ENVIRONMENTAL MANAGEMENT PLAN(draft)

for

Residential Facilities and Engineering Facilities
to be constructed an installed
on

Portion 243 (Portion of Portion 76) of the Farm Roodekrans, 183 IQ
MOGALE CITY, GAUTENG

Prepared By:

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Client:
TUTAM PROPERTIES 143 CFC

Submitted to:

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GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

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Document Title and Ref. no:

Report Title and Doc. Ref. no:	Environmental Management Plan: Homes Haven Extension 65	*EMP 20250516*
Client:	TUTAM PROPERTIES 143 CFC	
Authorised/Prepared by:	**Liselle Du Plessis** Environmental Assessment Practitioner (EAP) EAPASA Reg: 2020/1049	

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1	1	Electronic	Applicant	Landowner
1	1	Electronic and Hard Copy	Mogale City Local Municipality	Official
1	1	Online	GDARD	Official
1	1	Email	Ward Councillor	Ward Councillor

Purpose of this Document:

W & L Consultants Cc, as independent environmental managers and impact assessors, was appointed by TUTAM PROPERTIES 143 CFC to compile and submit an Environmental Management Plan (EMPr) to the decision making authority; Gauteng Department of Agriculture and Rural Development (GDARD). This document is compiled in accordance with the Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development (DEAT, 1992).

IEM is a key instrument of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended [NEMA]. NEMA promotes the integrated environmental management of activities that may have a significant effect on the environment, while IEM prescribes a methodology for ensuring that environmental management principles are fully integrated into all stages of the development process. It advocates the use of several environmental management tools that are appropriate for the various levels of decision-making. One such tool is an EMP.

This document captures the issues identified by Interested and Affected Parties (I&APs) and those identified through the technical process during the Scoping and EIA phases. Potentially significant issues have been considered by the EAP, independent specialists and the GDARD conservation department, and have been used to determine the proposed scope of the mitigation measures that have been proposed during the Impact Assessment Phase.

This document further proposes the processes to be followed during the construction and post-construction phase to ensure that potential negative impacts are mitigated and positive aspects of proposals are enhanced. Furthermore, to attempt to ensure that the 'social costs' of the development proposal (those borne by society, rather than the developers) outweigh the 'social benefits' (benefits to society as a results of the actions of the developers) and to ensure that there is a democratic regard for individual rights and obligations.

The Guiding Principles of this EMP:

This EMP is compiled using the following concepts and implementation requirements so that the objectives of sustainable development are realised:

- Continuous improvement. The project proponent (or implementing organisation) must commit to review and to continually improve environmental management, with the objective of improving overall environmental performance.
- Broad level of commitment. A broad level of commitment is required from all levels of management as well as the workforce in order for the development and implementation of this EMP to be successful and effective.
- Flexible and responsive. The implementation of the EMP must respond to new and changing circumstances, i.e. rapid short-term responses to problems or incidents. The EMP is a dynamic "living" document and thus regular planned review and revision of the EMP must be carried out.
- Integration across operations. This EMP must integrate across existing line functions and operational units such as health, safety and environmental departments in a company/project. This is done to change the redundant mindset of seeing environmental management as a single domain unit.
- Legislation. It is understood that any development project during its construction phase is a dynamic activity within a dynamic environment. The Developer, Engineer, Contractor and Sub-contractor must therefore be aware that certain activities conducted during construction may require further licensing or environmental approval, e.g. river or stream diversions, bulk fuel storage, waste disposal, etc. The Contractor must consult the ER, EO and ECO on a regular basis in this regard.

Environmental Assessment Practitioner:

As per the requirements of the National Environmental Management Act: NEMA, 1998 (Act No.107 of 1998), (NEMA) and the Environmental Impact Assessment Regulations, December 2014, the following information is pertinent with regards to the Environmental Assessment Practitioner (EAP) that has been appointed for the Environmental Assessment Process for the establishment of 20 residential units on Portion 243 (Portion of Portion 76) of the Farm Roodekrans, 183 IQ, Gauteng. The existing Restaurant will be retained and the existing dwelling unit will be used as a Guest House.

Contact Details of the Environmental Assessment Practitioner:

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1200

Qualifications and Relevant Expertise:

- EAPASA Registration – Reg.EAP: 2020/1049
- M Sc Environmental Management (UJ)
- B Art. et Scientae (Town and Regional Planning) (NWU, Potchefstroom Campus)
- Relevant Expertise – see attached company profile

1. Locality & Property Details:

Description of the property/properties where activity is proposed to be undertaken:	
Farm/ Erf name(s) & number(s) (including portion/ holding) of all proposed sites:	Portion 243 (Ptn of Ptn 76) of the Farm Roodekrans 183 IQ
Property size(s)(ha) of all proposed sites	1,5671ha
Development footprint size(s) in ha/m^2:	1,5671 ha in extent
SG Digit code(s) of all proposed sites:	T0IQ00000000018300243
Coordinates of all proposed sites: Latitude (S)	-26.068225°
Longitude (E)	27.842068°

Physical/Street address of proposed sites:	Located on west of Viljoen Road and east and adjacent to the Muldersdrift-se-Loop, within Ruimsig Country Estates.
Current Zoning of site(s)	Agricultural

As per the land use application, the activities to be accommodated within the proposed development are as follow:

- A township establishment application has been submitted to Mogale City Local Municipality for the proposed Homes Haven Extension 65 on Portion 243 (a portion of Portion 76) of the Farm Roodekrans 183 IQ, Johannesburg, Gauteng. The development includes:

- **Erf 1**: 20 residential units
- **Erf 2**: Zoned "Special" to formalize the existing restaurant and guest house
- **Public parking**: To be provided on site

LAND USE	NO. OF STANDS	AREA OF STANDS	% OF TOWNSHIP AREA
"Residential 2"	Erf 1	0,7817 ha	49,89 %
"Special" for Restaurant and Guesthouse	Erf 2	0,7854 ha	50,11 %
TOTAL	**2**	**1,5671 HA**	**100 %**

The Site Development Plan is attached (Annexure A).

1.2. Summary of impacts associated with the proposed activity

- Contamination of groundwater as a result of deposition of contaminants during the construction phase;
- Increased erosion and surface water runoff from hydrological systems in close proximity to the construction sites as a result of vegetation clearing (mainly during the construction phase) and increases area of hardened surfaces (mainly during the operational phase);
- Floral destruction through vegetation clearing and earthworks during the construction phase;
- Habitat loss or destruction as a result of vegetation clearing and other preconstruction activities;

- Faunal destruction (deaths) and displacement as a result of migration and competition from introduced species;
- Increased dust and noise generation from construction vehicles and other heavy-duty equipment used during the construction phase of the proposed development and increased noise during the operational phase of the development;
- Visual intrusion as a result of the construction activities and operational phase of the development;
- Increase in crime as a result of a new development;
- Impact on traffic patterns as a result of construction activities and operational phase;
- Increased employment opportunities and the resulting socio-economic benefits arising from an increase in earnings per household;
- Improvement in transport and accessibility due to the creation of and economic node;
- Upgrade of bulk services to the area and infrastructure optimisation due to the development of the site;
- Security enhancement through decreasing the amount of vacant derelict areas which are a target for informal housing; and
- Improvement to the quality of the water course/wetland via a comprehensive holistic storm water management plan and a wetland rehabilitation plan;

The following table is a summary of potential impacts identified during the Basic Assessment phase, taken from the basic assessment report:

Receiving Environment	Summary	Potential Impacts	Proposed Mitigation Measures
Terrestrial	The property is surrounded with a wall and contains various dwellings and gardens. The property is located within a residential Estate. Regional data indicates that the site is located within the Egoli Granite Grassland vegetation type	1. Impact on Vegetation of Egoli Granite Grassland if it was present 2. Establishment and spread of declared weeds and alien invader plants.	• None - The study site is entirely transformed. No vegetation of the Egoli Granite Grassland is present on site.

	which is considered Critically Endangered in terms of the 2021 Red List of Ecosystem, published by SANBI. GDARD Conservation plan (C Plan 3.3) indicated that a third of the western side of the site falls within an area considered as "irreplaceable area" and a small part in "Ecological Support Area. The site characteristics confirmed that the entire site was transformed, and that the area designated as "Irreplaceable area" by C Plan 3.3 was subjected to dumping and the area closer to the river was overgrown with black wattles and did not contain any indigenous vegetation. **Sensitivity Rating for the Site (SEI):** The SEI indicated that most of the site had a Very Low Site Ecological Importance with a medium SEI for the riverbanks. This was done to preserve the corridors offered by the riparian system. It must be stated that exotic plants have overgrown the river system and that these alien invasive plants hinder the survival of indigenous plant species.		• Almost 60% of plant species present on site is Alien Invasive plant species. These must be controlled and managed appropriately. The adjacent property to the west is a clear example of what would happen if alien invasive plants are left uncontrolled.
Flora	The site characteristics confirmed that the entire site was transformed, and that the area designated as "Irreplaceable area" by C Plan 3.3 was subjected to	Establishment and spread of declared weeds and alien invader plants.	• Stockpiles must be controlled to avoid the development of a soil seed bank of

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<td>dumping and the area closer to the river was overgrown with black wattles and did not contain any indigenous vegetation. There were no plants of Special Conservation Concern recorded on site and the field data corresponds with the data received from the DFFE screening tool which indicated a Low sensitivity for SCC plants. Eight plant species was identified on and around the site that is listed in the Alien and Invasive Species. These plants need to be controlled in accordance with the NEMBA Act. The specialist study concluded that the development would have a Low impact on the vegetation type of the Egoli Granite Grassland as there are no indigenous vegetation left on site. The area identified as irreplaceable area by C Plan 3.3 is currently rubbish dump and areas closer to the river is overgrown with alien invasive plants.</td>
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<td>alien plants within the stock-piled soil.
• Any alien plants must be immediately controlled.
• The river bank must be cleaned in accordance with a maintenance plan and cleared from Alien invasive species such as black wattles and eucalyptus trees.
• An on-going monitoring programme should be implemented to detect and quantify any aliens that may become established and provide information for the management of aliens.</td>
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<td>Aquatic Biodiversity Assessment</td>
<td>The study site is located within –
<table><tr><td>Quaternary Catchment Area</td><td>A21E</td></tr><tr><td>Water Management Area (WMA)</td><td>Limpopo (WMA 3)</td></tr><tr><td>Ecoregion</td><td>Highveld – 11.03</td></tr><tr><td>Applicable River(s)/Stream</td><td>Muldersdrift ser Loop</td></tr><tr><td>Impacts observed at the study area</td><td>The stream is situated in an urbanised area, surrounded by industrial zones and informal settlements</td></tr></table></td>
<td></td>
<td>• Based on the results of the Department of Water Affaires (DWS) Risk Assessment, a Water Use License (WUL) is required for the proposed township development in line with Notice 509 of 26 August 2016, which was drafted in</td>
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	The main findings of this report have been summarised below: • The Index of Habitat Integrity Assessment (IHIA) results indicate that the both the site and the Muldersdrift-se-loop is **Largely Modified (D Category)**. • Most of the water quality constituents did not meet the recommended guidelines. However, the site on the Muldersdrift-se-Loop have high concentrations of nitrites. • The SASS 5 results indicated that the site had seriously modified ecological Conditions **(E Category)** due to low species diversity and was classed as a **poor-quality,** indicative of eutrophic condition. • The overall Ecostatus of the Muldersdrift-se-Loop is **Seriously Modified (Category E)** and indicates that a loss and change of natural habitat and biota have occurred.		accordance with Section 21 of the National Water Act No. 36 of 1998. • The 32m bufferline as indicated on the layout plan must be maintained. • The exceeding nutrient levels should continue to be monitored over time to see if it increases and it must be managed accordingly. • Conduct bi-annual aquatic monitoring in this system (specifically in the wet season). Water quality sampling and diatoms sampling should be included during the wetland monitoring. This will lead to good management and intervention practices when and where required. • An Extensive alien invasive management plan should be compiled and implemented.

			• Access to the riparian area should be restricted except to managing alien invasive species. • Construction run off, and sediment controls should be implemented .

The EMP integrates the results of the specialist studies, and the potential impacts of the proposed development on the environment. Mitigation measures detailed within the different specialist reports are included in the EMP, in order to minimise negative impacts and optimise positive impacts.

1.3. Interpretations:

The implementation of the EMP is not an additional or "add on" requirement. The EMP is legally binding through NEMA and the relevant EA. The proponent is to ensure that through the project tender process the EMP forms part of the Project Construction Contract Document to be incorporated in line with:

a) General project specifications; and

b) SANS 1200 A or SANS 1200 AA, as applicable.

1.4 Role Players and Responsibility Matrix:

In order for the EMP to be successfully implemented, all the role players involved in the project need to co-operate. For this to happen, role players must clearly understand their roles and responsibilities in the project, must be professional, form respectful and transparent relationships, and maintain open lines of communication.

- **Identified role players during the Pre-construction & Construction phase:** Potential role players or project teams will include the Authorities (A), Other Authority (OA), Developer/Proponent (D), Consulting Engineers (CE), Engineers Representative (ER), Environmental Officers (EO), Environmental Site Officer (ESO), Environmental Control Officer (ECO), Project Manager (PM), Contractors (C), Environmental Assessment

Practitioner (EAP). Further; landowners, interested and affected parties and the relevant environmental and project specialists are also important role players. (Roles and Responsibilities will be revised pending the EA).

KEY	Designation	Responsibility/Function
PM	**Project Manger**	The Project Manager has over-all responsibility for managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. The CE may also act as the PM. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any construction activity in contravention of the EMP in accordance with an agreed warning procedure.
ER	**Engineers Representative**	The consulting engineer's representative on site. Has the power/mandate to issue site instructions and in some instances, variation orders to the contractor, following request by the EO or ECO. The ER oversees site works, liaison with Contractor and ECO.
EO/ EM	**Environmental Officer /Environmental manager**	• Appointed by the Consulting Engineers as their environmental representative on site. The EO is not independent but must rather act on behalf of the consulting engineers with the mandate to enforce compliance under the project contract, which must include the EMP. The EO has the directive to issue non-conformance and hazard certificates. Further, in terms of accepted industry practice the EO could issue the equivalent of a "cease works" instruction only in exceptional circumstances where serious environmental harm has been or is about to be caused i.e. in cases of extreme urgency and then only when the ER is absent. • The EO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. On certain types of projects, such as linear developments (fences, pipelines, etc), the EO must also be the liaison between the contractor and landowners. • The EO must attend relevant project meetings, conduct daily inspections to monitor compliance with the EMP, and be responsible for providing reports and feedback on potential environmental problems associated with the development to the project team and ECO. • The EO must convey the contents of this EMP to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce. • The EO must be suitably experienced with the relevant qualifications and preferably competent in construction related methods and practices.

ECO	**Environmental Control Officer**	• An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA, and the EMP for the project. The ECO must be on site prior to any site establishment and must endeavour to form an integral part of the project team. • The ECO must be proactive and have access to specialist expertise as and when required, these include geologists, heritage specialists, etc. • The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the EMP for the project. The size and sensitivity of the development, based on the EIA, and the EA will determine the frequency at which the ECO will be required to conduct audits. (A minimum of a monthly site inspection must be undertaken). • The ECO must be the liaison between the relevant authorities and the project team. The ECO must communicate and inform the developer and consulting engineers of any changes to environmental conditions as required by relevant authoritative bodies. The ECO must ensure that the registration and updating of all relevant EMP documentation is carried out. • The ECO must be suitably experienced with the relevant environmental management qualifications and preferably competent in construction related methods and practices. • The ECO must handle information received from whistle blowers as confidential and must address and report these incidences to the relevant Authority as soon as possible.
C	**Contractor**	The principle contractor, hereafter known as the 'Contractor', is responsible for implementation and compliance with the requirements of the EMP and conditions of the EA, contract and relevant environmental legislation. The Contractor must ensure that all subcontractors have a copy of and are fully aware of the content and requirements of this EMP. The contractor is required, where specified, to provide Method Statements setting out in detail how the management actions contained in the EMP will be implemented.
ESO	**Environmental Site Officer**	The ESO is employed by the Contractor as his/her environmental representative to monitor, review and verify compliance with the EMP by the contractor. This is not an independent appointment; rather the ESO must be a respected member of the contractor's management team. Dependent on the size of the development the ESO must be on site one week prior to the commencement of construction. The ESO must ensure that he/she is involved at **all phases** of the constriction (from site clearance to rehabilitation).
A	**Lead Authority**	The Lead authorities are the relevant environmental department that has issued the Environmental Authorisation. The authorities are responsible for ensuring that the monitoring of the EMP and other

		authorisation documentation is carried out, this will be achieved by reviewing audit reports submitted by the ECO and conducting regular site visits.
OA	**Other Authority**	Other authorities are those that may be involved in the approval process of an EMP. Their involvement may include reviewing EMP's to ensure the accuracy of the information relevant
EAP	**Environmental Assessment Practitioner**	The definition of an environmental assessment practitioner in Section 1 of NEMA *is:* *"the individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instruments introduced through regulations"*.

1.5. General Guidelines:

The following measures provide guideline solutions to frequently anticipated issues on most development activities:

- The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the construction phase, illegal activities, delays caused by archaeological finds, etc. is ultimately the responsibility of the applicant/developer. Section 28, NEMA.
- The study area must be clearly defined, surveyed and fenced according to the project authorisation. All workforce members and other construction personnel are not to go beyond the fenced footprint. Landowners are not comfortable when strangers come on to their properties. They will look for reasons to interfere with the construction process and may therefore cause delays in the process that can be very costly to the Contractor.
- The Contractors must adhere to agreed and approved access points and haul roads.
- No camping is allowed on any private property.
- Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the owner.
- Relevant landowners must be informed of the starting date of construction as well as the phases in which the construction shall take place.
- The Contractor must adhere to all conditions of contract including this EMP.

- Proper planning of the construction process must be undertaken to allow for disruptions due to rain and very wet conditions.
- Where existing private roads to be utilised as access are in a bad state of repair, such roads' condition must be well documented, including photographs, before they are used for construction purposes. If necessary some repairs must be done to prevent damage to equipment and plant.
- All private and public manmade structures near the project site must be protected against damage at all times and any damage must be rectified immediately.
- Proper site management and regular monitoring of site works.
- Proper documentation and record keeping of all complaints and actions taken.
- Regular site inspections and good control over the construction process throughout the construction period.
- A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions.
- An ESO, on behalf of the Contractor, is to be appointed to implement this EMP. The EO and not the Contractor or his/ her ESO is to deal with any landowner related matters and
- Environmental Audits to be carried out during and upon completion of construction.

1.6 Site documentation

The following is list of documentation that must be held on site and must be made available to the ECO and/ or Approving Authority on request.

- Copy of the Record of Decision;
- Site daily diary /instruction book/ Incident reports;
- Records of all remediation / rehabilitation activities;
- Copies of EO reports (management and monitoring);
- Environmental Management Plan (EMP);
- Complaints register; and

- Method statements: Methods statements are attached to the EMPr for (Annexure B):
    - Handling, storage and removal of Cement and Concrete;
    - Washing and handling of paint and paint equipment;
    - Handling & storage of Primer drums (Bitumen); and
    - Handling, storage and removal of waste – general waste as well as construction waste.

1.7 Structure of EMP Tables

The table is divided into:

- **Phase of development -** This row will identify either pre-construction (planning) or actual construction phase.
- **Impact/ issue -** This row will identify the issue being addressed, e.g. Materials, site demarcation, heritage, etc.
- **Mitigation Measure -** This column will include all the necessary mitigation measures for each impact/issue'.
- **Frequency of action -** These columns provide time guidelines for the 'Responsible party' by which he/she is to action or manage the required mitigation.

The EMP is not a stand-alone document and all mitigation measures proposed in the following documents should be adhered to:

- Aquatic Biodiversity Assessment Report;
- Terrestrial and Flora study; and
- Stormwater Management Plan.

The mitigation measures proposed by the specialist are set out in the table below. Please note that the mitigation measures presented below, are a summary of the measures presented in the various documents. The documents must be referenced if clarification is required.

Type of Pollution	Source	Potential Impact	Mitigation Measures
Sediment Pollution	Vegetation clearing, earthworks, stormwater runoff	Increased turbidity, disruption of aquatic habitats, siltation of watercourses.	Erosion control (silt fences, sediment traps), vegetation buffers, minimize site clearing.
Hydrocarbon Pollution (Oil and Fuel)	Construction vehicles, machinery leaks, fuel storage	Contamination of soil, groundwater, and surface water, affecting aquatic life.	Regular maintenance of equipment, spill kits on-site, bunded storage areas for fuels.
Cement and Concrete Contamination	Concrete mixing, cement washout areas	Alkaline runoff into watercourses, increased pH levels, harmful to aquatic species.	Designated washout areas away from watercourses, proper waste disposal, bunded mixing zones.
Chemical Pollution	Lubricants, adhesives, solvents	Groundwater contamination, toxic runoff to streams and wetlands.	Secure storage, use of biodegradable options where possible, regular inspections.
Litter and Solid Waste	Packaging, plastic, metal scraps	Debris entering watercourses, affecting water quality and wildlife.	Waste collection points, regular site clean-ups, proper disposal of waste.
Dust and Airborne Particulates	Excavation, grading, vehicle movement	Dust settling in watercourses, poor air quality for local communities.	Watering of exposed areas, speed control on site, dust suppression measures.
Sewage and Wastewater Discharge	Onsite sanitation facilities	Nutrient loading in watercourses, contamination of drinking water sources.	Proper sanitation management, regular emptying of portable toilets, avoid leakages.
Stormwater Contamination	Uncontrolled runoff, polluted stormwater	Transport of oils, heavy metals, and sediments into watercourses.	Stormwater management systems, retention ponds, oil-water separators.

Herbicide and Pesticide Contamination	Vegetation clearing and maintenance	Toxic runoff affecting aquatic life, contamination of water sources.	Minimize use, avoid application near watercourses, use organic options where possible.
Noise and Vibration Pollution	Heavy machinery, road compaction	Disturbance to terrestrial and aquatic fauna, breeding disruption.	Limit noisy operations during sensitive times, noise barriers, vibration monitoring.

The above amended mitigation measures forms part of the EMP and must be adhered to by the Contractor. The EMPr must for part of the tender document issued to the Contractor. The EMPr must be monitored by an Environmental Control Officer.

1.8. The Layout Plan:

The site development plan illustrating the layout of the various activities is attached hereto in Annexure A.

The Following activities must be done before commencement of activity:

- Pegging of the 32m buffer zone: A Surveyor must peg the 32m buffer zone. Poles painted red at the top must be placed along the edge of the buffer Zone. The demarcation must be maintained throughout the construction phase of the development.
- The Construction iste must be fenced off. Secure entrance and exit to the site must be established.
- The site camp must be fenced off.

1.9 The EMP:

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
1 INTRODUCTION Activities related to the construction of the proposed buildings and top structures as well as the installation of services and construction of roads, may have an impact on the environment and it is imperative that precautions be taken to ensure that potential environmental impacts are minimised. The purpose of the Environmental Management Plan (EMP) is to give effect to precautionary measures, which are to be put in place for controlling the activities that take place on site during the construction and the operational phases of a project and to serve as a working document concentrating specifically on certain activities with the purpose of reducing the danger of adverse impacts or effects on the environment. The EMP is not a stand-alone document. It should be read in conjunction with the following documents: 1. Aquatic Biodiversity Report, Stormwater Management report, Terrestrial and Flora Report The EMP specifies procedures and practices, which should be implemented during construction activities, and monitored by an Environmental Control Officer (ECO) approved by the Gauteng Department of Agriculture & Rural Development (GDARD).	Activities relates to all activities stipulated as the "proposal". Any deviation from the proposal approved must be reported to the relevant authority Attached to this report	As required Throughout the construction phase of the project	ECO, Developer, Project Manager ECO, Engineer & Project Manager

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
The objectives of the EMP are to: ■ Ensure that all pertinent environmental issues are addressed; ■ Ensure that the project is in compliance with national, provincial and local environmental legislation and regulations; ■ Determine environmental conditions and sensitivities of the site and areas outside that may be impacted by the project; ■ Ensure acceptability of design and construction practices with respect to identified impacts and prescribed mitigation measures; ■ Provide strategies for obtaining and/or complying with all environmental approvals, permits and agreements, and to provide a monitoring program; ■ Integrate environmental strategies with all design and construction work; ■ Provide input and strategies for environmental quality control and risk management during all phases of the project; ■ Provide strategies for the protection of the existing wildlife found on the site; and ■ Provide strategies for the management of stormwater from the site.	An Environmental file must be compiled for the development. The following documents must be placed in the file: Specialist reports, Environmental Authorisation, Water Use License, ECO Reports etc. The file spec must be sent to the Contractor by the ECO.	Before commencement of activity	ECO, Health & Safety Officer and Contractor.

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
The EMP presented here incorporates these components through the environmental design criteria and specifications, which have been drafted specifically for this project. To ensure the effective implementation of these criteria and specifications, the applicant must be committed to undertaking a program of Environmental Management during construction of all aspects of the project. An ECO must provide this service to the applicant. The ECO should ensure compliance by all contractors and subcontractors with the requirements of the EMP.			
2 ENVIRONMENTAL DESIGN AND SPECIFICATIONS The project is limited to the following activities for which environmental design criteria and specifications have been developed: ■ This EMP only focuses on the construction of buildings and top structures and the installation of related infrastructure within the area set aside for development.	To be assessed and aligned with the project specifications as required	Throughout the construction phase	ECO, Project Manager and Developer
3 DEFINITIONS In this document, unless the context requires otherwise -			

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
■ **Pre-construction** Involves the preparation of the site for construction. 32m Buffer line must be pegged with poles painted red at the top. Construction area must be fenced off.	Boundaries of the construction area to be surveyed and pegged	Once off	Project Manager & Surveyor
■ **Construction** For the purpose of this document construction is defined as the construction of all buildings and related facilities and associated infrastructure within all phases of the development	Top structures, infrastructure, site clearance and all associated activities	Ongoing	Professional Team
■ **Post-construction/ operational** This phase includes the long-term operation of the activities on the property.			
■ **Applicant/Developer** TUTAM PROPERTIES 143 CFC			
■ **Contract** The EMP shall form part of the legal contract between the applicant, the developer, the principle contractor and all sub-contractors. The applicant/developer will include the EMP into the tender documentation and	The EMPr, method statements and declaration of	Once off	Project Manager

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
contracts, and commit subcontractors to include the EMP as part of any works subcontracted.	understanding to be made available to the Contractor during the tender phase		
4 ENVIRONMENTAL CONSTRUCTION SUPERVISION An Environmental Control Officer (ECO) must be appointed to ensure that construction activities associated with the project will comply with environmental specifications and regulatory requirements, thus minimising adverse biophysical and social impacts and resulting liabilities. The ECO should be appointed before commencement of construction activities. The ECO should be appointed for all phases of the development. Details of the appointment should be communicated to GDARD.	Eco to be appointed before commencement of activity	Once off	Project Manager
4.1 Roles and Responsibilities The ECO will serve a pivotal role throughout all phases of the project, by providing input on matters related to detailed engineering design, inspecting construction activities, and monitoring the success of mitigation measures. The ECO will review and comment on the Contractor's plans to ensure that adverse environmental impacts are minimised.	Role of the ECO to be assessed and aligned with the requirements of the project, permits and authorisations	Throughout the construction phase of the project	Eco, Project Manager and Developer

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
During construction, the ECO's key responsibility will be to ensure that the environmental management measures, controls, and specifications (section 6) are properly implemented as per the National Environmental Management Act, Act 107 of 1998. Responsibilities will include: ■ Liaising regularly with all contractors as required; ■ Delivering environmental education and awareness to construction staff prior to and during on-site works; ■ Providing technical assistance on environmental matters to construction staff; ■ Inspecting all activities during construction to ensure compliance with terms and conditions of approvals; ■ Documenting construction activities by notes and photographs; and ■ Preparing reports at regular frequencies which summarise activities and actions taken and submitting these reports to the Client.	The ECO must assist the Contractor and Project Manager in the monitoring and implementation of all conditions and requirements stipulated in permits and Authorisations.	Throughout the construction phase of the development.	ECO, Contractor and Project Manager
4.2 Responsibility for Communication The ECO has a key responsibility to effectively communicate expectations of construction practices, which minimise environmental degradation, as well as resulting liabilities for violating environmental specifications and permit conditions. This responsibility will begin during the preparation of the detailed design phase, and continue throughout the construction phase of the project.	Eco to be appointed before commencement of activity	Monthly	Project Manager and Developer

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
During construction, the ECO will formally deliver the environmental information, direction and supervision on an as-required basis to Contractor's)' staff. The environmental information may be delivered through a number of avenues including:	Environmental Induction before commencement of activity	Once Off	ECO
■ Pre-construction field reconnaissance of construction areas, to identify any sensitive areas;	Before commencement	Before commencement	ECO
■ Pre-construction meeting to be attended by the ECO, the Project Manager, the Contractor, to formally discuss construction activities and to identify any potential problems; and	To be attended by the Professional Team	Once Off	Project Manager
■ Progress meetings to discuss construction practices and mitigation measures to be taken where necessary.	AS required	Monthly	ECO
The ECO will maintain continual contact with all the designated GDARD's contact persons on a routine basis to inform them of construction progress and mitigation measures taken.	AS required	Ongoing throughout the construction phase	ECO
4.3 Authority of Environmental Control Officer (ECO) The ECO will act independently from construction management and, acting reasonably, have the authority to suspend those construction activities that may cause unacceptable environmental harm, and prescribe mitigation measures. The Eco has the authority request the Client to fine the Contractor, should the Contractor not implement the conditions/requirements set out the authorisations and permits issued for the project, or should the Contractor not implement rectification actions proposed by the ECO.	ECO to be appointed as an independent Consultant	Ongoing	ECO

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
4.4 Documentation and Reporting The ECO will record field notes, and regularly take photographs to record incidents and the management of the sensitive areas. The ECO's field notes will include items such as: ■ Names of contacts and details of discussions with the Contractor and date of site inspection; ■ Issues and concerns recorded and specific actions taken to meet mitigation requirements as stipulated in environmental specifications, project plans, and design drawings; ■ Contractor compliance with environmental specifications, including reference to the specific clauses of the specifications; ■ Actions recommended and taken by the ECO in the event of non-compliance by the Contractor; ■ Effectiveness of mitigation measures taken; ■ Emergency responses to unforeseen environmental problems; and ■ Recommendations for future remedial work. The content of these field notes will form the basis of inspection reports. Any pollution incidents must immediately be reported to the ECO and GDARD.	A report must be submitted to the Professional team after each inspection. The report must include a photographic record, actions to be taken and highlight all issues and concerns recorded during the inspection.	Ongoing throughout the construction phase	ECO
5 MONITORING			

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
Monitoring entails periodic or continuous data collection of physical parameters as well as regular site inspections to determine compliance with environmental specifications and approval conditions. It provides an objective, quantitative means to assess the effectiveness of the mitigation measures and to detect potential environmental impacts.	Monitoring reports must include photos, actions and remedial measures where necessary. Reports must be kept in the Environmental File.	Monthly	Contractor, ECO
6 ENVIRONMENTAL SPECIFICATIONS AND CONDITIONS			
To assist in complying with the applicable national and provincial laws, regulations, permits, licenses and approvals, the environmental consultants have drafted the following Environmental Specifications and Conditions. The following specifications are not exhaustive and are meant to clarify various regulatory requirements. In the event of a discrepancy between these guidelines and legislation and/or regulations, the latter shall apply or if regulations or laws are amended, the amended regulations may apply.			
6.1 Pre-Construction and Construction Phase			
Bio-Physical Environment			
6.1.1 Site Clearance			

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
The Contractor shall flag clearing boundaries at the construction site prior to commencement of clearing operations. A site plan shall be submitted by the Developer to the Contractor showing areas to be cleared, the construction offices, access points, storage areas, ablution facilities, etc. Upon approval of this plan by the ECO, it will form the basis for onsite construction activities.	Site Inspection.	Once off	Contractor, Developer, ECO and Fauna and Flora specialist
6.1.2 Mitigation Measures applicable to the sensitive riparian area and the 32m buffer zone: (a) **Fencing of the site and construction area**: • *The 32m buffer zone must be pegged. The buffer zone must be clearly demarcated with poles painted red. The poles must be placed at 20m intervals – length of the intervals must be discussed with the Contractor.* • *In addition, the development footprint area as demarcated on the layout plan must be fenced off before construction activities commence. It is suggested that:* • *A temporary wire fence is erected for the demarcated area affected by construction, and the fence must be maintained throughout the construction period. The ECO must approve the location of the fence*	The ECO must inspect the fence. The fence must be approved by the ECO	Before commencement of activity	ECO

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
as well as the construction method to be used before the fence is erected.			
6.1.3 Fauna and Flora			
(a) General Requirements:	Site Engineer, Contractor and ECO to monitor. The 32m buffer zone must remain in place. Burning of vegetation is not permitted.	Monthly	Contractor & ECO
• *Work should be restricted to one area at a time to allow smaller birds, mammals and reptiles a chance to weather the disturbance in an undisturbed zone close to their natural territories.* • *No fauna species must be disturbed, trapped, hunted or killed during the construction phase.*			
(b) **During the construction phase:**			
• *All construction-related impacts (including service roads, temporary housing, temporary ablution, disturbance of natural habitat, storing of equipment/building materials/vehicles or any other activity) should be excluded from the open space system. Access of vehicles to the open space system should be prevented and access of people should be controlled, both during the construction and operational phases.*	No construction vehicles allowed in the riparian area outside of the demarcated construction footprint.	To be monitored during audits - Monthly	To be enforced by the Contractor and health & Safety officer.

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
Movement of indigenous fauna should however be allowed (i.e. no solid walls, e.g. through the erection of palisade fencing). • *No plants not indigenous to the area, or exotic plant species, especially lawn grasses and other ground-covering plants, should be introduced in the landscaping of the proposed development, as they might spread into the areas of natural vegetation and into the riparian area;* • *The contractor must ensure that no fauna is disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.* • *Dust suppression must be implemented during the construction phase of the development to ensure that excess dust do not harm the red listed plant communities.*	Crossing of veldt outside of the construction footprint is not permitted.		
6.1.4 Establishing the campsite & contractors yard **Mitigation measures:** • Housing will not be made available for the Contractor's employees on-site and the Contractor must make his own arrangements to house his employees and transport them to site. • The Contractors yard must be allocated prior to commencement of construction and should be fenced off.	Site Inspection This item will be inspected by the ECO	Continuous Monthly	Contractor & ECO Eco & Health and Safety officer

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
• The Contractors yard must be clustered together within an area approved by the ECO and site engineer. The yard must be maintained until construction is finished. • On completion of construction all material used must be cleared and rehabilitation of the area should be done. Rehabilitation plan must be approved by the ECO and specialist consultant.	The site camp must be fenced off with shade netting. Rehabilitation will be discussed with the ECO before completion of construction	Once Off	ECO
6.1.5 Provision of Storage for Construction Material The Contractor is responsible for providing a suitable area for storage of the construction material. All materials should be stored on the property in an area approved by the ECO. All materials to be secured to prevent materials from leaching into adjacent veldt. Please refer to the various method statements included in Annexure B.	Site Inspection. The method statement for cement and concrete must be implemented.	Continuous	Contractor, ECO
Mitigation Measures:			Contractor, ECO
• Bulk cement, bentonite and similar materials should be delivered by tanker and stored in silos;	This will be inspected by the ECO		Contractor, ECO
• Fine dry materials should be stored in buildings/enclosures or given adequate protection from dry wind;	This will be inspected by the ECO		Contractor, ECO

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
• Dry materials should be stored in bunded areas;	This will be inspected by the ECO		Contractor, ECO
Material stockpiles: ensure that the slopes, tips and mounds are at an angle not greater than the natural angle of repose of the material. Protect the stockpiles from wind erosion by keeping small stockpiles enclosed under sheeting or damping down dusty materials.	This will be inspected by the ECO		Contractor, ECO
• Ensure that methods and equipment are in place for immediate clear up of accidental spillages of dusty or potential dusty materials;	This will be inspected by the ECO		Contractor, ECO
• Use wet handling methods for cleaning up spillages of cement powder and similar materials.	Spills/runoff from cement mixing areas must be removed immediately	Ongoing item	To be monitored by the health & safety officer and the eCO
6.1.6 Toilet facilities, waste water and waste management			
Mitigation measures:			
• An adequate number of toilets shall be supplied and maintained for the use of the Contractor's personnel. The Contractor shall at all times during construction provide adequate sanitary facilities on site so that all employees are within easy reach of sanitary facilities. Regular inspections shall be carried out to ensure toilets are kept in a hygienic state. Toilet	Site Inspection. Contractor responsible for erection and maintenance of facilities.	Continuous	Contractor, ECO

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
paper shall be supplied to all toilets. Staff shall be advised to the fact that they should use these toilets at all times.			
• Refuse generated on the site shall be collected on a daily basis and placed in a suitable container. Once full and on a regular basis, this refuse container shall be emptied and the contents disposed of at an approved waste disposal site. No piling of any material, which could rot and release unpleasant smells into the air, shall be allowed.	Site Inspection	Daily	Contractor
• Waste management in the way of avoiding, minimizing, reusing, and recycling should be adopted to reduce waste generation. In addition, on site sorting of demolition debris will be carried out. Scrap metals or abandoned equipment will be recycled, if possible. • At least 30% of all construction waste (waste produced on the site) must be committed for recycling or re-use, either on site or off- site. The contractors must keep an accurate record of all waste (by weight) produced on site, with a record of what waste is committed for recycling or re-use.	Contractor to manage and report on a monthly basis to ECO in the form of a report.	Ongoing item throughout the construction phase	Eco, Health & Safety officer
• Receipts from waste collection contractors must be retained and submitted to the ECO with monthly reports confirming the weights of the various regular collections. The report must present a summary of quantities in weight of waste not recycled/re-used, and of waste recycled/re-used.	To be kept on site for the ECO to inspect	Monthly	ECO
• If volume is the preferred measurement on site by contractors, the waste volume must be converted to weight for the purpose of the report.	Site Inspection	Daily	Contractor

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
6.1.7 Cement – method statement attached in Annexure B **Mitigation Measures:**	Site Inspection	Monthly	Contractor, ECO
• Mixing should only be done at/ in bunded areas as sited by the ECO;	Mortar boards or plastic sheets to be used. Mixing areas must be bunded. Bricks, sandbags or a bunded container can be used. Mixing on topsoil is not permitted.	Daily/monthly	ECO, Contractor
• Palletise and shrink wrap fine dry materials; • Cleaning of cement mixing and handling equipment shall only be done within a designated area. All empty bags shall be removed from the site for appropriate disposal at an approved waste disposal site. Any spillage, which may occur, will be investigated and immediate action shall be taken. • Use premixed concrete, plaster or masonry compounds; • Keep foundations moist to prevent generation of fine particles	Empty cement bags must be stored in a clearly marked containers, separately from plastic and construction rubble.	Daily/Monthly	Eco, Health and Safety Officer

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
• Use larger pours of concrete rather than repeated small amounts.		Continuous	ECO, Contractor
6.1.8 Blasting No blasting is required for this project. However, should any blasting be necessary the Contractor shall notify the community should blasting be required and shall adhere to the requirements of the Explosives Act, 1956. Notices shall be placed on site in order to inform the adjacent owners of blasting activities and the Contractor shall give all potentially affected parties notice of his intent to execute any blasting work. Blasting will be done at appropriate times of the day to ensure that noise disturbance and vibrations are kept to a minimum, and blasting will be undertaken using appropriate techniques.		When required	Contractor
The Contractor will be bound to ensure that blasting operations do not cause damage to property. The Contractor shall also be obliged to ensure that the dangers of fly rock to people and properties are eliminated. The Contractor shall to keep a photographic record of the condition of the affected buildings or structures and shall acquire the signature of the surrounding owners/occupants agreeing to the condition of the structures.		When required	Contractor
*** Mitigation Measures:** * Assess the quantity of dust that would be generated; * Sheet all areas before work begins;			

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
* Noise reduction: Use additional localised shielding/barriers around pumps and compressors and at the work face; * Consider the duration of the activity and working hours. Keep community informed of day, time and intensity of blasting to be expected.			
6.1.9 Chemical, Fuel, and Oil Handling –			
*** Mitigation measures:** All Contractors shall ensure that an emergency cleanup program is in place in event of an accidental spill or leak of fuel, oil, chemicals, or other hazardous substances.	Site Inspection	Continuous	Contractor, ECO
Spillage of oil from crankcase oil draining or other such activities shall be prevented. If an accident occurs and fuels, oils, chemicals, or other hazardous materials are spilled or dumped on the ground, the affected soil shall be removed, placed in drums and disposed of in compliance with National legislation. Refer to the method statement for Primer in Annexure B.	Site Engineer and Contractor responsible for erection and maintenance of facilities.	Continuous	Contractor
Disposal and storage of materials such as water, rags, and pads, containing oils, filters, chemicals, liquid fuels, lubricating oils, or other potentially hazardous materials shall be in a manner satisfactory to the ECO.	Primer drums may not be stored on site. If stored, it must be stored in a bunded area	Continuous	Contractor, ECO

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
Hazardous chemicals, fuels, and other noxious or toxic substances shall be stored in covered containers in fenced areas for security reasons.	Must be stored in bunded containers/areas.	Continuous	ECO, Health & Safety Officer
Should temporary fuel tanks be used during the construction phase, the volumes of the tanks by not exceed 46m^3 and a bunded area must be provided to accommodate at least 1.5 times the volume of the fuel. The local fire authority must be informed of the temporary installation. Tanks and associated infrastructure must be dismantled and the area rehabilitated within 30 days of completion of construction of the development.	ECO to inspect and approve	Continuous	Contractor, ECO
6.1.10 Traffic The Contractor's vehicles shall comply with the South African Traffic Ordinance. All vehicles and their drivers shall be in possession of a valid driver's license for the vehicle in question. All vehicles shall undergo regular checks to ensure they are roadworthy and oil leak free.	Site Inspection	Continuous	Contractor
Care should be taken that the construction vehicles do not disrupt regular traffic flow patterns and should be limited to normal working hours. Entrance to the construction site should be from specific points as approved by the Council. • **Mitigation Measures:** o Don't leave engines running unnecessarily;	Spill Kits must be used Spills must be taken to a licensed waste disposal site. Disposal slips to be kept in the environmental file.	Continuous	Contractor

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
○ Check vehicles and equipment to ensure that they do not emit black smoke from exhaust systems except during ignition; ○ Use vehicles with low exhaust emissions and emission controls such as catalysts or diesel particulate filters; ○ Use acoustic screening where possible; ○ Avoid unnecessary vehicle movements and maneuvering on site; ○ Limit speed of vehicles on site ○ Avoid over filling vehicles; ○ All servicing and maintenance of vehicles to be conducted on an impermeable slab. ○ All surface water run-off from service areas to be diverted through oil traps. ○ Use sheeting to cover loads **6.1.11 Stormwater Management** • **Mitigation measures:** ○ All cut and fill slopes to be stabilised and re-vegetated using approved plants; ○ The use of porous pavement to increase perviousness while still providing a stable, protective surface. Materials such as porous asphalt, open-gridded modular pavement or pervious concrete could be used. The use of these materials would control the rate and volume			

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
of runoff, reduce the potential for swale and channel erosion and preserve the existing vegetation by maintaining proper soil moisture levels.			
○ The installation of infiltration trenches would aid in the temporary storage of runoff. The runoff stored would gradually infiltrate into the surrounding soil. This method is appropriate for relatively small drainage areas. They are flexible and can easily be fit into under-utilised areas of the site. An observation well, such as a perforated PVC pipe placed vertically in the trench, should be installed to monitor any change in the infiltration rate. ○ The existing vegetation cover on the site must be kept intact for as long as possible to minimise potential erosion on the site. ○ Stabilise construction entrances and exits: Implement measures to contain vehicle tracking of sediment; ○ Protect ditch bottoms: Any temporary ditch that drains water from the construction site or diverts water around the site, must be stabilised from the point of discharged to any surface water. ○ Control the location of runoff from temporary stockpiles: Place temporary stockpiles away from surface waters. Control runoff from stockpiles by tarping, using of silt fences or other effective sediment controls. ○ Implement pollution prevention measures: Control solid waste using proper waste management practices. Properly store oil, gas, paint			

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
and other hazardous substances. Limit washing of vehicles to a confined area. No engine degreasing to be allowed on site.			
6.1.12 Groundwater As a priority, any existing waste material on the site must be gathered and disposed off at a suitable and registered Waste Disposal Site to prevent the pollution of the groundwater. If pollution of any surface or groundwater occurs by any means whatsoever, the ECO shall be informed immediately.		Continuous	Contractor
6.1.13 Erosion Control • **Mitigation measures:** ○ Measures to redirect runoff should be put into place. ○ Vegetative buffer strips should be used to reduce runoff velocities. ○ Disturbance should be restricted to the areas that are necessary for development.	Site Inspection The Engineer must manage the timing of the actions. The contractor will be responsible for the construction, maintenance and operation of drains and retention units. Landscape contractor will be	Continuous	Contractor, ECO

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
• Construction material, equipment and staging should be limited to only those areas that are necessary to disturb during the construction process.	responsible for the establishment and maintenance of vegetation.		
Social and Cultural Environment			
6.1.14 Land use During the construction period the inconvenience to the surrounding property owners should be kept to an absolute minimum. The management of workers during construction is essential to avoid intrusion of people's privacy and properties. During this phase the buffer zone must be fenced off with a permanent fence palisade fencing must be used to ensure connectivity. Construction activities must take place during normal working hours. No construction activities to take place on a Sunday or on a Public Holiday	The Earthworks contractor will be responsible for dust control. The Site Engineer will be responsible for the phased timing of site clearance. The ECO will ensure that sufficient dust control is practiced. No	Continuous	Contractor
6.1.15 Air pollution The construction site must be watered to control dust to the minimum if an excessive dust problem occurs. Excessive dust conditions shall be reported to the ECO. Dust will be the main form of air pollution during construction. Trucks hauling material will contribute significantly to dust generation. Site clearance will contribute to dust fallout. A water truck must be on site. The site must be sprayed regularly.		Continuous	Contractor

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
The air quality will be affected by the burning of waste and smoke from open fires used for cooking or heating purposes by laborers. The burning of waste is not permitted. The Contractor will utilise dust suppression methods on site when necessary.	open fires are permitted. The burning of empty cement bags is not permitted. Cooking fires are not permitted. Fines will be issued if burning occurs on site.	Continuous	Health & Safety Officer, ECO and Contractor
6.1.16 Visual environment The construction site must be provided with litter bins. Refuse removal should take place on a regular basis. The construction site must routinely be checked for litter. Litter bins must be placed at the eating area and throughout the construction area **6.1.17 Noise** Noise levels shall be kept within acceptable limits. Construction activities should be limited to daylight hours and weekdays to avoid complaints by the surrounding owners. The Contractor shall address any complaints. All noise mitigation measures proposed under points 6.1.6 & 6.1.8 should be implemented and adhere to.	Recycling of waste must be encouraged on site. Separation of waste at the eating area and construction area is required.	Continuous Continuous	Health & Safety Officer, ECO and Contractor Contractor

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
6.2 Post-Construction, Operational and Decommissioning Phases **General:** An outline of potential impacts and mitigation measures relevant to the project is given above. Should the decommissioning be successful, environmental impacts, if any, can be mitigated to the acceptable levels. **6.2.1 Air Quality** **Gaseous Emission:** Localized land contamination may be experienced within the project site. A low level of soil gas emission during decontamination stage of the Project can be expected from soil excavation. **Dust:** During the demolition stage of the Project, dust impacts will arise from the demolition of existing buildings / structures, breaking up of pavement, haul road emissions, open site erosion, as well as from operations of the temporary stockpiling area, but is expected to be minor as the scale of the demolition works would be comparatively small. **Odour:** Significant odour is not anticipated **6.2.2 Noise Impacts** Construction noise will be generated by activities related to demolition works and removal of top structures throughout the project period. Given the project site is located adjacent to a large open area and a residential area, the noise impacts arising from the decommissioning works are anticipated to be high significance.	Site Inspection		

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
There is no plan of night-time operations. However, if night-time operation of the decommissioning works is required, appropriate noise mitigation measures (e.g. noise barriers, silencers, etc.) will be adopted. Furthermore, any construction works to be carried out in restriction periods (including evening, night-time and holidays) shall be subject to approval under the Noise Control Ordinance. **6.2.3 Traffic Generation** The construction and demolition materials arising from the demolition works would be re-used as far as possible or disposed of to a landfill site. Due to the small quantity of materials to be generated from the decommissioning works, the traffic generation is envisaged to be insignificant. **6.2.4 Water Quality and Contaminated Runoff** Construction wastewater containing elevated levels of suspended solids and /or silt are likely to be generated as a result of rainwater runoff, processing water such as that used for dust suppression. Potential impacts would be associated with discharge of these waters into surface water, which could cause elevation of suspended solids. Domestic sewage from the workforce will also be generated. **6.2.5 Wastes and Hazardous Materials** Wastes generated by construction works are likely to include site wastes, workforce wastes, chemical wastes, and construction and demolition materials. Chemical wastes, including residual fuel, solvent, lube oil and free oil may be generated from the decontamination works. These wastes should			

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Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
be collected by licensed collected and disposed of off-site at designated treatment centre. Contaminated soil may be generated from site decontamination, which requires treatment or disposal.			
6.2.6 Unsightly Visual Appearance The presence of demolition equipment and stockpiled materials on project sites will be potential sources of unsightly visual appearance. However, the visual impact arising from the decommissioning works will be temporary. Fences may be erected along the boundary of construction sites to minimize the impact. Furthermore, site cleanliness will be maintained and stockpiling of materials will be properly controlled to alleviate the impact. Therefore no significant visual impact is expected			
6.2.7 Ecological Impacts The existing surrounding area is a sensitive wetland area, with supporting vegetation and fauna. For the Project site, it is an undeveloped, open area with typically Highveld vegetation present, comprising of grassland, ridges and wetlands. The wetland area and buffer zone has ecological value. Therefore, mitigation measures such as erecting fences along the boundary of construction sites, adjustment of haul routes, storage and works areas, etc. will be adopted to avoid indirect impact arising from the decommissioning works.			

ENVIRONMENTAL MANAGEMENT PROGRAMME Homes Haven Extension 65			
Description of Aspect and proposed Mitigation or Action	**Comments: Control & Monitoring**	**Frequency**	**Responsible**
6.3 Possible Severity, Distribution and Duration of Environmental Effects Potential environmental impacts described in Section 6.2 are expected to last for the decommissioning period only. As such, the ensuing effects are considered to be temporary and short term. With the incorporation of appropriate mitigation measures, no insurmountable effects are anticipated.	Site Inspection	Quarterly	ECO
7 AMENDMENTS TO THE EMP Any issues that may arise at a later stage during the construction phase which are not covered in this EMP shall be addressed as addendums to the EMP and submitted for approval prior to implementation.			

ANNEXURES:

Annexure A: Site Development Plan

Annexure B: Method Statements

Annexure B: Method Statement for the Prevention of Cement Runoff on Construction Sites

1. Purpose and Scope

This method statement outlines the procedures and measures to prevent cement runoff during mixing and handling activities on construction sites. It aims to comply with the National Environmental Management Act (NEMA), Act 107 of 1998, and the National Water Act, Act 36 of 1998, to protect watercourses, soil, and the surrounding environment from contamination.

2. Legal and Regulatory Requirements

- National Environmental Management Act (NEMA), Act 107 of 1998
- National Water Act, Act 36 of 1998
- Construction Regulations of the Occupational Health and Safety Act, 1993
- SANS 1200 (South African National Standards for Civil Engineering Construction)

3. Roles and Responsibilities

- Site Manager: Ensure all prevention measures are implemented and maintained.
- Environmental Control Officer (ECO): Monitor compliance with environmental regulations.
- Contractor: Responsible for daily management of cement mixing areas.
- Site Workers: Adhere to site protocols for cement mixing and runoff prevention.

4. Site Preparation and Designated Mixing Areas

- Cement mixing shall only take place in designated areas that are located at least 50 meters away from watercourses or stormwater drains.

- The mixing area shall be prepared with an impervious surface, such as concrete slabs or heavy-duty plastic sheeting, to prevent seepage into the soil.
- Bund walls, sandbags or brick edge shall be placed around the mixing area to contain any accidental spillage.

5. Control Measures

5.1 Bunding and Containment:

- Bunded areas should be constructed to handle a 110% capacity of the maximum volume of cement mixed.
- Mixing areas must be inspected before operations begin to ensure the integrity of the bunding and containment measures.

5.2 Runoff Management:

- Use portable concrete washout containers for equipment cleaning.
- All washout water must be collected and treated before disposal, ensuring pH neutrality and removal of suspended solids.
- Prevent direct discharge of washout water to stormwater drains or natural watercourses.

5.3 Spill Response:

- Immediate containment of any spills using absorbent materials.
- Spills must be cleaned promptly to prevent runoff during rain events.
- Disposal of contaminated materials must comply with hazardous waste management regulations.

6. Emergency Procedures

- In case of major spills or breaches in bunding, initiate emergency containment measures.
- Notify the Environmental Control Officer (ECO) and initiate cleanup operations immediately.
- If spillage reaches watercourses, report to the relevant environmental authority as per NEMA requirements.

7. Monitoring and Reporting

- Daily inspections of the cement mixing area are required to check for leaks or breaches.
- Non-compliance incidents must be documented, including corrective actions taken and a photographic record of spills.

8. Training and Awareness

- All site workers must be trained in cement runoff prevention measures.
- Induction programs should include awareness of legal obligations under NEMA and the National Water Act.

9. Record Keeping

- Maintain records of daily inspections, non-compliance incidents, and training sessions in environmental file and health and safety file for inspection purposes.

Confirmation of Receipt of Method Statement by Contractor:

Company name:_____

Date:_____

Contractor Name:_____

Signature:_____

Health & Safety Representative:_____ **(Name)**

Signature:_____

Date:_____

Annexure B: Method Statement for the Cleaning of Paint Equipment

1. Purpose:

To ensure the cleaning of paint brushes and equipment is carried out in a manner that protects the environment and complies with South African environmental legislation, including the Environmental Impact Assessment (EIA) Regulations of 2018, the National Environmental Management Act (NEMA) (Act 107 of 1998), and the National Water Act (Act 36 of 1998).

2. Scope:

This method statement applies to all personnel responsible for painting works and equipment cleaning on site and outlines procedures to minimize pollution of soil, surface water, groundwater, and air during cleaning activities.

3. Relevant Legislation:

- National Environmental Management Act (NEMA), Act 107 of 1998
- National Water Act, Act 36 of 1998
- Environmental Impact Assessment Regulations, 2018

4. Environmental Risks:

- Pollution of surface and groundwater due to improper disposal of paint waste and wash water.
- Soil contamination from paint residues.
- Air pollution from volatile organic compounds (VOCs) in solvents.
- Harm to aquatic and terrestrial ecosystems.

5. Materials and Equipment:

- Dedicated wash station with bunded and lined area
- Drip trays
- Solvent recycling container (for oil-based paints)
- Waste water collection containers
- Non-toxic, biodegradable cleaning agents (where possible)
- Spill kits and absorbent materials

6. Methodology / Procedure:

6.1 Designated Wash Area:

- A clearly marked paint cleaning area will be set up away from stormwater drains, watercourses, or sensitive environments.
- The area will be bunded and impermeable to prevent runoff into the soil or groundwater.
- Wastewater will be collected in sealed containers for off-site disposal at a licensed hazardous waste facility.

6.2 Separation of Paint Types:

- Water-based paints: Brushes and rollers to be cleaned in containers. Waste water collected and disposed of at an approved facility. Solids settled out and collected for hazardous waste removal.
- Oil-based paints: Equipment to be cleaned with approved solvents. Used solvents stored in labeled drums and sent for recycling or hazardous waste disposal.

6.3 Spill Management:

- Any spills to be immediately contained using spill kits.
- Contaminated materials (rags, soil, etc.) to be disposed of as hazardous waste.

6.4 Storage and Handling:

- Paint and solvents must be stored in sealed containers in bunded areas.
- All waste containers must be clearly labelled and removed regularly to prevent overflow.

7. Monitoring and Compliance:

- Weekly inspections of the cleaning area must be done by the Health & Safety Officer, to check for leaks, spills, or signs of contamination.
- Monthly inspections will be conducted by the ECO.
- Waste manifests and disposal certificates to be kept on file.
- All personnel involved in painting and cleaning to be trained on this method statement and relevant environmental protocols.

8. Emergency Procedures:

- In case of major spills, notify the site environmental officer and activate the spill response procedure.
- Report all environmental incidents to the Department of Water and Sanitation if there is risk to a water resource.

9. Responsibilities:

Role	Responsibility
Site Manager	Ensure method statement implementation
Environmental Officer	Monitor compliance, report, and train workers
Painting Crew	Adhere to cleaning procedures and report any issues

Waste Management Team	Handle disposal and documentation of hazardous waste

10. Review and Updates:

This method statement is to be reviewed quarterly or as required by changes in legislation or site conditions.

Confirmation of Receipt of Method Statement by Contractor:

Company name:_____

Date:_____

Contractor Name:_____

Signature:_____

Health & Safety Representative:_____ **(Name)**

Signature:_____

Date:_____