



INTABA RIDGE

— PRIVATE GAME ESTATE —

ENVIRONMENTAL MANAGEMENT PLAN

OPERATIONAL PHASE

AFZELIA CONSULTING

Intaba Ridge Estate, Pietermaritzburg

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Wolfgang Kanz of Afzelia Environmental Consultants compiled the EMP; a comparative assessment was carried out of published EMPs, whilst site specific conditions and new information that has come to light were also incorporated. The aim of this environmental management plan (EMP) is to integrate environmental planning, design, construction, and operational activities of the proposed residential development.

GENERAL

1. The Environmental Process

In accordance with the Integrated Environmental Management Guidelines published by the Department of Environmental Affairs & Tourism (DEAT) in 1992, the purpose of an Environmental Management Plan (EMP) is "to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised". It is a detailed plan of action prepared to organise and coordinate environmental mitigation, rehabilitation and monitoring so that positive impacts are enhanced, and negative impacts and damage to the environment are avoided, minimised or rectified where required.

The objectives of the EMP are to:

- Provide a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on site.
- Ensure that the construction and operational phases of the project continues within the principles of integrated Environmental Management.
- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project.
- Ensure that the safety recommendations are complied with.

This EMP, which forms an integral part of the contract documents, informs the Contractor as to his duties in the fulfillment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. This is to include any rehabilitation and landscape processes work which is needed post-construction and which would be carried out by the contractor or specialist subcontractor who he may appoint to do such rehabilitation work. The provisions of the EMP are binding on the Contractor during the contract period. They are to be read in conjunction with all the documents that comprise the suite of documents for this project. In the event that any conflict occurs between the terms of the EMP and the project specification or Record of Decision, the terms herein shall be subordinate. In the event that any rights and obligations contained in this EMP contradict those specified in the standard of project specifications, then the latter shall prevail.

Any environmental issues that are identified during or after construction will be addressed in consultation with the environmental consultant. As such it should be viewed as a dynamic document that may require updating or revision where necessary.

All activities and earthworks associated with construction and reticulation of services will be undertaken in accordance with SASS 1200 standards, which deal with guidelines for civil engineering and general construction works.

2. Legislation

Environmental legislation applicable to the formulation of an EMP includes but is not restricted to the following:

Intaba Ridge Estate, Pietermaritzburg**Forest and Veld Conservation Act (Act 13 of 1941)**

- National Resources Development Act (Act No. 51 of 1947)
- Water Act (Act No. 54 of 1956)
- Animals Protection Act (Act No. 71 of 1962)
- Atmospheric Pollution Prevention Act (Act No. 45 of 1965)
- Environmental Planning Act (Act No. 88 of 1967)
- Soil Conservation Act (Act No. 76 of 1969)
- Hazardous Substances Act (Act No. 15 of 1973)
- Conservation of Agricultural Resources Act (Act No. 43 of 1983)
- Forest Act (Act No. 122 of 1984)
- Environment Conservation Act (Act No. 73 of 1989)
- Minerals Act (Act No. 50 of 1991)
- Occupational Health and safety Act (Act No. 85 of 1993)
- The Constitution of the Republic of South Africa (Act No. 108 of 1996)
- **National Environment Management Act (Act No. 107 of 1998)**
- National Water Act (Act No. 36 of 1998)
- National Forests Act (Act No. 84 of 1998)
- **In terms of the above, all regulations framed thereunder and amendments thereto**
- **The relevant Municipal bylaws**

3. Parties involved**Project Manager: Architect or Principal Agent (PM)**

The Project Manager is the administrator of the project acting as an agent of the main line department (DAEA). The PM is responsible for all direct communication with the contractor.

Contractor (CT)

This refers to the main contractor(s) appointed by the client for the construction of the Project, or portion of the Project. The main contractor(s) are required to adhere to the EMP and are **responsible to ensure that all sub-contractors, suppliers and staff appointed by them also** adhere to the EMP.

All Staff

All workers employed by the contractor, HOA or Sign Power (Pty) Ltd, **persons involved with activities related to the project, or persons present or visiting the construction area, including permanent, contract, or casual labour.**

Environmental Control Officer (ECO)

An individual nominated by HOA or Sign Power to oversee compliance by the **Contractor in matters concerning the day-to-day implementation of the EMP, and for liaison** with the DAEA, Umgeni Municipality, EKZNW and DWAF and the public and owners.

OAEA

The Compliance Officer appointed by the KZN Department of Agriculture and Environmental Affairs **to this project.**

Local Community

People residing or present in the region and near the construction activities, including the owners and/or managers of land affected by construction, workers on the land, and people in nearby towns and villages.

Public

Any individual or group concerned with or affected by the Project and its consequences, including the local community, local, regional, and national authorities, investors, workforce, customers, consumers, environmental interest groups, and the general public.

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Homeowners Association

The management association, acting on behalf of the residents of Intaba Ridge, and exercising and enforcing all management requirements as described in the Record of Decision, the EMP and the Environmental Reports.

4. Project details

The proposed development would consist of the construction of 100 new residential units, their associated services and road infrastructure. A maximum of approx. 25 ha will be disturbed in terms of the development of residential properties. Communal facilities, including stables, estate office, convenience centre and a clubhouse will be built

The project will include the following:

- Construction of internal roads and entrances;
- Provision of services and reticulation;
- Plant rescue and translocation;
- Construction of residential units;
- Removal of alien invasive species;
- Indigenous landscaping; and
- The establishment of a conservation network.

5. Record keeping

Copies of any Record of Decision or EMPs required for specific construction activities shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

The Project Manager will monitor the Contractor's adherence to the approved impact prevention procedures and shall issue the Contractor a notice of non-compliance whenever transgressions are observed. The Contractor should document the nature and magnitude of any non-conformance in a designated register, the action taken to correct the non-conformance, the actions taken to mitigate its effects and the results of those actions. Any non-conformance shall be documented and reported to the Project Manager in a monthly report.

The Contractor shall also record all complaints received regarding activities on the construction site pertaining to the environment, and the response noted with the date and the action taken. These records shall also be submitted to the Project Manager in the monthly report.

6. Compliance and Penalties

The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after the contract completion in terms of the contract as the defects liability period.

The contractor is deemed not to have complied with the EMP if:

- Within the boundaries of the site, site extensions and access roads there is evidence of contravention of clauses;
- Environmental damage occurs due to negligence;
- The contractor fails to comply with corrective or other instructions issued by the Project Manager within a specified time frame;
- The contractor fails to respond adequately to complaints from the public or local community

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The Contractor shall act immediately after a notice of non-compliance is received, and correct the cause for the issuing of the notice. Application of a penalty clause will apply for incidents of non-compliance. The penalties imposed per incident or violation will be as follows:

Incident / Violation	Penalty
Failure to stockpile material correctly	R 1 000
Pollution of water bodies	R 3 000
Failure to control Storm water runoff	R 1 500
Failure to provide adequate sanitation	R 3 000
Unauthorised clearing / removal of vegetation	R 10 000
Failure to provide adequate waste disposal facilities and services	R 5000
Failure to reinstate disturbed areas within specified time period	R 3 000
Failure to rehabilitate disturbed areas within 3 months of completion	R 5 000
Any other contravention of the environmental specification	R 1 000

The imposition of such a penalty shall not preclude the relevant provincial authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as deemed fit. The polluter-pays principle applies.

The "polluter-pays" principle provides that "the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment. NEMA imposes a duty of care on every person who causes, has caused or may cause significant pollution or degradation of the environment is authorised by law or cannot reasonably be avoided, NEMA requires that the pollution must be minimised and rectified.

Furthermore NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of certain environmental statutes. For example, offences under the National Water Act No. 36 of 1965 and the Environmental Conservation Act No. 73 of 1989 may result in penalties being imposed in terms of NEMA. Importantly, NEMA provides for the liability on conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

7. Amendments to the EMP

Any major issues not covered in the EMP as submitted, will be addressed as addenda to this EMP, and submitted for approval prior to completion.

The EMP is a living document and is subject to change from time to time in consultation with DAEA. Any amendments to the EMP will require approval DAEA. A confirmation letter from DAEA approving the amendments to the EMP will be attached as addenda.

8. Enforcing the EMP

The Contractor, the HOA and Sign Power (Pty) Ltd have a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes sub-contractors, casual labour, etc.). The EMP shall be part of the terms of reference for all contractors and sub-contractors.

They shall know and understand the specifications of the EMP and shall be able to assist other staff members in matters relating to the EMP. On completion of construction, the EMP shall be part of the terms of reference for homeowners and shall be made available to all ongoing contractors entering the property. All homeowners and future contractors have to give some assurance that they understand the EMP and that they will undertake to comply with the conditions therein. All members of the Homeowners Association shall familiarise themselves with the full contents of the EMP. They shall know and understand the specifications of the EMP and shall be able to assist other Homeowners in matters relating to the EMP.

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A. OPERATIONAL PHASE

Activity	Management / Mitigation	Responsibility	Frequency Timing
01 -Vegetation	<p>a. Maintenance and eradication of alien vegetation, including commercial/ timber species on site. Only registered herbicides are permitted. Rocky outcrops currently infested with invasive alien plants and commercial timber species should be cleared of such vegetation and allowed to rehabilitate.</p> <p>b. Compliance monitoring in terms of the introduction of alien invasive species into residential Gardens by individual land owners.</p> <p>c. Landscaping of woody species along external and internal roads should comprise a mix of indigenous species.</p> <p>d. Protection of designated conservation areas on the common property; specific reference is made regarding the grasslands and adjacent wetland areas. No picking of indigenous plants is permitted within these areas. Human trampling and vehicle tyres have a profound negative impact on the biodiversity of flowering plants. Plants are easily crushed. In this regard, the open space areas are not designated parks, but rather areas protected from disturbance. Mowing will not be permitted in those areas apart from the mow-lines needed for the burning program (the suggested method is mowing with brush cutters rather than slashing by tractors). All biennially burnt grasslands will be burnt in blocks; no block may be larger than three hectares and shall be burnt annually. The representative floral species should form the basis of a landscaping plan for the disturbed areas on the common property.</p>	HOA/ECO/Estate Manager	Ongoing
	<p>e. Landscaping within the development area should be undertaken in such a way as to aid in screening the units from one another and from the surrounding environment, in particular neighbouring properties and roads.</p> <p>f. If possible, incorporation of existing pockets of valuable indigenous vegetation within the development area should be undertaken in such a way as to aid in screening the units from one another and from the surrounding environment, in particular neighbouring properties and roads..</p> <p>g. Mowed garden lawns may not be allowed to extend into natural veld .</p> <p>h. The following rules should form part of the Homeowners' Association Code of Conduct: (i) Discourage picking of natural vegetation. (ii) Prevent trampling of conservation areas.</p>	HOA/ECO/Estate Manager	Ongoing

02- Fauna	a. Wild animals are very vulnerable to attack from domestic pets. In this regard, no dogs will be permitted on any part of the common property without being restrained by a lead, and are not allowed to roam across the conservation areas (accompanied or not accompanied; human traffic across the conservation areas is also not permitted)	HOA/ECO/Estate Manager	Ongoing
	b. <i>Bradypodion bourquini</i> (dwarf chameleon) is known to occur in the area. Capture of this is illegal. those reptiles is not permitted.		
	c. The following rules should form part of the Homeowners' Association Code of Conduct: (iv) Discourage capture of all indigenous fauna. Prevent trampling of important habitats		
	d. No hunting shall be permitted by residents or anyone entering upon this property. This includes the use of poisons, firearms, slingshots, snares and other traps.		

Soil Erosion	The following measures need to form part of the management of the property: <ul style="list-style-type: none"> Monitoring storm water exit points Regularly clean storm water run-off channels. Fill in and re-vegetated eroded areas. Regularly maintain storm water structure to maintain effectiveness. 		
Waste Management	The following measures need to form part of the management of the property: <ul style="list-style-type: none"> Monitor solid waste removal Provide sufficient animal proof dust-bins and secure waste collection points and safe-guard against animal scavenging. Dispose of hazardous substances, i.e. paint in an approved manner It is strongly recommended that organic waste be composted. Chlorinated water from swimming pools should be discharged (when required) onto level garden a minimum of 10m from natural vegetation, and under no circumstances into adjacent natural veld. 	HA/ ECO	Ongoing
Compliance with Record of Decision and other planning regulations and specifications	a. No construction of additional facilities, i.e. housing, roads, infrastructure and services. b. Adherence to the selected style of architecture, roof and colour scheme for the units that blend in with the surrounding environment and that are appropriate for the area. c. Maintain facilities regularly to prevent visual disturbances, e.g. landscaping maintenance, flaking of paints, etc.	All	Project Completion
03 Traffic/ Transport	a. No vehicles shall drive off-road on the sensitive areas and the conservation areas on tile properties.		
	b. Road verges shall be re-vegetated with <i>Cynodon dactylon</i> (<i>Cynodon</i>) or indigenous flowering plants, NOT <i>Penniselum clandestinum</i> (<i>Kikuyu</i>) .		
	c. Hazardous substance spills from vehicles, e.g. oils, grease etc., will have to be monitored and cleaned up on discovery.		
	d. If road lighting is desired, this is to comprise lighting in the order of "cat's eyes" or ground low level lighting at intervals of no more than 1 light per 10m- these lights producing a soft ambient light (40 watt maximum directed downwards).		
	e. All internal roads shall be managed to prevent scouring and erosion to prevent erosion from point source discharge runoff.		
04 Fire Management	a. This will constitute an: Annual burns on natural grasslands, divided into 4	HA/ ECO	Ongoing
	b. Fire breaks will need to be managed to contain fires. Where natural veld borders residential infrastructure a 10 metre strip will be mown in autumn to serve as a fire break. Keep grass near units as short as possible.		
	c. Ensure that the storage capacity of the reservoir makes allowance for fire flow as well as domestic demand		
	d. Provide fire-fighting facilities (fire hose reels and extinguishers) at all the buildings.		
05 Compliance with Record of Decision and other planning regulations and specifications	a. No construction of additional facilities, i.e. housing, roads, infrastructure and services. b. Adherence to the selected style of architecture, roof and colour scheme for the units that blend in with the surrounding environment and that are appropriate for the area. c. Maintain facilities regularly to prevent visual disturbances, e.g. landscaping maintenance, flaking of paints, etc. d. All buildings must be regularly inspected and any structural failures must immediately be reported and the necessary steps must be taken to ensure continued safety.	All	Project Completion

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The objective of providing guidelines during the decommissioning phase is to prevent structures being left to deteriorate. This looks unsightly and will severely detract from the beauty for the surrounding mountainous landscape. Therefore it is imperative that non-functional structures be removed as soon as possible and the area rehabilitated to its original natural state. If non-functional structures are not needed anymore, or not removed, it must be maintained as

	ALL STAFF MUST OBEY THE FOLLOWING RULES:
1	DO NOT tamper with or destroy nesting sites, lairs or any other form of animal shelter
2	DO NOT feed the native animals.
3	DO NOT leave the construction site untidy and strewn with rubbish that will attract animal pests.
4	DO NOT bring your pets to the construction site.
5	DO NOT trespass on private properties not linked to the project.
6	DO NOT carry a weapon on the construction site or in the vehicles transporting workers to and from the construction site.
7	DO NOT set fires unnecessarily.
8	DO NOT cause any unnecessary disturbing noise at the construction camp/site or at any designated worker collection/drop off points.
9	DO NOT drive a construction-related vehicle under the influence or alcohol.
10	DO NOT exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable) whilst driving a construction vehicle.
11	DO NOT drive a vehicle that is generating excessive noise (noisy vehicles must be reported and repaired as soon as possible).
12	DO NOT litter along the roadsides, including both public and private roads.
13	DO NOT remove or destroy vegetation at the construction camp/construction site without the prior consent of the Estate Manager Environmental Control Officer.
14	DO NOT tamper with or remove vegetation from any areas that have been fenced off or marked.
15	DO NOT Pollute watercourses, whether flowing or not.
16	DO NOT drive through the watercourses except on the roads or at designated points. if it is used to prevent the environmental degrading of the area.