEIN 9301

Contact person: Mr Pieter Joubert Tel: 051 4442256 Email: joubert@peyperattorneys.co.za

1.3 Objectives of the EMPr

The EMPr aims to fulfil the requirements in terms of the National Environmental Management Act (Act 107 of 1998), with the following objectives:

- To identify, predict and evaluate actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management;
- To identify and employ the modes of environmental management best suited to ensuring that the activity is pursued in accordance with best environmental management practices;
- To be able to respond to unforeseen events; and
- To provide feedback on compliance.

1.4 Implementation of the EMPr

- i) The Applicant's Project Manager / Engineers will be responsible for the implementing and supervision of the EMPr and will have overall responsibility for ensuring that the provisions of the EMPr are implemented. The Project Manager will be assisted in this task by the Environmental Control Officer (ECO).
- ii) The Conditions of the Environmental Authorisation and recommendations of the EMPr should be included in tenders and construction / operational contracts, where necessary.
- iii) All contractors should be supplied with a copy of the EMPr and it should be ensured that construction and operational staff adhere to the mitigation measures.

1.5 Roles and responsibilities

Formal responsibilities are necessary to ensure that procedures and EMPr measures are executed throughout the construction and operational phase by each responsible party. For the construction phase, responsible parties for this project include the following: Applicant, Project Manager, Site Manager, an on-site Environmental Control Officer, Contractors, Environmental Auditor and construction workers.

1.5.1 <u>Applicant</u>

The Applicant remains ultimately liable for the implementation of the EMPr and EA conditions and requirements. It is the Applicant's responsibility to ensure the EMPr and conditions of the Environmental Authorisation are implemented during all phases of the development.

It is the Applicant's responsibility to ensure the Project Manager, Contractors, and other parties involved in any phase of the project are aware and provided with the EMPr and conditions laid out in the EA.

1.5.2 Project Manager

- Ensure that the on-site contractors or employees are aware of all specifications, legal aspects, and standards of procedure relating to the construction phase in terms of environmental protection.
- Ensure that all EMPr measurements and guidelines are communicated to and adhered to by all parties on site.
- Monitor the implementation of the EMPr throughout the construction phase through regular monitoring, inspections, and meetings with all applicable parties on site.
- Be completely familiarised with the Basic Assessment (BA), including the EMPr for the project, the conditions of the Environmental Authorisation (EA), and other relevant environmental legislation.
- Appoint an Environmental Control Officer for the duration of the construction phase of the project.
- 1.5.3 <u>Site Manager</u>
 - Be familiar with the BA for the project.
 - Be familiar with the conditions of the EA for the project.
 - Have sound knowledge of and be familiar with the EMPr.
 - Be aware of all specifications, legal aspects, and standards of procedure relating to the construction and operational phase in terms of environmental protection and ensure compliance with these.
 - Have an overall responsibility to implement measures as set out in this EMPr.
 - Ensure the relevant audits take place to ensure compliance with this EMPr.
 - Continuously liaise with the project manager, the environmental control officer and other role players on matters concerning the environment.

- Prevent actions that will harm or may cause harm to the environment and take steps to prevent any form of pollution on the site.
- Confine related activities to the demarcated site.
- 1.5.4 Environmental Control Officer
 - Conduct daily inspections to determine compliance with the EA and EMPr using checklists.
 - Submit monthly audit update reports and liaise with the Environmental Audito and Project Manager, showing progress on findings.
 - Facilitate reporting, recording, investigation, and followup of environmental related incidents.
 - Facilitate and integrate relevant training programs for personnel covering all activities impacting the environment.
 - Ensure that the environmental commitments in this EMPr, the EA and the WUL are complied with by the contractor, sub-contractors and all employees.
 - Evaluate construction methods, techniques and procedures, identify environmental risks, draw conclusions and recommend possible solutions.
 - Implement and manage the necessary construction and operational Environmental Management Measures.
 - Proactively interpret and objectively analyse environmental data and initiate programs to mitigate against the environmental and related risks.
 - Assume a leading role in performing environmental audits and guiding other staff in the performing of external and internal audits.
 - Maintain the following on site:
 - A daily site register
 - A non-conformance register
 - A public complaint register
 - A register of audits
 - A register of incidents
- 1.5.5 <u>Environmental Auditor</u>
 - Be fully familiar with the BA Report.
 - Be fully familiar with the conditions of the EA.
 - Be fully familiar with this EMPr.
 - Be fully up to date with all relevant environmental legislation, policies, and procedures, and ensure compliance with them.
 - Undertake periodic environmental performance audits on the project implementation, as required by the EA.

- Undertake comprehensive inspection of the site and surrounding areas to monitor compliance with the EMPr.
- Report to project manager.
- Discuss the contents of this EMPr in detail with the Project Manager and Contractor.
- Take appropriate action if the specifications contained in the EMPr are not followed.
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible.
- Ensure that activities on site comply with all relevant environmental legislation.
- Compile progress reports on a regular basis, with input from the Site Manager, for submission to the Project Manager, including a final post-construction audit carried out by an independent auditor/consultant.
- Attendance of site meetings, where necessary.
- Advising the Project Manager and contractors on environmental issues within the defined work areas.
- Assisting in finding environmentally acceptable solutions to development and construction problems.
- Inspecting the site at a frequency determined by the stage of the project to establish compliance with environmental provisions.
- Reviewing the site logbook with regard to records of site activities that may pertain to the environment.
- Recommending corrective action to the Project Manager where construction activities are not in compliance with the EMPr.
- Keeping diligent records of communication with the Project Manager.
- Liaise with the Ecological and Heritage Consultants, if and when necessary.
- Run induction courses on environmental awareness for contractors' staff and supervisors.
- Provide assistance on environmental issues.
- Keep record of construction activities, problems identified and transgressions noted.
- Liaise with registered interested and affect parties during especially the construction phase of the project.

1.5.6 <u>Contractors and Service Providers</u>

All contractors (including subcontractors and staff) and service providers are ultimately responsible for:

• Complying with the environmental management specifications, where applicable.

- Provide Environmental Method Statements to the Site Manager specifying how certain activities will be conducted on-site.
- Adhering to any environmental instructions issued by the Site Manager/Project Manager
- Submitting a report, in a format and frequency as decided upon by the Project/Site Manager, which will document all incidents that have occurred during the period before the site meeting.
- Arrange that all employees and those of the subcontractors receive training. Training must be appropriate for the level of the tasks and functions undertaken. Training should be project-specific and refer to the EA and EMPr of this site.

1.6 Environmental awareness training

The aim of Environmental Awareness Training is to ensure that all persons involved in the project are aware of the risks that may occur during construction, as well as the necessary mitigation required to minimise the risks involved.

It is important that construction employees understand how each action of the project may influence the environment. It is just as important that each person understands the management strategies as it ensures that the impact on the environment is kept to a minimum.

During site establishment and before construction activities commence, the ECO will inform the contractor and construction employees of the following:

- Point out the areas that are not to be impacted on and that require protection;
- Explain the possible impacts as identified in the EIA;
- Inform construction staff of the conditions of the Environmental Authorisation and recommendations of the EMPr;
- Explain risks and emergency procedures;
- Impose an understanding of pollution and degradation of the environment that may result from the construction work;
- Advise on the importance of containing the footprint of the construction site; and
- Advise on the aims of rehabilitation, post construction.

The above should also be communicated to any new employees that join the team during the construction period.

2. PREPARATION OF THE EMPR

2.1 Person(s) who prepared the EMPr

Marguerite Cronje

For:

MDA P.O. Box 100982 Brandhof Bloemfontein 9324 Tel: 051 447 1583 Email: marguerite@mdagroup.co.za

2.2 Expertise of the person(s) who prepared the EMPr

Marguerite Cronje

Key qualifications:

• Key competencies and experience include environmental management and research in zoology and environmental management.

Education:

- B.Sc. (Zoology), University of the Free State, South Africa, 2002
- B.Sc. Honnours (Zoology), University of the Free State, South Africa, 2003
- M.Sc. Diploma (Equine Science), University of Edinburgh, Scotland, UK, 2005
- Masters in Environmental Management, University of the Free State, South Africa, 2008

Professional Registrations:

- EAPASA (Registration no.: 2020/682)
- IAIAsa (Member no.: 2826)

3. RECOMMENDED MANAGEMENT AND MITIGATION MEASURES

3.1 Planning / pre-construction phase

3.1.1 Licenses & Permits

The necessary authorisations should be obtained from the Department of Water and Sanitation (DWS) where the two watercourses will be affected by the development.

Scattered specimens of the protected Wild Olive tree, Olea europaea subsp. africana, will not transplant easily and will have to be removed where they occur outside private open space. Specimens should be incorporated into the design of the development but where this is not possible, permits must be obtained to remove these trees, but can be offset by using saplings in the landscaping of the development.

The site contains numerous geophytic and succulent plant species, which are easily transplanted. Permits must be obtained and these transplanted to areas of private open space where they will remain unaffected. It is recommended that a suitably qualified ecologist/botanist be consulted during this process to provide expert input. The process of transplanting should be undertaken during the rainy season when deciduous geophytes will be visible. Should it be necessary to establish a temporary nursery area, this should be constructed, overseen and maintained by a suitably qualified person.

Blasting permits will need to be obtained if any blasting is required.

3.1.2 <u>Site documentation</u>

A copy of the EMPr and Environmental Authorisation should be available on site during the construction phase.

3.1.3 Demarcation of sensitive areas

Sensitive areas such as the ridge, wetland areas excluded from the development need to be defined and delineated prior to construction activities to ensure they are not impacted on by construction activities. If necessary, a specialist can assist in this regard. Historical structures on site must be conserved and not damaged by any construction activities. Assistance from the specialist may be required to indicate historical structures to ensure contractors are familiar therewith. Relocation of structures, if any, will be done in consultation with the Heritage Specialist.

3.1.4 Establishment of Access Roads

Existing access roads will be utilized to gain access to the site. The footprint of the site will be demarcated and impact on surrounding areas should be kept to a minimum.

3.1.5 Location of Contractor's Camp

The Project Manager and ECO must recommend and approve the location of any contractor's camp, which is the demarcated area where the contractor will establish offices, workshops and storage facilities, prior to its establishment.

In choosing a site for the camp:

- Not within or near to watercourses;
- Choose as level an area as possible;
- If possible, the camp must be located within the construction site area.

Extension or movement of the construction camp must be agreed by the ECO.

If possible, the construction camp and site must only have one access route, which should be maintained in an adequate condition so as to minimise dust and erosion. Where possible, existing roads and tracks must be used.

3.1.6 Construction Employees

Construction workers should not be housed on site.

Designated eating areas are recommended, and clean water should be made available daily to workers on site.

3.1.7 Sanitary Facilities

An adequate number of self-contained chemical toilets must be established on site, which must be easily accessible to construction workers. The Contractors must supply toilet paper at all toilets and will be responsible for the maintenance and servicing.

Contractors must ensure that no spillage occurs when chemical toilets are cleaned, and that the contents are properly stored and removed off-site. A contingency plan for spills from toilets must be supplied by the Contractors and approved by the ECO.

Toilets must be placed outside areas susceptible to standing or flowing water, and siting must be done in consultation with the Project Manager and ECO.

Performing ablutions outside toilets is strictly prohibited.

3.1.8 <u>Safety and Security</u>

The contractors must comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site. Construction contracts must include safety and security measures for staff.

Fire extinguishers must be available, where required.

Entrance control during construction may be required. Unauthorised entry to construction areas should not be allowed.

3.2 Construction phase

Table 1 below indicates the impact management aspects and recommended actions to be taken during the construction phase.

Table 1	I: Construction	Phase	Mitigation
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ltem	Aspect	Mitigation Measure
1.	Wetlands	 Wetland areas will be demarcated and protected during construction activities.
2.	Soil, erosion & vegetation	 Excluded portions of the ridge system should be treated as no-go areas during the construction phase and kept as natural areas. This should include that the area not be used as stockpile areas, laydown areas, parking or any other activities associated with construction. The site contains scattered specimens of the protected Wild Olive tree, <i>Olea europaea</i> subsp. <i>africana</i>, which will not transplant easily and will have to be removed where they occur outside private open space. Permits must be obtained to remove these trees. There are also numerous geophytic and succulent plant species which can be easily transplanted. Permits must be obtained and these transplanted to areas of private open space where they will remain unaffected It is recommended that a suitably qualified ecologist/botanist be consulted during this process to provide expert input. The process of transplanting should be undertaken during the rainy season when deciduous geophytes will be visible. Should it be necessary to establish a temporary nursery area, this should be constructed, overseen and maintained by a suitably qualified prior to construction. It is also recommended that the eradicated prior to check succuring the management of the residential development throughout the lifetime of the development. Where category 1 and 2 weeds occur, they require removal by the property owner according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004. Removal of vegetation should be kept to a minimum.

		establishment of exotics and the current survey
		 has also indicated this to be the case. It is therefore recommended that weed eradication be initiated at the construction sites and maintained until rehabilitation has been completed. The footprint of disturbance and clearance of vegetation must always be kept to a minimum. Care should be taken to limit unnecessary destruction of the surrounding natural vegetation. All human movement and activities must be contained within designated construction areas and the planned site access road in order to prevent peripheral impacts on surrounding natural habitat. It is recommended that an adequate storm water management system be implemented to manage runoff and allow it to enter the two watercourses system on the site. Visual inspections for the occurrence of erosion should be undertaken on a weekly basis during the construction phase. If erosion is evident, proper erosion control measures should be implemented as soon as
		possible.
3.	Fauna protection	 No fire wood may be collected in the veld. The hunting, capturing and trapping of fauna should be prevented by making this a punishable offense during the construction phase of the development. Open trenches may act as pitfall traps to mammals, reptiles and amphibians and trenches should be daily monitored for trapped animals which should be removed promptly. In the event of poisonous snakes or other dangerous animals encountered on the site an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area. In the event of poisonous snakes or other dangerous animals encountered on the site, an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area.

4.	Excavations and trenches	 The planning of excavations will be undertaken in liaison with the ECO and cognisance must be given to minimise the potential for soil erosion, disturbance of indigenous vegetation, the pit- trapping of mammals, reptiles, amphibians, insects, etc. The trench route with permitted working areas will be clearly defined and marked beforehand with clear indicators.
5.	Topsoil stockpiles	 Topsoil (top 30cm of natural soil including vegetation and organic matter) must be removed during site clearance to be used for rehabilitation. Topsoil stockpiles should be stored in an approved location and in an approved manner for later re-use in the rehabilitation process, for example: Bricks may be placed around the stockpiles, to limit the loss thereof due to rainy events. Stockpiles should not be higher than 2 m. The gradient of stockpiles should not be greater than 1:1.5. Weeds appearing on stockpiled topsoil must be removed by hand before seeding.
6.	Dust control	 Appropriate dust suppression measures can be implemented when dust generation is unavoidable, e.g. dampening with water, if available.
7.	Noise control	 Where blasting is required and necessary permits have been obtained, all relevant precautions need to be taken. Construction activities should be limited to normal working hours. Working hours must conform to local by-laws. Any deviation from this should be done in consultation with the local authorities. Contractors will not be allowed to use sound amplification equipment on site, unless in emergency situations. All equipment must be regularly and systematically checked, maintained and repaired (especially exhaust systems) as poorly maintained vehicles can generate disturbing and unnecessary noise. Construction workers must be made aware of not creating unnecessary noise such as hooting and shouting.

		 Any complaints received regarding noise levels from neighbouring properties must be reported to the ECO.
8.	Visual impact & light pollution	 The construction site should be kept clean and tidy. This also includes the plant and material storage area. The use of floodlights to illuminate construction sites must be limited. All floodlights should be installed in such a way that the light and glare does not unnecessarily increase light pollution.
9.	Waste management (all construction debris and domestic waste produced during the construction phase)	 Visual inspections for the occurrence of pollution should be undertaken regularly. Best practices should be implemented in the case of spillages / pollution / erosion. No waste (general / construction / potential hazardous / etc.) may be dumped in the veld / water features. Suitable waste bins etc. will be available on site for the temporary disposal of waste. Metals, bottles and plastics should be separated from waste and sent to a reputable recycling program in order to recycle and reuse materials, as far as possible. Waste will be removed from site and disposed of at an authorised landfill site. Record should be kept on site during the construction phase to indicate date of visual inspection, any spillages observed, and manner in which spill was treated. The contractor will be responsible for the removal of construction waste. No littering is permitted. During the construction period the site shall be maintained in a neat and tidy condition. No dumping, burning or burying of waste may take place on site.
10.	Handling & storage of materials	 Unless specifically authorized, fuel for construction vehicles shall not be stored on site. All chemicals used during construction should be stored in proper storerooms or protected areas to prevent pollution. Vehicles should be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere. No construction material shall be stockpiled on the surrounding vegetation.

		 Possible contamination of storm water entering surrounding drainage systems by chemicals must be prevented at all times. Where applicable, the contractors must ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary. All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. should be reported to the Project Manager and ECO. DWS should be notified within 24 hours of any spillage / pollution of occurrence within water resources. Spill containment and treatment is the responsibility of the contractor and must be cleaned to the satisfaction of the ECO.
11.	Concrete mixing	 Mixing should be confined to an impervious and contained area. Excess waste concrete should be disposed of at a licensed landfill site.
12.	Discovery of artefacts	 If in situ fossil material is exposed, archaeological material is uncovered, or graves are found as a result of excavations, the ECO and the specialist should be notified asap.

3.3 Post construction rehabilitation

3.3.1 <u>Site Clean-up</u>

The Contractor(s) must ensure that all structures, equipment, materials and facilities used for construction activities are removed upon completion of the project. The Contractor(s) must clear and clean the construction site to the satisfaction of the Project Manager and ECO.

All waste, equipment, materials, etc. used during construction must be cleared from the site. Excavated rock may not be left in heaps and must be removed or distributed evenly over the terrain to represent a natural environment. After rehabilitation any excess soil or material should be removed and disposed of at a registered disposal facility.

3.3.2 Disturbed and compacted areas

Areas that have been compacted due to construction activities should be ripped. Topsoil should be placed where it was removed as soon as possible.

Vegetation should be allowed to re-establish naturally over rehabilitated areas.

All exotic, and especially invasive plant species must be eradicated.

Adequate monitoring of weed and invasive species establishment and their continued eradication must be maintained (Appendix B of the Ecological and Wetland Assessment). Where category 1 and 2 weeds occur, they require removal by the property owner according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and National Environmental Management: Biodiversity Act, No. 10 of 2004.

Erosion should be prevented as far as possible and attended to, as serious erosion may occur at barren areas.

3.4 Operational phase

It is recommended that the development refrain from introducing any game or domestic animals such as horses to the remaining private open space as these will within a short period trample the vegetation layer and defeat the purpose of the exclusion.

4. COMPLIANCE AND MONITORING

4.1 Environmental Monitoring Reports / Audits

The Environmental Auditor will compile monthly environmental monitoring reports, which must be kept on site and made available for inspection to any relevant competent authority.

4.2 Non-conformance and corrective action

Issues of non-conformance noted by the ECO will be communicated to the Project Manager, who will be responsible for ensuring that the relevant parties are informed of the non-conformance and that appropriate corrective actions are taken where necessary.

Environmental issues will be addressed at regular site meetings between the ECO, Project Manager and Contractor. The ECO will present verbal reports of any environmental concerns or issues that have arisen, and corrective actions that have been taken. Outstanding corrective actions will be discussed and agreed at these meetings. Issues relating to complaints or comments received from the public will also be discussed at these meetings.

Minutes of these meetings will be prepared / approved by the Project Manager and copied to all attendees before the next meeting. The frequency of the site meetings will be agreed by the ECO, Project Manager, the Contractors and other relevant parties prior to the commencement of the project.

Non compliance with regard to the protection and conservation of heritage resources will be dealt with in terms of Section 51 of the National Heritage Resources Act (Act 25 of 1999).

4.3 Internal review

Internal review of the EMPr will take place on an on-going basis by the ECO. Based on observations during site inspections and issues raised at the site meetings, the ECO shall determine whether any procedures require modification in order to improve the efficiency of the EMPr. Any changes or adjustments to the EMPr shall be registered in the records of

the ECO. Therefore, adjustment and update of the original EMP document is not required when these ad hoc changes are made. The ECO's records shall be available to the relevant authority, the Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA) throughout the process and copies will be provided on request.

4.4 Close-out report

Once construction activities have been completed and rehabilitation of the site has been undertaken, a final Environmental Monitoring Report will be compiled by the Environmental Auditor and submitted to the Project Manger. It will outline the implementation of the EMPr, especially the site clean-up and rehabilitation undertaken by the contractors before site handover.