LORNAY
ENVIRONMENTAL CONSULTING

Environmental Management Plan
For
Construction

Rusty Gate
Farm 824, Farm RE826 and 887, Caledon RD
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REFERENCE: CEMP/824/0-826/887/Rev4

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STATEMENT OF INDEPENDENCE

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1. INTRODUCTION

This Environmental Management Plan (EMP) serves as a guideline document for the expansion of the existing tourism overnight offering at Rusty Gate Mountain Retreat situated on the Remainder of Farm 826, Farm 824 and Farm 887, Theewaterskloof Municipal area, Caledon RD.

This EMP describes mitigation measures and is prescriptive, identifying specific individuals or organisations responsible for undertaking specific tasks during the construction phase of the development with the aim to ensure that potential impacts on the environment during the construction phase, are minimised and / or avoided. The EMP is an open-ended document and may require updating from time to time and as the activities evolve on site. The construction EMP has been compiled as part of the Basic Assessment process and once approved by the Competent Authority, is legally binding.

This EMP is drafted in line with the requirements outlined in Section 24N of the National Environmental Management Act (NEMA) (Act 107 of 1998).

2. ACTIVITY

The landowner purchased the three subject properties in June 2019, as an already existing guest farm. The three farms are Farm 824, Remainder Farm 826 and Farm 887, located in close proximity to Greyton on the Helderstroom Road, in the Theewaterskloof Municipal area. The majority of the infrastructure is located on Farm 826. Historically, the farm was developed as a nursery for apples and orchards. The original labourers cottages were converted by the previous owners to create the 5 self-catering cottages. Large scale once off events such as mountain bike races or music festivals, are held once to twice per year. All services for this type of use are temporary in nature and brought onto site for the event and then removed again.

The application is for the expansion and addition to an existing tourism operations, includes the following (as per the Preferred Alternative):

The application is for the expansion and addition to an existing tourism operation, includes the following (as per the Preferred Alternative):

- → Consolidation of all three farms and rezoning from Agriculture Zone 1 to Open Space 4 in terms of Section 15(2)(a) of the Theewaterskloof Municipality By-Law on Municipal Land Use Planning

- → Consent uses in terms of Section 15(2)(o) of the Theewaterskloof Municipality By-Law on Municipal Land Use Planning for the proposed Amphitheatre, events terrace, conference facility, sundowner boma and parking area, hiking trails (Conference facility, Function venue, Outdoor trading and dining, Tourist accommodation, Tourist facilities as indicated on the site development plan).

Table 1. Development information

	New Development Type	No. of units	Pax	Size per unit	Total Size (m^2)
2	Main Dwelling	1	6	120	120
3	Camp site (plus internal road)	6	36	225	1600
5	Eco pods	2	4	56	112
7	Eco cabins	2	8	124	248
8	Eco cabins	2	8	124	248
22	Conference facility	1	0	0	150
25	Eco cabins	6	24	124	744
26	Sundowner boma	1	0	0	80
27	Eco pods	2	4	56	112
28	Eco cabin	1	4	124	124
			94		3538

The main activities expected during the construction phase include:

- → Clearance of vegetation at new footprints only
- → Minor earthworks and installation terraces in the camp site area and foundations for units
- → Delivery of construction materials
- → Storage and / or stockpiling of construction materials
- → Mixing and preparation of construction materials
- → Extension of services to the site – to follow existing roads and service lines

The approach is to disturb as little natural environment as possible and limit areas which are impacted by the construction and construction related activities.

2.1. Principles and approach to development

The intent is that construction of the new accommodation units will be conducted in such a manner as to minimise the ecological impact, with the following principles being applied:

- → Design methodology - use of renewable energy (solar and/or wind) and sustainable and eco-friendly treatment of sewage and wastewater.
- → Location – the placement of units in specifically identified locations with least possible adverse impact on fauna, flora and aquatic features, with the placement of every unit guided by the specialist team.
- → Construction type - use of light steel construction with prefabricated components, raised units on pillar type foundations, minimize site impacts and reduce on-site construction, excavations, terracing and site preparations.

- → Sustainability - use of sustainable and non-toxic materials with minimal maintenance requirements over the lifetime of accommodation units, materials to be environmentally sensitive with fire retardation materials built into it.
- → Aesthetics – specific aim to create units which are visually unobtrusive in the landscape with the use of neural and natural colour schemes, screens and overhangs.

Sewage and wastewater

Since the proposed expansion areas are located away from existing service infrastructure on the farm, it is not possible to link into these without significant construction activities and therefore environmental impact and disturbance. For this reason, environmentally friendly, low impact, sustainable solutions have been explored during the design phase. Closed conservancy tank systems will be utilised, which will be serviced as required, by an appropriate service provider. Boland Toilet Hire already services the existing infrastructure on site and has confirmed capacity to service the additional areas proposed in the expansion application. The existing internal roads on the farms allow for easy access to these tanks.

Construction considerations

The followings aspects have been taken into account regarding the construction types for the proposed tourism units:

- → Topography – All three farms are located on elevated, rocky and uneven terrain
- → The sites are located across the farm in remote areas not suitable for construction teams and large construction vehicles
- → Service infrastructure to the new units cannot be via already existing service infrastructure or municipal networks and therefore sustainable, off the grid options needed to be included.

As a result of the above, alternative construction and building methods will be implemented and are considered upfront in the project design process. Light steel frame construction will be used, with pillar / stilt foundation types applied to the uneven and / or rocky areas. Depending on the soil type and incline at each individual site, the units may be elevated above the rocky outcrops or extended over the landscape in the case of uneven inclines. This construction type limits the excavation required, extent of construction activities and general disturbance to the areas.

The use of these light steel frame construction types is the proposed method for construction of the units as it offers cost effective alternatives to other construction methods considered, of which the most significant include:

Transport and Logistics

Light steel frames are pre-manufactured and easily transported to the site, for on-site assembly. This addresses a number of challenges faced in other conventional construction methods, where large construction vehicles would be required with heavy loads etc. The offsite manufacturing considerably reduces onsite construction works and thereby reduces related construction impacts such as cement batching and mixing, establishment of construction camps, construction storage areas, risks of heavy machinery leaking fuels, waste management, trampling and activity sprawl which is experienced when using large construction teams.

Fast Build Times

Faster construction is possible when using prefabricated light steel frames as they arrive on site pre-engineered, and ready to use.

Comparative case studies for construction of similar type accommodation units shows that a weatherproof building can be erected within a week, and total construction projects including electrical wiring, plumbing,

fittings, and finishes can be completed within a month. A regular brick and mortar structure takes considerably longer, needing foundation preparation, materials and construction teams.

Versatility

Steel can be prefabricated into any shape and used in a broad variety of ways in construction. Further to this a wide range of material options are available for roofing, wall cladding, insulation, flooring etc. for this type of construction. The versatility in design and materials assist in fire suppression and reduction in long term maintenance requirements when compared to conventional building designs.

Durability

Durability is a major consideration from a maintenance perspective during the commercial lifetime of the accommodation units. Steel structures are durable and require little maintenance, which reduces operating costs. It also provides sturdy structures to withstand adverse conditions severe weather, fire, decay, and pests.

In addition, materials for walls, floors and roofing can also be pre-selected to be flame retardant which is a critical consideration in a fire driven ecosystem.

Eco-friendliness

Steel buildings can provide excellent energy efficiency, especially when combined with other solutions. Airtight connections between steel parts create a completely sealed envelope for the building. Off the grid, renewable energy sources are also included in the design phase.

Cost-effective

Realisable savings for and from the above-mentioned benefits of light steel frame construction versus other methods is significant over the asset lifetime.

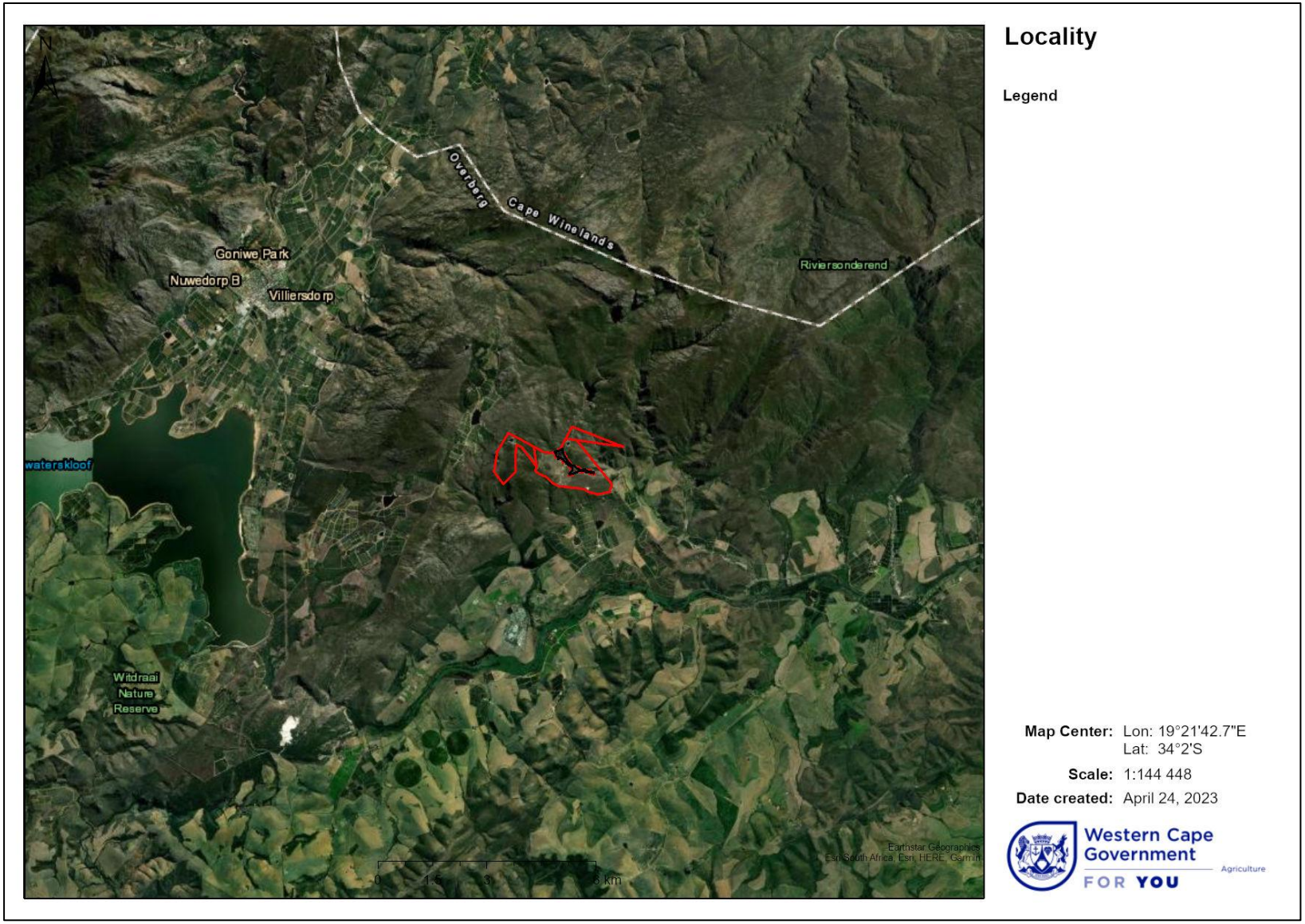


Figure 1. Locality map

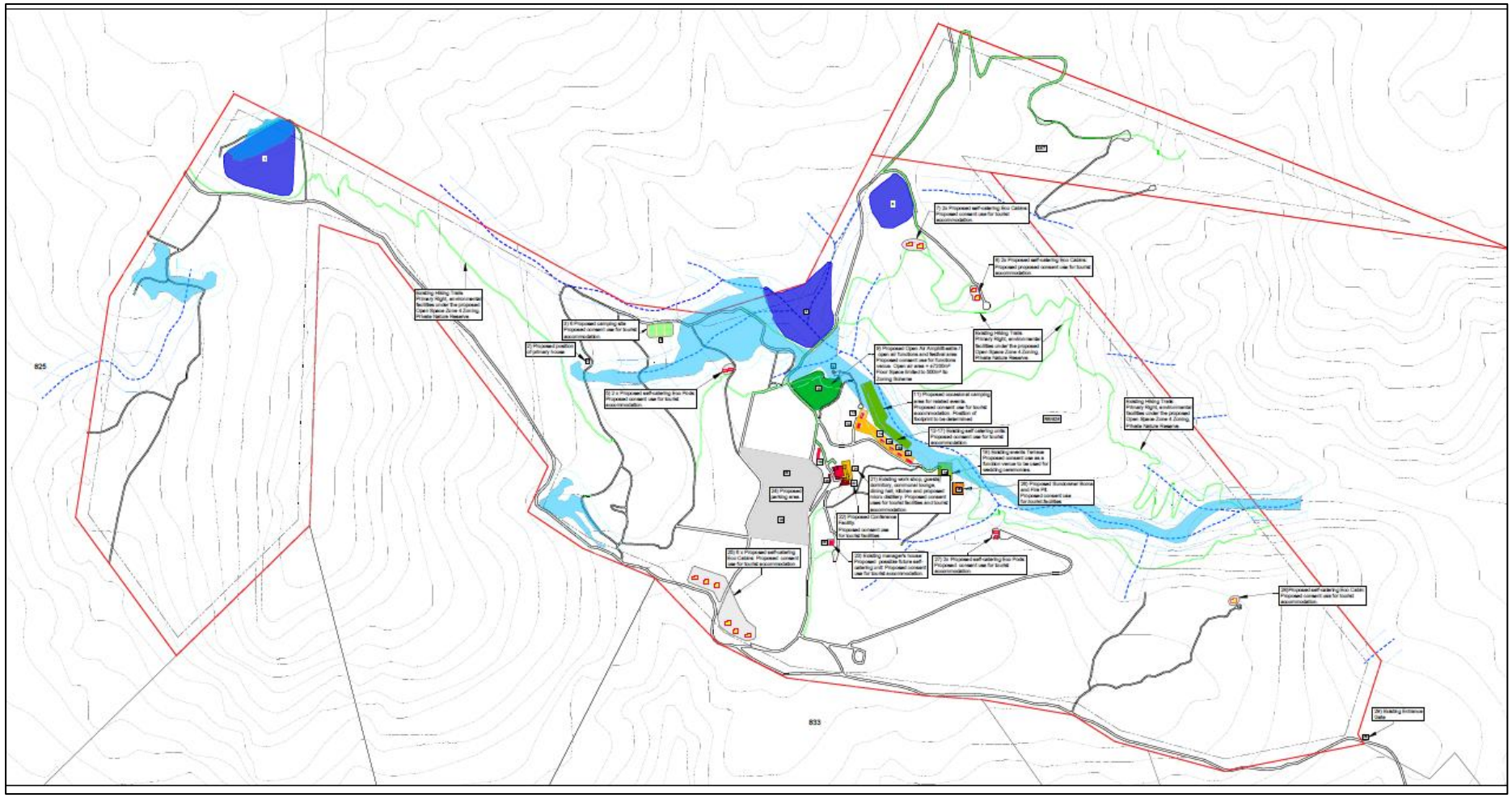


Figure 2. Alternative 3 – Final preferred development. Expansion activities confined to Farm 826 Only.

3. KEY TERMS AND ABBREVIATIONS

BAR	Basic Assessment Report
CARA	Conservation of Agricultural Resources Act (Act No. 43 of 1983)
DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
EA	Environmental Authorisation
ECA	Environment Conservation Act (Act No. 73 of 1989)
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEM:BA	National Environmental Management Biodiversity Act (Act No. 10 of 2004)
NEM:WA	National Environmental Management Waste Act (Act No. 59 of 2008)
PPE	Personal Protective Equipment
SDS	Safety Data Sheets
SHE	Safety Health and Environmental

Basic Assessment - Process followed to receive Environmental Authorisation from the Competent Authority, necessitated by NEMA. The Basic Assessment Report (BAR) is drafted in line with the legislation.

Competent authority - The Department of Environmental Affairs and Development Planning (DEA&DP)

Contractor - the main or specialised contractors as appointed by the developer / applicant for the execution of the works, including all sub-contractors

Developer / Applicant – Rusty Gate Mountain Retreat (Pty) Ltd

Environmental Control Officer (ECO) - a suitably qualified person to be appointed by the Developer / Applicant, to oversee the implementation of the EMP and environmental agreement until the completion of works on the site

Environmental Management Plan / Programme (EMP/r) - this document, approved by the competent authority, to control the implementation of the works on the site in such a way as to ensure that they do not result in undue or reasonably adverse impacts on the environment.

General waste - Waste that does not pose an immediate hazard or threat to health or to the environment, and includes domestic waste, building and demolition waste, business waste and inert waste

Hazardous waste - Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.

Project manager - Overall responsible and accountable person for the site during the construction, operation and decommissioning of the facility.

Project Management team - The responsibility of the EMP implementation resides with this team. This team

includes a Project Manager and appointed contractors and consultants.

Safety, Health and Environmental Officer (SHE Representative) – Applicant / developer will appoint one Safety Health and Environmental Officer, assisting the construction manager on Safety, Health and Environmental aspects of the project on the construction site.

Site Manager **–** the employee of the main contractor responsible for the day to day control of all activities and operation on site.

Sub-contractor and Contractor - Any provider of services, goods or people to the Applicant / Developer, for the construction, operation or decommissioning.

4. ENVIRONMENTAL CONTROL ON SITE

4.1. Approach

The Table below illustrates the various approaches to be undertaken to manage potential scenarios as a result of the activity on site:

Table 3: Impact management

Avoidance	Avoiding activities that could result in adverse impacts and/or resources or areas considered sensitive.
Prevention	Preventing the occurrence of negative environmental impacts and/or preventing such an occurrence having negative impacts.
Preservation	Preventing any future actions that might adversely affect an environmental resource.
Minimisation	Limiting or reducing the degree, extent, magnitude or duration of adverse impacts through scaling down, relocating, redesigning and/or realigning elements of the project.
Mitigation	Measures taken to minimise adverse impacts on the environment.
Enhancement	Magnifying and/or improving the positive effects or benefits of a project.
Rehabilitation	Repairing affected resources, such as natural habitats or water resources.
Restoration	Restoring affected resources to an earlier (possibly more stable and productive) state, typically, 'background' or 'pristine' condition. These resources may include soils and biodiversity
Compensation	Compensating for lost resources, and where possible, the creation, enhancement or protection of the same type of resource at another suitable and acceptable location.

4.2. Organisational Structure and Responsibilities

The Applicant and their appointed contractors will be responsible for the construction phase of each house, internal and access roads and associated infrastructure. All construction related staff are to be briefed on the requirements of the EA and EMP and copies of these documents are to be kept on site during all phases of construction.

Environmental Control Officer

Due to the sensitivity of the site, it is recommended that an ECO be appointed for the construction phase of the development. ECO site visits should take place for the duration of the construction phase as per the conditions of the Environmental Authorisation. This will ensure that the additional conditions contained in the EA, EMP and BAR are implemented.

The responsibilities of the ECO during the construction phase of the project, will include, but not be limited to, the following:

- → To environmentally educate and raise the awareness of the Contractors and their staff and to target responsible individuals as key players for environmental education and to facilitate the spread of the correct environmental attitude during the contract work
- → To review method statements and to determine the most environmentally sensitive options
- → To oversee the implementation of environmental procedures set out in this document
- → To attend site contractor's meetings, as required and report on environmental issues
- → To receive notices and minutes of all site meetings
- → To maintain an open and direct channel of communication with the construction team and site manager
- → To take immediate action on site where clearly defined no-go areas are violated, or in danger of being violated, and to inform the site manager immediately, of the documents and the action taken
- → To keep an up-to-date record of works on site, as they relate to environmental issues in the site diary.
- → To be contactable by the public regarding matters of environmental concern during the construction phase.

Project Manager.

In addition to the ECO, the Project Manager will be responsible for the following:

- → All activities relating to the construction phase
- → Delegate activities in accordance with the EMP
- → Communicate design changes and technical issues to the team timeously
- → Ensure that all contractors are managing their team adequately and abiding by the conditions of the EMP and EA
- → Ensuring that the Contractors are aware of the conditions of the EMP and EA

Contractor

The Contractor (including sub-contractors) will be responsible for:

- → Familiarising themselves with the EIA and EMP
- → Complying with the EMP and EA commitments and any other legislative requirements as applicable
- → Adhering to any instructions issued by the Project Manager or the Safety, Health and Environmental (SHE) Officer, if applicable

- → Submitting an environmental report at designated site meetings on the environmental incidents that have occurred, if applicable
- → Arranging that all employees and those of the subcontractors receive appropriate training prior to the commencement of construction, taking cognisance of this EMP and EA

4.3. Site documentation and reporting

Site logbook

A logbook should be kept on a construction site for the purposes of recording on-site instructions and as a general record of environmental issues. The logbook should be kept for a minimum of two years after the activity is completed for the relevant authority to review if deemed necessary. A photographic record of before and after construction should also be kept for visual reference purposes. The logbook should also contain the following sections:

- → *Environmental Site Instruction*

The Environmental Site Instruction section will be used for the recording of general site instructions relating to the protection of environmentally sensitive or potentially impacted areas or features on the site as applicable, by the ECO / site manager / construction team.

- → *Site Diary*

The purpose of this section will be to record the comments of the ECO / site manager / contractor etc., as they relate to activities on the site. The diary should also hold the complaints register, received from onsite personnel and the general public, Environmental Incident Register, disposal certificates for waste and sewage, non-conformance information, and written corrective active instructions.

- → *Monitoring Section*

The purpose of this section will be to record the comments of the ECO / site manager / contractor, during construction, relating to the implementation of the mitigation measures as well as waste, recycling, landscaping and renewable energy measures used during the construction. The findings of all inspections and internal audits should be structured into instructive reporting, providing information to all responsible personnel. Corrective actions must be clearly defined where required. Within the reporting function a structured review component will be enforced. This review function will assist in prescribing necessary corrective actions. During construction, the ECO / Project management team, will be responsible for onsite monitoring to ensure that the contractor abides by the conditions of the EA and EMP.

The Environmental Authorisation (EA) as well as a copy of the approved Environmental Management Plan (EMP) for Construction, should also be accessible on site at all times.

5. ENVIRONMENTAL AWARENESS

It is important to ensure that the contractors and employees associated with the proposed activity receive the appropriate level of training and awareness to ensure that continual environmental due diligence and conservation is applied at all levels of work carried out on site. Employees, contractors and sub-contractors must be made aware of their responsibilities in terms of relevant legislation, guidelines, as well as this EMP and EA.

The environmental conditions should be included in the contracts issued to the contractors, making them aware of the potential environmental impacts and risks associated with the proposed development as well as what measures are expected of them whilst conducting work on site. The importance of implementing the conditions in the EMP and the necessity of good housekeeping practices, will be made known to the contractors and employees.

5.1. Aim of the Environmental Awareness Plan

- → Promote environmental education and conservation on site.
- → Inform employees and contractors on the applicable environmental procedures and plans.

5.2. Environmental Awareness Training and content

- → All personnel should undergo induction, which as a minimum should include Safety, Health and Environmental awareness.
- → All attendees should sign an acknowledgement register upon receiving and understanding the induction
- → Construction and operational staff should be trained on the implementation of emergency procedures where applicable
- → Definitions as used in this EMP should be provided
- → How and why environmental protection is necessary, should be explained
- → Management measures required to prevent environmental impacts should be outlined
- → Emergency and spills response procedures should be outlined

Environmental conditions in the induction should focus on the following:

- → Good house-keeping practices
- → Air quality (Dust)
- → Waste Management
- → Odour/vermin Control
- → Proper use of sanitation facilities; and
- → Chemicals and materials storage, use and handling.

Environmental training should be implemented at the onset of the construction and can be done verbally or in written format. Proof of training should be kept on record.

6. LEGISLATIVE REQUIREMENTS

A Basic Environmental Assessment process was applicable in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) regulations (2014) (as amended). Appendix 4 of the NEMA EIA Regulations (GN. R982) sets out the minimum requirements for the drafting of an Environmental Management Plan (EMP). This EMP has been created in fulfilment of these prescribed requirements for the construction phase of the activity. The implementation of this EMP will be a condition of approval of the Environmental Authorisation (EA). Failure by the applicant, to comply with this EMP, will therefore constitute an offence, and the applicant and / or the appointed contractors can be held liable for penalties and / or legal action. It is therefore important that a copy of this EMP be issued to each contractor, preferably at the appointment stage, in order to allow for the costs of implementing the EMP, to be included in cost proposals. This will also ensure that the contractor is aware of his responsibilities prior to appointment and commencement. Each appointed contractor involved in the project, as well as the project manager (as applicable), will be required to sign for and thereby acknowledge contents of, the approved EMP and therefore abide by the specifications of the document and any amendments thereto.

Other applicable legislation

The Constitution of The Republic of South Africa (Act 108 of 1996)

The Constitution of the Republic of South Africa states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

National Environmental Management Act (Act 107 of 1998)

The National Environmental Management Act (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the relevant competent authorities. NEMA is a National Act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEA&DP).

National Environmental Management: Biodiversity Act (Act 10 of 2004)

Chapter 4 of the National Environmental Management: Biodiversity Act, 2004 (NEMBA) deals with threatened and protected ecosystems and species. The need to protect listed ecosystems is addressed (Section 54). Section 73 deals with Duty of Care relating to invasive species, while Section 76(2) calls for development of invasive species monitoring, control and eradication plans by all organs of state in all spheres of government, as part of environmental management plans required in terms of Section 11 of NEMA.

National Environmental Management: Waste Act (Act No. 59 of 2008)

The National Environmental Management: Waste Act (NEM:WA) provides for specific waste management measures (disposal and storage) and the remediation of contaminated land.

National Environmental Management: Air Quality Act (Act No. 39 of 2004)

Section 32 provides provision for the control of dust, section 34 provides provision for the control of noise and section 35 provides provision for the control of offensive odours, all which may be experienced during the construction or operation of an applicable development.

Environment Conservation Act (Act No. 73 of 1989)

The Environment Conservation Act (ECA) provides provision for the prevention of littering by employees and subcontractors during construction and the maintenance phases of development.

Occupational Health and Safety Act (Act No. 85 of 1993)

Section 8 outlines the general duties of employers to their employees and section 9 outlines the general duties of employers and self-employed persons, to persons other than their employees.

Hazardous Substances Act (Act No. 5 of 1973)

This Act provides for the definition, classification, use, operation, modification, disposal or dumping of hazardous substances.

7. CONSTRUCTION PHASE IMPACTS AND MITIGATIONS

7.1. Freshwater Mitigation Measures

Construction phase

Impact 1 - Disturbance Of Wetland Habitat

- → Clearly demarcate the edge of the development footprint of each accommodation area using Weather-proof markers for the full duration of the construction phase and ensure that construction activities are limited to within the designated area

Impact 2 - Alteration of flow regime

- → Mitigation not applicable / required

Impact 3 - Increased sedimentation

- → Limit the construction phase to the dry summer months when rainfall is at its lowest
- → Make use of “stilt” or “pillar and beam” type foundations where the structure of accommodation units will be built on an elevated platform placed on top of the raised pillar/stilt foundations
- → Minimise the time that exposed soils are potentially exposed to the elements (as far as practically possible);
- → Cover all soil, sand and stone stockpiles with plastic sheeting to ensure that the stockpiles are protected from rain.
- → Actively repair any erosion runnels and prevent any sediment-laden run-off from exiting the construction through placement of sandbags or similar; and

- → Immediately after construction of the buildings and associated infrastructure is complete, revegetate any exposed areas with locally occurring indigenous plant species.

Impact 4 - Water quality impairment

- → Undertake the construction project during the dry summer months and ensure that all construction vehicles and machinery cease from operating during the rainy winter period.
- → Make use of "stilt" or "pillar and beam" type foundations where the structure of accommodation units will be built on an elevated platform placed on top of the raised pillar/stilt foundation.
- → Ensure that all construction machinery and vehicles are checked for oil leaks and are in good working order before being permitted onto the development site;
- → Use drip-trays at all times when operating petrochemical driven construction machinery (e.g. generators and cement mixers);
- → Use drip trays and other appropriate containment methods while refuelling of vehicles and machinery;
- → Demarcate an area for the refuelling of machinery and vehicles (this is recommended to be at the existing farm shed);
- → Ensure that hazardous substances and chemicals are stored in a contained, impermeable area which has the capacity to contain at least 110% of the total volume of stored substances.
- → Store cement is a secure weather-proof area (e.g. shipping container) and ensure that used cement bags are placed in plastic bin-bags prior to placement in the on-site solid waste storage area; All cement batching on the site must be undertaken on impermeable and bunded batching boards to ensure cement slurry is contained; and
- → Any cement residues and concrete waste within the construction site must be removed at the end of every working day and disposed of as rubble.

Impact 5 - Loss of biota

- → Clearly demarcate the edge of the development site using weather-proof markers for the full duration of the construction phase;
- → All watercourses / wetlands must be off-limits to construction workers, vehicles and machinery unless authorised by the ECO); and
- → Keep construction material stockpiles as far from the wetlands and drainage lines as possible and where possible do not place these immediately upslope of any of the hillslope seeps.

Operational phase

Impact 1 - Alteration of flow regime

- → Collect rainwater off the roofs of the dwellings and store the water in rainwater tanks for domestic use.

Impact 2 - Erosion and Sedimentation

- → Collect rainwater off the roofs of the dwellings and store the water in rainwater tanks for domestic use.

Impact 3 - Water quality impairment

- → Ensure that the conservancy tank is appropriately sized (input should be obtained from a professional civils engineer and the calculation endorsed by the municipality).
- → Formalise an operational agreement between the owner/s and the municipality/3rd party contractor that specifies the timing of tank emptying; and
- → During the operational phase, monitor the site for any odorous liquids possibly being associated with a leaking sewerage system.

Impact 4 - Loss of biota

- → Ensure that the conservancy tank is appropriately sized (input should be obtained from a professional civils engineer and the calculation endorsed by the municipality).
- → Formalise an operational agreement between the owner/s and the municipality/3rd party contractor that specifies the timing of tank emptying; and
- → During the operational phase, monitor the site for any odorous liquids possibly being associated with a leaking sewerage system

7.2. Botanical and Terrestrial

The following mitigation is considered feasible, reasonable and essential:

- → All invasive alien vegetation on the property must be removed within three years of any project approval, using proper methodology (see Martens et al 2021. Annual alien vegetation removal around all new units must be undertaken, so that these sites do not act as sources of alien spread.
- → No plant species that are not locally indigenous may be planted around any of the new units.
- → Rubbish, building rubble and household refuse must not be stored or disposed of outdoors on any of the sites as this may encourage spread of alien invasive Argentine ants. Rubbish and refuse should be kept indoors for responsible disposal later, and building sites should be kept as free of rubble and building material as far as is possible, during construction and operational phases.
- → Firebreaks should be brush cut annually around all isolated units, using handheld brush cutters. These firebreaks should extend from the edge of the building platforms outwards for at least 5m, and this brush cutting will then at least partially simulate regular fires in these areas within 5m of the buildings, whilst minimising likely fire damage to the infrastructure.

7.3. Faunal Impact Assessment mitigation measures

Mitigation suggestions for nocturnal insect SCC (1-10) and diurnal insect SCC (8-10):

1. Switch lights off when not needed
2. Add timers / sensors to lights
3. Make lights activated by movement
4. Add shields to lights
5. Make lights shine downward, or direct only to where needed
6. Use long wavelength red or amber lights / filtered amber LED, with no blue / minimal green light for outdoor lighted areas
7. A lighting plan should be developed to ensure that the impact of night lights is kept to an absolute minimum
8. Clearing of indigenous fynbos vegetation should be kept to an absolute minimum
9. Avoid the establishment of invasive species
10. Avoid trampling of natural fynbos vegetation surrounding developments

The additional faunal mitigation measures are recommended, organised to address specific types of faunal populations and impacts

1. **Reducing potential landscape connectivity and large mammal behavioural impacts**

The following table outlines recommended mitigation measures to manage potential impacts on landscape connectivity and large mammal behavioural patterns during all phases of the project.

Impact Category	Project Phase	Mitigation Measure	Objective
Landscape Connectivity	Pre-construction	Locate infrastructure outside CBA1 and ESA1 zones wherever feasible.	Minimize direct habitat loss in critical connectivity zones.
	Pre-construction	Designate and map natural movement corridors prior to finalizing development layout.	Ensure corridors are preserved in planning.
	Construction	Maintain broad undeveloped buffer zones around natural corridors.	Retain functional landscape linkages during construction.
	Construction	Minimize construction footprint and avoid unnecessary vegetation clearance.	Reduce habitat fragmentation.
	Post-construction	Restore temporary construction areas with indigenous vegetation.	Rehabilitate affected habitats and corridor function.
	Post-construction	Incorporate wildlife-friendly fencing designs where fencing is required. Avoid fencing as far as possible	Facilitate safe animal movement across the site.
Animal Behavioural Responses	Pre-construction	Schedule high-disturbance activities (e.g., bulk earthworks) outside of sensitive wildlife periods (e.g., breeding seasons).	Reduce stress on sensitive species before activity begins.
	Construction	Limit noisy or disruptive activities to daylight hours only.	Minimize disturbance to crepuscular and nocturnal species.
	Construction	Establish clear, enforced no-go zones for construction crews within or adjacent to key habitat corridors.	Prevent unintended disturbances near sensitive areas.
	Post-construction	Implement visitor education programs promoting low-impact recreation practices.	Reduce cumulative behavioral disturbance from tourism.
	Post-construction	Monitor large mammal activity patterns (e.g., camera trapping) to detect shifts in behaviour or corridor use.	Inform adaptive management to address emerging impacts.
	Post-construction	Manage tourist flows spatially and temporally (e.g., restrict access during dawn/dusk in sensitive areas).	Minimize disturbance during critical wildlife activity periods.

2. Mitigation specific to Striped Flufftail

The following table outlines recommended mitigation measures to manage potential impacts on Striped flufftail.

Impact Category	Project Phase	Mitigation Measure	Objective
Habitat Loss	Planning & Design	Avoid development in seepage zones and dense fynbos patches known to support Striped Flufftail. Move development sites out of 30 m buffer zone (Sites 2, 3, 5, 26 and 27)	Preserve core breeding and foraging habitat.
Habitat Fragmentation	Planning & Construction	Maintain ecological corridors and a minimum 30 m buffer zone around sensitive wetland microhabitats.	Ensure landscape connectivity and reduce isolation of suitable habitat patches.
Disturbance from Construction Noise	Construction	Restrict construction near sensitive habitat to the non-breeding season (November-April); limit construction to daylight hours.	Minimize interference with calling, nesting, and foraging activity.
Fire Regime Disruption	Operation & Maintenance	Implement a rotational fire management plan preserving unburned refugia; avoid hot burns in seepage zones.	Sustain habitat structure needed for cover and breeding.
Erosion and Runoff	Construction	Use sediment traps, contour berms, and redirect runoff away from seepage zones during site preparation and construction.	Protect microhabitat quality and prevent siltation of breeding wetlands.
Artificial Lighting	Operation	Install low-intensity, downward-shielded lights and avoid lighting near wetland and dense fynbos zones.	Reduce nocturnal disturbance and preserve natural activity cycles.
Recreational Disturbance from Birdwatchers	Operation	Prohibit the use of playback (acoustic luring) within designated sensitive zones through signage and visitor briefings.	Prevent acoustic stress and disruption to natural calling, breeding, and territory establishment.
Long-Term Monitoring	Operation	Conduct periodic acoustic and camera trap surveys to confirm presence and assess population trends post-construction.	Evaluate effectiveness of mitigation and allow adaptive management.

3. Mitigation specific to amphibians

The following table outlines recommended mitigation measures to manage potential impacts on amphibians.

Impact Category	Project Phase	Mitigation Measure	Objective
Habitat Destruction (Seepage Zones)	Planning & Design	Exclude infrastructure from wetland areas and natural drainage lines; buffer of at least 30 m maintained around any seepage areas.	Protect critical breeding and foraging microhabitats.
Breeding Habitat Degradation	Construction	Avoid any earthworks or vegetation clearance in potential amphibian habitats during the breeding season (late winter to spring).	Prevent loss of egg-laying and tadpole development areas.
Water Quality Impacts	Construction	Prevent chemical and sediment runoff into aquatic habitats by installing erosion controls and avoiding use of herbicides nearby.	Maintain water quality essential for larval development.
Artificial Lighting	Operation	Minimize night lighting near wet zones with motion sensors or full shielding.	Prevent disorientation and alteration of amphibian activity cycles.
Disturbance from Recreation	Operation	Prevent foot traffic, picnicking, or construction of trails through sensitive seepage habitats.	Reduce habitat trampling and stress to frog populations.
Fire Regime Alteration	Operation & Maintenance	Maintain natural fire cycles at appropriate intervals, avoiding hot fires in known wetland/seep areas.	Sustain post-burn recovery of wetland vegetation and invertebrate prey.
Population Monitoring	Operation	Implement seasonal call surveys post-development to detect persistence or declines.	Assess success of mitigation and adjust practices if necessary.

4. Mitigation specific to insects

The following table outlines recommended mitigation measures to manage potential impacts on insects.

Impact Category	Project Phase	Mitigation Measure	Objective
Microhabitat Disturbance	Planning & Construction	Avoid fynbos clearing in known or likely habitat patches (south-facing slopes, grassy mosaics, restio-dominated areas).	Conserve host plants and breeding sites.
Artificial Light Pollution	Operation	Use amber-spectrum or motion-controlled lighting; eliminate unnecessary lights in nocturnal insect habitats.	Reduce disorientation and mortality from light attraction.

Impact Category	Project Phase	Mitigation Measure	Objective
Host Plant Loss	Construction	Identify and preserve endemic/restioid host plants during vegetation surveys prior to clearing.	Protect essential larval resources.
Fire Management	Operation & Maintenance	Implement a patch-mosaic burning regime that allows refugia to remain during fire events.	Support insect recolonization and maintain habitat heterogeneity.
Post-development Monitoring	Operation	Conduct seasonal sweep-net surveys and visual assessments to track persistence of species populations.	Verify mitigation effectiveness and inform adaptive management.

7.4. Heritage mitigation

Regarding a proposed eco-tourism development on Farms 824, 826 and 887 near Villiersdorp, the following recommendations are made.

1. No archaeological mitigation is required prior to construction excavations commencing.
2. No archaeological monitoring is required.
3. Pending the exposure of significant new fossils (*e.g.* shelly invertebrates, well-preserved trace fossil assemblages) during construction, no further specialist paleontological studies are recommended here and there are no objections on paleontological heritage grounds to authorization of the proposed development (Almond 2024)

7.5. General construction phase impacts and requirements

7.5.1. Contractors camp
Responsibility – Contractor / ECO / owner

The contractor shall comply will all relevant laws and regulations concerning water provision, sanitation, wastewater discharge and liquid and solid waste handling and disposal during the construction phase. The contractor is referred to the requirements of the NEMA and the NEM:WA and related regulations. The contractor shall not locate the camp, or sanitation facilities, in any areas that can cause nuisance or safety hazards to surrounding land users, inhabitants or the general public. Suitable temporary toilet facilities should be provided to the construction team. These facilities should be emptied and cleaned on a regular basis by a registered contractor and the waste is to be removed by contractor to a registered facility. The contractor shall at all times carefully consider the machinery required for the desired task while minimizing the extent of environmental damage. The contractor shall keep construction campsites clean and tidy at all times. The contractor shall not leave domestic waste uncontained, and temporary storage shall be enclosed to keep out people and animals. No permanent domestic waste disposal shall be permitted. All domestic refuse is to be removed to an existing licensed landfill site. The contractor shall take specific measures to prevent the spread of veld fires, which may be caused by activities at the camp. These measures may include appropriate instruction of employees about the fire risks and the construction of firebreaks around the site perimeter, as required. The contractor shall prevent accelerated erosion from the construction campsite and shall not discharge polluted runoff into the environment. Adequate firefighting equipment shall be made available and maintained on site. the contractors camp should be located in area proposed for development, in order to reduce impacting undisturbed areas. No overnighting will be permitted at the contractors camp, unless specifically arranged or required.

Decommissioning of the campsite will involve removal of all compacted platforms, equipment machinery, tools, waste, etc.

7.5.2. Health and Safety
Responsibility - Project Manager / Contractor / ECO / owner

Correct Personal Protective Equipment (PPE) must be worn at all times by the personnel on site. Personnel must be trained on the use of PPE. The applicant will appoint one safety officer for the activities. Suitable warning and information signage should be erected at the commencement of construction. The handling of hazardous materials should only be done by trained personnel. Safety Data Sheets (SDSs) must be readily available for all hazardous substances on site and employees should be aware of the risks associated with any hazardous materials used. All provisions of the Occupational Health and Safety Act (Act No. 85 of 1993) must be complied with. In the event of an emergency relating to a hazardous substance, procedures detailed in the SDSs should be immediately implemented.

7.5.3. Fire risk management
Responsibility - Project Manager / Contractor / ECO / owner

The Applicant / Project manager / contractor should identify a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The Fire Officer shall ensure that there is basic fire-fighting equipment available on site at all times. Any fires should be reported to the fire officer immediately. No fires must be used to burn vegetation or for heating or cooking purposes, during construction. No smoking on the construction site should be permitted, unless in secure and predesignated areas.

7.5.4. Fuels and hazardous materials
Responsibility - Project Manager / Contractor / owner

Fuels and flammable materials are to be suitably stored, inside the contractor's camp or as appropriate. Impervious materials are to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks. Quantities of fuels and hazardous materials stored on site should be appropriate to the requirement for these substances on site.

Bulk fuel depots, if required, should be placed within bunded areas to prevent soil contamination in the event of leaks of spills. Bunded areas are to have a holding capacity equal to 110% of the largest fuel container. The relevant Health and Safety requirements for the hazardous materials and fuels should be kept on site in the event of an emergency.

7.5.5. Emergencies protocol
Responsibility - Project Manager / Contractor / owner

Fire: The fire officer / suitable other person, should be notified of any fires. Employees should be aware of the procedure to be followed in the event of a fire.

Hydrocarbon (fuel & oil) leaks and spillages: Employees should be aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the project manager / contractor. All vehicles leaking fuel or other liquids should immediately be removed to the maintenance area and repaired. In the event of a hydrocarbon spillage, the soil must be excavated and treated and adequately disposed. The necessary materials and equipment for dealing with spills and leaks are present on site at all times. The clean-up of sewerage spills

and any damage caused by the spill or leak shall be for the applicant's account. The applicant shall ensure that the Health and Safety officer is available for the duration of the construction period.

Raw Sewerage spills (from portable toilets): Employees are to be aware of the procedure to be followed for dealing with spills and leaks. All the necessary materials and equipment for dealing with spills and leaks are present on site at all times. The clean-up of sewerage spills and any damage caused by the spill or leak shall be for the Applicant's account or applicable contractor.

Sudden illness in member of team: emergency numbers should be readily available on site in case of a sudden illness or injury to a construction team member.

Snake bite: Emergency contact numbers must be kept on site in case of a snake siting or snakebite. A Snake Response Plan may be requested by the Health and Safety contractor is applicable.

7.5.6. Site Demarcation
Responsibility - Project Manager / Contractor / ECO / owner

Prior to any construction commencing, the boundaries of the site and / or the footprints of each dwelling should be appropriately indicated or fenced off by the contractor. Natural areas that should be retained should also be indicated at this stage. Following this, all construction works, as well as the storage or preparation of any materials must be within the demarcated boundaries of the construction zone. No Go areas are to also be demarcated at this stage. All areas beyond the direct footprint must be regarded as the No Go area.

7.5.7. Stockpiles
Responsibility - Project Manager / Contractor / ECO / owner

The contractor and / or project manager should identify sites for the stockpiling of building materials and excavated material. Stockpile sites should preferably be in areas with a gentle gradient. Stockpiles should be stabilised as required and monitored for dust blow and runoff / erosion.

7.5.8. General Wastes
Responsibility - Project Manager / Contractor / ECO / owner

Refuse refers to all construction debris (cement bags, rubble, timber, cans, nails, wire, spilt bitumen, glass, packaging, plastic, organic matter, etc.). Refuse generated during the construction phase should be stored in an appropriate area on site, should be watertight and wind proof, and removed on a regular basis for disposal at a permitted disposal site. Waste bins should be labelled for their designated use. No burning or burying of general refuse on site should be permitted. Recycling and sorting of waste, at the source, is encouraged. Disposal certificates should be kept.

7.5.9. Recreational / Eating areas
Responsibility - Project Manager / Contractor / ECO / owner

If construction workers are permitted to eat on the development site, other than within the contractor's camp, the Contractor shall provide adequate refuse bins at all such places and ensure that they are used. Bins are to be cleared on a daily basis. No rest areas are to be permitted in No Go areas.

7.5.10. Construction water
Responsibility - Project Manager / Contractor / ECO / owner

All cement effluent from mixer washings and run-off from batching areas, as well as other work areas, should be contained in suitable manner, these areas should be lined and allowed to dry from time to time in order to remove the solid materials. Care should be taken to prevent the runoff of construction water, to other areas on site or onto adjacent sites.

7.5.11. Equipment maintenance
Responsibility - Project Manager / Contractor / ECO / owner

All mechanical equipment and work vehicles which are present on site during construction, are to be stored, serviced and refuelled only at designated areas or within the contractor's camp. Within these areas drip trays and other impervious materials, for example plastic or metal sheeting, must be used to prevent contamination of the ground. The project manager may order the removal of equipment that is causing continual environmental damage, until such equipment has been repaired.

7.5.12. Stormwater Management
Responsibility - Project Manager / Contractor / ECO / owner

Due to the small-scale nature of the construction, a Stormwater Management Plan is not required. however, Stormwater should be monitored regularly to ensure no environmental risk or unmanageable load to the existing infrastructure. The contractor must take suitable measures to prevent erosion resulting from a diversion, restriction or increase in flow of stormwater caused by construction. The open space areas will be used for stormwater retention.

7.5.13. Topsoil Removal and Stockpiling
Responsibility - Project Manager / Contractor / ECO / owner

Where services are to be extended or houses erected, topsoil is to be removed from the work areas, stockpiled separately from subsoil, and must be stabilised within a day of stockpiling. In general, stockpiles should be convex at the top to promote run- off, so that water is not able to accumulate and result in leaching of nutrients from the soil. Stockpiling areas should be determined in consultation with the ECO and only for short term.

7.5.14. Erosion Control
Responsibility - Project Manager / Contractor / ECO / owner

Action should be taken to prevent erosion of soils on the construction site. Should any erosion be detected on site, the cause of such erosion should be identified, and appropriate remedial action must be immediately implemented.

7.5.15 Dust Control
Responsibility - Project Manager / Contractor / ECO / owner

Appropriate action should be taken to minimise the generation of dust on the site. This can be done by applying appropriate stabilisation materials, such as straw or mulch or watering of exposed areas. Suppression methods not involving water, are preferred as far as possible.

7.5.16. Construction Traffic Management
Responsibility - Project Manager / Contractor / ECO / owner

All construction vehicles which carry construction materials, must use sheeting or a suitable cover, to prevent loss of load during travelling or due to wind or rain. Any spills should be cleaned immediately.

7.5.17. Architecture / Design
Responsibility - Project Manager / Contractor / ECO / owner

The architecture and design of the dwellings will be done in line with the general trend of the area. The houses should be designed to be in line with the surrounding architecture and cape vernacular style common to the area. Neutral colour palettes should be used which blend into the surrounds.

7.5.18. Sustainable Building Guidelines and materials
Responsibility - Project Manager / Contractor / ECO / owner

The units should be designed in such a way as to create a sustainable living area. Ensure materials and orientation allow for an environmentally friendly design with lower operating costs, i.e natural ventilation, correct orientation, correct colours and roofing etc. Use recycled materials as far as possible.

Energy efficiency is also an important consideration and the following actions should be considered:

- → North orientation to ensure that as many well-used spaces face north as possible. Sun control is more difficult on East and West facing windows
- → Use of good insulation in the roof and walls to keep the inside temperature warm in winter or cool in summer
- → Solar water heaters to be included in the design phase
- → Suitable roof overhangs to let in the lower winter sun but provide shade from the summer sun
- → Sensible fenestration – let in the light and catch the winter sun, but not too much window area so that warmth or cool cannot be retained inside when needed. They can be combined with shading and reflecting devices - such as overhangs, screens, shutters, awnings, trees, planting and different glass types which will aid to control the amount, quality and time of daylight entering the building
- → Suitable ventilation for fresh air and cool breezes
- → Natural lighting through windows and light wells

Water conservation should be a priority. Rainwater tanks are recommended as far as possible. Optimally designed systems for grey water reuse should also be explored during the design phase in order to prevent the expense of retrofitting a system. Water wise and indigenous landscaping is recommended and will reduce the water costs associated with maintaining gardens. Permeable paving is to be used in areas where paving is required. Low flow shower heads and dual flushing systems should be fitted. Aerators on taps should also be fitted to reduce overall water demand.

Construction activities such as watering, mixing and cleaning should avoid water wastage. Dry brushing and trigger spray nozzles should be used. Reuse of construction water should also be implemented.

7.3.19. Site Clean Up and Rehabilitation
Responsibility - Project Manager / Contractor / ECO/ owner

The following actions should be implemented once construction has concluded:

- → The construction footprint should be restored to the natural contours of the ground and shall allow normal surface drainage, as far as possible

- → No foreign matter such as rubble, waste or hazardous material will be mixed with the topsoil or used to backfill excavation.
- → All temporary works within the construction footprint, including fences, access, roads etc. disturbed by construction, should be restored to their original condition, as far as practical.
- → Compacted soils within the construction footprint should be loosened by means of a plough or scarified to aid revegetation
- → Runoff and erosion, as a result of the construction phase, should be suitably managed to prevent long term impacts
- → All structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed
- → Vegetation cover (using species appropriate to the local area) in all areas disturbed by the works should be reintroduced, as required.

8. DESIGN CONSIDERATIONS

The followings aspects were taken into account regarding the construction types for the proposed tourism units:

- → Topography – All three farms are located on elevated, rocky and uneven terrain
- → The sites are located across the farm in remote areas not suitable for construction teams and large construction vehicles
- → Service infrastructure to the new units cannot be via already existing service infrastructure or municipal networks and therefore sustainable, off the grid options needed to be included.

As a result of the above, alternative construction and building methods will be implemented and were considered upfront in the project design process. Light steel frame construction will be used, with pillar / stilt foundation types applied to the uneven and / or rocky areas. Depending on the soil type and incline at each individual site, the units may be elevated above the rocky outcrops or extended over the landscape in the case of uneven inclines. This construction type limits the excavation required, extent of construction activities and general disturbance to the areas.

Examples of accommodation units and pillar / stilt foundations and vision for the proposal at Rusty Gate:

The use of these light steel frame construction types is the proposed method for construction of the units as it offers cost effective alternatives to other construction methods considered, of which the most significant include:

Transport and Logistics

Light steel frames are pre-manufactured and easily transported to the site, for on-site assembly. This addresses a number of challenges faced in other conventional construction methods, where large construction vehicles would be required with heavy loads etc. The offsite manufacturing considerably reduces onsite construction works and thereby reduces related construction impacts such as cement batching and mixing, establishment of construction camps, construction storage areas, risks of heavy machinery leaking fuels, waste management, trampling and activity sprawl which is experienced when using large construction teams.

Fast Build Times

Faster construction is possible when using prefabricated light steel frames as they arrive on site pre-engineered, and ready to use.

Comparative case studies for construction of similar type accommodation units shows that a weatherproof building can be erected within a week, and total construction projects including electrical wiring, plumbing, fittings, and finishes can be completed within a month. A regular brick and mortar structure takes considerably longer, needing foundation preparation, materials and construction teams.

Versatility

Steel can be prefabricated into any shape and used in a broad variety of ways in construction. Further to this a wide range of material options are available for roofing, wall cladding, insulation, flooring etc. for this type of construction. The versatility in design and materials assist in fire suppression and reduction in long term maintenance requirements when compared to conventional building designs.

Durability

Durability is a major consideration from a maintenance perspective during the commercial lifetime of the accommodation units. Steel structures are durable and require little maintenance, which reduces operating costs. It also provides sturdy structures to withstand adverse conditions severe weather, fire, decay, and pests.

In addition, materials for walls, floors and roofing can also be pre-selected to be flame retardant which is a critical consideration in a fire driven ecosystem.

Eco-friendliness

Steel buildings can provide excellent energy efficiency, especially when combined with other solutions. Airtight connections between steel parts create a completely sealed envelope for the building. Off the grid, renewable energy sources are also included in the design phase.

Cost-effective

Realisable savings for and from the above-mentioned benefits of light steel frame construction versus other methods is significant over the asset lifetime.

8.2. Accommodation types

The architectural designs of the proposed units have been chosen in order to achieve the following specific objectives:

Sustainability

The choice of "green" construction materials and methods is one of the primary decision criteria for the design of accommodation units. Electricity, potable water, and sewerage services make use of renewable and recycling technologies as far as possible to allow "off-the-grid" functioning of the units and minimal external service requirements. The use of flame-retardant materials is of critical importance to reduce the risk of damage due to fire. Minimising maintenance and operations cost of accommodation units during commercial lifetime will also be a significant factor in the choice of construction materials and methods.

Aesthetics

Aesthetics of the proposed development is of importance on two levels. Firstly, the structure and facades visible to the eye should blend in with- and/or complement the surrounding environment e.g., topography, geology, and flora. Secondly, structural design and layout should maximise the enjoyable experience of occupants e.g., large windows and French doors for view of the landscape, minimalistic and comforting interior design.

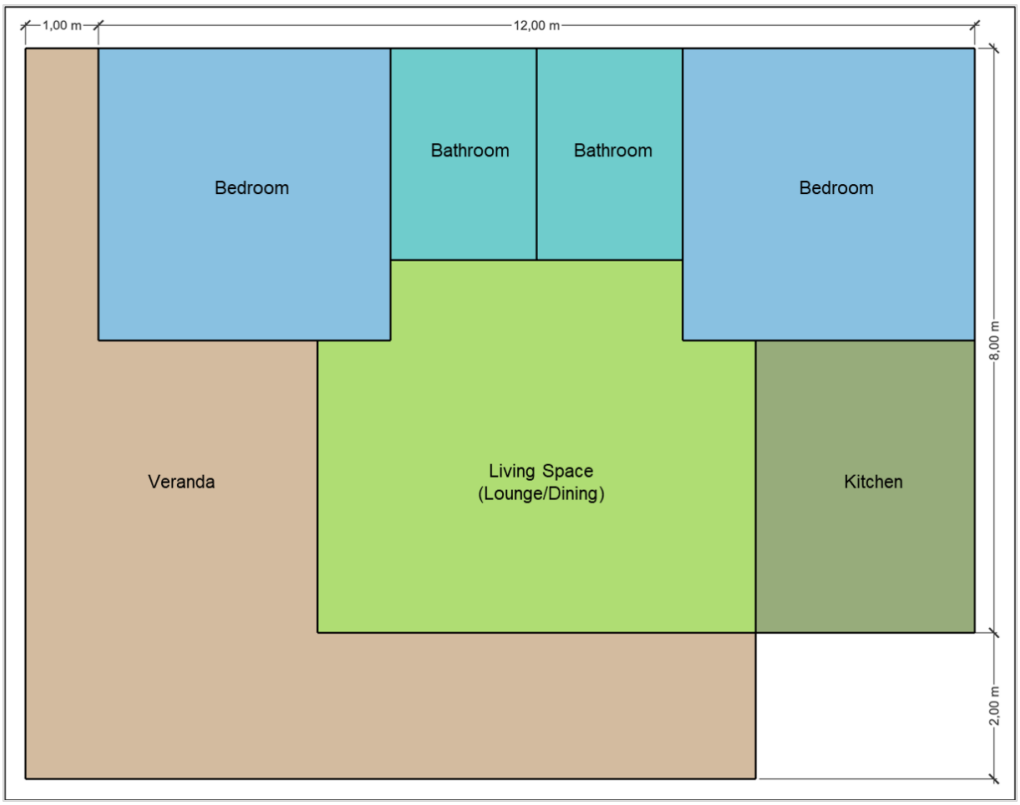
Ergonomics

As the locations of intended accommodation units will predominantly be on inclined planes and/or rocky outcrops optimal use of surface area will be of material importance to provide comfortable and functional guest accommodations on the smallest possible construction footprint. This will require smart design and layout of the units and placement of furniture, fittings, and appliances to create the illusion of space and maximising comfort and ergonomics.

The expansion of the accommodation offering at Rusty Gate will be through the addition of eco pods, eco cabins and camp sites. A new singe residential dwelling is also proposed.

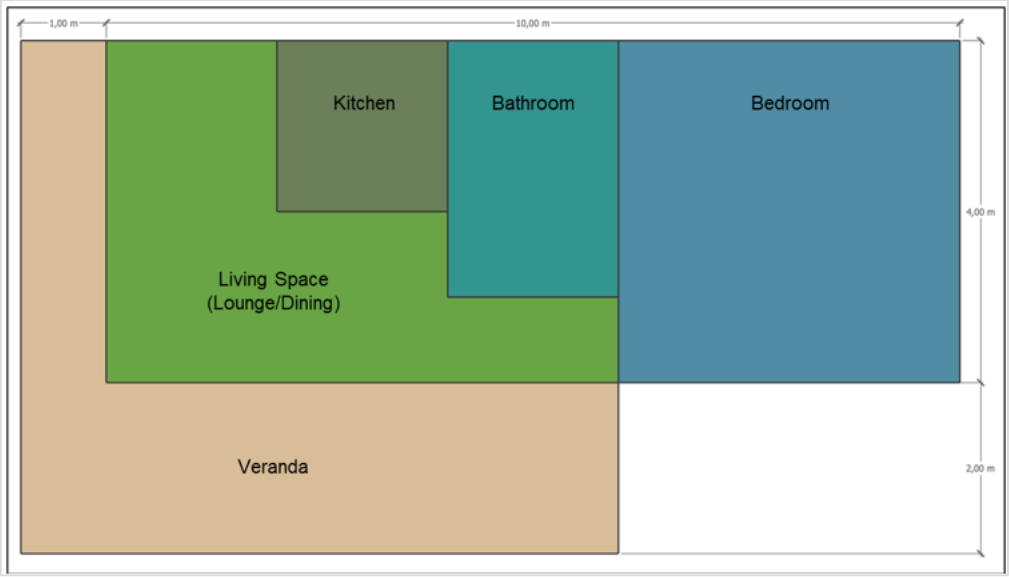
1. Eco cabins

Eco cabins will be suitable to small family units or groups of up to 4 people and will include 2 bedrooms with ensuite bathrooms and an open living area. The total floor area will be 84 m^2 with a 40 m^2 veranda, as follows:



2. Eco pods

Eco pods will be suitable for an individual or a couple, with one bedroom and ensuite and open living area. Total floor area will be 40 m^2 with a 16 m^2 veranda.



3. Campsite

The campsite layout will comprise three terraced platforms with two camp stands per terrace i.e. 6 sites in total. The slope of the campsite area varies between 10 and 20 % and therefore in order to provide level sites, the soils will need to be excavated to create an upper terrace on the west site and part of the middle terrace, the excavated material will be used as backfill for a lower terrace on the east side of the campsite.

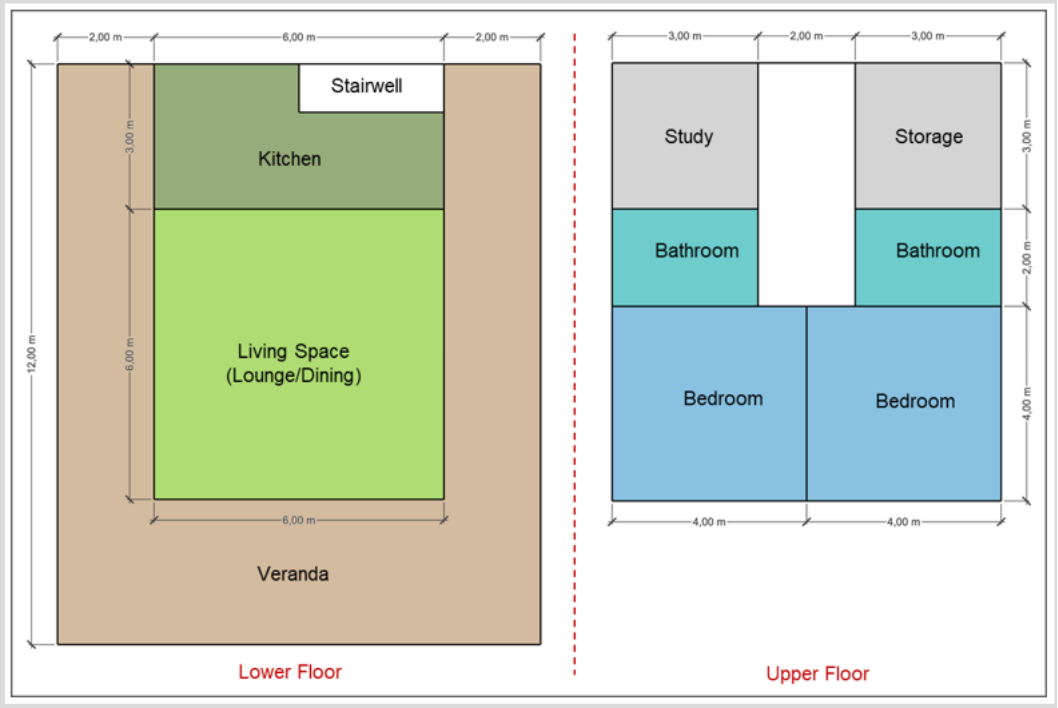
Kikuyu or similar grass will be planted on the sites to stabilise the disturbed soil and provide dust free camping. Access roads to sites on each terrace will be via 3 m wide gravel access track on the eastern side of each terrace.

Each camping stand will be 15 m x 15 m to allow for sufficient turning space of vehicle with off-road trailers or caravans. Each camping stand will be provided with individual ablutions and an adjacent "outside scullery" which will be located in a corner at the back of the stand. Ablutions will include a shower, basin, and toilet and the scullery will include a wash-up zinc and lockable cabinet to house gas geyser and cylinder, and solar power equipment to be protected from environment.

4. New dwelling

There is currently no main dwelling on the property and therefore the addition of this is proposed along with the expansion application. This accommodation will be occupied by the owners and / or manager at Rusty Gate. The preferred site is located on an incline and in order to minimise the direct footprints, the design includes a lower and upper floor. Total ground floor area will be approximately 120 $m^{2:}$

- → Lower Floor: Open living space and dining area with 36m^2 floor area, kitchen with 15m^2 floor area stairwell with 3m^2 floor area, wrap around deck with 64m^2 floor area, i.e., total floor area of maximum 120m^2.
- → Upper Floor: Two bedrooms with 16m^2 floor area each, two ensuite bathrooms with 6m^2 floor area each, a study with 9m^2 floor area, storage room with 9m^2 floor area, and stairwell passage with 10m^2 floor area, i.e., total floor area of 72m^2



9. COMPLIANCE AND MONITORING

9.1. Non-compliance

The Environmental Authorisation (EA) stipulates that, *"Non-compliance with a condition of this Environmental Authorisation and the EMP may render the holder liable to criminal prosecution."* It is therefore important that the conditions are adhered to as outlined in the EA and EMP. A Penalties scheme can be used during construction for transgressions.

Transgressions relate to actions by the contractor whereby damage or harm is inflicted upon the environment or any feature thereof and where any of the conditions or specifications of the EMP and EA have been infringed upon. In the instance of environmental damage, the damage is to be repaired and rehabilitated using appropriate measures, as far as possible and as directed by appropriate specialists, if required. These remedial

actions are for the account of the contractor or other guilty party as identified by the Project Manager, applicant or ECO. Where non-repairable damage is inflicted upon the environment or non-compliance with any of the EMP / EA obligations is registered, then the Contractor may face a monetary penalty to an amount specified by the Project manager / ECO. The Project manager / ECO reserves the right to implement a first offence warning.

If excessive infringement with regard to any of the specifications is registered, the applicant / project manager / owner reserves the right to terminate the contractor's contract.

Table 3. Penalties Scheme – to be reviewed by ECO if required

INFRINGEMENT	DESCRIPTION	PENALTY
Hydrocarbon / fuel spill	Penalty to be issued when remediations not implemented timeously	R 5000
Disturbance beyond approved footprint	Disturbance to vegetation beyond approved development sites	R 5000
Disturbance to watercourse / wetlands	Any disturbance to watercourses or wetlands not included in the EA	R 5000
Waste management	Inappropriate waste management	R 3000 dependent of extent
Not adhering to conditions of EA	Not attending to specific EA conditions	R 3000 + per condition

9.2. Environmental Control Sheets

Environmental Control Sheets to be used by the ECO on a weekly basis to monitor construction activities to ensure compliance with recommendations. The ECO should familiarise themselves with the full set of recommendations for the site and reasons for these recommendations, as well as understand the site and constraints analysis and be able to identify the constraints / No Go areas.

Table 4. Environmental Control Sheets

					RECORD OF PERFORMANCE		
TASK	**ACTION REQUIRED / MITIGATION & METHOD FOR IMPLEMENTATION**	**FREQUENCY**	**TARGET / OUTCOME**	**RESPONSIBILITY**	**COMPLETED YES/ NO**	**DATE**	**COMMENT**
PRE-CONSTRUCTION							
Procurement	→ EA and EMP to be distributed to contractor at tender stage to include costing incurred due to compliance with EA and EMP METHOD: Distribute with tender documents	As required	Contractors are aware of requirements in terms of NEMA and can budget accordingly	Developer Project Manager			
Environmental File	→ To include EA, EMP, site diary, public complaints section → To be updated on a regular basis → Public complaints register → Kept on site at all times METHOD: Issue all applicable documents to site manager	As required	Construction team(s) and general public can access relevant information as or when required	ECO Project Manager			
Environmental Awareness training and induction	- All contractors to attend briefing prior to commencement of site works - Register to be signed as proof of attendance METHOD: Briefing to be undertaken by project manager and / ECO	As required	Construction team(s) informed of all requirements in terms of EMPr and EA	ECO Project Manager			

Method Statements	- Contractors to submit MS seven working days prior to commencement on site - MS to contain clear methods for pollution control measures during construction including hazardous waste, run off, general waste etc. METHOD: Request for method statements to be contained in tender documents	As required	ECO and project manager to be well informed in terms of methods for construction	Contractor			
Site definition and demarcation	- Site survey and pegging - Site demarcation and fencing (mark construction areas – all other areas are No Go) - Access roads for construction vehicles to be clearly indicated, consideration to be given to turning circles - Review of specialist input to familiarise with mitigation measures - Buffer areas to be indicated and demarcated as No Go METHOD: Demarcation methods to be undertaken as outlined in EMP, suitable to the environment and semi-permanent to last as long as possible during construction phase, to be checked on a regular basis	As required and to be repeated on a regular basis in the event that demarcations shift or disturbed by operators, weather etc.	A well demarcated site Well-defined No-Go areas Well defined construction zones	ECO Project Manager Contractor			
Construction traffic	- All construction vehicles carrying materials must use cover sheeting to prevent loss of loads due to wind or rain - Maximum speed to be enforced	Duration of Construction	A safe working environment with minimal impact on No Go areas, minimal dust impact, minimal loss of load and minimal general public impact	Project Manager Contractor			

	- Movement of construction vehicles must be limited to approved haul and access routes and existing tracks METHOD: To be monitored by ECO and project manager as well as construction team leaders						
Emergencies protocol	- Staff to be aware of actions to be taken in the event of a natural or medical emergency - Applicable Health and Safety required in terms of OH&S Act METHOD: OH&S officer to be appointed, appropriate signage to be implemented	Duration of Construction	A safe working environment with minimal incidences	Project Manager Contractor			
Fire	- Fire Management recommendations to be implemented - Required firefighting equipment is available on site, and in working order - No open fires are lit on site without approval of the ECO and Site Manager METHOD: To be checked by the ECO and project manager and implemented by the contractor	Duration of Construction	A safe working environment with minimal incidences Action plan in the event of a fire	Project Manager Contractor			
Contractor's camp	- Contractor's Camp is located at the most suitable site as identified by the ECO and Site Manager, preferably in areas to be developed or used (i.e roads or development footprints) or already transformed areas	Duration of Construction	A well placed and functional contractors camp to minimise impacts on other areas on site	Project Manager Contractor			

	- Contractor team to be briefed regarding Do's and Don'ts of camp and site in general - Suitable toilet facilities are provided for all staff - Ablutions are to be restricted to the facilities provided - Toilets are to be kept in a hygienic condition and emptied regularly METHOD: Site to be determined in conjunction with project manager and ECO, to be well demarcated with appropriate signage, serviced and cleaned on a regular basis, checked by ECO						

CONSTRUCTION							
TASK	**ACTION REQUIRED / MITIGATION & METHOD FOR IMPLEMENTATION**	**FREQUENCY**	**TARGET / OUTCOME**	**RESPONSIBILITY**	**COMPLETED YES/ NO**	**DATE**	**COMMENT**
Topsoil removal and stockpiling	- Replaced immediately after works where required - Topsoil which is required to be removed from direct work areas, should be stockpiled separately from subsoil and reused as far as possible - Stockpiles should be suitably shaped to prevent leaching of nutrients, and stabilized, or dispersal by wind or rain - Stockpiles to be monitored for dispersal by rain and wind METHOD: Implement conditions outlined in EMP for stockpiling and topsoil removal	Duration of Construction	Reusable sand and soil stockpiles to facilitate rehabilitation of the site	Project Manager Contractor			
Earthworks	- Works to be restricted to construction area only - Bulldozer/ heavy machinery operators to be under constant supervision particularly at onset of works - Use and excessive movement of heavy machinery to be avoided in areas of environmental sensitivity or high erosion potential - Trenching to be undertaken in a phased manner	Duration of Construction	Minimal disturbance to sensitive zones, minimal disturbance to vegetation	Project manager Contractor ECO			

	- Fill material to be replaced in same work area from which it originated - Fill material to be compacted to its approximate original density METHOD: Construction zone to be clearly demarcated, instruction for stockpiling to be implemented, operators to be briefed prior to works						
Material handling, dispatching and storage	- Fuels and hazardous materials to be stored in suitably equipped storage areas in the Contractor's camp and approved by the ECO - Strict measures to be put in place for the use and storage of hazardous materials on site - Disposal to licenced facility only - These areas shall comply with fire safety requirements - Impervious materials are to be used to prevent contamination of the ground in the event of spillages or leaks - Construction materials spilled on public or private roads to be immediately cleaned - No storage other than contractor camp METHODS: Undertake regular inspections of areas and procedures	Duration of Construction	Minimal disturbance to sensitive zones including wetland areas and sensitive botanical sites Minimal incidences	Project Manager Contractor			
Stockpiles	- Sites for stockpiling as identified by the Contractor are to be marked on a plan, and approved by the ECO and Site Manager - Stockpiles must be suitably stabilized where necessary	Duration of Construction	Reusable sand and soil stockpiles to facilitate rehabilitation of the site	Project Manager Contractor ECO			

	METHODS: Undertake regular checks of stockpiles to ensure methods outlined in the EMP are implemented						
Waste management	- All waste to be stored in an appropriate contained area on site, and protected against wind, rain and animal dispersal - Waste to be removed on a weekly basis for disposal at a permitted disposal site - No burning or burying of refuse on site is allowed - Eating areas must be demarcated and provided with suitable refuse collection areas METHOD: Waste areas to be designed correctly and be wind and weatherproof and emptied on a regular basis	Duration of Construction	A tidy waste collection point which is serviced on a regular basis	Project Manager Contractor ECO			
Construction wastewater	- Careful runoff management will be required particularly during construction. No contaminated water should be allowed to seep into the ground or runoff the construction site towards watercourses and drainage lines - All runoff from batching plants, work areas and mixer washings to be contained in sedimentation ponds, which are suitably lined - Ponds must be allowed to dry out regularly, and solid waste removed and disposed of at a site approved by the local authority.	Duration of Construction	A clean site post construction	Project Manager Contractor ECO			

	METHOD: Wastewater areas to be suitably designed and inspected on a regular basis						
Maintenance of equipment	- All mechanical equipment and work vehicles to be stored, serviced and refuelled at designated areas in the contractor's camp - Major services to take place off site - Drip trays or impervious materials to be used to prevent contamination of ground METHOD: Regular inspections undertaken	Duration of Construction	A clean site post construction	Project Manager Contractor ECO			
Stormwater	- Suitable measures must be in place to prevent erosion resulting from diversion, restriction or increase in stormwater runoff - Measures must be taken to prevent stormwater from flowing from excavated areas or stockpiles - Stormwater containing harmful substances to be contained, and removed from site METHOD: Regular inspections undertaken	Duration of Construction	A clean site post construction, avoiding additional impact on surrounds	Project Manager Contractor ECO			
Erosion	- Stormwater channels are to be kept clear from soil and debris - Erosion or stormwater damage resulting from Contractor's operations to be suitably repaired - Suitable stabilization measures are to be implemented wherever	Duration of Construction	A clean site post construction, avoiding additional impact on surrounds	Project Manager Contractor ECO			

	works are taking place as outlined in this document - Where erosion is detected, suitable mitigation methods are to be employed as soon as possible METHOD: Regular visual inspections undertaken						
Dust	- Sand stockpiles are to be covered with Hessian, shade cloth or DPC plastic - Stockpiles are to be located in sheltered areas and the useable face to be orientated away from the prevailing wind - Excavation and transporting erodible material during high wind conditions - water dampening measures or cessation of activities should be required - If necessary, certain components of the work should be stopped until conditions are more favourable - Vehicles must not exceed 40 km/h along gravel roads - If roads generate unacceptable levels of dust, suppression measures should be introduced - If water is used only the critical areas should be watered by cart or hand to avoid unnecessary run-off, erosion or misuse METHOD: Areas and activities of possible dust generation to be	Duration of Construction	A clean site post construction, avoiding additional impact on surrounds, avoidance of impacts on general public	Project Manager Contractor ECO			

	inspected on a regular basis, as well as strategies to address dust						
Site clean-up and rehabilitation	- All structures, equipment materials and facilities are to be removed from site on completion of the project - Construction site shall be cleared and cleaned to the ECO's satisfaction - Site / Area Rehabilitation to be conducted in line with recommendations herein - Specialist advice to be sort where required - No waste or remaining materials to be buried on site METHOD: Inspected upon site closure / suspension of works, rehabilitation methods contained in EMP to be implemented	Duration of Construction	A functional ecosystem post construction, suitably rehabilitated as required	Project Manager Contractor ECO			
Specialist mitigation measures	- All mitigation measures, no go areas and recommendations made by the specialist team, must be implemented throughout construction METHOD: Verified throughout the construction phase	Duration of Construction	A healthy ecosystem post construction, suitably rehabilitated as required	Project Manager Contractor ECO			

10. ENVIRONMENTAL AUDITS

The purpose of auditing is to determine and monitor compliance with the EMP and EA, and measure its effectiveness in mitigating environmental impacts. In terms of Regulation 34 of the NEMA EIA Regulations, 2014, the holder of the EA must conduct environmental audits in order to determine compliance with the conditions of the EA and EMP. Environmental Audit Reports should be submitted to the Competent Authority or as stipulated in the EA. The audit reports should be prepared by an independent person. The audit report should also provide recommendations regarding the need to amend the EMP.

The objective of the environmental audit report is to:

- → Report on the level of compliance with the conditions of the EA and the EMP
- → Report on the extent to which the avoidance, management and mitigation measures outlined in the EMP, achieve the objectives and outcomes of the EMP
- → Identify and assess any new impacts and risks as a result of the activity
- → Evaluate the effectiveness of the EMP
- → Identify shortcomings in the EMP
- → Identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMP

An environmental audit report should contain the following:

- → Details and expertise of the independent person who prepared the environmental audit report
- → A declaration that the auditor is independent
- → An indication of the scope of, and the purpose for which, the environmental audit report was prepared
- → A description of the methodology adopted in preparing the environmental audit report
- → An indication of the ability of the EMP to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity as well as to ensure compliance with the provisions of environmental authorisation and EMP.
- → A description of any assumptions made, and any uncertainties or gaps in knowledge
- → A description of any consultation process that was undertaken during the course of carrying out the environmental audit report if required
- → A summary and copies of any comments that were received during any consultation process
- → Any other information requested by the competent authority.

Given the nature of the development proposed, environmental audits may be difficult to undertake, but should be done as far as reasonably and practically possible.

11. FIRE MANAGEMENT

Rusty Gate already implements various actions relating to fire management and fire emergency preparedness:

- → The current owners purchased Rusty Gate Mountain Retreat, including Farms 824, 826 and 887 in June 2019.
- → In early 2020, Rusty Gate joined the GOFPA (Greater Overberg FPA) and with their assistance assessed and implemented fire risk mitigation and management procedures on site
- → The property perimeter of Rusty Gate is approximately 13 km of which roughly half the length constitutes the boundary with Riviersonderend Nature Reserve. The northern boundary of approximately 4 km of Rusty Gate's property borders exclusively with the Riviersonderend Nature Reserve.
- → One of the major concerns already identified in 2020 is that the veld and vegetation on the farm and surrounding properties last burned in approximately 2010, resulting in substantial fuel build-up and increased wild-fire risk.
- → With the assistance of GOFPA, Rusty Gate actively engaged with Cape Nature from early 2020 to formalise a three-way firebreak agreement between the aforementioned parties and Boskloof Farm for collective management of and mitigation of wildfire risk, and specifically on the northern boundary of the property.
- → A formal Firebreak Agreement was drafted by Rusty Gate for approval by Cape Nature and Boskloof Farm. The Firebreak Agreement also included a request for controlled block burning of vegetation on Rusty Gate's property to reduce the fuel load and risk of uncontrollable wildfires.
- → By late 2021 Rusty Gate and Boskloof Farms were fully committed to the proposed Firebreak Agreement, but formalising the agreement was hampered by administrative and bureaucratic challenges at Cape Nature's legal department. Failure to formalise the proposed firebreak agreement led the three parties to a verbal agreement for the implementation of single fire break from Silverstream Dam (eastern extremity) via Rusty Gate to Boskloof Dam (western extremity) to be jointly maintained by the three parties and each party being responsible for the portion of the fire break on their land.

Principles of fire management which have been considered in this application:

Rusty Gate acknowledges that the proposed expansion of their tourism offering must include appropriate fire management strategies and prevent fire suppression. As such, the applicant is already in consultation with various specialists including Chris Martens (goFPA) and Sean Privett (Grootbos) regarding fire management and block burning on site to ensure that appropriate fire intervals are implemented and maintained during operations. It is important that the natural fire regime be allowed to proceed despite the proposed development. It is therefore proposed that an Integrated Fire and Alien Vegetation Management Plan be prepared for the site, as a condition of Environmental Authorisation. The principles of such a report, which are mostly already implement, include:

- → Implementation and maintenance of correctly planned fire breaks across the properties and at each new site
- → Allowance for natural fire regimes
- → Allowance for strategic block burning in line with specialist recommendations
- → Suppression of fires which occur at increased frequencies
- → Ongoing Alien vegetation clearing and management across the site

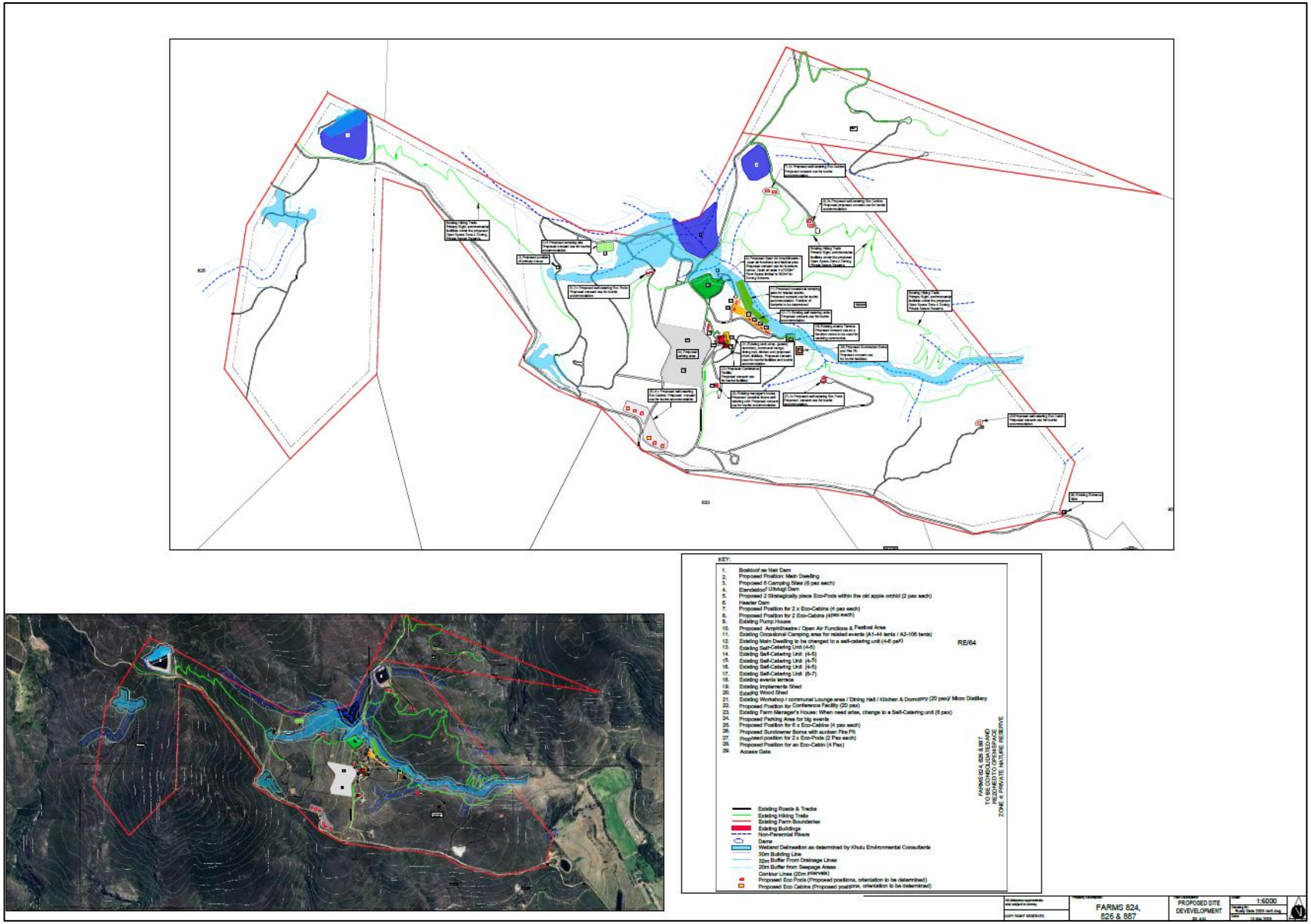
12. CONCLUSION

An EMP has been developed as part of the Basic Assessment process to ensure that mitigation and management measures are enforced during the construction phase of the development, and that the conditions of the EA are upheld. The EMP should guide all phases of the project to minimize possible negative impacts and assign responsibility for environmental controls. The EMP provides a tool to recognise the needs of the environment and is intended to be utilised in conjunction with the Environmental Authorisation.

13. DECLARATION OF CONTRACTOR'S ACCEPTANCE

I, _____ (name), representing _____ (company name), have read and understood the above Environmental Management Plan and hereby acknowledge its contents and requirements as a framework for my company's environmental performance during the applicable development.

Signed: _____ Date: _____


KEY:
1. Boskloof se Nek Dam
2. Proposed Position: Main Dwelling
3. Proposed 6 Camping Sites (6 pax each)
4. Elandsdoof Uitvlugt Dam
5. Proposed 2 Strategically place Eco-Pods within the old apple orchid (2 pax each)
6. Header Dam
7. Proposed Position for 2 x Eco-Cabins (4 pax each)
8. Proposed Position for 2 Eco-Cabins (4pax each)
9. Existing Pump House
10. Proposed Amphitheatre / Open Air Functions & Festival Area
11. Existing Occasional Camping area for related events (A1-44 tents / A2-106 tents)
12. Existing Main Dwelling to be changed to a self-catering unit (4-6 pax)
13. Existing Self-Catering Unit (4-5)
14. Existing Self-Catering Unit (4-5)
15. Existing Self-Catering Unit (4-5)
16. Existing Self-Catering Unit (4-5)
17. Existing Self-Catering Unit (5-7)
18. Existing events terrace
19. Existing Implements Shed
20. Existing Wood Shed
21. Existing Workshop / communal Lounge area / Dining Hall / Kitchen & Dormitory (20 pax)/ Micro Distillery
22. Proposed Position for Conference Facility (20 pax)
23. Existing Farm Manager's House: When need arise, change to a Self-Catering unit (6 pax)
24. Proposed Parking Area for big events
25. Proposed Position for 6 x Eco-Cabins (4 pax each)
26. Proposed Sundowner Borma with sunken Fire Pit
27. Proposed position for 2 x Eco-Pods (2 Pax each)
28. Proposed Position for an Eco-Cabin (4 Pax)
29. Access Gate
RE/64
FARMS 824, 826 & 887 TO BE CONSOLIDATED AND REZONED TO ONE USE ZONE: 4 PRIVATE NATURE RESERVE
Existing Roads & Tracks
Existing Hiking Trails
Existing Farm Boundaries
Existing Buildings
Non-Perennial Rivers
Dams
Wetland Delineation as determined by Khulu Environmental Consultants
30m Building Line
32m Buffer From Drainage Lines
20m Buffer from Seepage Areas
Contour Lines (20m Intervals)
Proposed Eco Pods (Proposed positions, orientation to be determined)
Proposed Eco Cabins (Proposed positions, orientation to be determined)
FARMS 824, 826 & 887
PROPOSED SITE DEVEVELOPMENT
1:6000