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AMENDED ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE

HARTLAND LIFESTYLE ESTATE DEVELOPMENT ON A PORTION OF THE REMAINDER OF THE FARM VAALEVALLEY 219, MOSSEL BAY WESTERN CAPE

APPLICANT:	Hartland Lifestyle Estate (Pty) Ltd
ENVIRONMENTAL CONSULTANT:	Sharples Environmental Services cc Primary Author: Michael Bennett
DEA&DP REF:	Original: EG12/2/1 - AM18 - Farm Valle Valley 219/10 (5382) Amended: 16/3/3/5/D6/29/0003/22 Addendum: 16/3/3/5/D6/29/0008/22 Amended: EG12/2/1-AM18-FARM VAALEVALLEY 219/B, MOSSEL BAY
SES REFERENCE NUMBER:	EIR/MSB/MS/36/SD/3/8/25
DATE:	3 February 2025

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APPENDICES

DOCUMENT DETAILS

Project Ref. No:	EIR/MSB/MS/36/SD/3/8/25
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Sharples Environmental Services cc Since 1998, SES has been actively engaged in the fields of environmental planning, assessment and management. We advise private, corporate and public enterprises on a variety of differing land use applications ranging from large-scale residential estates and resorts to golf courses, municipal service infrastructure installations and the planning of major arterials. Our consultants have over 20+ years of combined experience and we operate in the Southern, Eastern and Western Cape regions.

MICHAEL BENNETT (Environmental Assessment Practitioner, Report Reviewer):
Michael studied at the University of Cape Town completing a Bachelor of Science degree majoring in Environmental and Geographic Science and Ocean and Atmospheric Science. Michael joined SES in 2014 and has extensive experience in assessments and monitoring and has worked on a variety of technical projects Michael is registered with EAPASA as a certified Environmental Assessment Practitioner. See Appendix C for his curriculum vitae.

JOHN SHARPLES (Managing Director, Report Reviewer):
John started Sharples Environmental Services in 1998 and has overseen the company's growth and development since then. John also started the Cape Town office in 2010. John holds a Master's in Environmental Management from the University of the Free State as well as a Bachelor's degree in Conservation. He has consulted for 18 years running a team of highly trained and qualified consultants and prior to this gained 12 years of experience working for environmental organizations. John is registered with EAPASA as a certified Environmental Practitioner.

1. Introduction

Sharples Environmental Services cc (SES) was appointed by *Hartland Lifestyle Estate (Pty) Ltd* to undertake the amendment of the Environmental for the Residential Development on a portion of the Farm Vaale Valley 219, Mossel Bay (Hartenbos Landgoed II), now known as Hartland Lifestyle Estate.

The Environmental Authourastion (EA) was granted in terms of Section 22 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) and as such the EMPr dated March 2008, Ref: EIR/MSB/MS/36/SD/3/8 does not comply with Appendix 4 of the Amended Environmental Impact Assessment Regulation of 7 April 2017 (GN. R. 326).

This Amended EMPr therefore carries over the relevant content of the EMPr, dated March 2008 and has been updated to include the aspects of the amended EA and the requirements of an EMPr as per Appendix 4 of the NEMA EIA Regulations, 2017, as amended

2. About this EMPr

This document is intended to serve as the Environmental Management Programme (EMPr) for the Construction Phase activities as well as the rehabilitation phase.

This document provides measures that must be implemented to ensure that any environmental degradation that may be associated with the activities is avoided, or where such impacts cannot be avoided entirely, are minimised, and mitigated appropriately.

This EMPr has been prepared in accordance with the requirements of an EMPr as specified in Appendix 4 of the Environmental Impact Assessment Regulations, 2017 (as amended), and with reference to the "Guidelines for Environmental Management Programmes" published by the Department of Environmental Affairs and Development Planning (2005).

It is important to note that not only is the EMPr designed to manage the physical establishment of the development *per se*, but also as a tool which can be used to manage the environmental *impacts* of the development.

The rehabilitation, mitigation, management, and monitoring measures prescribed in this EMPr must be seen as binding to *The Applicant*, and any person acting on his behalf, including but not limited to agents, employees, associates, guests or any person rendering a service to the development site.

2.1. Important caveat to the report

In the past, some developments have had a devastating impact on the environment even though they have had Environmental Management Programmes in place, while other developments have had a low impact even though no management plans have been compiled.

The Implementing Agent and the attitude of the construction team play an integral role in determining the impact that the development will have on the environment. The ECO needs to ensure that all role-players are aware of the constraints that the EMPr places on the development and construction team and are prepared to be actively involved in enforcing these constraints. The end result relies on cooperation and mutual respect and understanding of all parties involved.

3. How to use this document

It is essential that this EMPr be carefully studied, understood, implemented, and adhered to as far as reasonably possible, throughout all phases of the activities. *The applicant* must retain a copy of this EMPr, and an additional copy must be kept on site at all times during the pre-construction, construction, and post-construction rehabilitation phases of the development.

This EMPr must be included in all contracts compiled for contractors and subcontractors employed by *The Applicant*, as this EMPr identifies and specifies the procedures to be followed by engineers and other contractors to ensure that the adverse impacts of construction and maintenance activities are either avoided or reduced. Appointed contractors must make adequate financial provision to implement the environmental management measures specified in this document.

This EMPr must be seen as a working document, which may be amended as and when needed, in order to accommodate changing circumstances on site or in the surrounding environment, or in order to accommodate requests/ conditions issued by the competent authority. Amendments to this EMPr must first be approved by the competent authority, in writing, before being implemented.

4. Location and Description of the Property

The Property is located approximately 2-km northeast of Hartenbos and about 2-km southwest of Little Brak River township

The railway line serves as the south-eastern boundary of the Property, with the ocean beyond that. The N2 National Road serves as the north-western boundary, with the old Hartenbos-Little Brak River road and tracts of zoned agricultural land on the other side of the N2 Road. The Little Brak River serves as the north-eastern boundary. Further north is the informal residential area of Power Town and the residential area of Little Brak River.

The Hartland Lifestyle Estate Phase I development serves as the southwestern boundary, with a host of smallholdings and the Hartenbos River. Beyond that, further south, is the residential area of Hartenbos.

Table 1: Property Details and Co-ordinates

Province	Western Cape		
District Municipality	Garden Route		
Local Municipality	Mossel Bay		
Ward number(s)	4		
Nearest town(s)	Hartenbos		
SG Code(s)	C05100000000021900011		
Co-ordinates of the farm(s):	Property	Latitude (S)	Longitude (E)
	RE/11/219	34° 6'25.12"S	22° 6'45.84"E
		34° 5'17.68"S	22° 8'4.06"E
		34° 5'30.13"S	22° 8'38.82"E
		34° 6'46.52"S	22° 7'29.76"E

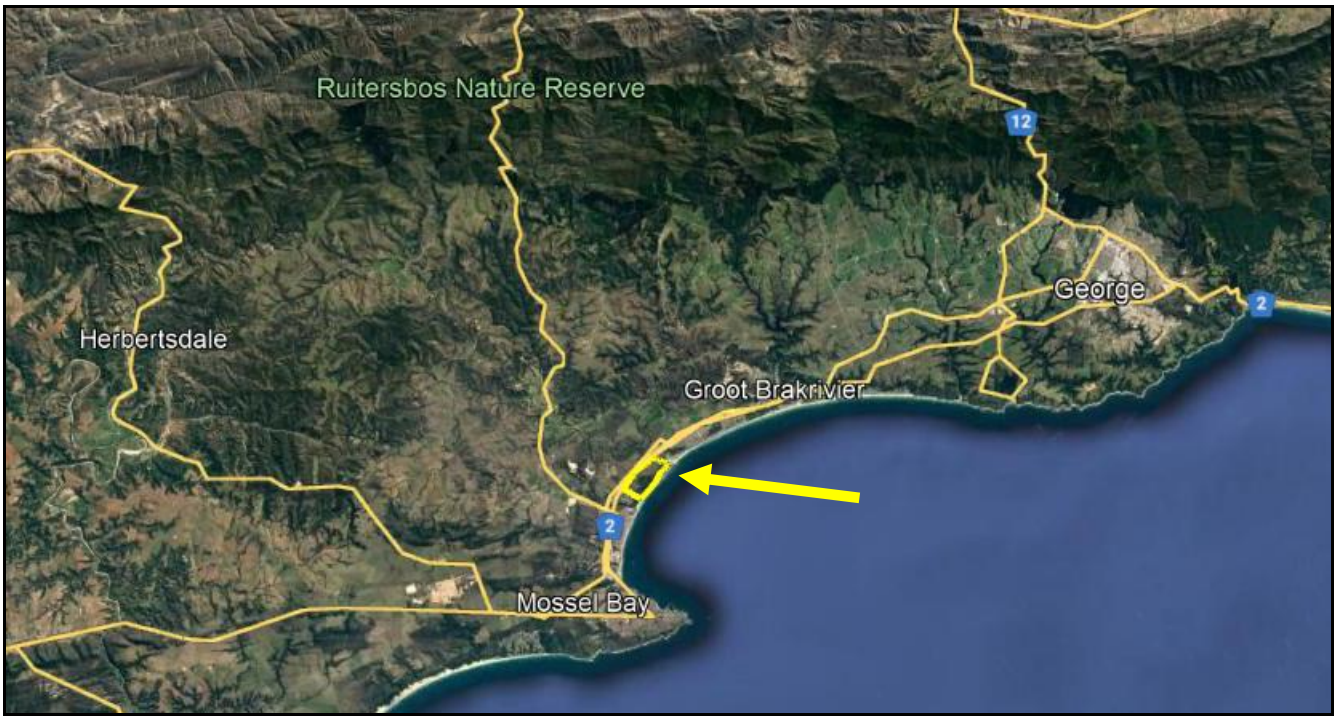


Figure 1: Locality of Vaale Valley 219, Mossel Bay

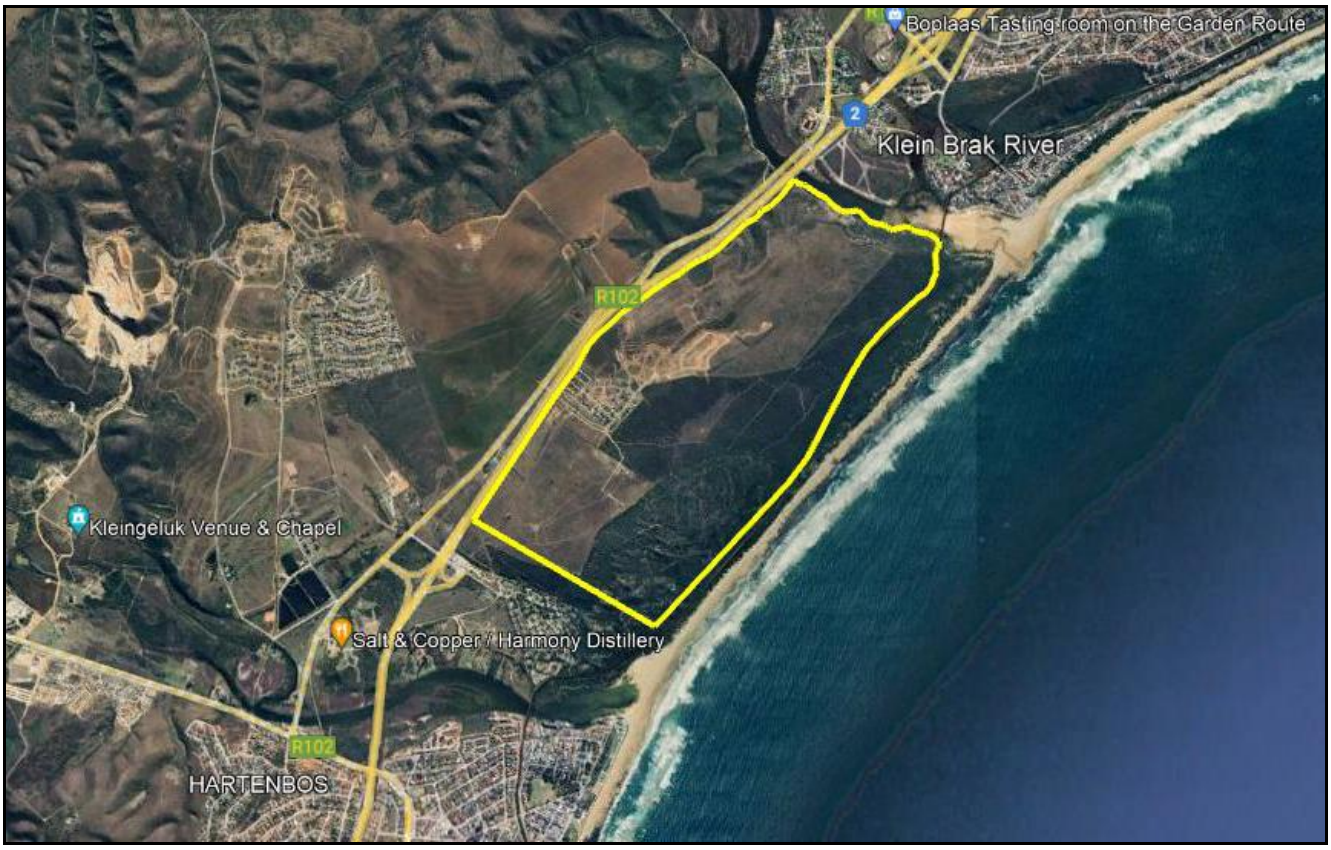


Figure 2: Vaale Valley 219, Mossel Bay

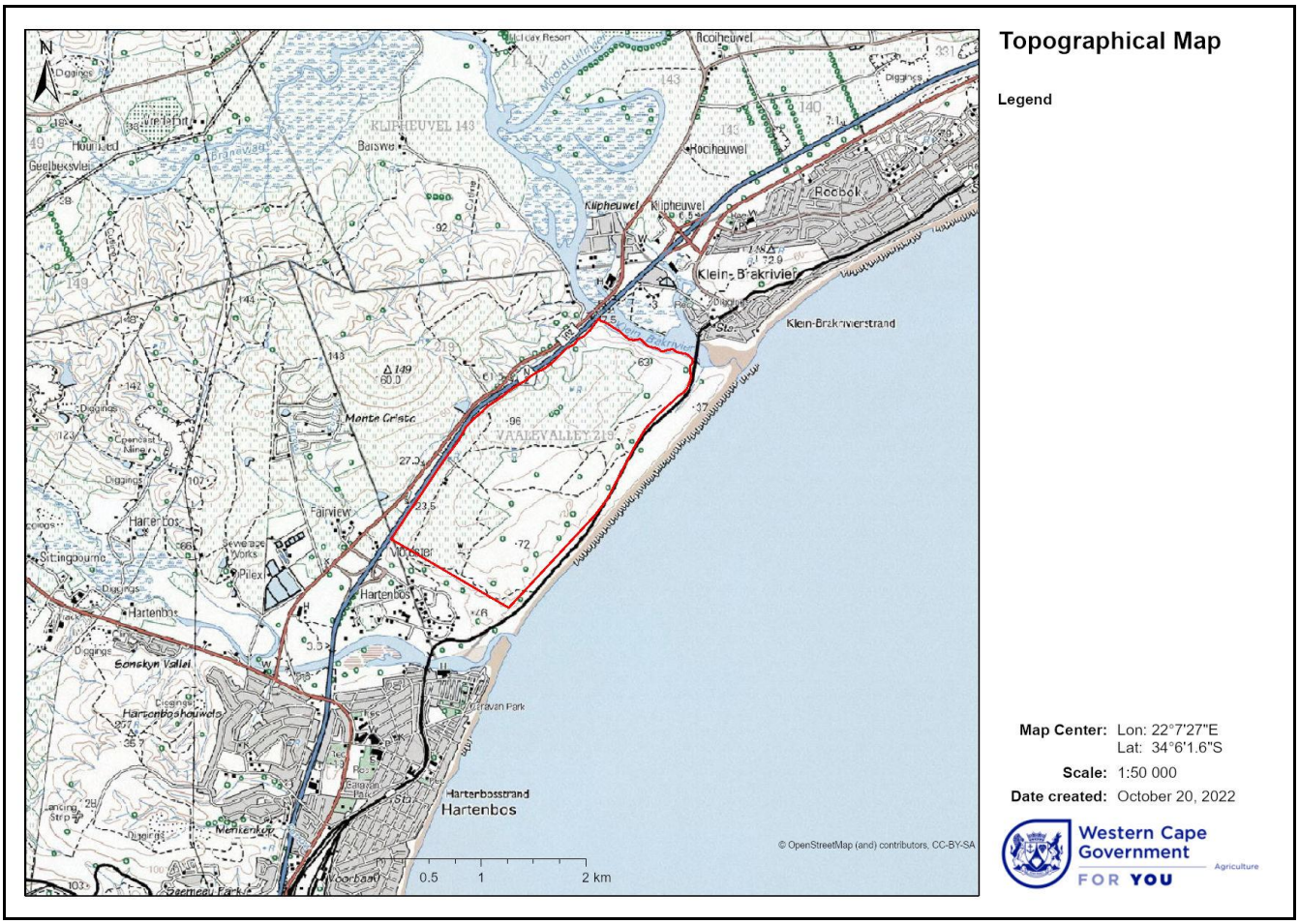


Figure 3: Topographical Map Vaale Valley 219, Mossel Bay

5. Description of the Activity

The proposed development consists of a telecommunication tower, total of 2288 Residential units made up of single residential erven and general residential (including 150 Social Housing units), a 0.88ha Business Zone, 3.24ha Community Zone (consisting of a school and sports field) and an Open Space of 235ha (excluding the internal Open Spaces), which will be- managed as a nature reserve, a road network and associated infrastructure services will be accommodated on the footprint.

The main access will be from through the New Vintage Development to the southwest of Hartland and the secondary access will be from the MR 344 through the culvert under the N2 National Road.

Water will be provided from the proposed new 15Ml reservoir that will supply both the proposed Hartland Lifestyle Estate and possible future developments in the area, in addition to a 5Ml reservoir and booster pump station.

Sewerage removal will be accommodated by means of a gravity sewer network in combination with sewage pump stations. The sewage will be pumped to a point near the north-western edge of the site from where it will gravitate and siphon to the Hartenbos Regional Sewage Treatment Works.

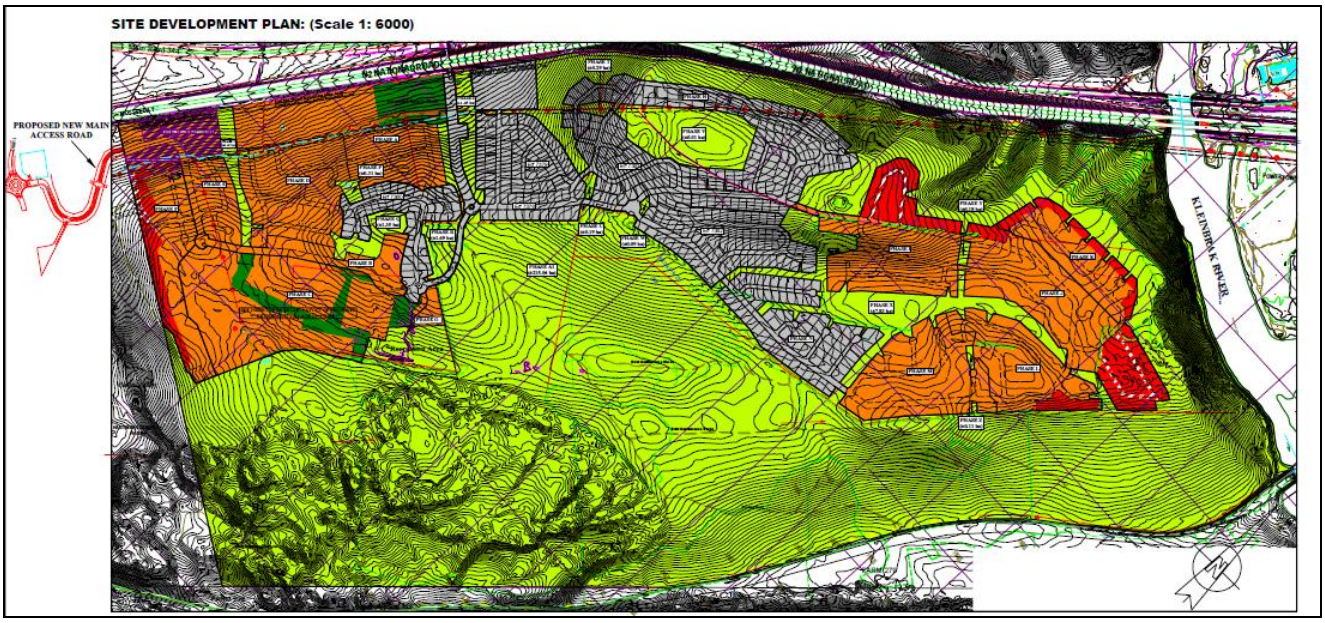


Figure 4: Site Development Plan

Figure 5: Locality of proposed Telecommunication mast

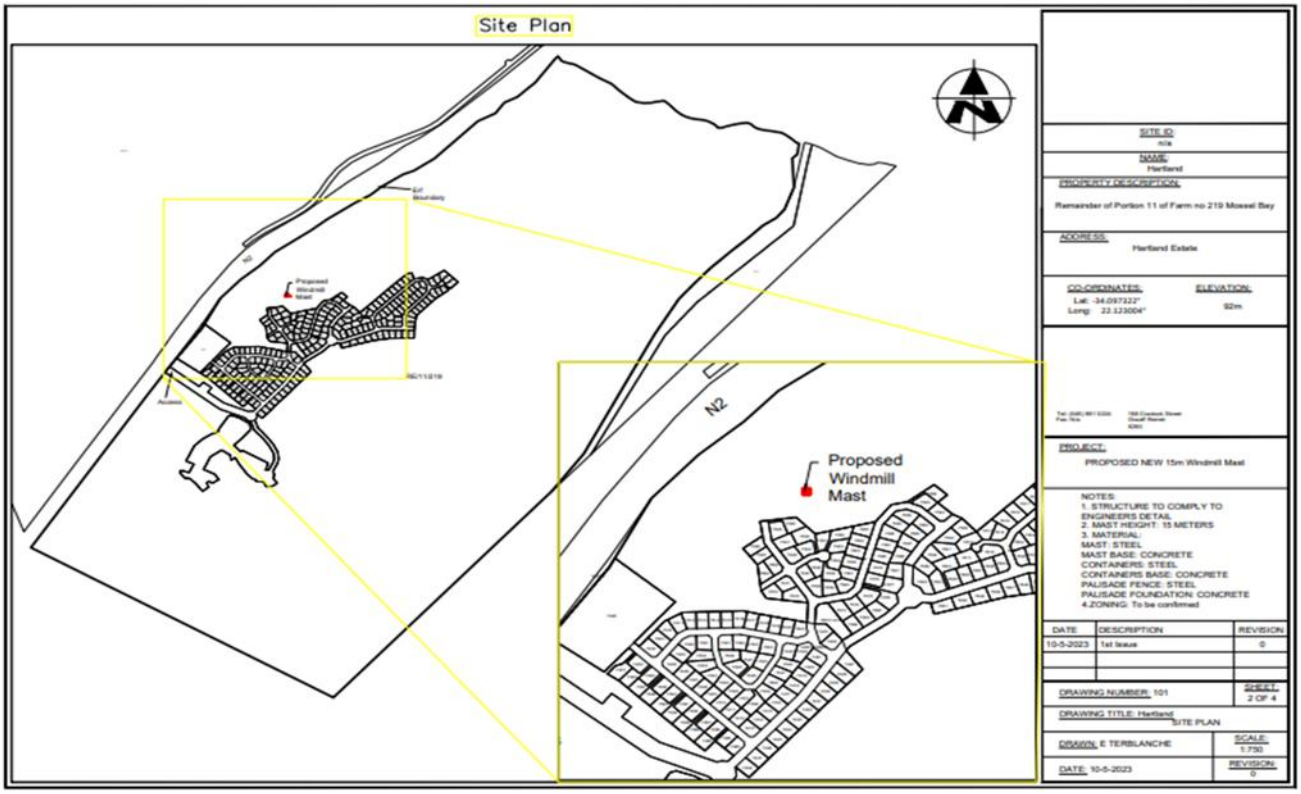


Figure 6: Proposed site plan for the telecommunication mast.

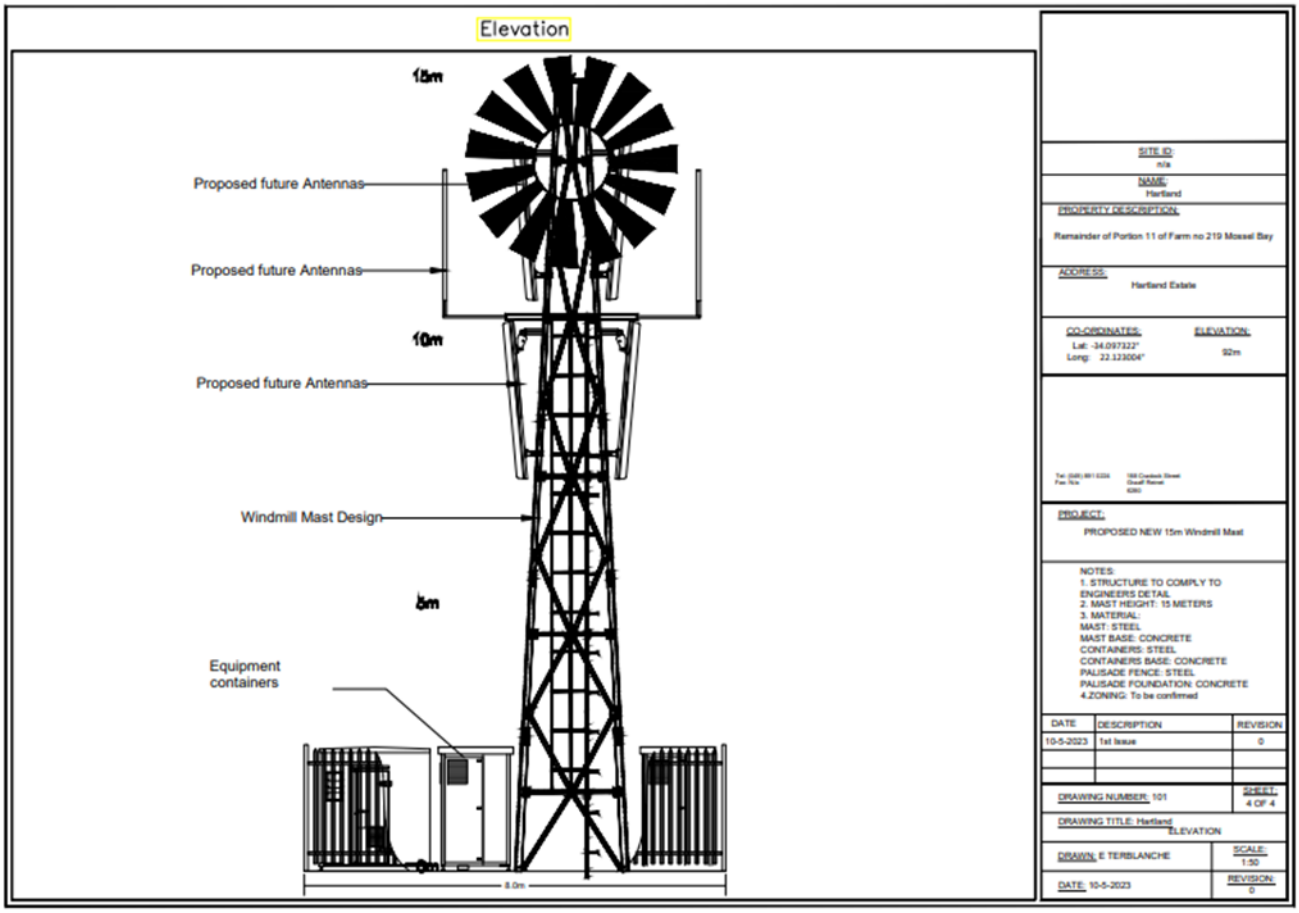


Figure 7: Elevation of Telecommunication Mast.

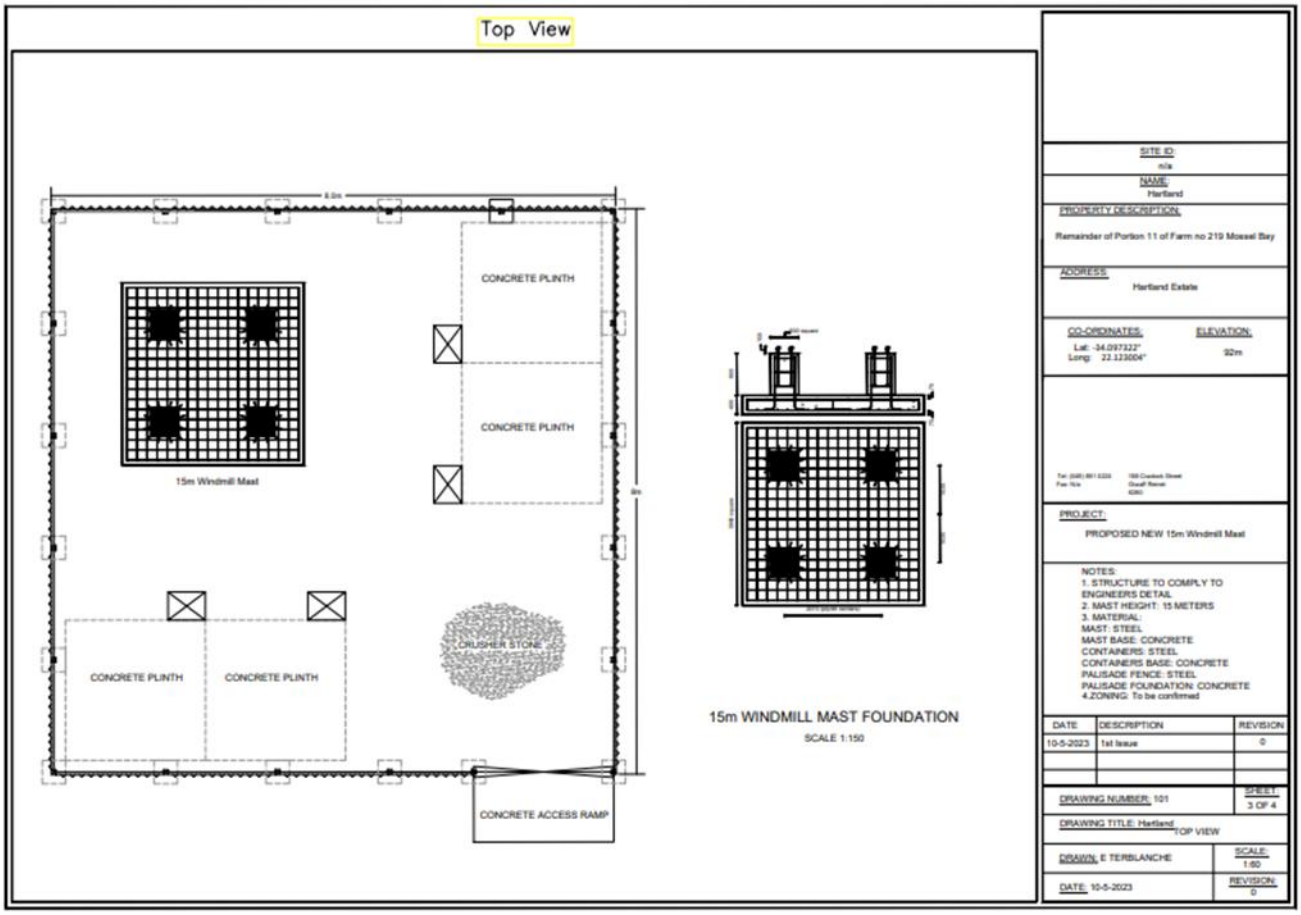


Figure 8: Top view of Telecommunication Mast.

Please refer to Appendix A for the full-sized layouts

6. Description Receiving Environment

Section 6.1 provides a description of the environmental aspects as determined by the initial EIR and as included in the EMPr dated March 2008. Section 6.2 provides the revised environmental aspects as described by the specialist's compliance statements as part of the substantive amendment of EA undertaken in 2022.

6.1. Biophysical Environment (2008)

According to Conservation Management Services, who compiled a Vegetation and Vertebrate Fauna Sensitivity Analysis for the entire property as part of the environmental assessment process, the vegetation of the property can be broadly differentiated into transformed and un-transformed habitats. According to Conservation Management Services the un-transformed areas consist largely of Thicket and Fynbos / renosterveld vegetation. In the report it is noted that Vlok & Euston-Brown (2002) described the vegetation, in terms of the STEP project, as Herbertsdale Renoster Thicket. This is actually a mosaic of Gouritz Valley Thicket within a Renosterveld matrix. In terms of the CAPE project (Cape Action Plan for the Environment), the vegetation of the area is mapped as Riversdale Coast Renosterveld and Stilbaai Fynbos / Thicket mosaic.

In terms of detailed on-site investigation, it is noted that the vegetation of the study area appears to be most accurately described as a Fynbos / Thicket mosaic. There is no clear distinction between Renosterveld and Fynbos in this area, but the vegetation matrix in which the Thicket is located is clearly more of a Coastal Fynbos than Renosterveld.

6.1.1. Vegetation Sensitivity Analysis

According to Conservation Management Services, the general sensitivity of the dominant natural vegetation type (Fynbos / thicket) lies in the fact that the sands of the area overlie limestone, which are limited on the study area. Two species indicative of lime-rich soils are Agathosma muirii, and Euchaetis burchelli. Both of these plant species, although not yet Red Data Book species, are threatened. Otholobium fruticans, a Red Data Book plant which is listed as vulnerable, is also as widespread on the study area. Another very rare plant identified by the Report is Delosperma virens, and the small population of no more than 100 plants is notable.

Conservation Management Services indicated that another critically endangered plant of the study area is Diosma aristata. The population found on the property is of great significance for the conservation of this species. Hawarthias parksiana was also noted, and this too is a listed Red Data species (endangered).

6.1.2. Vertebrate Fauna Survey

Conservation Management Services indicated that the fauna of the study area is typical of the thicket and fynbos covered South Cape coastal areas. The fauna is relatively intact, with the exception that many of the original larger mammal species were eradicated by the end of the 19th Century.

The following description of the fauna is per vertebrate faunal group:

Amphibians - The disturbed pasture area, thicket and Fynbos habitats and earth dams provide a limited range of suitable habitats for amphibians. Of the 16 species listed to occur in the area, Conservation Management Services could not confirm that the species were currently present.

Reptiles - The following is likely to occur in the study area: 3 Tortoises; 1 Chameleon; 21 Snakes; 5 Geckos, and; 11 Lizards. According to the Conservation Management Services, of the 43 species predicted to occur, 16 are endemic to the sub-region, most with small distribution ranges. Only 2 of the predicted species were confirmed.

Mammals - The pasture, thicket and Fynbos habitats potentially provide habitat for:

- 8 Insectivores (shrews, moles);
- 13 Chiroptera (bats);
- 2 Primates (monkeys);
- 1 Lagomorph (rabbits, hares);
- 16 Rodents (rats, mice);
- 9 Carnivores (cats, mongooses, otters), and;
- Ungulates (hoofed animals).

Only 5 of the 59 species were confirmed.

Birds - Birds are comparatively more mobile, than other animals and their presence does not necessarily indicate permanent residence or occupation. The earth dams on the study area support occasional water and wetland birds. The thicket habitats of the general area are important bird habitats and may contain: Chorister robin; Forest buzzard; Forest canary; Knysna warbler, and; Knysna woodpecker. The thicket habitats of the study area may also contain elements of bird fauna typical of coastal forest, Afromontane forest and thicket / fynbos ecotones. Of the 153 bird species predicted to occur in the general area, only 16 are confirmed.

6.2. Biophysical Environment (2022)

- Mark Berry was appointed to compile the Vegetation Compliance Statement.
- Robyn Phillips of Cossypha was appointed to compile the Terrestrial Biodiversity and Animal Species Compliance Statement.

- Dr James Dabrowski of Confluent aquatic consulting and research was appointed to compile the Freshwater Compliance Statement

6.2.1. Vegetation Compliance Statement

The study site is located in a coastal fynbos/thicket environment on the Southern Cape coastal plain. The indigenous species recorded in the vegetation adjacent to the site are typical thicket species, such as Searsia pterota, Sideroxylon inerme, Schotia afra, Cussonia thyrsiflora and Aloe arborescens. The 2018 Vegetation Map of South Africa classifies the main vegetation type found here as Hartenbos Dune Thicket. The latter is easy to spot with its impenetrable, thorny thicket structure. The Vegetation Map also shows Canca Limestone Fynbos and Mossel Bay Shale Renosterveld in the western part of the site, but this is speculative as the area has been almost completely transformed by past farming activities. There is evidence on site that the thicket may have extended across the site towards its western boundary.

Indigenous shrub species recorded inside the fallow land include *Felicia muricata, Helichrysum foetidum, Osteospermum moniliferum, Leysera gnaphalodes, Gnidia squarrosa, Drosanthemum intermedium, Delosperma litorale, Carpobrotus edulis, C. deliciosus (or C. deliciosus x edulis), Mesembryanthemum aitonis, Aizoon secunda (dominant), Euphorbia burmannii, Clutia daphnoides, Crassula multicava, C. expansa, Cotyledon orbiculata, Aloe ferox, Lycium cinereum, Searsia glauca, Sideroxylon inerme, Carissa bispinosa, Pelargonium capitatum, Anthospermum galioides, Exomis microphylla and Selago corymbosa.* The *Carpobrotus* species are excellent soil binders and should be salvaged for rehabilitation purposes. Geophytes recorded include *Oxalis pes-caprae, Drimia capensis, Bulbine lagopus, Brunsvigia orientalis* and *Moraea polyanthos*. The taller shrubs and trees, such as *Sideroxylon inerme, Carissa bispinosa and Searsia glauca*, are typically associated with dune thicket. *Sideroxylon inerme* (milkwood) is a protected tree species and a permit is required for its removal.

Indigenous species recorded in the dune thicket include *Schotia afra, Sideroxylon inerme, Pterocelastrus tricuspidatus, Mystroxylon aethiopicum, Gymnosporia buxifolia, Putterlickia pyracantha, Searsia glauca, S. pterota, Azima tetracantha, Diospyros dichrophylla, Phylica axillaris, Colpoon compressum, Hermannia holosericea, Agathosma apiculata, Aloe arborescens, Jordaaniella dubia, Crassula muscosa, Cussonia thyrsiflora, Pelargonium peltatum, Rhoicissus digitata and Commelina africana. Thamnochortus insignis* is the only restioid recorded inside the thicket.
All the recorded species are widespread and fairly common. Due to the time of the survey, spring flowering bulbs, especially members of the *Iridaceae* and *Orchidaceae* families, were not picked up. These will show themselves later in the spring season. Floristic association with dune thicket (Hartenbos Dune Thicket in this case) is strong with most of the recorded species regarded as important taxa in the unit. No SCC or regional endemics were recorded.

6.2.2. Terrestrial Biodiversity and Animal Species Compliance Statement

Faunal activity on the site was generally low with only common or generalist birds, small mammals, and butterflies recorded. Some of the bird species recorded on the site included Cape Spurfowl *Pternistis capensis*, Spotted Thick-knee *Burhinus capensis*, Barn Swallow *Hirundo rustica*, Karoo Prinia *Prinia maculosa*, Bokmakierie *Telophorus zeylonus*, Common Starling *Sturnus vulgaris*, and a pair of Jackal Buzzard *Buteo rufofuscus* that are known to nest in an alien tree on the southern border of the site (on the fringe of the indigenous dune thicket). Mammal diversity on the site was low with only small mammals such as Four-striped Grass Mouse *Rhabdomys pumilio* and Cape Gerbil *Gerbilliscus afra* recorded, with a high concentration of burrows observed throughout the site. Spoor of Small-spotted Genet *Genetta genetta* was observed on the edge of the dune thicket in the southern portion of the site. Only one common butterfly species was recorded during the field survey, Silverbottom Brown *Pseudonympha magus*. No faunal SCC were recorded during the site surveys. The habitat on the site is largely homogenous and generally of poor quality and is unlikely that the available habitat would support any significant populations of faunal SCC.

6.2.3. Freshwater Compliance Statement

The property falls within Primary Catchment K (Kromme) area and falls on the catchment divide of quaternary catchments K10B and K10F. The project area of interest (PAOI) (i.e., the surface area to be developed) falls within K10B. No freshwater features are indicated to occur within the development footprint. The PAOI was traversed by vehicle and by foot on the 26th of August 2022. No freshwater features were identified within the development footprint. Based on the results of the desktop review and the site survey, the sensitivity of aquatic biodiversity on Remaining Portion 11 of Farm 219 Vaale Valley can be confirmed as Low and a comprehensive specialist assessment is therefore not required.

7. Legal Framework

7.1. The NEMA, Act No. 107 of 1998, as amended, and the EIA Regulations (2017)

The National Environmental Management Act (NEMA; No. 107 of 1998, as amended) gives effect to the Constitution of the Republic of South Africa by providing a framework for co-operative environmental governance and environmental principles that enable and facilitate decision-making on matters affecting the environment. NEMA requires that an environmental authorisation be issued by a competent authority (CA) before the commencement of an activity listed in Environmental Impact Assessment Regulations Listing Notices G.N. 324 & 327 published on the 7th of April 2017.

The activities were authorized in terms of Schedule 1 of Government Notice No. R1182 of 5 September 1997, as amended.

The authorised activities are:

- 1(c): The construction, erection or upgrading of – with regard to any substance which is dangerous or hazardous and is controlled by national legislation – (i) infrastructure, excluding road or rail, for the transportation of any such substance; and (ii) manufacturing, storage, handling, treatment or processing facilities for any such substance
- 1(d): The construction, erection or upgrading of roads, railways, airfields and associated structures
- 1(k): The construction, erection or upgrading of reservoirs for public water supply
- 1(m): The construction, erection or upgrading of public and private resorts and associated infrastructure
- 1(n): The construction or upgrading of sewage treatment plants and associated infrastructure
- 2(c): The change of land use from agricultural or zoned undetermined use or an equivalent zoning to any other land use
- 10: The cultivation or any use of virgin land

SIMILARLY LISTED ACTIVITIES

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed project to which the applicable listed activity relates.
9	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	This activity relates to the bulk services which will be installed. Their internal diameters will vary between 600mm and 300mm. The lengths will exceed the 1km threshold.
10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of	The internal sewage system will be within the thresholds, and it is understood that the bulk removal will be through 2 existing 450mm siphons.

	sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	
11	The development of facilities or infrastructure for the transmission and distribution of electricity— (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is — (a) temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometres or shorter in length; (c) within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	The internal network will be supplied from a 22/11kV substation, This activity will however not be applicable as the main electrical medium voltage reticulation throughout the entire Hartland Estate will be 11kV.
12	The development of— i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	No water courses or wetlands are within 32meters of the infrastructure or structures and as such this activity is not triggered
13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	The combined capacity of the two reservoirs will be 2000 cubic meters (20Ml) well below this 50000 cubic meter threshold. Therefore this activity is not applicable.
14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	This activity is similarly listed to Item 1(c) however it was likely authorised for small scale fuel storage (bowsers) during the construction phase. The capacity of bowsers will not exceed these thresholds and therefore the activity is no longer listed.
24	The development of a road— (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road— (a) which is identified and included in activity 27 in Listing Notice 2 of 2014; (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.	The proposed project includes the development of various roads with widths which range from 8m to 20m.
25	The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres.	The hydraulic loading of the sewage system is estimated at 1566,9 kℓ/day. This is fairly close to the threshold and as such this activity should be included
27	The clearance of an area of 1 hectares or more, but less	Vegetation cleared for the footprint of the development

	than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	will exceed the upper threshold of 20ha, as such this activity is not applicable however Activity 15 of Listing Notice 2 will be applicable.
28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The site was and still is zoned for agriculture except where houses have already been constructed
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed project to which the applicable listed activity relates.
2	The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres. i. Western Cape i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. In areas containing indigenous vegetation; or iii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose.	The combined capacity of the two reservoirs will be 2000 cubic meters (20Ml)
4	The development of a road wider than 4 metres with a reserve less than 13,5 metres. i. Western Cape i. Areas zoned for use as public open space or equivalent zoning; ii. Areas outside urban areas; (aa) Areas containing indigenous vegetation; (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or iii. Inside urban areas: (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	The development includes the development of various roads with widths which range from 8m to 20m.
5	The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep less than 15 people. - Not listed in the Western Cape -	Not listed in the Western Cape
6	The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more. i. Western Cape i. Inside a protected area identified in terms of NEMPAA; ii. Outside urban areas; (aa) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; or (bb) Within 5km from national parks, world heritage sites, areas identified in terms of NEMPAA or from the core area of a biosphere reserve; - excluding the conversion of existing buildings where the development footprint will not be increased.	This activity is not triggered by the development
10	The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. i. Western Cape i. Areas zoned for use as public open space or equivalent zoning; ii. All areas outside urban areas; or iii. Inside urban areas: (aa) Areas seawards of the development setback line or within 200 metres from the high-water mark of the sea if no such development setback line is determined; (bb) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; or (cc) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.	This activity is similarly listed to Item 1(c) however it was likely authorised for small scale fuel storage (bowsers) during the construction phase. The capacity of bowsers will not exceed these thresholds.

12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	The clearance associated with the development footprint, the site is zoned agriculture which is considered equivalent to conservation.
15	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010. f. Western Cape i. Outside urban areas, or ii. Inside urban areas: (aa) Areas zoned for conservation use or equivalent zoning, on or after 02 August 2010; (bb) A protected area identified in terms of NEMPAA, excluding conservancies; or (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act as adopted by the competent authority.	The development will exceed the threshold and the site was zoned Agriculture
Activity No(s):	Provide the relevant **Scoping and EIR Activity(ies)** as set out in **Listing Notice 2**	Describe the portion of the proposed project to which the applicable listed activity relates.
15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The development site exceeds 20ha and as such this activity should be included in the amended EA.

7.2. Other Applicable legislation

The Applicant is responsible for ensuring that all contractors, labourers and any other appointed person/entity acting on his behalf, remain compliant with the conditions of the received authorisations, as well as the provisions of all other applicable legislation and guidelines, including inter alia:

- National Heritage Resources Act (Act No 25 of 1999);
- National Environmental Management Act (Act No. 107 of 1998), as amended.
- National Forest Act (Act 84 of 1998).

The above listed legislation has general applicability to most development applications, and it is The Applicant's responsibility to ensure that all contractors and employees are aware of their obligations in terms of these Acts. This EMPr does not detract from any other legal requirements.

The proposed development activity will take place through various phases. Each phase has specific impacts or issues unique to that phase of the development activity. These phases of the development are listed below, and the impacts associated with each phase as identified through the environmental impact assessment process are identified and given a brief description. Brief management statements are provided, as well as a description of the desirable impact management outcomes.

8. Scope of this EMPr

This EMPr describes the measures that must be implemented in order to avoid, minimise, manage and monitor the potential environmental impacts of the development, during all phases of the project life cycle, namely:

- Planning and Design Phase
- Pre-construction Phase
- Construction Phase
- Post-Construction Rehabilitation

General environmental management measures that must be applied throughout the project lifecycle (as and where applicable) are described in Chapter 9 below. Additional management measures that must be implemented to address specific impacts that may arise during each phase are provided in Chapters 10-12 of this EMPr.

9. General Environmental Management

The following general management measures are intended to protect environmental resources from pollution and degradation during all phases of the project life cycle. These measures should be implemented as and where applicable, reasonable, and practicable during the pre-construction, construction and post-construction rehabilitation and operational (maintenance) phases of the proposed development.

Code of Conduct

The purpose of the Code of Conduct (CoC) is to minimise the impact of the activities associated with the construction phase on the environment. The rules and regulations prescribed in this CoC are intended to ensure that the impacts on the environment are not prejudiced by the construction activities. Failure to adhere to or any breach of this CoC will result in a fine being levied against the offending or defaulting party / individual.

Labourers during the construction phase should conserve the natural environment, endorsing the principles of sustainable use and minimum impact. They should also be sensitive to the impact of their operation on the environment within which they work and minimise any adverse impacts.

This EMPr forms an integral part of the activities during the construction phase and as such, is legally enforceable. In addition to the restrictions and controls provided for in this EMPr, the environmental controls comprise the following:

Contractors and sub-contractors

- Unless otherwise determined, only appropriately registered contractors shall be appointed.
- It shall be the responsibility of the holder / engineer to ensure that the contractors abide by and comply with the rules and regulations of the Code of Conduct.
- Contractors shall at all times be responsible for their sub-contractors and employees whilst they are on the development property.

Rules and Regulations

It is of vital importance that engineers, and contractors understand and acknowledge that they are working on an environmentally sensitive development and agree to conform to all environmental controls specified in this EMPr and any additional input by the ECO. In addition to the EMPr, the environmental controls comprise the following:

- **Building Plan Controls**
    - A copy of the approved and signed building plans must be available on site during the construction phase of the development.
    - Variations of the building plans must be approved by the engineer / holder prior to being implemented.

- Prior to commencing building, the contractor must remove all topsoil and store it in a berm of not more than 2 m high, away from construction activities.

- **Site tidiness**
  - The contractor must keep the appearance of his building site neat and tidy at all times. Building rubble must be removed from site at regular intervals, and litter must be removed from the site on a daily basis. Refuse drums must be available on site which waste can be placed in. The drums must be emptied on a regular basis and the waste taken to a licenced local waste disposal facility.
- **Safety**
  - The contractor shall comply with the Health and Safety Act (Act No. 85 of 1993), as amended, together with such regulations promulgated thereunder.

9.1. Heritage Resources

An Archaeological Heritage Impact Assessment was conducted by MAPCRM cc and noted a number of areas and artefacts considered sensitive from a heritage and archaeological point of view. It will be important to for the contractor to ensure that all recommendations included in the report compiled by MAPCRM cc dated 28 September 2005 are implemented. The necessary permits as stipulated in the afore mentioned report, obtainable from Heritage Western Cape, must be applied for in advance and the relevant authorizations made available to the ECO prior to construction activities commencing.

If any heritage resources are unearthed or discovered, work in that area is to be suspended immediately. These heritage resources may include, among others, features of previous human activity, such as:

- Human remains;
- Fossil bones;
- Stone tools / artefacts;
- Coins;
- Rock art & engravings;
- Pottery & ceramics;
- Shell middens / marine shell heaps; and
- Old structural remains.

Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities, all works must be stopped immediately, and Heritage Western Cape must be notified without delay.
Heritage Western Cape:
T: 021 483 5059
E: hwc.hwc@westerncape.gov.za

9.2. Heritage Resources Current Status and Way Forward

An Archaeological Heritage site visit was undertaken by Dr. Peter Nilssen on 27 April 2021. The recommendation in his report, dated 5 May 2021 are as follows:

- Because of their vulnerable context and in order to protect them in the short to medium term, it is strongly recommended that the graves at waypoint HD32 (Figure 6) should be fenced as soon as possible and that a buffer of at least 2 to 3 meters between the graves and the fence should be observed. A decision about the future of the graves should also be made as soon as possible. It is requested that Heritage Western Cape provides input as to the best way forward in terms of relocating the graves to a more suitable site on the property or conserving the graves in situ with suitable measures for maintenance and protection. It is this author's opinion, pending results of research into living descendants or relatives of the deceased, that the former option of relocation may be preferable. This issue may require further discussion between all

interested and affected parties and with consideration of Section 36 of the National Heritage Resources Act (Act No.25 of 1999).

- Due to the scarcity of heritage resources - noted in both the Nilssen 2005 report and during the recent site inspection - in the area currently under development (Figure 9), it is recommended that full time archaeological monitoring is not necessary but that part time monitoring involving daily site inspections by a suitably accredited professional archaeologist should be implemented when bulk excavations and earthworks are in progress. Dalmar or a representative should inform the appointed archaeologist of their excavation and earthworks schedules to ensure that fresh earthworks are inspected for potential buried heritage resources.

- Because the original archaeological heritage impact assessment was done 16 (sixteen) years ago, it is recommended that recorded heritage resources falling within the development footprint shown in Figure 9 should be revisited and re-evaluated and that a fresh assessment be made of their significance and requirements for mitigation. It is recommended that only heritage occurrences considered being of medium to high significance or that were proposed for mitigation need to be investigated and re-evaluated. Due to higher incidences of Stone Age materials in certain portions of the development footprint (see Figure 9), it may be necessary to implement full time archaeological monitoring in those areas.

- Any heritage resources of high significance, but that currently fall outside the development footprint must be avoided by increased vehicular and pedestrian activity on the property. It may be necessary to revisit such sites and make appropriate arrangements for their protection and conservation.

- As stated previously, the recommendations made here need to be reviewed and responded to by Heritage Western Cape in light of the current situation as well as the earlier assessment by this author in 2005. HWC is requested to give advice on the best way forward in order to attain and maintain compliance with the heritage / archaeological component of the EA.

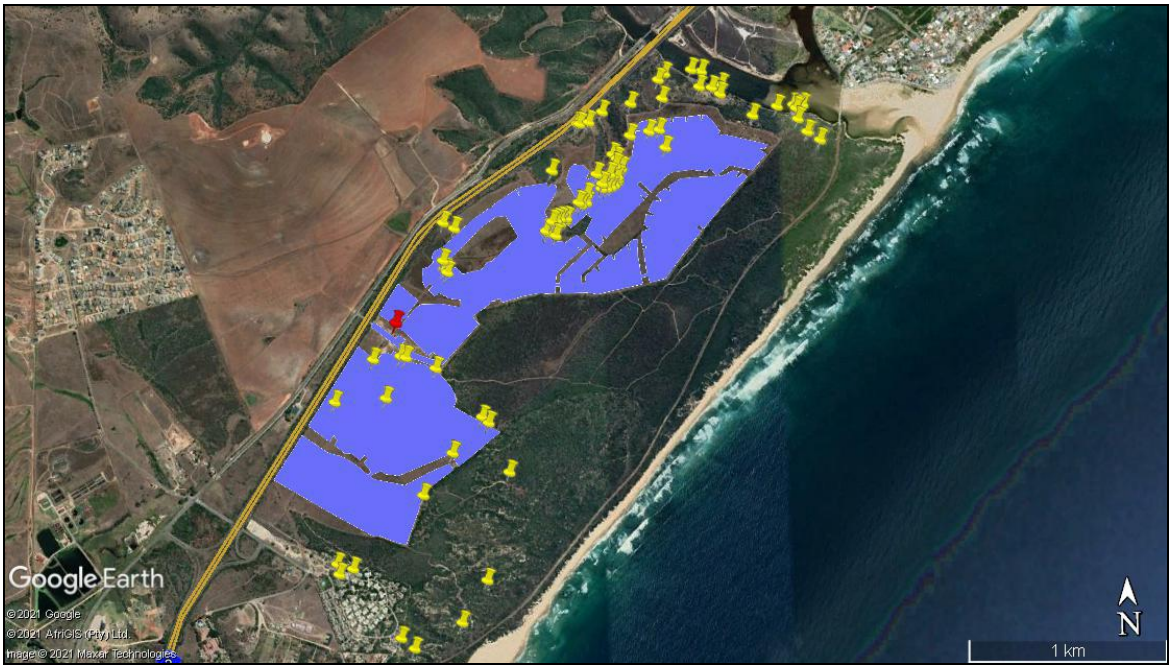


Figure 9: Hartland Development footprint in blue with heritage occurrences recorded in 2005 indicated by yellow markers (Nilssen 2005). The red marker is the location of the graves at waypoint HD32 (see Figure 10). Note that many of the documented heritage resources fall outside the Hartland Development footprint, but that a few in the south-west are in an area that is already developed. Courtesy of HilLand Environmental, Dalmar Beleggings and Google Earth 2021

Figure 10: Enlarged from Figure 9 showing the current and imminent development phases in green (Hartland Villas, Phase 1 and Phase 3), GPS fixed tracks (red lines) of the archaeological foot survey and documented heritage resources (yellow markers, Nilssen 2005). Note that HD32 is approximately 20 meters NE of the actual location of the graves enclosed with a white circle. The labourers cottages were at waypoint HW33. Courtesy of HilLand Environmental, Dalmar Beleggings and Google Earth 2021.

10. Impact Management Objectives and Outcomes

10.1. Environmental Impact Management: Planning and Design Phase

No direct environmental impacts are associated with the planning and design phase. However, poor planning or inappropriate design decisions in this phase may result in environmental impacts arising during subsequent phases of the project.

Planning and design activities must therefore take into account the environmental constraints and opportunities identified during the Environmental Impact Assessment process, in order to avoid or minimise the potential future impacts of the development. Proper planning is also essential to ensure that adequate provision is made to implement the environmental requirements of this EMPr, and to ensure that the development is compliant with additional conditions which may be included in the Environmental Authorisation.

The environmental management objectives (goals) during this phase are to:

- Appoint an Environmental Control Officer.
- Update the EMPr (if necessary).

These environmental management objectives, as well as the management actions that must be implemented in order to achieve the desired objective and avoid/minimise potential impacts are discussed in more detail below.

10.1.1. Objective 1: APPOINTMENT OF AN ENVIRONMENTAL CONTROL OFFICER

Impact Management Objective: ***To appoint a suitably qualified and experienced Environmental Control Officer.***		
Potential impact to avoid	Failure to appoint an ECO will result in non-compliance with the requirements of the EMPr.	
Impact Management Outcome	The requirements of the EMPr are implemented and monitored during all phases of the development, which will promote sound environmental management on site.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• A suitably qualified and experienced Environmental Control Officer must be appointed before any activities commence on site. • The appointed ECO must adhere to the requirements stated in Chapter 13 and any other requirements specified in the Environmental Authorisation. • The appointed ECO must be advised of the construction start date before any activities commence on site so that the ECO can perform a pre-commencement inspection and plan for environmental awareness training of construction workers.	The Applicant.	During design phase
Performance Indicator	A qualified ECO is appointed prior to the commencement of any construction activities (including pre-construction set-up activities) on site.	

10.2. Environmental Impact Management: Pre-construction Phase

Proper set-up during the pre-construction phase can set the foundation for good environmental management during the active construction phase to follow and can avoid potential impacts from arising at a later date.

The Impact Management Objectives for this phase of the project relate to:

- Identify and demarcate no-go areas and working areas.
- Establish Environmentally sensitive site camp and site facilities.
- Pre-construction ECO visit.

10.2.1. Objective 1: IDENTIFY & DEMARCATE NO-GO AND WORKING AREAS

Impact Management Objective: ***Identify and demarcate no-go areas, working areas and site facilities.***		
Potential impact to avoid	• No-Go areas include public open space to remain natural. • Insensitive location of working areas and site facilities may result in environmental impacts during the construction phase. • Failure to accurately demarcate working areas may result in an increased disturbance footprint. • Failure to demarcate no-go areas may result in disturbances to these areas during construction.	
Impact Management Outcome	Future construction activities will be restricted to within the designated areas & environmentally sensitive areas (no-go areas) will be protected from disturbance.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period

• The environmentally sensitive areas must be identified and be designated as no-go areas. • All sensitive areas, which must not be disturbed, must be demarcated using with a 1.2m high fence constructed of shade cloth netting (or similar product), staked at regular intervals of between two and three meters. Two strands of wire, one along the top of the fence and one along the bottom should be sufficient to keep the fence rigid. "No-Go" signs should be erected along the fence at prominent locations. Where a fence is considered impractical No- Go signs should be erected at frequent intervals along the edge of the no-go areas in consultation with the ECO. • "No-Go" signs should be of a minimum size of 200mm x 150mm with red letters on a white background displaying the words "No-Go Area". Demarcation put in place to protect sensitive areas should be left in position until construction has been completed. The areas must be clearly delineated to ensure that no unnecessary disturbance of the environment takes place. • The sensitive areas include all areas that are deemed to be of a high or very high sensitivity with regard to slope steepness, soil stability, vegetation cover, etc. As per the findings of Conservation Management services' report dated June 2005 and later findings by Synecology in their report dated January 2008 the areas indicated below in Figure 11 must be considered No-Go areas. • Care should be taken to ensure that a buffer area of at least three meters are implemented around afore mentioned sensitive areas to further limit construction materials or activities with construction activities near these areas. • All sensitive areas must be identified and marked in consultation with the ECO. Other sensitive areas may include areas that are stripped of or lose their vegetation as a result of the construction. The marking of these areas will be at the discretion of the ECO. • It must be impressed upon contractors that no one should enter these demarcated areas. This will minimize the effect of trampling which could lead to erosion and other environmental impacts. The demarcated areas must make allowance for reasonable space for construction activities like stockpiling of material etc, to the satisfaction of the ECO. • Before any of the work commences, the ECO must address all the contractors and their workers to ensure that they are all well informed as to where the "no-go" areas are. • It must be impressed upon the contractors and labourers that no one may cross into these lines of demarcation and move into the demarcated areas. If any contractor or their employees transgress any of the conditions of approval, the ECO will have the right to demand that the resident	Contractor	Pre-construction phase (prior to arrival of construction equipment, machinery, or workers on site)

engineer institute action against the contractor. Work is to be halted until the problem has been resolved between the ECO, resident engineer, and the contractor. • Any financial loss that may derive from such a cessation of the work will be to the cost of the contractor. If this action does not have the desired effect, the ECO may appeal to DEA&DP for further action to be taken. The contractor should be fined and must pay for reinstatement or rehabilitation of damaged areas and features. • Demarcate the protected trees on site. • Site camp facilities must be situated as far away from the No-Go areas as possible. • Demarcation of access points and haulage routes would also be important and need to remain in place for the full duration of the construction phase. This demarcation would also serve the purpose of informing and warning passing vehicular traffic of the construction activities taking place.		
Performance Indicator	No-go areas, working areas and areas for site camp facilities have been identified and appropriately demarcated to the satisfaction of the ECO, before construction activities commences on site.	

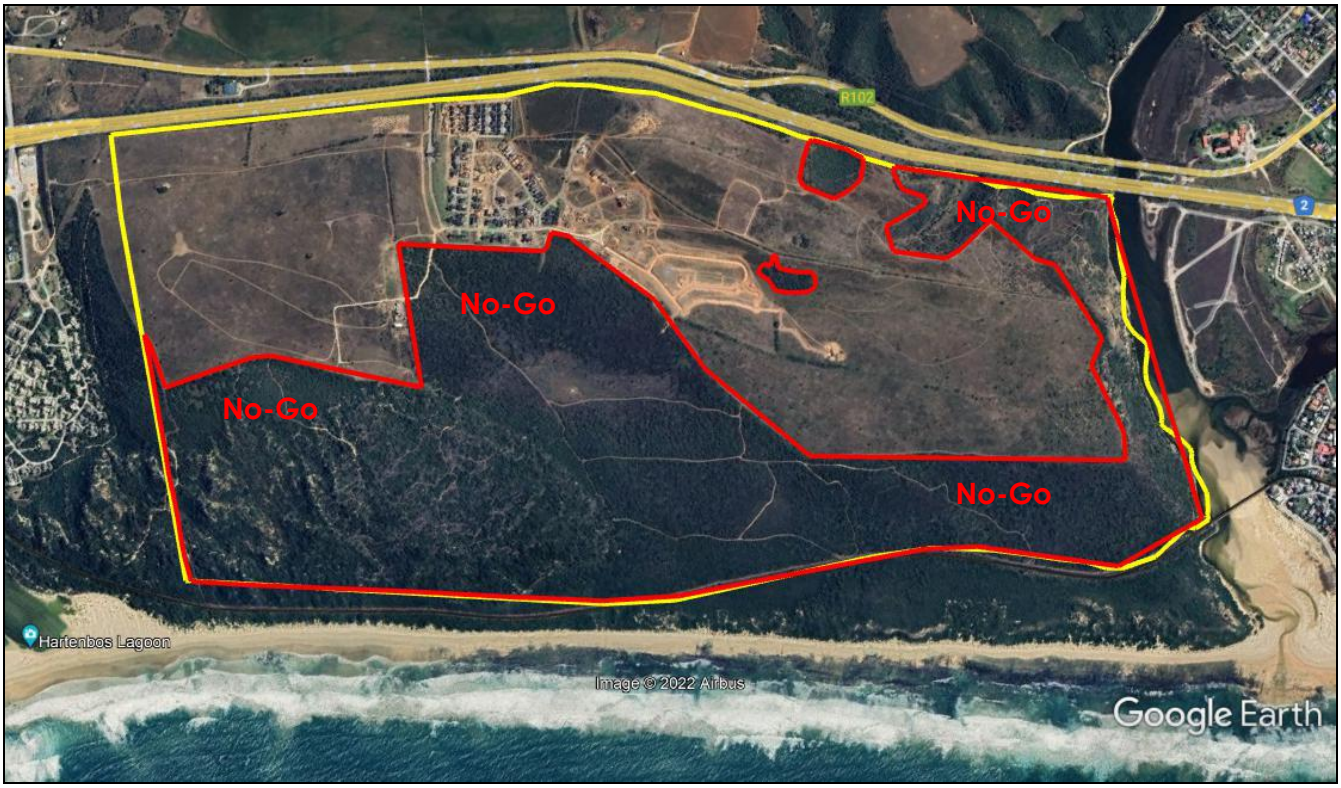


Figure 11: Construction No-Go area

10.2.2. Objective 2: ESTABLISH ENVIRONMENTALLY SENSITIVE SITE CAMP & SITE FACILITIES

Impact Management Objective: ***To set up and equip the site camp and associated site facilities in a manner that will promote good environmental management.***			
Potential impact to avoid	• Inappropriate siting of site camp facilities may result in impacts to sensitive resources and a negative visual impact. • Failure to properly demarcate and set up site facilities may result in disorganised construction activities and unnecessary disturbance to the site. • Failure to provide the necessary site facilities and/or failure to equip these facilities with the necessary equipment/materials may impede good environmental management & compromise ability to respond to emergencies.		
Impact Management Outcome	Site camp facilities do not impact significantly on environment and present little visual disturbance. The equipment required to implement the provisions of the EMPr are provided on site.		
IMPACT MANAGEMENT ACTIONS			
Mitigation measure		Responsible party	Time period
• The site camp and associated site facilities must be set-up and managed in accordance with the general environmental management measures specified in Chapter 9 of this EMPr. • The site camp must be strategically set up in a manner that will promote good environmental management during construction/ demolition, and to respond to potential emergencies (including fires, spillage of hazardous substances etc.) that may arise. • The No-Go boundary must be demarcated, and no disturbance may occur past this point during any stage. • The site camp, storage facilities, stockpiles, waste bins, and any other temporary structures on site should be located in such a way that they will present as little visual impact to surrounding residents and road users as possible. • Frequent stormwater outlets must be designed to prevent erosion at discharge points. • It is recommended that the stormwater management plan be developed with appropriate ecological input and be developed based on Sustainable Drainage Systems (SUDS). • The contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. • Top soil and other top material such as boulders must be stored at a stockpile location agreed to by the ECO. Ensure the stockpile does not exceed the maximum height agreed upon.		Contractor / Developer	Pre-construction phase (prior to start of construction activities)
Performance Indicator	Appropriate, well organised and properly equipped site facilities are available on site prior to commencement of construction activities. The location and set up of the facilities does not impact on the natural resources.		

10.2.3. Objective 3: PRE-CONSTRUCTION ECO INSPECTION

It is essential that the appointed ECO be advised of the intended construction start date before construction activities commence on site, in order for the ECO to conduct an initial site inspection to assess the pre-commencement condition of the site. The ECO can also advise on the appropriate siting and demarcation of the site facilities, and the identification and demarcation of the no-go areas. The ECO may also conduct the first round of environmental awareness training at this stage, if the construction workers are present on site.

<table>
<tr><td colspan="4"><u>Impact Management Objective:</u> Environmental Control Officer to conduct an inspection prior to the commencement of construction activities on site.</td></tr>
<tr><td>Potential impact to avoid</td><td colspan="3">• Failure to appoint ECO or to notify ECO of commencement prior to commencement may result in non-compliance with the EA.
• If a pre-commencement ECO inspection is not performed, the Construction Contractor may be held liable for environmental degradation that took place prior to the Contractor commencing work on site.</td></tr>
<tr><td>Impact Management Outcome</td><td colspan="3">• Good environmental management is promoted and enforced by the ECO during the full pre-construction and construction phases.
• Site facilities are appropriately located on site.
• Construction workers receive environmental awareness training before commencing work on site.</td></tr>
<tr><td colspan="4">IMPACT MANAGEMENT ACTIONS</td></tr>
<tr><td colspan="2">Mitigation measure</td><td>Responsible party</td><td>Time period</td></tr>
<tr><td colspan="2">• The appointed ECO must be advised of the construction start date, before any activities commence on site so that the ECO can perform a pre-commencement inspection and plan for environmental awareness training of construction workers.</td><td>Contractor</td><td>Start of construction phase</td></tr>
<tr><td>Performance Indicator</td><td colspan="3">A pre-commencement site inspection is conducted by the appointed ECO before construction activities commence on site.</td></tr>
</table>

10.3. Environmental Impact Management: Construction Phase

A number of potential environmental impacts may arise during the construction phase of the development. These impacts have been identified and assessed during the Environmental Impact Assessment process. Environmental Management objectives and actions that will prevent the identified potential impacts from arising – or where avoidance is not possible, that will minimise and mitigate the impacts – are provided in this section.

The environmental management actions and mitigation measures prescribed in this section must be implemented throughout the construction phase and must be implemented in conjunction with the general management measures specified in Chapter 9 of this EMPr, as well as any other conditions which may be stated in the Environmental Authorisation. The Environmental Control Officer must monitor and enforce the implementation of the relevant environmental management measures and may provide guidance on the implementation of these environmental management measures as and when required.

The environmental management objectives (goals) for the Construction phase are:

- Prevent pollution and soil contamination
- Protection of terrestrial ecosystems (fauna and vegetation)
- Alien clearing
- Noise impact management
- Visual impact management

- Traffic and safety impact management
- Dust impact management

The environmental management actions that must be implemented in order to achieve the desired objectives and avoid/minimise potential impacts are discussed in more detail in the sections below.

10.3.1. Objective 1: PREVENT POLLUTION AND SOIL CONTAMINATION

Impact Management Objective: ***To prevent environmental pollution and contamination of soil and subsurface water resources***		
Potential impact to avoid	• Fuel, oil, lubricant or other pollutants may leak from vehicles/ machinery and contaminate soil and/or ground water. • Spills of hazardous substances may contaminate environment. • Chemical toilets may leak. • Contamination of surrounding environment due to irresponsible bitumen usage. • Contaminated run-off from site or site camp facilities may pollute soil. • Waste (solid or liquid) from the construction site may be blown or washed into surrounding environment.	
Impact Management Outcome	The environment (including soil, surface and groundwater) is not contaminated.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• Any Bitumen spills must be excavated and disposed of as hazardous waste. • Erosion control measures including silt fences, low soil berms and/or shutter boards must be put in place around the stockpiles to limit sediment runoff from stockpiles. **General Pollution Management:** • No pollution of ground water resources may occur due to any activity on the site. • No storm water runoff from any premises containing waste, or water containing waste emanating from construction activities may be discharged into the environment. Polluted stormwater must be contained on the site. • Stormwater managed by the development is to be discharged into porous channels / swales ('infiltration channels or basins') running near parallel or parallel to contours within and along the edge of the development • Frequent stormwater outlets must be designed to prevent erosion at discharge points. **General Waste Management:** • Dedicated waste bins or skips must be provided on site and kept in a demarcated area on an impermeable surface. • Separate waste bins/skips must be provided for recyclable waste, general waste and hazardous waste. Recovered builder's rubble & green waste may be stockpiled on the ground within the site camp, or in separate skips until removal.	Contractor	Construction phase

• Waste must be placed in the appropriate waste bins/skips/ stockpiles. • Hazardous waste bins must be kept on an impermeable bunded surface capable of holding at least 110% of the volume of the bins. • Skips/ bins must be provided with secure lids or covering that will prevent scavenging and windblown waste or dust. • Waste bins/skips must be regularly emptied and must not be allowed to overflow. • Construction workers must be instructed not to litter and to place all waste in the appropriate waste bins provided on site. • The Contractor must ensure that all workers on site are familiar with the correct waste disposal procedures to be followed. • Waste generated on site must be classified and managed in accordance with the National Environmental Management: Waste Act – Waste Classification and Management Regulations (GN No. R. 634 of August 2013). • Disposal of waste to landfill must be undertaken in accordance with the National Environmental Management: Waste Act – National Norms and Standard for the Assessment of Waste for Landfill Disposal (GN No. R. 635 of August 2013). • All waste, hazardous as well as general, resulting from the proposed activities must be disposed of appropriately at a licensed Waste Disposal Facility (WDF). **Pollution Management – hydrocarbons (oil, fuel etc.)** • Vehicles and machinery must be in good working order and must be regularly inspected for leaks. • If a vehicle or machinery is leaking pollutants it must, as soon as possible, be taken to an appropriate location for repair. The ECO has the authority to request that any vehicle or piece of equipment that is contaminating the environment be removed from the site until it has been satisfactorily repaired. • Repairs to vehicles/ machinery may take place on site, within a designated maintenance area at the site camp. Drip trays, tarpaulin or other impermeable layer must be laid down prior to undertaking repairs. • Refuelling of vehicles/ machinery may only take place at the site camp or vehicle maintenance yard. Where refuelling must occur, drip trays should be utilised to catch potential spills/ drips. • Drip trays must be utilised during decanting of hazardous substances and when refilling chemical/ fuel storage tanks. • Drip trays must be placed under generators (if used on site) water pumps and any other machinery on site that utilises fuel/ lubricant, or where there is risk of leakage/spillage. • Where feasible, fuel tanks should be elevated so that leaks		

are easily detected. • A spill kit to neutralise/treat spills of fuel/ oil/ lubricants must be available on site, and workers must be educated on how to utilise the spill kit. • Soil contaminated by hazardous substances must be excavated and disposed of as hazardous waste. • Spoil or waste material should not be dumped within 50 m of natural areas, it should be discarded at a licensed dump site. **Pollution Management – Ablution facilities** • Chemical toilets must be kept at the site camp, on a level surface and secured from blowing over. • Toilets must be located well outside of any storm water drainage lines and may not be linked to the storm water drainage system in any way. • Chemical toilets must be regularly emptied, and the waste disposed of at an appropriate waste water disposal/ treatment site. Care must be taken to prevent spillages when moving or servicing chemical toilets. **Pollution Management – Hazardous Substances** • Any hazardous substances (materials, fuels, other chemicals etc.) that may be required on site must be stored according to the manufacturers' product-storage requirements, which may include a covered, waterproof bunded housing structure. • Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases. • Hazardous chemicals and fuels should be stored on bunded, impermeable surfaces with sufficient capacity to hold at least 110% of the capacity of the storage tanks. **Cement Batching** • Cement batching must take place on an impermeable surface large enough to retain any slurry or cement water run-off. If necessary, plastic/ bidem lined detention ponds (or similar) should be constructed to catch the run-off from batching areas. Once the water content of the cement water/ slurry has evaporated the dried cement should be scraped out of the detention pond and disposed of at an appropriate disposal facility authorised to deal with such waste • Cement batching should take place on already transformed areas within the footprint of the facility. • Unused cement bags must be stored in such a way that they will be protected from rain. Empty cement bags must not be left lying on the ground and must be disposed of in the appropriate waste bin.		

• Washing of excess cement/concrete into the ground is not allowed. All excess concrete/ cement must be removed from site and disposed of at an appropriate location.		
Performance Indicator	The site is free from any spills or evidence of irresponsible waste management practices. No signs of pollution or contamination.	

10.3.2. Objective 2: PROTECTION OF TERRESTRIAL ECOSYSTEM (FAUNA AND VEGETATION)

Impact Management Objective: ***To ensure that the terrestrial ecosystem is not significantly impacted on.***		
Potential impact to avoid	• Potential disturbance to terrestrial fauna during land clearing/construction activities. • The clearing/trimming of vegetation will result in loss/ disturbance of indigenous vegetation and may reduce habitat heterogeneity.	
Impact Management Outcome	The terrestrial ecosystem is not significantly impacted on as a result of the construction activities.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• An awareness program is to be run by the ECO in order to prevent the labour force from intentionally killing any faunal species • Great care will be taken if cement is to be mixed on site, especially in the proximity of vegetation It will be mixed on thick plastic sheets or in large buckets and not allowed to spill onto bare ground. Any spillage will be cleaned up immediately. Cement water will also be contained in the above manner and allowed to dry out and then removed from site. Cement water, which is highly alkaline, poses a definite threat to the soil and seed banks. • Blanket clearing of vegetation must be limited to the approved development footprint, and the area to be cleared must be demarcated before any clearing and grubbing commences. • No clearing outside of development and infrastructure footprint area to take place. • Rescued plants should be replanted into a nearby disturbed area of similar habitat or for open space rehabilitation, if appropriate. • An Environmental Control Officer will oversee compliance with all the prescribed environmental requirements and mitigation measures listed here and will be on site regularly. • Construction workers must be sensitised to the fact that fauna (including mammals, snakes, birds, tortoises etc.) may be encountered on site, and they must exercise due caution to ensure that their actions/movements do not impact fauna. • Any fauna encountered on site must be allowed to passively vacate the area. Active relocation of fauna	Contractor	Construction phase

like snakes must be a last resort and must only be performed by a person skilled/ experienced enough to do so without endangering him/herself or the animal/bird. • If animals are discovered on site during site preparation, they are to be relocated or allowed to move off the area that is required to be disturbed without harm; • No wild animal may under any circumstance be handled, removed, or be interfered with by construction workers. No wild animal may under any circumstance be hunted, snared, captured, injured, or killed. This includes animals perceived to be vermin; • Construction workers may not feed, hunt, trap, poison or shoot fauna on site or in the immediately surrounding areas. • The site must be cleared of all alien plants and trees during the construction phase, except for the Eucalyptus tree at 34°06'20.87"S 22°07'26.36"E in which the Jackal Buzzard pair has a nest, in the eastern portion of the assessment area adjacent to the natural dune vegetation. Jackal Buzzard use the same nest for up to five years or alternative between nest sites (Allan, 2005). • Position the telecom mast in the most degraded spot devoid of significant indigenous growth. • As a duty of care measure, succulents and bulb species (if present) can be searched and rescued for replanting in a nearby rehabilitation area (open space) where it is safe from development. Species suitable for search and rescue include Carpobrotus edulis, Crassula tetragona, C. capitella ssp. thyrsiflora, Aloe ferox and Bulbine lagopus. Carpobrotus edulis is anexcellent soil binder. • Implement alien control as a long-term (operational phase) maintenance requirement. Currently, the focus should be to eradicate Acacia cyclops (rooikrans) and Lantana camara (lantana) from the area surrounding the telecom mast site. In terms of the NEMBA (Act 10 of 2004) Alien and Invasive Species List (2016), category 1b invasive species require compulsory control as part of an invasive species control programme. • The development footprint should be kept at the provided minimum to minimise disturbance of any surrounding natural habitats on the site. • Every effort should be made to save and relocate any mammal, reptile, amphibian, bird, or invertebrate that cannot flee of its own accord, encountered during site preparation (i.e., to avoid and minimise the direct mortality of faunal species). These animals should be relocated to a suitable habitat area immediately outside the project footprint, but under no circumstance to an area further away.		

Performance Indicator	• Construction team limit disturbance to the terrestrial ecosystem as far as possible for the duration of the construction phase. • There are no significant or long-term impacts to terrestrial vegetation or fauna.

10.3.3. Objective 3: ALIEN CLEARING

***Impact Management Objective:* To create habitat free of alien vegetation**		
Potential impact to avoid	• The proliferation of alien vegetation once construction has been completed. • Presence of alien vegetation within the provisioned open space.	
Impact Management Outcome	The level of alien infestation decreases over time and there are no alien species inhabiting the open space.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• The ECO must be informed in advance of any vegetation that will be removed, irrespective of whether or not the vegetation is alien or indigenous. • Alien plants must be removed from the site as per NEMBA requirements. • Alien clearing must be done in such a way as not to cause damage to indigenous vegetation. • Regular follow-up clearing of aliens is required in order to achieve rehabilitation successfully. It is assumed that the responsibility of alien clearing will rest with the local authority. If not, an alien clearing contractor must be employed to conduct alien clearing. • After any clearing is completed, an appropriate cover crop should be planted where any weeds or exotic species are removed from disturbed areas timeously. • Alien clearing must be undertaken in accordance with the Alien Clearing Management Plan.	The Applicant.	Construction phase
Performance Indicator	No alien invasive species are observed in areas that have been disturbed.	

10.3.4. Objective 4: NOISE IMPACT MANAGEMENT

***Impact Management Objective:* To control avoidable noise impacts to the surrounding areas**		
Potential impact to avoid	Avoidable noise generated during the undertaking of construction activities, which may present a nuisance to surrounding community.	
Impact Management Outcome	Avoidable noise impacts are managed efficiently.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• A noise complaints register should be opened. • Excavations and earth-moving activities must be restricted to normal construction working hours (7:30 – 17:30) as far as possible. • Work on site must be well-planned and should proceed efficiently so as to limit the duration of the disturbance. • Vehicles and equipment must be kept in good working	Contractor	Construction phase

condition. If deemed necessary, machinery and equipment should be fitted with mufflers/ exhaust silencers. No unnecessary disturbances should be allowed to emanate from the construction site. • Workers should be educated on how to control noise-generating activities that have the potential to become disturbances, particularly over an extended period of time. • Noise levels must comply with the relevant health & safety regulations and SANS codes and should be monitored by the Health & Safety Officer as necessary and appropriate. • The noise management and monitoring measures prescribed in the EMPr must be adhered to. • The appointed Environmental Control Officer (ECO) must undertake a site inspection once per week, for the duration of the construction phase, and to produce a short monthly ECO monitoring audit report, auditing on the compliance of the property developer with the conditions of the Environmental Authorisation and the approved EMP.		
Performance Indicator	Noise levels on site remain within acceptable standards. No valid noise complaints are received.	

10.3.5. Objective 5: VISUAL IMPACT MANAGEMENT

Impact Management Objective: ***To prevent the site from presenting an unnecessary visual impact to the surrounding public.***		
Potential impact to avoid	During construction the site may appear disturbed or disorganised and may present visual impact to observers of the site.	
Impact Management Outcome	The site does not present a significant visual impact and the sense of place is maintained.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• Consult with the ECO when determining the appropriate site for the site camp. • The site camp must be kept neat and tidy and free of litter at all times. • Waste must be managed according to this EMPr, and the mitigation measures listed above in terms of waste management. Good housekeeping practices on site must be maintained to ensure the site is kept neat and tidy. • Work on site must be well-planned and well-managed so that work proceeds quickly and efficiently, thus minimizing the disturbance time. • The site camp, storage facilities, stockpiles, waste bins, elevated tanks and any other temporary structures on site should be located in such a way that they will present as little visual impact to surrounding landowners and road users as possible.	Contractor	Construction phase

• The site camp may require visual screening via shade cloth or other suitable material. • Special attention should be given to the screening of highly reflective material. • Construction vehicles must enter and leave the site during working hours. • Delivery trucks should be appropriately covered to deter the spilling of material along the route to the site. • Working areas, storage facilities, stockpiles, waste bins, elevated tanks and any other temporary structures on site should be located in such a way that they will present as little visual impact to surrounding residents and road users as possible. • No clearing of land to take place outside the demarcated footprint. • Clearing should take place in a phased approach, so that cleared areas are kept small and manageable. • Vegetation Screening: Planting indigenous trees and shrubs around the mast's base to soften the visual impact. The strategic placement of vegetation can help reduce the mast's prominence, particularly from key visual receptors along the N2 highway and in residential areas like Hartenbos and Riverside. • Colour and Material Selection: Choosing colours and materials that blend with the natural surroundings, such as matte finishes and neutral colours, can reduce the visual intrusion of the structure. • Avoidance of Reflective Surfaces: Ensuring that the mast does not include highly reflective surfaces to prevent glare and minimise its visual footprint during peak sunlight hours.		
Performance Indicator	• Good "housekeeping" is evident on site. • The site does not pose a visual impact to surrounding community.	

10.3.6. Objective 6: TRAFFIC & SAFETY IMPACT

Impact Management Objective: Reduced negative impact caused by increased traffic		
Potential impact to avoid	• Traffic congestion on the existing road networks. • An unsafe and non-user-friendly transport network. • Damaged roads	
Impact Management Outcome	• Ensure the safety of vehicular and pedestrian traffic during the construction phase of the development.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• All construction vehicles need to adhere to traffic laws. The speed of construction vehicles and other heavy vehicles must be strictly controlled to avoid dangerous conditions for other road users. As far as possible care should be taken to ensure that the local traffic flow pattern is not significantly disrupted.	Developer	Operational phase

• All vehicle operators need to be educated in terms of "best-practice" operations to minimise unnecessary traffic congestion or dangers. Construction vehicles should therefore, not unnecessarily obstruct the access point or traffic lanes used to access the site. Construction vehicles also need to consider the load carrying capacity of road surfaces and adhere to all other prescriptive regulations regarding the use of public roads by construction vehicles. • Adequate signage, that is both informative and cautionary to passing traffic (motorists and pedestrians), warning them of the construction activities must be suitably located in the area where the construction is occurring and must be easily visible by all road users. Signage needs to be clearly visible and needs to include, among others, the following: o Identifying working area as a construction site; o Cautioning against relevant construction activities; o Prohibiting access to construction site; o Clearly specifying possible detour routes and/or delay periods; o Possible indications of time frames attached to the construction activities, and; o Listings of which contractors and engineers are working on the site. • If needed, appropriate traffic management measures and/ or points men (traffic marshals) should be utilized to assist vehicles entering/ exiting the site, particularly where vehicles must cross the path of oncoming traffic. • Speed of construction vehicles and other heavy vehicles must be strictly controlled to avoid dangerous conditions for other road users. • The Contractor must ensure that any large or abnormal loads (including hazardous materials) that must be transported to/ from the site are routed appropriately, and that appropriate safety precautions are taken.		
Performance Indicator	• Surrounding road network remains safe, free of excessive congestion and undamaged.	

10.3.7. Objective 7: DUST IMPACT MANAGEMENT

***Impact Management Objective:* To prevent the generation of significant dust.**	
Potential impact to avoid	• Dust and wind-blown sand may arise from site during earth-moving and other construction activities. • Dust may be generated from cement batching activities. • Dust may be generated from stockpiles of earth material. • Dust may smother surrounding vegetation and may pose a nuisance to nearby land occupants or land users.
Impact Management Outcome	The surrounding environment, land users, residents do not experience significant dust-related impacts.
IMPACT MANAGEMENT ACTIONS	

Mitigation measure	Responsible party	Time period
• Land clearing and earthmoving activities should not be undertaken during strong winds, where possible. • Cleared areas should be provided with a suitable cover as soon as possible, and not left exposed for extended periods of time. • Stockpiles of topsoil, spoil material and other material that may generate dust must be protected from wind erosion (e.g., covered with netting, tarpaulin or other appropriate measures. Note that topsoil should not be covered with tarpaulin as this may kill the seedbank). • The location of stockpiles must take into account the prevailing wind direction and should be situated so as to have the least possible dust impact to surrounding residents, road-users and other land-users. • Speed limits must be enforced in all areas, including public roads and private property to limit the levels of dust pollution. • The speed limit should be set at 20-40km/h. • Dust must be suppressed on access roads and the construction site during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that will not result in the generation of excessive run off. • Dust suppression measures such as the wetting down of sand heaps as well as exposed areas around the site must be implemented especially on windy days. • The use of straw worked into the sandy areas may also help and the ECO must advise when this is necessary. • If dust appears to be a continuous problem the option of using shade cloth to cover open areas may be necessary or the erecting of shade netting above the fenced off area may need to be explored. • All vehicles transporting sand need to have tarpaulins covering their loads which will assist in any windblown sand occurring off the trucks. • Work on site must be well-planned and should proceed efficiently so as to minimise the handling of dust generating material. • Material loads should be properly covered during transportation. • Dust levels specified in the National Dust Control Regulations (GN 827 of November 2013) may not be exceeded. i.e., dust fall in residential areas may not exceed 600mg/m2/day, measured using reference method ASTM D1739; • A Complaints Register must be available at the site office for inspection by the ECO of dust complaints that may have been received.	Contractor	Construction phase

Performance Indicator	• Excessive dust does not arise from the site. • No dust complaints are received from any member of the public. • There is no evidence that vegetation surrounding the site is being smothered by dust.

10.4. Environmental Impact Management: Post Construction Rehabilitation Phase

After all construction activities have ceased, the sites must be cleared of all construction related equipment, materials, facilities and waste. In addition all disturbed surfaces – including disturbed areas around the structures and all areas utilised for site facilities – must be stabilised, rehabilitated and provided with a suitable cover. All temporary access roads constructed must be rehabilitated and access must be restricted from the public.

The environmental management objectives (goals) for this phase are:

- Rehabilitate & stabilise disturbed areas and ensure environmentally sensitive closure of the construction sites.
- No establishment of alien vegetation on the site.

10.4.1. Objective 1: SITE CLOSURE & REHABILITATION

Impact Management Objective: ***To rehabilitate all areas disturbed by construction activities in an environmentally sensitive manner.***		
Potential impact to avoid	• Failure to remove all construction related waste and materials may result in environmental pollution. • Failure to remove all construction related equipment, machinery and site facilities may pose an impact to the natural environment. • Failure to stabilise disturbed surfaces may result in soil erosion and increased storm water run-off, which may limit successful revegetation of the site.	
Impact Management Outcome	• The site is neat and tidy and all exposed surfaces are suitably covered/ stabilised. • There is no construction-related waste or pollution remaining on site. • The open space remains in a natural state,	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• On completion of the construction operations, the site camp area must be cleared of all site camp facilities, ablution facilities, fencing, signage, waste and surplus material. • Surfaces are to be checked for waste products from activities such as concreting or asphalting and cleared in a manner approved by the ECO. • Any contaminated soil must be collected and disposed of as hazardous waste. • All construction waste, litter and rubble are to be removed from the site and re-used elsewhere or recycled/disposed of at an appropriate facility. • Burying or burning of waste or rubble on site is prohibited. • All areas within the working area and site camp that have become devoid of vegetation or where soils have been compacted due to construction activities should be scarified or ripped.	Contractor / The Applicant	Rehabilitation phase

• Topsoil removed during the establishment of the site camp and the working area must be spread evenly over the entire site camp area and all other disturbed/ exposed areas after those areas have been ripped, scarified, shaped and contoured (as required). • Where necessary seeding and planting of vegetation can take place after the replacement of the topsoil. Hardy, drought tolerant, non-invasive plant species must be selected. If needed, a layer of mulch can be applied to the newly shaped/ landscaped and topsoiled areas. The mulch will serve to limit erosion and will promote the re-vegetation of the site by retaining moisture in the soil and providing organic material (compost) for new plant growth. • All exposed soils and recently topsoiled areas are to be re-vegetated or stabilised to the satisfaction of the ECO, to protect these areas from wind and water erosion. No areas are to be left exposed to erosive forces. Erosion protection measures that can be applied include mulching (described above), the placement of geotextile, onion bags filled with wood chips, brush-packing or other similar measures. • Any topsoil, subsoil or other excavated material that cannot be utilised during site rehabilitation must be removed from the site and reused elsewhere on the property or disposed of at an appropriate disposal site. • Disturbed soils must be revegetated with the local indigenous vegetation such as that which occurs at the site or provided with other suitable cover. • It is recommended that follow-up alien clearing be conducted 6 months after construction is complete and thereafter annually for 3 years (or longer is alien recruitment is still evident on site).		
Performance Indicator	• All construction-related materials, equipment, facilities, waste and contaminated soils have been removed from the site. • Compacted soils have been scarified/ ripped and stabilised. • All disturbed/exposed surfaces have been provided with a suitable covering and/or stabilised. • No alien vegetation is evident on site.	

10.4.2. Objective 2: MAINTENANCE OF ENVIRONMENTAL INTEGRITY DURING THE OPERATIONAL PHASE

***Impact Management Objective:* Keep the site free of alien vegetation**		
Potential impact to avoid	• Excessive alien vegetation growth. • Negative impacts on the environment.	
Impact Management Outcome	• The integrity of the environment is maintained throughout the operational phase.	
IMPACT MANAGEMENT ACTIONS		
Mitigation measure	Responsible party	Time period
• Cover crop that was planted where any weeds or exotic	The Applicant.	Operational

species were removed is to be maintained. • Regular follow-up clearing of aliens is required. • Ensure that any greenery planted on the parameter of the development is maintained. • Any erosion runnels/ gulleys/ channels that form on site must be infilled with appropriate material, compacted, rehabilitated as needed and appropriate erosion control measures put in place to prevent recurrent erosion at that site. • Alien plants must be removed from the site as per NEMBA requirements. • After any clearing is completed, an appropriate cover crop should be planted where any weeds or exotic species are removed from disturbed areas timeously.		phase
Performance Indicator	• The integrity and condition of the surrounding environment is maintained at an acceptable level. • All previously disturbed/exposed surfaces have been provided with a suitable covering and/or stabilised. • No alien vegetation is evident on site.	

11. Emergency Preparedness

11.1. Emergency response procedures

The potential environmental risks that may arise as a result of construction activities, or during the maintenance of the structures must be identified, and appropriate emergency response procedures must be compiled for each emergency scenario. Potential environmental emergencies that require an emergency response include, but are not limited to, unplanned fires, sewage spills, spills of hazardous chemicals, snake bites etc.

- The construction contractor is responsible for identifying potential significant environmental risks that may arise as a result of pre-construction, construction and rehabilitation activities, and the contractor must formulate emergency response procedures for these potential incidents.
- The ECO, the contractor and the Holder are responsible for ensuring that all construction workers are aware of the emergency procedures and are properly trained on how to identify and respond to an emergency incident during construction.
- An emergency procedure must clearly indicate who will take charge during an emergency, and the roles and responsibilities of workers and authorities during an emergency.
- The construction contractor is responsible for ensuring that the requirements of the Occupational Health & Safety Act (OHSA) are adhered to during the construction phase. The Holder is responsible for ensuring compliance with the OHSA during the undertaking of maintenance activities.

11.2. Emergency preparedness

The following measures must be implemented, as appropriate, to ensure effective responses to emergencies:

- All workers on site during the construction and operational phase must be properly educated about possible emergency incidents that may arise, how to avoid such incidents and how to respond in the event of an incident. "Refresher" training sessions on emergency procedures must be held if needed.

- All workers must ideally be given basic fire-awareness training and advised on basic firefighting and safety techniques. Fire-fighting equipment must be available on-site during construction and maintenance activities.
- All workers must be trained on how to respond in the event of a spill of a hazardous substance (fuel, chemicals etc.), if hazardous substances are to be used on site.
- A spill kit for containing and/or neutralising spills of hazardous substances (e.g. hydrocarbons) must be available on site at all times, when hazardous substances are present.
- Any incidents of pollution or spillage of hazardous materials during construction must be reported to the ECO as soon as possible. The ECO must then (depending on the nature of the spill) notify the relevant authorities, if needed. During the operational phase of the development, the Holder is responsible for notifying the relevant authorities of any pollution incidents that arise as a result of maintenance activities.
- A first aid kit must be available on site at all times.
- Emergency contact numbers (including the fire department, police and ambulance) must be prominently displayed on site at all times and regularly updated.
- All emergency incidents must be recorded in a site incident log. The cause of the incident, the measures taken in response to the incident and the efficacy of those measures must also be recorded. This information must be used to inform future emergency preparedness planning, and to avoid prevent similar incidents from arising again.

12. Method Statements

The Competent Authority and/or the ECO may require the Holder or Construction Contractor to submit Method Statements for one or more construction-related activity, or any aspect of the management of the site, before the activity is undertaken or during the performance of the activity, if the activity is causing or may cause significant environmental damage or pose a health and safety risk.

Method Statements need not be complex and lengthy, but must clearly state how, when and where the activity concerned will be undertaken, and must specify who will be responsible for undertaking each component of that activity. Method Statements must be prepared by the Construction Contractor and submitted to the ECO for approval before undertaking the activity concerned.

The ECO and / or Competent Authority have the authority to request method statements for activities, including but not limited to:

- Establishment of site camp and stockpile area.
- Cement/ concrete batching, disposal and emergency contingencies.
- Topsoil and sub-soil storage/ stockpiling.
- Storage of fuels and hazardous chemicals and emergency contingencies.
- Waste management system.
- Storm water management and control.
- Fire Control & Fire Emergency Plan.
- Emergency preparedness plan / emergency response procedure (see Chapter 11).
- Post-construction rehabilitation.

The ECO has the authority to prevent activities from being undertaken until such time as a satisfactory Method Statement has been submitted to the ECO and approved by the ECO.

13. Roles and Responsibilities

This EMPr, once approved by the competent authority, must be seen as binding to the Holder, and any person acting on the Holder's behalf, including but not limited to agents, employees, associates, contractors and service providers.

The Holder and all other persons who may be directly involved in the development are also bound by their general Duty of Care, as stated in Section 28 of the National Environmental Management Act, 1998:

> ***Duty of Care:***
> *"Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment"*

13.1. Duties and Responsibilities of the Holder

The Holder is ultimately responsible for ensuring that the environmental management measures specified in this EMPr, as well as any other conditions specified by the competent authority, are implemented, and adhered to during the construction and operational phase (maintenance activities) of the proposed development.

The Holder or delegated party is responsible for monitoring and maintenance during the operational phase. The Holder must ensure that all appointed service providers, contractors and maintenance workers are capable of complying with all statutory requirements of this EMPr and the conditions of the Environmental Authorisation. The Holder is responsible for ensuring that this EMPr and the conditions of the Environmental Authorisation are implemented and adhered to during construction.

The Holder or appointed consultant is responsible for identifying emergency situations that may arise during operational and maintenance activities and must formulate appropriate emergency response procedures for these emergency scenarios.

13.2. Duties and Responsibilities of the Contractor

The "Construction Contractor" is the entity responsible for undertaking the physical construction of the residential development. The construction contractor is responsible for ensuring that all environmental management measures specified in this EMPr and in the EA are implemented during the pre-construction, construction and post-construction rehabilitation phases, unless agreed otherwise with the Holder. The contractor will be responsible for all costs incurred in the rehabilitation of the site and for ensuring effective environmental management during construction. The contractor must therefore make adequate financial provision for the implementation of all prescribed measures.

It is strongly recommended that the Construction Contractor appoint an Environmental Site Officer (ESO), who will act as the Contractor's representative to monitor and enforce compliance with the conditions of this EMPr, throughout all phases of construction.

In addition to the above, the Construction Contractor is responsible for the following:

- Identify emergency situations that may arise as a result of construction activities and formulate appropriate emergency response procedures.
- Ensure that all construction workers, including sub-consultants and service providers, undergo environmental awareness training prior to commencing work on site, or as soon as possible thereafter.

- Compile the required method statements, which must be to the satisfaction of the ECO, before commencing with the activity to be governed by the method statement.
- Respond to concerns or issues identified by the ECO, as relates to environmental management, and implement the appropriate management or remediation measures, at the Contractor's own expense (unless agreed otherwise)
- Should third parties be called to the site to perform clean up and rehabilitation procedures, the Construction Contractor will be responsible for all associated costs.

Note that failure to comply with the requirements and conditions of this EMPr and the Environmental Authorisation may result in fines or other penalties being levied against the Construction Contractor by the Competent Authority.

13.3. Duties and Responsibilities of the ECO

The appointed Environmental Control Officer (ECO) is responsible for undertaking regular site visits to monitor and report on the implementation of the EMPr and adherence to the conditions of the Environmental Authorisation during the pre-construction, construction and post-construction rehabilitation phases. The ECO is not required to monitor the site during the operational phase of the development.

13.4. Competency of the ECO

The ECO must be independent of the Holder, Engineer, Construction Contractor and their service providers. The appointed ECO must be suitably qualified and experienced and must be able to demonstrate that he / she is of sufficient competency to undertake the required task. The ECO must preferably be a resident in close proximity to the development area to ensure quick response if required. The ECO must work in close co-operation with the Construction Contractor, resident engineer or ESO (where applicable) and all contractors in order to identify potential problems before they occur and provide suitable guidance as to how the identified problems (environmental impacts) can be avoided.

13.5. Duties of the ECO

The duties of the ECO include, but are not limited to:

- Conduct a pre-construction site inspection to ascertain the pre-commencement condition of the site (i.e., the status quo);
- Conduct environmental awareness training;
- Undertake weekly site visits to monitor compliance with all mitigation, monitoring and management measures contained in the EMPr and the Environmental Authorisation, during the pre-construction, construction and rehabilitation phases of the development;
- Evaluate the achievement of the performance indicators associated with each impact management objective specified in this EMPr;
- Liaise with site contractors, engineers and other members of the development team with regard to the requirements of the EMPr;
- Provide guidance as and when required regarding the implementation of the environmental management measures contained in the EMPr and EA, so as to assist the Holder and contractor in remaining compliant with these measures;
- Assist in finding environmentally acceptable solutions to construction problems;
- Ensure that the working areas, site camp facilities, access roads and no-go areas are properly demarcated;
- Ensure that proper topsoil management practices are adhered to on site;
- Ensure that proper waste management & pollution prevention strategies are practised on site;
- Examine method statements, where required;
- Recommend additional environmental protection measures, should this be necessary;
- Furnish contractors with verbal warnings in case of contravention of the EMPr;
- Recommend that the competent authority furnish errant contractors with predetermined fines, when verbal and / or written warnings are ignored;
- Ensure satisfactory rehabilitation of disturbed areas on site, after construction is complete;
- Keep detailed records of all site activities that may pertain to the environment, and produce compliance-monitoring reports (ECO Reports) for submission to the Holder, and the Competent Authority at regular intervals during the construction phase;

- Submit a final post-construction inspection report, within 3 months of completion of the construction phase. The audit report must detail the rehabilitation measures undertaken, describe all major incidents or issues of non-compliance and any issues or aspects that require attention or follow-up.
- All ECO Reports and Inspection Reports must be submitted to the Holder and Competent Authority.

13.6. Frequency of ECO visits

The ECO must conduct weekly site visits.

The ECO has the discretion to undertake additional visits if he / she feels this is justified due to the actions of the contractors, and to make ad hoc visits in order to ensure compliance.

The ECO must also undertake a final inspection (audit) 3 months of completion of construction activities. The purpose of this final inspection is to ensure that the rehabilitation measures applied at the conclusion of the construction phase have been sufficient to promote the successful rehabilitation of the site, and to identify any further issues that require attention or follow-up.

13.7. Authority of the ECO

The ECO has the authority to recommend to the authorities that they suspend all works (or part thereof) occurring on site, should any action being undertaken on site not comply with the environmental requirements, and where such actions pose a serious threat to any element of the surrounding environment.

The ECO has the authority to issue instructions to the Construction Contractor and/or Holder, regarding measures that must be implemented on site in order to ensure compliance with the EMPr and Environmental Authorisation, and/or to prevent environmental degradation or pollution from occurring.

The ECO has the authority to issue verbal and written warnings to contractors. Should verbal and written instructions and/or warnings be ignored, the ECO has the authority to request the Competent Authority to issue pre-determined fines or other penalties.

The ECO has the authority to report incidents of non-compliance to the Competent Authority at any time.

14. Environmental Awareness Plan

Environmental Awareness Training must be conducted prior to the commencement of construction activities. It is the holder's responsibility to familiarise himself/herself with the content and requirements of this EMPr. The holder is also responsible to ensure that the contractor and all labourers working on site during the construction phase are familiar with the content of this EMPr.

The following actions must be taken to ensure that all relevant parties are aware of their environmental role and duties:

- This EMPr must be kept on site at all times.
- The provisions of this EMPr and the conditions of the Environmental Authorisation must be explained in detail to all staff during Awareness Training.
- Training booklets will be handed out to all labourers and must be explained to them.
- Weekly checks to be done by the Holder's environmental representative who must be on site at all times.
- The ECO to conduct frequent site visits.
- Monthly monitoring reports to be compiled by the ECO. These reports will be circulated to all parties involved (including the holder, contractor and the competent authority).

The Construction Contractor must make allowance for all construction site staff, including all subcontractors that will be working at the site, to attend environmental awareness training sessions (undertaken by the ECO) before commencing any work on site. During this training, the ECO will explain the EMPr and the conditions contained therein. Attention will be given to the construction process and how the EMPr fits into this process. Other items relating to sound environmental management which must be discussed and explained during the environmental awareness training sessions include:

- The demarcated "No-Go" areas;
- General do's and don'ts of the site;
- Making of fires;
- Waste management, use of waste receptacles and littering;
- Use of the toilets provided;
- Use and control of construction materials and equipment etc.;
- Control, maintenance and refuelling of vehicles;
- Methods for cleaning up any spillage;
- Access and road safety;
- Emergency procedures (e.g. in case of fire, spillage etc.)
- General "best practice" principles, with regards to the protection of environmental resources.

Environmental awareness training and education must be ongoing throughout the construction phase and must be undertaken regularly if deemed necessary (especially if it becomes apparent that there are repeat contraventions of the conditions of the EMPr), or as new workers come to site. Translators must be utilised where needed.

15. Monitoring, Record Keeping and Reporting

15.1. Environmental Auditing

In accordance with the requirements of the Environmental Impact Assessment Regulations, 2014 (as amended), the holder of the Environmental Authorisation must, for the period that the Environmental Authorisation is valid, appoint a suitably qualified independent person to conduct an environmental audit to audit compliance with the conditions of the Environmental Authorisation and the EMPr.

The holder is responsible for appointing, managing and remunerating the appointed auditor. The auditor may not be the Environmental Control Officer (ECO) or EAP, but must be an independent party.
The appointed auditor must undertake Environmental Audit within 6 months of completion of construction phase (note that development phases/sales phases is not necessarily a construction phase). Following each audit, the environmental auditor must submit an audit report to the Competent Authority.

- Environmental auditing and environmental audit reports must adhere to the requirements of the amended 2014 Environmental Impact Assessment Regulations, in particular Section 34 (Auditing of Compliance with Environmental Authorisation, Environmental Management Programme) and Appendix 7 (Objective and Content of Environmental Audit Report)
- The audit report must provide verifiable findings on the level of compliance with the provisions/ conditions of the Environmental Authorisation and the EMPr and must also comment on the ability of the measures contained in this EMPr to sufficiently avoid, manage and mitigate environmental impacts.
- Where the findings of the audit report indicate that the impact management measures stated in the EMPr are insufficient to adequately address environmental impacts, recommendations as to how the EMPr must be amended so as to address the identified shortcomings must be made and submitted to the competent authority together with the audit report.

15.2. Construction Phase Monioring, reporting and record keeping

The appointed Environmental Control Officer (ECO) is responsible for monitoring the site weekly during the construction phase, in order to ensure that the provisions of this EMPr and the Environmental Authorisation are adhered to, and that sound environmental management is ensuing on site.

The ECO must compile a monthly ECO report detailing the ECO's observations on site, any instances of non-compliance and any issues or aspects that require attention, follow-up or remedial action. The ECO reports must be submitted to the Holder and to the Competent Authority is so requested by that authority. The ECO inspection reports must include both photographic and written records.

15.2.1. ECO Inspections - Photographic Records

The condition of the surrounding natural environment must be monitored regularly in order to ensure that construction and management activities are not impacting negatively on the condition of the landscape and any sensitive ecosystems. The most effective way to achieve this is by means of a detailed photographic record. In this way, a record of any shift in ecosystem condition can be maintained and potential impacts be detected at an early stage. Where necessary, the entire working area must be well documented and photographed.

15.2.2. ECO Inspections - Written Records

The following record-keeping during the pre-construction, construction and rehabilitation phases of the development is recommended:

- The ECO must complete an ECO Checklist after each ECO site visit.
- The ECO must compile an ECO monitoring report and submit this to the Holder, the Contractor and the Competent Authority (the latter only if required by the Competent Authority). The monthly reports must be a summary of the ECO inspections from the preceding month and must highlight the key concerns/ issues on site, instances of non-compliance with the EA and EMPr, all instructions issued to the contractor, actions taken and aspects that still require attention.
- All ECO reports and ECO instructions must be retained on file at least for the duration of the construction period (retaining reports for a period of at least 5 years is recommended, in the event that the Competent Authority must request information).
- A record (minutes) of construction site meetings, liaison site meetings between the ECO and resident engineer or contractor, monitoring reports, ECO instructions and ECO observations must be clearly documented and filed on a master file off-site for safe keeping.
- It is recommended that a site register (incident register) be kept on site at the site office for the recording of any environmental incidents (e.g., fires, spills etc.), observations which are contrary to the stipulations within the EMPr, and any other contravention deemed necessary for the attention of the resident engineer. Actions taken to remedy the incidents must also be recorded.
- A complaints register must be kept on site in which complaints by any member of the public must be logged.
- The ECO must compile a final post-construction audit report, within 3 months of completion of each construction phase. The audit report must detail the rehabilitation measures undertaken, describe all major incidents or issues of non-compliance and any issues or aspects that require attention or follow-up.

15.2.3. Construction Phase Record Keeping

A copy of the approved EMPr, the Environmental Authorisation and any relevant construction method statements must be kept on site at all times during pre-construction, construction and rehabilitation activities. The ECO Reports must be retained by the Holder for a period of at least 5 years and must be provided to the Competent Authority upon request.

16. Auditing

The Holder must, for the period during which the environmental authorisation and EMPr remain valid ensure the compliance with the conditions of the environmental authorisation and the EMPr, is audited;

16.1. The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr, must adhere to the following programme:

16.1.1. During the period which the activities have been commenced with on site until the construction of the bulk internal service infrastructure (i.e. internal roads; water-, sewer-, electricity reticulation and bulk storm water) has been completed on site, the Holder must undertake annual environmental audit(s) and submit the Environmental Audit Report(s) to the Competent Authority.

A final Environmental Audit Report must be submitted to the Competent Authority within three (3) months of completion of the construction of bulk internal services and the post construction rehabilitation and monitoring requirements thereof.

16.1.2. During the period the development of the residential phases (i.e. construction of top structures) is undertaken, the Holder must ensure that environmental audit(s) are performed regularly and submit these Environmental Audit Report(s) to the Competent Authority.

During this phase of the development, the frequency of the auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr may not exceed intervals of three (3) years.

A final Environmental Audit Report must be submitted to the Competent Authority within three (3) months of completion of the final phase of the residential development and the post construction rehabilitation and monitoring requirements thereof.

16.2. The Environmental Audit Report(s), must –

- be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or EAP who conducted the EIA process;

16.2.2. provide verifiable findings, in a structured and systematic manner, on–
16.2.2.1. the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
16.2.2.2. the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.

16.2.3. identify and assess any new impacts and risks as a result of undertaking the activity;
16.2.4. evaluate the effectiveness of the EMPr;
16.2.5. identify shortcomings in the EMPr;
16.2.6. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
16.2.7. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
16.2.8. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;
16.2.9. include a photographic record of the site applicable to the audit; and
16.2.10. be informed by the ECO reports.

The Holder must, within 7 calendar days of the submission of the audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and on a publicly accessible website (if applicable).

17. Penalties, Claims and Damages

The contractor will be responsible for all costs incurred in the rehabilitation of the site and for ensuring that all procedures required to rehabilitate the site are implemented. If third parties are called to the site to perform clean up and rehabilitation procedures, the contractor will be responsible for all costs. The competent authority may impose penalties on the Holder or any of the contractors if conditions contained in this EMPr are contravened. This would be based on an agreement or contract between the Holder and the contractor.

Penalties could be imposed in terms of Chapter 11 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, and would be applicable for any action which leads to damage to the natural environment. Please note that the payment of any fines in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.

In cases where severe environmental damage occurs, the competent authority law enforcement division may take legal action against the responsible parties. The reasons for this could include, among others:

- Not implementing the conditions of the EMPr;
- Spillage that result in environmental damage;
- Incorrect handling and storage of construction materials and chemicals;Sensitive areas that are not clearly demarcated;
- Performing ablutions in areas other than facilities provided for such actions; and
- Occurrence of unattended and out of control fire.

The contractor will be responsible to pay the following penalties should indigenous trees or vegetation which are in no go areas or being protected by barrier or danger tape be damaged by anyone under his/her employ.

The Contractor shall comply with the environmental specifications and requirements on an ongoing basis and any failure on his part to do so will entitle the ECO to issue the contractor with penalty / fine as described in the following section.

The following fine structure shall apply:

Table 2: Offences that may constitute a fine.

Any vehicles, plant, or thing related to the Contractors operations within the designated boundaries of a "no-go" area	**R 1,000.00**
Any vehicle being driven, and items of plant or materials being parked or store outside the demarcated boundaries of the site	**R 1,000.00**
Persons walking outside the demarcated boundaries of the site	**R 100.00**
Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refuelling such as the use of a funnel rather than a pump	**R 1,000.00**
Littering of site by individuals	**R 250.00**
No on-site implementation of waste management system.	**R 1000.00**
Waste not collected and contained immediately.	**R 1000.00**
No recycling of waste.	**R 1000.00**
Burning, burying or disposing of waste other than as prescribed.	**R 1000.00**

Waste not disposed of at an approved landfill.	**R 1000.00**
Chemicals and / or waste spilled on ground.	**R 250.00**
Use of other areas for toilet purposes and / or disposal of chemicals / waste.	**R 250.00**
Stockpiling of soil in an unspecified area.	**R 2500.00**
Stockpiles not located and aligned so as to minimise impacts.	**R 2500.00**
Spilling of soil or construction material into water body or stream.	**R 1000.00**
Removal of protected trees without appropriate permit.	**R 2500.00 (per tree)**

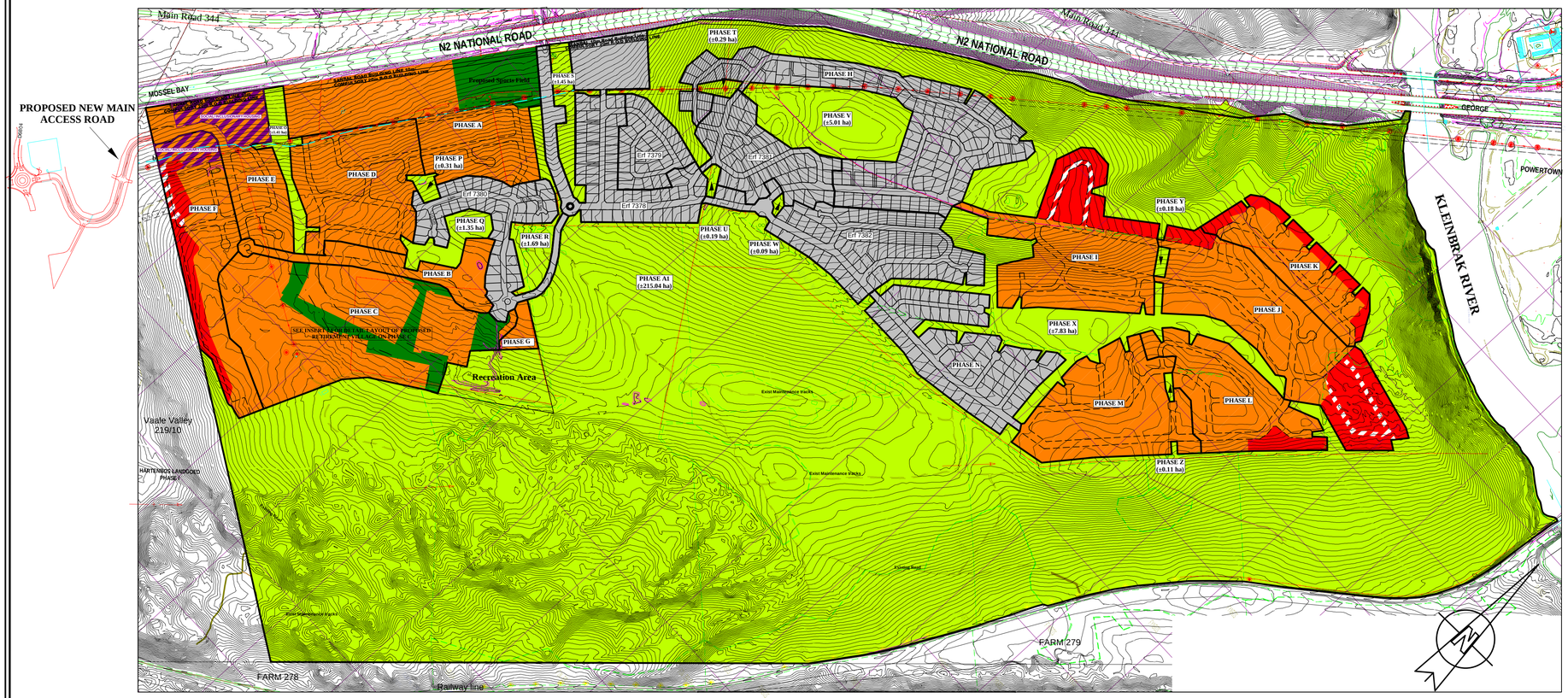
The above does not absolve the transgressor from being prosecuted in terms of the ***National Environmental Management Act (Act 107 of 1998)*** which may result in further penalties and other actions by State Departments.

18. Conclusion

The recommendations and mitigation measures prescribed in this EMPr have been formulated with the intention of addressing potential pre-construction and construction phase impacts on the environment. It is likely that if the conditions, requirements and recommendations of the above EMPr are implemented as described and the relevant stakeholders adhere to the various mitigation measures, then the project will be completed without unforeseen negative environmental impacts.

Familiarity with the contents of this EMPr by the contractors and other individuals involved in the development project will assist in achieving "environmental best-practice, which ultimately ensures that the project arrives at a sustainable outcome.

SITE DEVELOPMENT PLAN: (Scale 1: 6000)



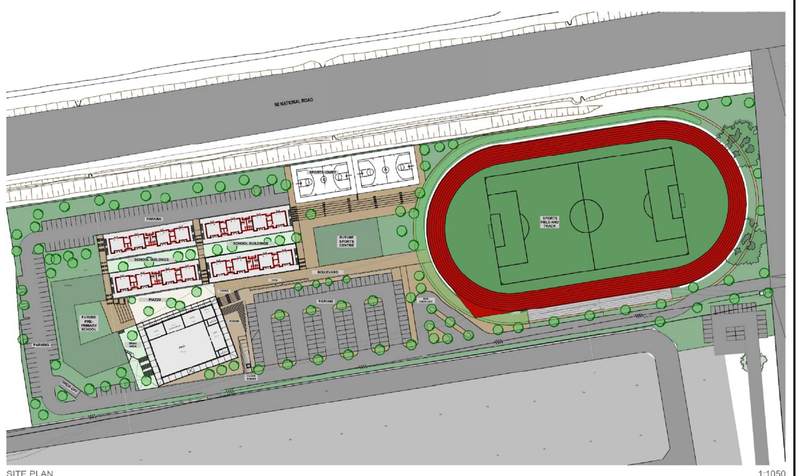
PLEASE NOTE:

1.The figure boarded by — · — · — · — · — on the Phasing Plan above represents the original alignment of the Open Space on the previously approved Plan No. HB/C/204-10; and

2. The dashed road alignments of roads are schematic and may be amended marginally in future.

INSERT 1 (True to scale): DRAFT PROPOSAL FOR RETIREMENT VILLAGE ON PHASE C

INSERT 2 (True to scale): DRAFT PROPOSAL FOR SCHOOL WITH SPORTS FIELD ON A PTN. OF PHASE A



PROPOSED SITE DEVELOPMENT PLAN FOR THE REZONING OF REM. PTN 11 OF FARM VAALE VALLEY No. 219, SITUATED IN THE MUNICIPALITY AND ADMINISTRATIVE DISTRICT OF MOSSEL BAY

PLEASE NOTE:

THIS PLAN IS A RESULT OF CONDITION B.3. IN THE ENVIRONMENTAL AUTHORISATION STIPULATING THAT: "A NEW SITE DEVELOPMENT PLAN (SDP) MUST BE SUBMITTED THAT INCLUDES THE SOCIAL HOUSING UNITS"

REMARKS:
1. PLAN NO HB/G/206-4 IS A 'REZONING PLAN' AND NOT A SITE DEVELOPMENT PLAN THEREFORE, THIS NEW SITE DEVELOPMENT PLAN WAS COMPILED TO COMPLY WITH CONDITION B.3 IN THE 'E.A';
2. BY AMENDING THE TABLES AND INSCRIPTIONS ON PLAN NO. HB/G/206-4 AND THE ANNEXURE TO THE LATTER IN ORDER TO PROVIDE FOR THE SOCIAL/INCLUSIONARY HOUSING WILL CREATE CONFUSION AS THESE PLANS WERE SENT TO ALL THE I.& A.P's IMPLYING THAT IT WILL HAVE TO BE WITHDRAWN, WHILE IT DOES NOT HAVE A MATERIAL INFLUENCE ON THEIR DECISION MAKING. THEREFORE, THE SITE DEVELOPMENT PLAN INCLUDES AMENDED TABLES AS EXTRACTS FROM PLAN NO. HB/G/206-4 AND THE ANNEXURE THERETO REFLECTING THE AMENDED DENSITIES IN PHASES E AND F AND NUMBER OF UNITS NOW INVOLVED IN ORDER TO COMPLY WITH THE SAID 'E.A' CONDITION; SEE NEWLY CREATED TABLE 1A AND 1B BELOW;
3. ACCORDING TO THE ABOVE AMENDMENT 'PHASE E' WILL NOW PROVIDE FOR 125 IN STEAD OF 120 UNITS AND THE DENSITY WILL INCREASE FROM 22 TO 22.48 UNITS/HA, WHILE THE NUMBER OF UNITS AND DENSITY OF PHASE F WILL REMAIN UNCHANGED. THE ONLY AMENDMENT TO THE TABLE ON THE ANNEXURE PLAN IS AN INCREASE IN THE TOTAL NUMBER OF UNITS FROM 1740 TO 1743;
4. IN ORDER TO PREVENT CONFUSION THE TABLES ON THIS 'SITE DEVELOPMENT PLAN' (S.D.P -1) MUST SERVE AS A SUBSTITUTE FOR THE FIGURES IN THE TABLE ON PLAN NO. HB/G/206-4 AND THE ANNEXURE PLAN; AND
5. THE ONLY OTHER AMENDMENT PROVIDED FOR ON 'S.D.P.-1' IS INSCRIBTIONS INDICATING THE AREA'S HATCHED PURPLE/ORANGE IN PHASES E AND F WHICH WILL ACCOMMODATE A TOTAL OF 150 SOCIAL/INCLUSIONARY HOUSING UNITS.

Table 1A

PHASE	AREA (ha)	TOT. NO. OF UNITS (±)	DENSITY (±)	OTHER
PHASE A	±11.34ha**	220	20 units/ha	
PHASE B	±3.05ha*	80	27 units/ha	
PHASE C	±15.05ha*	500	34 units/ha	
PHASE D	±7.36ha*	90	13 units/ha	
PHASE E	±5.56ha*	**125**	**22.48 units/ha**	± 0.31ha BZIV
PHASE F	±6.94ha*	110	16 units/ha	
PHASE G	±0.57ha*	N/A	N/A	± 0.57ha BZIII
PHASE I	±9.39ha*	120	13 units/ha	
PHASE J	±11.03ha*	250	23 units/ha	
PHASE K	±4.90ha*	60	13 units/ha	
PHASE L	±6.23ha*	90	15 units/ha	
PHASE M	±7.97ha*	100	13 units/ha	
PHASE O	±1.41ha***	N/A	N/A	±1.41ha OSZII
PHASE P	±0.31ha***	N/A	N/A	±0.31ha OSZII
PHASE Q	±1.35ha***	N/A	N/A	±1.35ha OSZII
PHASE R	±1.69ha***	N/A	N/A	±1.69ha OSZII
PHASE S	±1.45ha***	N/A	N/A	±1.45ha OSZII
PHASE T	±0.29ha***	N/A	N/A	±0.29ha OSZII
PHASE U	±0.19ha***	N/A	N/A	±0.19ha OSZII
PHASE V	±5.01ha***	N/A	N/A	±5.01ha OSZII
PHASE W	±0.09ha***	N/A	N/A	±0.09ha OSZII
PHASE X	±7.83ha***	N/A	N/A	±7.83ha OSZII
PHASE Y	±0.18ha***	N/A	N/A	±0.18ha OSZII
PHASE Z	±0.11ha***	N/A	N/A	±0.11ha OSZII
PHASE A1	±215.04ha***	N/A	N/A	±215.04ha OSZII

Table 1B

	Approved R.O.D. (18/08/2009)	Implemented	Approved Development Not Implemented	Proposed New Dev.	Prop. units/area more/less than R.O.D. appr. units/area
TOTAL AREA	371.03ha	46.7ha (±)	324.33ha (±)	324.33ha (±)	- 46.7ha (±)
Residential Units *	2073 **	548	1525	**1743**	+ 215
Business	0.38ha (±)***	0	0.38ha (±)***	0.88ha (±)	+ 0.5ha (±)
Community Zone	N/A	N/A	N/A	3.24ha (±) ****	N/A
Open Space	240ha (±)	0ha (±)	240ha (±)	235ha (±)	- 5ha (±)*****

Notes
1. Contour Mapping and cadastral information by Azur Aerial Work.
2. Contour Intervals = 1m

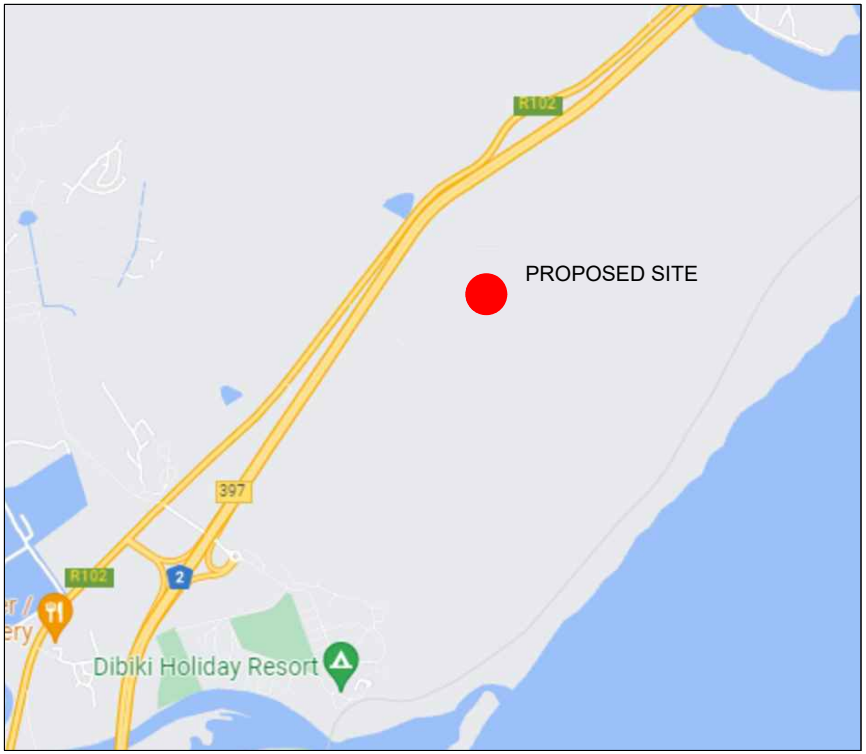
REM. PORTION 11 OF FARM VAALE VALLEY 219 MOSSEL BAY

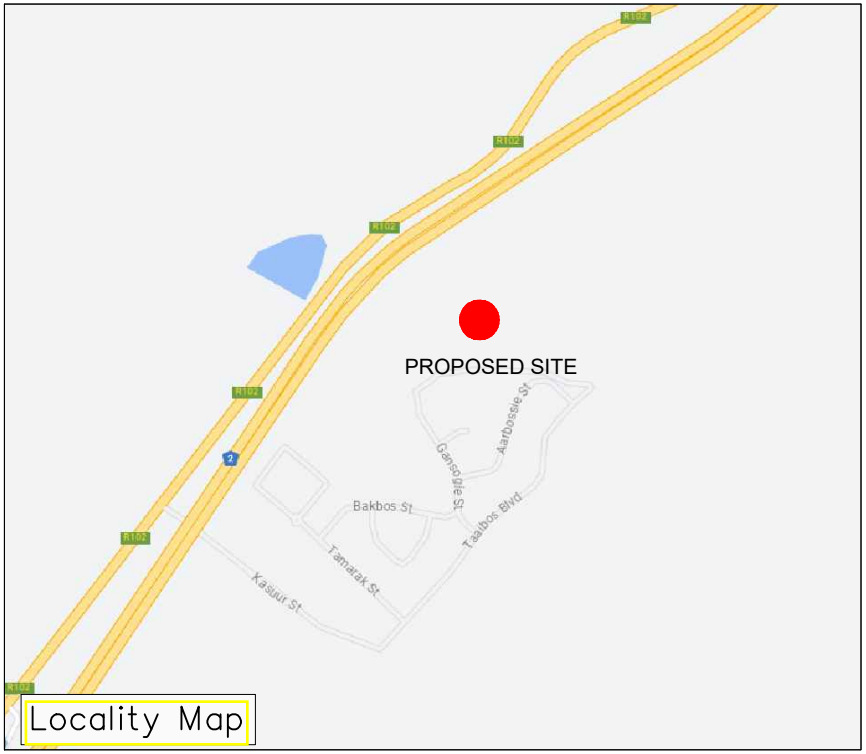
HARTLAND Lifestyle Estate

SKAAL 1:6000 (A1) SCALE

del & dek Town and Regional Planners
Stads -en Streekbeplanners
Yorkstraat 56 York Street
Posbus 1186 / P.O. Box 1186
George 6530
Tel: (044) 874 5207
Fax: (044) 873 6354
E-pos / E-mail: neldek@mweb.co.za

Beplan Planned	D.N.	Plan No	S.D.P. -2
Geteken Drawn	A.H.		
Datum Date	JUNE 2023		





SITE ID:
n/a

NAME:
Hartland

PROPERTY DESCRIPTION:

Remainder of Portion 11 of Farm no 219 Mossel Bay

ADDRESS:
Hartland Estate

CO-ORDINATES:
Lat: -34.097322°
Long: 22.123004°

ELEVATION:
92m

Tel: (049) 891 0224
Fax: N/a

188 Cradock Street
Graaff Reinet
6280

PROJECT:

PROPOSED NEW 15m Windmill Mast

NOTES:
1. STRUCTURE TO COMPLY TO ENGINEERS DETAIL
2. MAST HEIGHT: 15 METERS
3. MATERIAL:
MAST: STEEL
MAST BASE: CONCRETE
CONTAINERS: STEEL
CONTAINERS BASE: CONCRETE
PALISADE FENCE: STEEL
PALISADE FOUNDATION: CONCRETE
4.ZONING: To be confirmed

DATE	DESCRIPTION	REVISION
10-5-2023	1st Issue	0

DRAWING NUMBER: 101

SHEET:
1 OF 4

DRAWING TITLE: Hartland
LOCALITY MAP

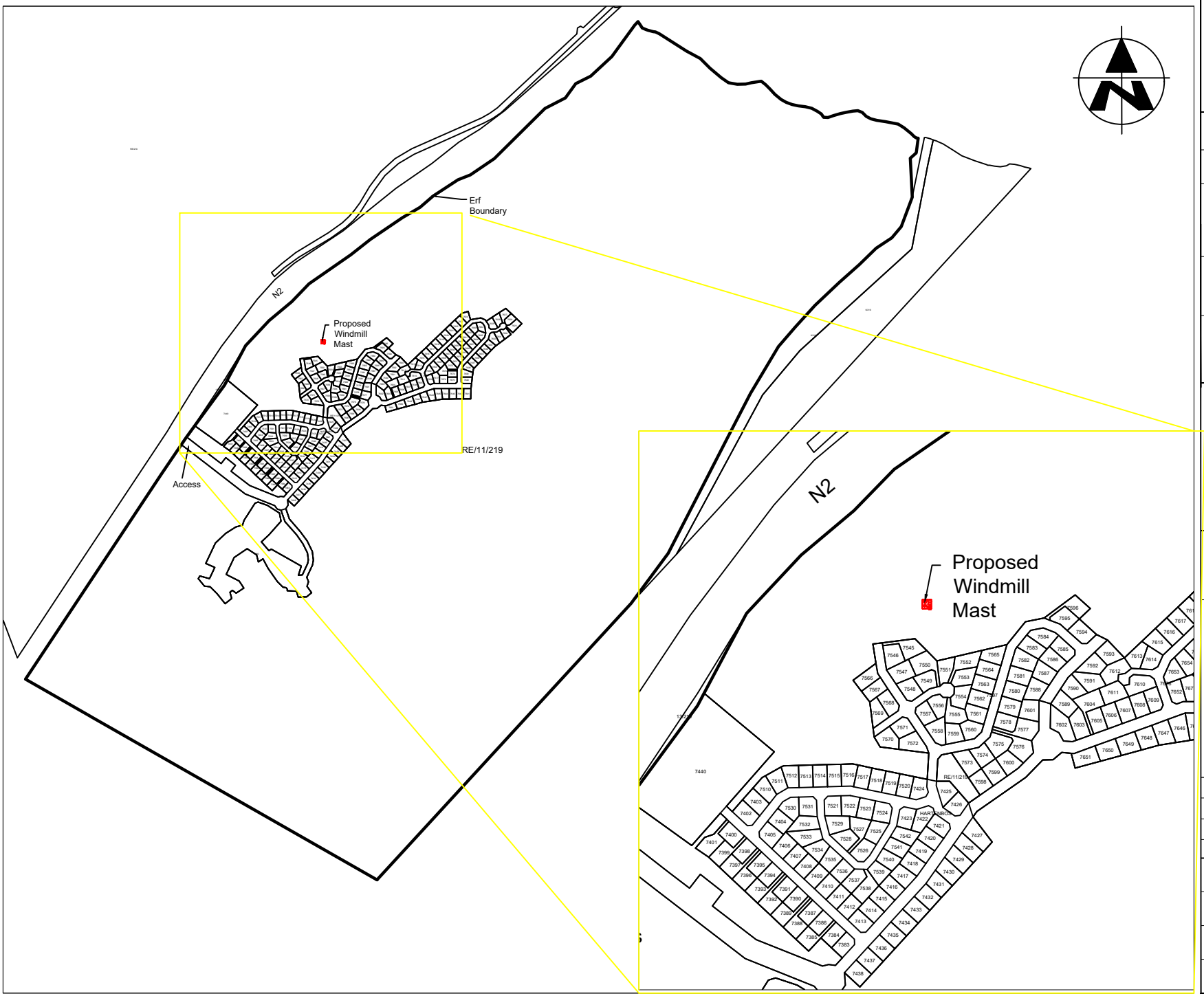
DRAWN: E TERBLANCHE

SCALE:
NTS

DATE: 10-5-2023

REVISION:
0

Site Plan



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PALISADE FOUNDATION: CONCRETE
4.ZONING: To be confirmed

DATE	DESCRIPTION	REVISION
10-5-2023	1st Issue	0

DRAWING NUMBER: 101

SHEET: 2 OF 4

DRAWING TITLE: Hartland SITE PLAN

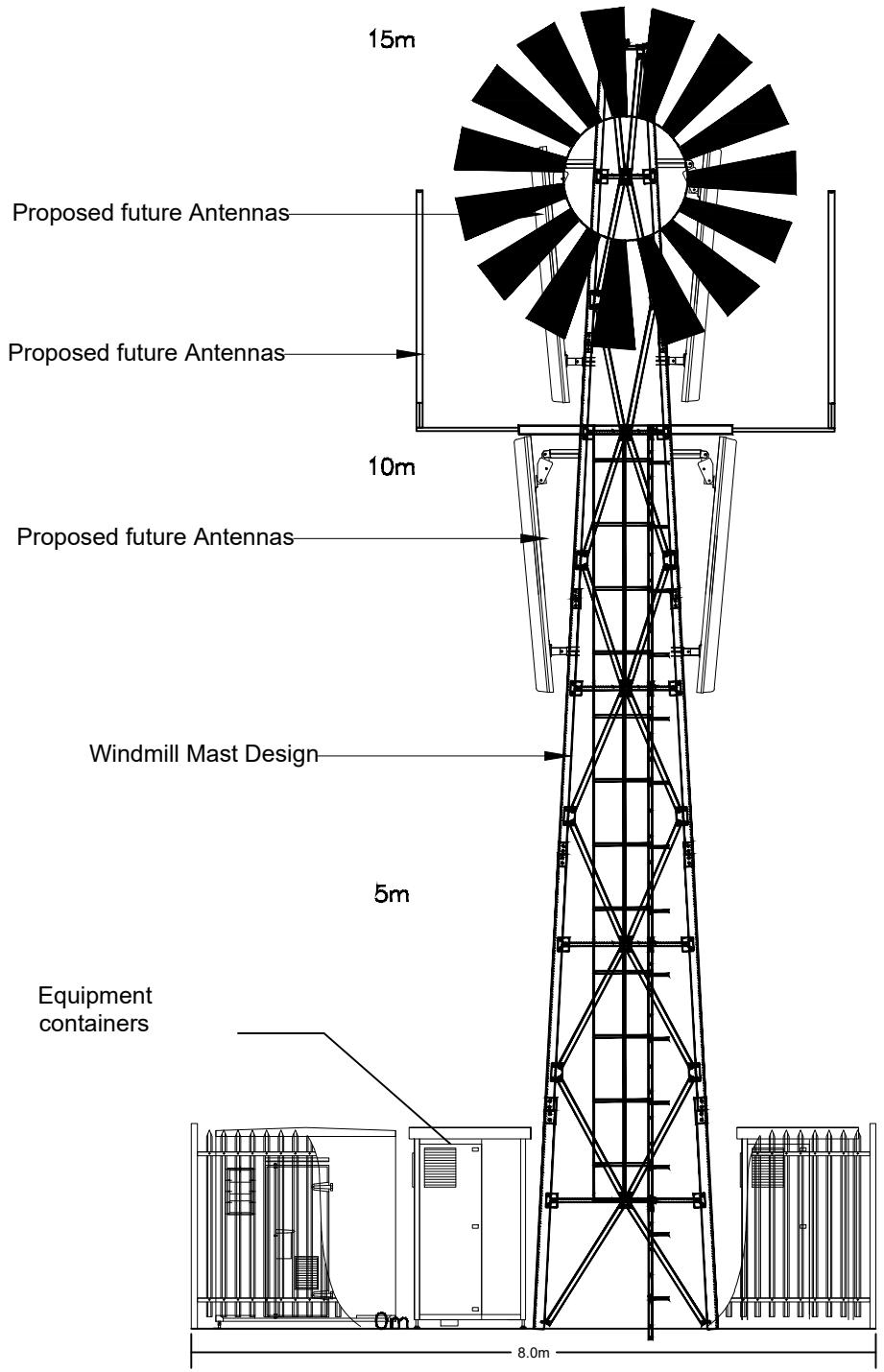
DRAWN: E TERBLANCHE

SCALE: 1:750

DATE: 10-5-2023

REVISION: 0

Elevation



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CONTAINERS: STEEL
CONTAINERS BASE: CONCRETE
PALISADE FENCE: STEEL
PALISADE FOUNDATION: CONCRETE
4.ZONING: To be confirmed

DATE	DESCRIPTION	REVISION
10-5-2023	1st Issue	0

DRAWING NUMBER: 101

SHEET: 4 OF 4

DRAWING TITLE: Hartland ELEVATION

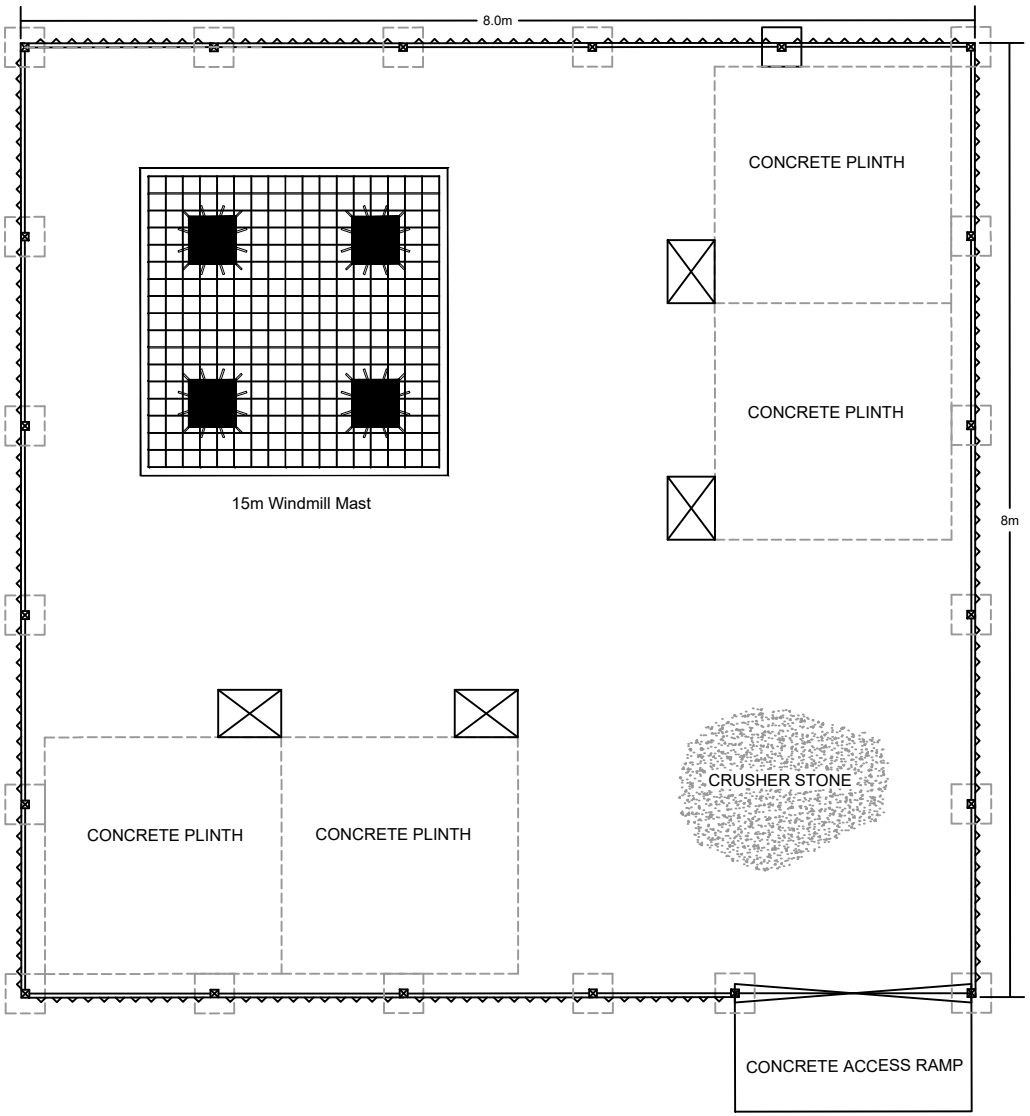
DRAWN: E TERBLANCHE

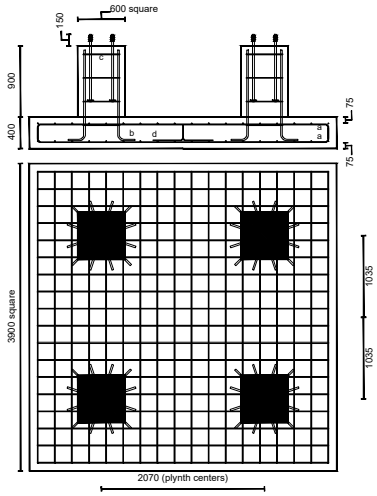
SCALE: 1:50

DATE: 10-5-2023

REVISION: 0

Top View





15m WINDMILL MAST FOUNDATION

SCALE 1:150

SITE ID:
n/a

NAME:
Hartland

PROPERTY DESCRIPTION:

Remainder of Portion 11 of Farm no 219 Mossel Bay

ADDRESS:
Hartland Estate

CO-ORDINATES:
Lat: -34.097322°
Long: 22.123004°

ELEVATION:
92m

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Fax: N/a

188 Cradock Street
Graaff Reinet
6280

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CONTAINERS: STEEL
CONTAINERS BASE: CONCRETE
PALISADE FENCE: STEEL
PALISADE FOUNDATION: CONCRETE
4.ZONING: To be confirmed

DATE	DESCRIPTION	REVISION
10-5-2023	1st Issue	0

DRAWING NUMBER: 101

SHEET: 3 OF 4

DRAWING TITLE: Hartland TOP VIEW

DRAWN: E TERBLANCHE

SCALE: 1:60

DATE: 10-5-2023

REVISION: 0

Western Cape Government

Department of Environmental Affairs and Development Planning
Gavin Benjamin
Directorate: Development Management
Gavin.Benjamin@westerncape.gov.za | 044 814 2001
DEADPEIAAdmin.George@westerncape.gov.za | 044 814 2002

EIA REFERENCE NUMBER: EG12/2/1-AM18-FARM VAALEVALLEY 219/B, MOSSEL BAY
DATE OF ISSUE: **07 AUGUST 2023**

THE DIRECTOR
HARTLAND LIFESTYLE ESTATE (PTY) LTD
Unit 1
K109 Business Park
1 Tinus de Jongh St
Van Eck Park
BRAKPAN
1541

Attention: Mr. A. le Roux

Tel: 011 915 0891
E-mail: andre@dalmar.co.za

Dear Sir,

APPROVAL OF THE REVISED CONSTRUCTION PHASE AND OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME AND ACKNOWLEDGMENT OF RECEIPT OF THE AMENDED SITE DEVELOPMENT PLAN: FOR THE HARTLAND LIFESTYLE ESTATE, HARTENBOS

1. The abovementioned EMPr dated 28 June 2023 and the amended Site Development Plan (SDP) received by the Directorate: Development Management Region 3 (hereinafter referred to as "this Directorate") on 29 June 2023, refers.

2. This Directorate hereby acknowledges receipt of the amended SDP (Compiled by Nel and De Kock dated June 2023, Plan number S.D.P. -2).

3. By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014, as amended, the competent authority herewith approves the abovementioned amended environmental management programme (EMPr).

4. Please ensure compliance with the Environmental Authorisation and approved EMPr.

Note: A person is guilty of an offence in terms of Section 49A of the National Environmental Management Act, 1998 (Act no. 107 of 1998) ("NEMA") if that person fails to comply with or contravenes a condition of an environmental authorisation granted for a listed activity or an approved environmental management programme.

A person convicted of an offence in terms of the above is liable to a fine not exceeding R10 million or to imprisonment for a period not exceeding 10 years, or to both such fine or such imprisonment.

5. An application for amendment to the EMPr must be submitted to the competent authority if any amendments are to be made to the EMPr, other than those mentioned above, and this may only be implemented once the amended EMPr has been authorised by the competent authority.

6. The Department reserves the right to revise initial comments and request further information from you based on any new or revised information received.

Yours faithfully

Gavin Benjamin

Digitally signed by Gavin Benjamin
Date: 2023.08.07 14:30:00 +02'00'

DIRECTOR: DEVELOPMENT MANAGEMENT REGION 3
DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

Copied to: EAP: Sharples Environmental Services E-mail: michael@sescc.net

FOR OFFICIAL USE ONLY:

APPEAL ENVIRONMENTAL AUTHORISATION REFERENCE NUMBER:	**3/6/3 (HARTENBOS LANDGOED PHASE 2)**
DATE OF ISSUE:	**18 AUGUST 2009**
EA ADDENDUM #1 REFERENCE NUMBER:	**M3/6/5**
DATE OF ISSUE:	**18 DECEMBER 2012**
EA ADDENDUM #2 REFERENCE NUMBER:	**M3/6/5**
DATE OF ISSUE:	**12 FEBRUARY 2018**
EA ADDENDUM #3 REFERENCE NUMBER:	**16/3/3/5/D6/29/0008/22**
NEAS REF.:	**WCP/EIA/AMEND/0000677/2022**
DATE OF ISSUE:	**22 JUNE 2023**

Western Cape Government

Department of Environmental Affairs and Development Planning
Zaahir Toefy
Directorate: Development Management
Zaahir.Toefy@westerncape.gov.za | 021 483 2700
DEADPEIAAdmin.George@westerncape.gov.za | 044 814 2006

REFERENCE: 16/3/3/5/D6/29/0008/22
NEAS REF.: WCP/EIA/AMEND/0000677/2022
DATE OF ISSUE: 22 June 2023

ADDENDUM TO ENVIRONMENTAL AUTHORISATION

APPLICATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND PART 2 AND 4 OF CHAPTER 5 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 FOR THE AMENDMENT OF THE APPEAL ENVIRONMENTAL AUTHORISATION ISSUED ON 18 AUGUST 2009 (REF 3/6/3) AND THE ENVIRONMENTAL MANAGEMENT PROGRAMME (DATED 8 MARCH 2008) FOR THE PROPOSED RESIDENTIAL DEVELOPMENT ON A PORTION OF THE FARM VAALE VALLEY 219, MOSSEL BAY – HARTLAND LIFESTYLE ESTATE

With reference to your application for the abovementioned, find below the decision with respect to the application (submitted 21 October 2022) for the amendment to the Environmental Authorisation issued on 18 August 2009 (hereinafter referred to as an "Environmental Authorisation").

A. DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998, as amended) and the Environmental Impact Assessment Regulations, 2014, ("EIA Regulations") the competent authority herewith—

- **grants in part,** the amendment of the Environmental Authorisation issued on 18 August 2009; whereas, the removal of the social housing node from the development proposal is refused.
- **refuses** the amendment of Condition 8.3 of the Environmental Authorisation issued on 18 August 2009 to allow kikuyu grass (*Pennisetum clandestinum*) to be included in the list of plant species in the OEMP that must be encouraged on the estate.
- **grants,** the removal of the impact management action of the Construction Phase Environmental Management Programme ("CEMPr") dated March 2008 and the Operational Phase Environmental Management ("OEMPr") dated June 2008 regarding the establishment of an Environmental Liaison Committee ("ELC"); and
- **refuses** the amendment to the impact management action and impact management outcome in the CEMPr and OEMPr related to Condition 8.3 of the Environmental Authorisation issued on 18 August 2009, regarding the addition of kikuyu grass (*Pennisetum clandestinum*) to the list of plant species that should be encouraged/permitted on the estate.

The Environmental Authorisation issued on 18 August 2009 and the EMPr (comprising of the CEMP and OEMP) are amended as set out below.

1. The Environmental Authorisation issued on 18 August 2009 is amended as follows:

1.1 The substitution in the Title and Section A of the Environmental Authorisation for the expression "*Hartenbos Landgoed Phase 2*" or "*Hartenbos Landgoed*" where it refers to the development on portion of the Farm Vaale Valley 219, Mossel Bay, for the following words—

"Hartland Lifestyle Estate"

1.2 Section A: Description of the Activity is substituted with the following:

"The proposed development consists of a total of 2288 Residential units made up of single residential erven and general residential (including 150 Social Housing units), a 0.88ha Business Zone, 3.24ha Community Zone (consisting of a school and sports field) and an Open Space of 235ha (excluding the internal Open Spaces), which will be managed as a nature reserve, a road network and associated infrastructure services will be accommodated on the footprint.

The main access will be from through the New Vintage Development to the southwest of Hartland and the secondary access will be from the MR 344 through the culvert under the N2 National Road.

Water will be provided from the proposed new 15Ml reservoir that will supply both the proposed Hartland Lifestyle Estate and possible future developments in the area, in addition to a 5Ml reservoir and booster pump station.

Sewerage removal will be accommodated by means of a gravity sewer network in combination with sewage pump stations. The sewage will be pumped to a point near the north-western edge of the site from where it will gravitate and siphon to the Hartenbos Regional Sewage Treatment Works."

1.3 Section G: Condition 25 is substituted with the following:

"*25. The Holder must, for the period during which the environmental authorisation and EMPr (comprising of the CEMP and OEMP) remain valid, ensure the compliance with the conditions of the environmental authorisation and the EMPr, is audited*."

25.1 The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr, must adhere to the following programme:

25.1.1 During the period which the activities have been commenced with on site until the construction of the bulk internal service infrastructure (i.e., internal roads; water-, sewer-, electricity reticulation and bulk

storm water) has been completed on site, the Holder must undertake annual environmental audit(s) and submit the Environmental Audit Report(s) to the Competent Authority.

A final Environmental Audit Report must be submitted to the Competent Authority within three (3) months of completion of the construction of bulk internal services and the post construction rehabilitation and monitoring requirements thereof.

25.1.2 During the period the development of the residential phases (i.e., construction of top structures) is undertaken, the Holder must ensure that environmental audit(s) are performed regularly and submit these Environmental Audit Report(s) to the Competent Authority.

During this phase of the development, the frequency of the auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr may not exceed intervals of three (3) years.

A final Environmental Audit Report must be submitted to the Competent Authority within three (3) months of completion of the final phase of the residential development and the post construction rehabilitation and monitoring requirements thereof."

1.4 Section G: Condition 26 is substituted with the following:

"26. *The Environmental Audit Report(s), must–*

26.1 be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or the EAP who managed the application or the EIA process.

26.2 provide verifiable findings, in a structured and systematic manner, on–

26.2.1 the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and

26.2.2 the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.

26.3 identify and assess any new impacts and risks as a result of undertaking the activity;

26.4 evaluate the effectiveness of the EMPr;

26.5 identify shortcomings in the EMPr;

26.6 identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;

26.7 *indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;*

26.8 *indicate the date on which the maintenance/ rehabilitation was commenced with and the progress of the rehabilitation;*

26.9 *include a photographic record of the site(s) applicable to the audit; and*

26.10 *be informed by the ECO reports*.

Note: *The Holder must, within 7 calendar days of the submission of the audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and on a publicly accessible website (if applicable).*
The EMPr comprises of the CEMP and OEMP"

1.5 All other conditions contained in the Environmental Authorisation issued on 18 August 2009 (as amended) still remain unchanged and in force.

2. The EMPr (comprising of the CEMPr and OEMPr approved on 18 August 2009) is amended as set out below:

2.1. The requirements of Condition 25 of the Environmental Authorisation as issued on 18 August 2009, which required the establishment of an Environmental Liaison Committee ("ELC") prior to the commencement of site preparation and construction activities; may be removed respectively from the CEMPr and OEMPr (as approved on 18 August 2009); and

2.2. The requirement relating to the submission of an Environmental Audit Report to the Department within 6 months after installation of the services of each phase that has been completed as contained in Condition 26 of the Environmental Authorisation as issued on 18 August 2009; must be amended to address the environmental auditing requirements of the Environmental Impact Assessment Regulation, 2014 and incorporate the changes to the conditions in Section G made in this Addendum to the Environmental Authorisation.

B. CONDITIONS

1. The applicant must, in writing, within **14 (fourteen)** calendar days from the date of the Department's decision –
   1.1 notify all registered interested and affected parties registered in the previous EIA process of –
      1.1.1 the outcome of the application;
      1.1.2 the reasons for the decision;
      1.1.3 the date of the decision; and
      1.1.4 the date of issue of the decision;

1.2 draw the attention of all registered interested and affected parties registered in the previous EIA process to the fact that an appeal may be lodged against the decision in terms of the National Appeals Regulations, 2014 (as amended) in section D below;

1.3 draw the attention of all registered interested and affected parties registered in the previous EIA process to the manner in which they may access the decision.

2. The holder of the environmental authorisation must within thirty (30) calendar days of the issue of this amendment decision, provide the competent authority with written proof of compliance with condition 1 above.

3. A new Site Development Plan ("SDP") must be submitted that includes the Social Housing units. This SDP must be submitted to this Department prior to the commencement of the new phases.

4. The amended CEMPr and OEMPr submitted with the Final Impact Report must be amended to incorporate the changes made in this Addendum to the Environmental Authorisation. The amended CEMPr and OEMPr must be submitted to this Department for approval prior to the commencement of the construction of the new phases.

C. APPEALS

1. An appellant (if the holder of the decision) must, within 20 (twenty) calendar days from the date the notification of the decision was sent to the holder by the Competent Authority–
    1.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and
    1.2. Submit a copy of the appeal to any registered I&APs including any Organ of State with interest in the matter; and
    1.3. Submit a copy of the appeal to the decision-maker (i.e. the Competent Authority that issued the decision) at:
        Zaahir.Toefy@westerncape.gov.za and copied to:
        DEADPEIAadmin.George@westerncape.gov.za
        Gavin.Benjamin@westerncape.gov.za

2. An appellant (if NOT the holder of the decision) must, within 20 (twenty) calendar days from the date the holder of the decision sent notification of the decision to the registered I&APs–
    2.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and

    2.2 Submit a copy of the appeal to the holder of the decision and any registered I&AP including any Organ of State with an interest in the matter; and

2.3 Submit a copy of the appeal to the decision-maker (i.e. the Competent Authority that issued the decision) at:

Zaahir.Toefy@westerncape.gov.za and copied to:
DEADPEIAadmin.George@westerncape.gov.za
Gavin.Benjamin@westerncape.gov.za

3. The holder of the decision (if not the appellant), the decision-maker that issued the decision, the registered I&AP and the Organ of State must submit their responding statements, if any, to the appeal authority and the appellant within 20 (twenty) calendar days from the date of receipt of the appeal submission.

4. The appeal and the responding statement must be submitted to the Appeal Administrator at the address listed below:

By post: Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or

By hand: Appeal Administrator
Attention: Mr Marius Venter (Tel: 021 483 3721)
Room 809
8th Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

Note: For purposes of electronic database management, you are also requested to submit electronic copies (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Authority to the address listed above and/ or via e-mail to DEADP.Appeals@westerncape.gov.za.

5. A prescribed appeal form as well as assistance regarding the appeal processes is obtainable from the Appeal Administrator at: Tel. (021) 483 3721, E-mail DEADP.Appeals@westerncape.gov.za or URL http://www.westerncape.gov.za/eadp.

D. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this Addendum to the Environmental Authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully

Zaahir Toefy

Digitally signed by Zaahir Toefy
Date: 2023.06.21 18:52:36 +02'00'

ZAAHIR TOEFY
DIRECTOR: DEVELOPMENT MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

DATE OF DECISION: 21 JUNE 2023

FOR OFFICIAL USE ONLY:

APPEAL ENVIRONMENTAL AUTHORISATION REFERENCE NUMBER:	**3/6/3 (HARTENBOS LANDGOED PHASE 2)**
DATE OF ISSUE:	**18 AUGUST 2009**
EA ADDENDUM #1 REFERENCE NUMBER:	**M3/6/5**
DATE OF ISSUE:	**18 DECEMBER 2012**
EA ADDENDUM #2 REFERENCE NUMBER:	**M3/6/5**
DATE OF ISSUE:	**12 FEBRUARY 2018**
EA ADDENDUM #3 REFERENCE NUMBER:	**16/3/3/5/D6/29/0008/22**
NEAS REF.:	**WCP/EIA/AMEND/0000677/2022**
DATE OF ISSUE:	**THIS DECISION**
CASE OFFICER:	**MS. JESSICA CHRISTIE | Jessica.Christie@westerncape.gov.za**

ANNEXURE A: REASONS FOR THE DECISION

In reaching its decision, the Department took, *inter alia,* the following into consideration:

a) The information contained in the Application Form received on 21 October 2022, the Final Impact Report (FIR) and supporting documents submitted on 3 April 2023;

b) Relevant information contained in the Departmental information base, including the Guidelines on Public Participation and Need and Desirability;

c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

d) The comments received from Interested and Affected Parties (I&APs) and responses to these, included in the FIR received by this Department on 3 April 2023;

e) The balancing of negative and positive impacts and proposed mitigation measures;

f) All relevant information that was made available in the report to understand the environmental and spatial context.

g) The site inspection that was undertaken by Ms. Jessica Christie and Mr. Francois Naudé on 2 August 2022.

All information presented to the Competent Authority was taken into account in the consideration of the application for the amendment of the Environmental Authorisation. A summary of the issues that were considered to be the most significant for the decision is set out below.

1. Public Participation

A public participation process was undertaken according to a Public Participation Plan that was approved by this Department and the plan has satisfied the minimum requirements as prescribed in the EIA Regulation 2014 for public involvement.
The following Organs of State provided comment on the proposal during the Public Participation Process:

- *WCG: Department of Agriculture*
- *CapeNature*
- *Department of Forestry, Fisheries and Environment – Forestry Section*
- *Breede Gouritz Catchment Management Agency*
- *Interested and Affected Parties ("I&APs):*
  - *Chairperson of Garden Route Stakeholders of Built Environment*
  - *Mr. Charl Moller (Consulting Engineer)*

2. Key Factors Affecting the Decision

- Layout alternative and densification of housing:
  The proposed amendments will not increase the total development footprint of the estate, but the purpose is to re-align internal roads and increase the density of the houses. This proposed changes to the layout and density of the development, except for the

exclusion of the social housing node, are supported as this will improve the efficiency of the land use and promote the better utilisation of resources.

- Removing the requirement for a Social Housing node:

  During the process to develop the property now known as Hartland Lifestyle Estate, the developer at the time entered into an agreement with the Mossel Bay Municipality to include 150 social housing units in the SDP to allow for the relocation of residents of Power Town. Due to the time delay in commencing with the development, the Mossel Bay Municipality developed a further phase to Sonskynvallei to provide residents an alternative to relocate from Power Town; however, many residents from Power Town did not wish to relocate. Since then, the developer and the Mossel Bay Municipality have reached a new agreement regarding the social housing node whereby the developer will provide a financial contribution to the Mossel Bay Municipality. It is written that this funding will be ringfenced by the municipality specifically for the development of municipal services for the Power Town community since the municipality has not yet decided on the way forward regarding the remaining residents of Power Town.

  Notwithstanding this agreement, the application to remove the social housing units from the development is refused as the need for social housing / inclusionary housing in the development had not been refuted and the assessment had not addressed this aspect appropriately. It appears that the social housing had only been interpreted as a form of "low-cost housing" in the initial application for environmental authorisation. The Socio-Economic Compliance Statement only addressed the economic nature of the removal of the social housing for a single community and concluded that "*the removal of the 150 social housing units will not produce an adverse social / economic impact as alternative provisions have been made for the community in question*", and it thereby failed to address the need for social housing and an integrated residential development in general. Providing social / inclusionary housing opportunities in high-value, well-resourced urban locations through private developments, is a mechanism to promote spatial transformation and seeks to offer an alternative to poor spatial choices facing middle to lower income households. It should not be seen as the development of low-cost housing alone, which in this application it was.

  Therefore, this item / aspect was not removed from the proposed scope of the development. A condition has been set that a revised site development plan be submitted to the Competent Authority to demonstrate how a social housing component has been retained in the development.

- Refusal to amend Condition 8.3 of the Environmental Authorisation dated 18 August 2009:

  Whereas condition 8 of said Environmental Authorisation requires that Chapter 12 of the Operational Management Plan must be expanded to include specific impact management actions related to biodiversity impact management outcomes on the estate, Condition 8.3 states: "*The list of plant species that should be encouraged must include all the locally occurring indigenous plant species, as well as kweek and buffalo*

grass". The latter refers to *Cynodon dactylon* (kweek grass) and *Bouteloua dactyloides* (buffalo grass).

In the application for the amendment of the Environmental Authorisation, it has been requested that Kikuyu grass (*Pennisetum clandestinum*) be added to the list in Condition 8.3 as one of plant species that are allowed to be introduced to / planted and therefore should be encouraged on the estate.

The Environmental Impact Report and supporting documentation has failed to demonstrate what the impact would be and how the relevant biodiversity impact management outcome(s) will be influenced. No reason or motivation besides that "it comes up naturally" has been given. There are specific impacts and impact management outcomes that were initially assessed, and which must be met.

Notwithstanding the above, *Pennisetum clandestinum* is classified as an alien invasive plant species. Even though a person may not be required to obtain a specific permit in terms of the provisions of the National Environmental Management: Biodiversity Act, 2004 (as amended) to allow such a person to grow or allow the spread of any specimen of this plant on the site, since this is a recognised alien invasive plant species any impacts on biodiversity within the site must be avoided. The impact report fails to clearly address the advantages and disadvantages associated with the proposed change; the measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and which changes to the EMPr are required. The reasons provided do not justify the loss or risk of loss of biodiversity or the degradation to the environment. This decision is further supported by the principles as set out in Section 2 of the National Environmental Management Act, 1998 (as amended ("NEMA").

- Refusal to amend the impact management outcome in the CEMPr and OEMPr related to the introduction of kikuyu grass (*Pennisetum clandestinum)*.

  The abovementioned reasons to refuse the amendment of Condition 8.3 consequently inform the decision to refuse the application to amend the EMPr to include kikuyu grass.

  In light of this decision, the EMPr should in fact be amended to include *Pennisetum clandestinum* on the list of plant species which must not be planted or permitted in the estate. Condition 8.2 of the Environmental Authorisation issued on 18 August 2009 has reference in this regard.

- Amendment of Condition 25 of the Environmental Authorisation:

  Condition 25 of the Environmental Authorisation required the establishment of an Environmental Liaison Committee ("ELC") prior to the commencement of site preparation and construction. It is noted that the developer placed an advert to invite participants to join the ELC and a Terms of Reference ("TOR") was submitted to this Department for approval, nonetheless, the establishment of the ELC did not occur.

This Department is satisfied that an Environmental Control Officer ("ECO") was appointed to monitor compliance with the Environmental Authorisation and EMPr in accordance with the agreed frequency. The establishment of the ELC only at this point in the development of the estate is regarded unnecessary and the presence of an established estate homeowners' association can support the role and responsibility of the ECO. The omission of the requirement to establish and maintain an ELC is regarded to be acceptable.

- Amendment of Condition 26 of the Environmental Authorisation:

  Condition 26 required the Holder of the Environmental Authorisation to submit an Environmental Audit Report to the Department within 6 months after installation of the services of each phase that has been completed.

  The changes to Condition 25 and 26 are regarded to comply with the environmental auditing requirements stipulated in the Environmental Impact Assessment Regulations, 2014 (as amended) and the changes will adequately address the auditing frequency and reporting requirements for the estate development.

  It must be acknowledged that the EAP revised the CEMPr and OEMPr to bring the document in line with Appendix 4 of the Environmental Impact Assessment Regulations 2014, however, it has not been approved as the document does not comply with Appendix 4 of the EIA Regulations 2014 and the abovementioned refusal to allow kikuyu to be planted, amongst other aspects are still contained within the EMPr.

3. National Environmental Management Act Principles

The National Environmental Management Principles (set out in section 2 of the NEMA, which apply to the actions of all organs of state, serve as guidelines by reference to which any organ of state must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- sensitive, vulnerable, highly dynamic or stressed ecosystems to receive specific attention in the management and planning procedures;
- the prevention of the disturbance of ecosystems and loss of biological diversity, or, where this cannot be altogether avoided, that the disturbance or losses are minimised and remedied;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;
- the resolving of actual or potential conflicts of interest between organs of state through conflict resolution procedures; and
- the selection of the best practicable environmental option.

4. Conclusion

After consideration of the information and factors listed above, the Department made the following findings:

(a) The identification and assessment of impacts associated with the proposed changes to the Environmental Authorisation and EMPr are detailed in the Final Impact Report (FIR) and supporting documents submitted on 3 April 2023.

(b) The procedure followed for the impact reporting is adequate for the decision-making process.

Due consideration is also given to the person's duty of care described in Section 28 of NEMA:

> "*Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment*".

In view of the above, the NEMA principles, compliance with the conditions stipulated in the Environmental Authorisation (as amended), and compliance with an approved EMPr, the Competent Authority is satisfied that the proposed listed activities will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

---------- **END** ----------

Ministry of Local Government, Environmental Affairs and Development Planning
Ministerie van Plaaslike Regering, Omgewingsake en Ontwikkelingsbeplanning
AbaPhathiswa bakaRhulumente womMandla, bemiCimbi esiNgqongileyo noCwangciso loPhuhliso

3/6/3

REGISTERED MAIL

DATE OF ISSUE 18 AUG 2009

FAX TO: MR J SHARPLES
COMPANY: _____ PAGE: _____ OF: _____
FAX NO 044/ 874 5953 DATE: 18/8/09
FROM: JAAP DE VILLIERS
COMPANY: _____ PHONE NO: 021 483 3721
FAX NO: _____ Post-it FAX PAD 7551

Mr J C Janse van Rensburg
Director
Hartenbos Landgoed
17 Penz Drive
Flamingo Vlei
BLOUBERG
7441

Dear Mr Janse van Rensburg

Tel : 083 790 1234
Fax: 044 878 1449

APPLICATION: PROPOSED RESIDENTIAL DEVELOPMENT ON A PORTION OF THE FARM VAALE VALLEY 219, MOSSEL BAY (HARTENBOS LANDGOED PHASE 2)

The appeals against the Record of Decision regarding the above, refers.

After careful consideration of the appeals, as well as supporting documentation received, I have decided to vary the decision. Please find below the varied Record of Decision in respect of this application.

RECORD OF DECISION

A. DESCRIPTION OF ACTIVITY:

The proposed development consists of 1265 residential erven (zoned Residential I), five townhouse erven (zoned Residential III that includes 150 Social housing units, a multi-purpose community centre and a ± 300m^2 split zoned Business II site located on Ptn. 1302), an open space network and recreation area (zoned Open Space II) and a ± 3500m^2 split zoned Business II site (located on Ptn. 1306), a road network and associated infrastructure services on the footprint as indicated on the layout plan HB/C/204/9 by Nel & De Kock dated February 2009. The remainder of the property will be managed as a nature reserve.

Access will be from Main Road 344 through the culvert under the N2 national road, which will be upgraded to four lanes. A second access will be provided to the south along the existing dirt track to Hartenbos landgoed Phase 1. This road will be upgraded to two lanes and will have a paved/tarred surface.

Water will be provided from the proposed new 15Ml reservoir that will supply both the proposed Hartenbos Landgoed and possible future developments in the area. (See drawing M1607/002A dated 24 June 2008). A 5Ml reservoir and booster pump station is proposed for construction on Erf 1313 of Plan No. HB/C/204/9 as part of this application. (See drawing M1607/002B dated 24 June 2008).

Sewerage removal will be accommodated by means of a gravity sewer network in combination with sewage pump stations. From pump station PS01 on Erf 1308 next to the N2 national road, the sewage will be pumped to a point near Erf 1 from where it will gravitate and siphon to the Hartenbos Regional Sewage Treatment Works. (See drawing Number M1607/001 dated 24 June for the bulk sewer layout.)

These are activities identified in Schedule 1 of Government Notice No. R1182 of 5 September 1997, as amended, being:

Item 1(c): The construction, erection or upgrading of – with regard to any substance which is dangerous or hazardous and is controlled by national legislation – (i) infrastructure, excluding road and rail, for the transportation of any such substance; and (ii) manufacturing, storage, handling, treatment or processing facilities for any such substance;

Item 1(d): The construction, erection or upgrading of roads, railways, airfields and associated structures;

Item 1(k): The construction, erection or upgrading of reservoirs for public water supply;

Item 1 (m): The construction, erection or upgrading of public and private resorts and associated infrastructure;

Item 1(n): The construction or upgrading of sewage treatment plants and associated infrastructure;

Item 2(c): The change of land use from agricultural or zoned undetermined use or an equivalent zoning to any other land use;

Item 10: The cultivation or any use of virgin land;

hereinafter referred to as "the activity".

B. LOCATION:

The proposed development will occur on Portion 11 of Farm Vaale Valley No. 219, Hartenbos, is located between the towns of Hartenbos in the southwest and Klein Brak River in the Northeast and between the railway line which runs along the coastline in the southeast and the N2 National Road in the North-West. A locality map is included as Figure 1 in the Vegetation and Vertebrate Fauna Sensitivity Analysis by Conservation Management Services dated June 2005, which is attached to the application form. The above-mentioned portion of the farm Vaale Valley 219, hereinafter referred to as "the property", is approximately 370ha in extent.

Co-ordinates: 34° 06' 4.23" South & 22° 07' 38.57" East

C. **APPLICANT:**
Hartenbos Landgoed (Pty) Ltd.
c/o Mr W. van Rensburg
3 Bell House
Westlake Business Park
STEENBERG
7947

Tel: 083 790 1234
Fax: 044 878 1449

D. **CONSULTANT:**
Sharples Environmental Services cc
c/o Mr J Sharples
PO Box 9087
George
6530

Tel: 044 873 4923
Fax: 044 874 5953

E. **SITE VISIT(S):**
Date: 11 December 2008

Persons Present: Messrs Y Atwaru, N. Lambrechts and D Swanepoel of the Department of Environmental Affairs & Development Planning ("DEA&DP")

F. **DECISION:**

In terms of Sections 22 and by virtue of powers delegated by the Minister in terms of Sections 28 & 33 of the Environment Conservation Act, 1989 (Act No. 73 of 1989), I, Minister of Local Government, Environmental Affairs and Development Planning, hereby grant **authorisation with the conditions** contained in this Record of Decision, for the execution of the activity described above.

In terms of Sections 22 and by virtue of powers delegated by the Minister in terms of Sections 28 & 33 of the Environment Conservation Act, 1989 (Act No. 73 of 1989), I, Minister of Local Government, Environmental Affairs and Development Planning hereby refuse authorisation for the execution of the following:

- The creation of the erven 1019 to 1053 indicated on the layout plan HB/C/204/9 by Nel & De Kock dated February 2009; and
- The two parking areas for 50 and 70 cars.

This Authorisation has been granted in terms of section 22 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) solely for the purposes of undertaking the activity referred to above, and does not exempt the holder thereof from compliance with any other relevant legislation.

G. CONDITIONS OF AUTHORISATION:

1. One week's notice, in writing, must be given to the Department, before commencement of construction activities.

   1.1 Such notice shall make clear reference to the site location details and reference number given above.

   1.1 The said notice must also include proof of compliance with the following conditions described herein:

   Conditions: 7, 8, 23, 25 & 27

2. An integrated waste management approach must be used that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste shall be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989). A system of waste separation at source must be implemented and the separated waste must be regularly transported to the various recycling companies.

3. The mitigation/rehabilitation measures and recommendations as detailed in the Environmental Impact Report dated 5 September 2008 compiled by Sharples Environmental Services, must be adopted and implemented.

4. The recommendations made in the Vegetation and Vertebrate Fauna Sensitivity Analysis dated June 2005 by Conservation Management Services must be implemented.

5. The recommendations included in the report by MAPCARM cc dated 28 September 2005 must be implemented. Permits as stipulated in the aforementioned report must be obtained from Heritage Western Cape (HWC) before commencement of each development phase.

6. No new roads may be made within the nature area. No parking for visitors to the beach may be made in the nature area. Parking can be provided on the transformed areas as indicated on the vegetation sensitivity map (Figure 3 of the Vegetation and Vertebrate Fauna Sensitivity Analysis dated June 2005) or within the disturbed area on Hartenbos Landgoed Phase I. Existing roads or tracks that are required for the management of the nature area may be retained. All other roads that are not required for management must be rehabilitated. A system of hiking trails through the nature area may be established in accordance with the Operational phase environmental management plan.

7. A Fire Management Programme must be developed before any construction commences, except for the construction of the proposed Social Housing development. The Fire Management Programme must be approved by CapeNature as well as the Mossel Bay Fire Chief and the Eden Fire Chief.

8. Chapter 12 of the Operational Management Plan must be expanded to include amongst others the following:

   8.1 No cats may be allowed on the estate.

   8.2 The list of plant species which may not be planted must also include Pine trees, Monkey puzzle trees, palm trees or any other exotic tree species with a growth form which is unlike the growth form of the locally indigenous vegetation and which may dominate the landscape.

   8.3 The list of plant species that should be encouraged must include all the locally occurring indigenous plant species, as well as kweek grass and buffalo grass for lawns.

9. A property Owners Association must be established to which all property owners on Hartenbos Landgoed must belong. Each member of the POA must sign acceptance of the POA management plan / rules and regulations and operational phase Environmental Management Plan which they will abide to.

10. The applicant must approach CapeNature with a request to enter into some form of agreement or contract in terms of CapeNature's Stewardship Programme.

11. All invasive alien vegetation must be cleared from the site. The initial clearing of all alien invasive vegetation must take place within 24 months after commencement of construction work. Follow up clearing of invasive alien plants must be done annually.

12. The area with natural vegetation must be managed as a nature reserve according to a management plan approved by CapeNature.

13. With reference to layout plan no. HB/C/204/9 dated February 2009, the following erven must be removed from the proposed development: 1019 to 1053 and the two parking areas for 50 and 70 cars. These areas are to be included in the open space network.

13.1 An amended layout plan depicting these changes must be submitted to the Department for approval prior to commencement of construction activities.

14. Only single storey dwellings (6m height restriction from natural ground level) must be constructed on the following erven indicated on layout plan NB/C/204/9 dated February 2009: 1 & 2; 84 to 88; 89 to 107; 523 to 540; 528 to 544; 880 to 887; 1054 to 1087; 1287 to 1290; 1009 to 1018; 1253 to 1269; 1245 to 1247; 1284 to1300; 1226 to 1228; 545 to 611; 656 to 681; 643 to 655 and 548 to 567.

15. A fire break or buffer of at least 10m must be maintained between erf boundaries and the existing edge of the natural vegetation. All buildings must be set back at least 10m from the edge of the natural vegetation. This 10m buffer must not be bulldozed but the grass in this area must be regularly cut. A 20m buffer must be provided for all erven located closest to the N2 highway. This buffer may also serve as an access for fire fighting vehicles.

16. The following Resource Conservation Measures must be implemented:

16.1 Rainwater from roofs must be collected and stored in rainwater tanks. No taps linked to piped, potable water may be installed outside buildings. Any water used in gardens or outside buildings must only be collected rainwater.

16.2 All buildings must be fitted with water saving devices such as low flow showerheads and double flush toilets.

16.3 All residential dwellings must be fitted with and use solar hot water systems.

17. A Storm water management plan must be prepared and approved by the Mossel Bay Municipality. Hard surfaces must be limited or reduced where possible. Measures must be implemented to slow down the flow of storm water, such as artificial wetlands and swales, which will also assist in filtering storm water, dissipating energy and increasing infiltration of storm water, thereby reducing storm water and replenishing groundwater. Storm water may not be allowed to run down the steep slopes on the north-eastern boundary towards the Kleinbrak River.

18. No buildings are allowed on slopes of 1:4 and steeper.

19. Permits must be obtained from the Department of Water Affairs and Forestry before any protected tree species (including Milkwood trees, *Sideroxylon inerme*) or forest may be disturbed, pruned or damaged in any way.

20. The existing indigenous hedgerows on the property must be retained.

21. The Guidelines contained in the Economic Impact Assessment Report by Urban-Econ must be implemented. Preference must be given to local labour. The applicant must provide ample opportunity for training and skills transfer.

22. Bulk earthworks and excavations must be monitored by a professional archaeologist. Should any heritage remains be exposed during excavations, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)). Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.

    22.1 If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, marine shell heaps, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to Heritage Western Cape and must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.

    22.3 If any graves or unmarked human burials are discovered, or any human remains be disturbed, exposed or uncovered during excavations and earthworks, they must be treated with respect and SAHRA must be notified immediately and must not be disturbed further until the necessary approval has been obtained from SAHRA. An archaeologist must be contracted to remove the remains at the expense of the developer.

23. The applicant must appoint a suitably experienced Environment Control Officer before commencement of any land clearing or construction activities to ensure that the mitigation/rehabilitation measures and recommendations referred to in this Record of Decision are implemented and to ensure compliance with the provisions of the construction phase EMP.

24. The Construction Phase Environmental Management Plan for the proposed development dated March 2008 and the Operational Phase Environmental Management Plan for the proposed development dated June 2008 by Sharples Environmental Services must be implemented. Any amendments to the environmental management plans must be submitted to the Department for approval.

25. An Environmental Liaison Committee ("ELC") must be established at the cost of the Applicant, prior to commencement of site preparation and construction.

    25.1 The applicant must draw up the ELC's draft terms of reference ("TOR") or draft constitution and submit it to the Department. This must be approved by the Department prior to any land clearing or construction commencing.

    25.2 The TOR must include but is not limited to the following:

        25.2.1 the frequency of meetings and reports

        25.2.2 chairmanship/membership

        25.3.3 auditing requirements

        25.2.4 duties and responsibilities during the construction phase

        25.2.5 the termination of such ELC

        25.2.6 the frequency of providing feedback to the local community.

26. The applicant must submit an Environmental Audit Report, ("audit report") to this Department within six months after installation of the services of each phase has been completed.

26.1 The audit report must indicate the date on which the construction was completed, and detail compliance with the conditions of this authorisation, and the status of the rehabilitation programme.

26.2 The Department may require remedial action should the audit report reflect that rehabilitation is inadequate.

26.3 If the audit report is not submitted, the Department may give 30 days written notice and may have such an audit undertaken at the expense of the applicant and may authorise any person to take such measures necessary for this purpose.

27. All outdoor advertising associated with this activity, whether on or off the property concerned, must comply with the applicable Local Authority By-Law for the control of Outdoor Advertising or in the absence of local legislative controls, must comply with the South African Manual for Outdoor Advertising Control (SAMOAC) available from:

The Director: Environmental Impact Management
Department of Environmental Affairs and Tourism
Private Bag X447
Pretoria
0001.

28. The applicant shall be responsible for ensuring compliance with the conditions contained in the Record of Decision by any person acting on his behalf, including but not limited to, an agent, servant, employee or any person rendering a service to the applicant in respect of the activity, including but not limited to contractors and consultants.

29. The owner and/or developer must notify this Department and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhered to.

30. Departmental officials shall be given access to the property referred to in B above for the purpose of assessing and/or monitoring compliance with the conditions contained in this Record of Decision, at all reasonable times.

H. RECOMMENDATIONS:

The relevant authority recommends that:

The Architectural Guidelines proposed for the development limit architectural styles to only one style. It is suggested that a local vernacular style is the most appropriate in view of the place-specific approach to planning, design and management of the natural and human-made environment and guiding principles of 'critical regionalism' described in the Bioregional Planning Framework for the Western Cape Province, October 2000.

I. KEY FACTORS AFFECTING THE DECISION:

As an introduction to the key factors affecting this decision, the applicant is respectfully reminded of the principles of the National Environmental Management Act ("the NEMA" Act 107 of 1998) which apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. These principles serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment.

The NEMA principles state that sustainable development requires the consideration of all relevant factors including, amongst others, the following:

i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
ii. that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
iii. that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
iv. that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Biophysical environment:

A Vegetation and Vertebrate Sensitivity Study dated June 2005 was conducted by Conservation Management Services. The report concludes that the broad vegetation type of the study area, Herbertsdale Renoster Thicket (HRT) is classed in the STEP project as highly threatened. Much of the HRT has been transformed with only 16.2% of the original Herbertsdale Renoster Thicket remaining. Only 1.14% remains in good condition. In addition to the overall threatened condition of the HRT, the vegetation of the study area is particularly sensitive in that it contains 3 Red Data Species, 10 limestone fynbos-endemic species, one of which is only known from the study area and another from only one other site nearby. Ten of the birds that are likely to occur on the study area are classified in the Red Data Book as endangered, vulnerable or near-threatened and ten of the mammals predicted to occur on site are also listed as Red Data species. The application area is clearly sensitive to any kind of disturbance that may reduce the ecological integrity of the HRT or threaten any of the Red Data listed or endemic biota. Approximately half of the area under study for this application has been transformed by cultivation. On-site connections between the differing habitats within the FRT are critical and should also not be jeopardized by fragmentation of any kind. The natural vegetation of the study is area is one of the last remaining larger patches of intact coastal vegetation on the south coast area. It is thus a valuable area for the conservation of the local vegetation and animal biodiversity and should thus be retained intact and effectively managed as a conservation area. Accordingly, the development footprint is restricted to largely disturbed and transformed areas which have a low level of species diversity and no species of concern as transformed areas have lost inherent their ecological functioning and is of a low conservation status.

In terms of fire ecology although the assessment undertaken by Mr Nigel Wessels of Synecology cc determined that a 10m building line set back from the fringe of the natural vegetation as an appropriate distance for both the execution of controlled ecological fires as well the control of wildfires. Accordingly, a condition to impose this requirement has been included in this Record of Decision to address this issue except for erven located closest to the N2 highway where a 20m buffer will be applicable.

Cultural historic:

A Heritage Impact Assessment was done by Dr P Nilsen. The study revealed that numerous archaeological and heritage resources occur on the property and that d Development will certainly have a negative impact on these resources unless mitigation measures are employed. Identified materials range in age from Early Stone Age (ESA) through Middle Stone Age (MSA), Later Stone Age (LSA) and pottery/pastoralist period to historic times. Heritage Western Cape has stated in a letter dated 6 June 2008 that in terms of Section 38 of the Heritage Resources Act, 1999, the application is endorsed as follows:

- That no further assessments are required as the nature of the proposed development and contextual analysis reveals that the development does not warrant such action.
- The development may proceed and all other approvals must be handled by the local municipality.
- If any archaeological material is discovered during earth moving activities all works must be stopped and HWC must be notified immediately and the necessary permits obtained.

This is in accordance with the mitigation measures proposed in the Heritage Impact Assessment.

Social:

The proposed development includes a social housing component of approximately 5.31ha in extent on which approximately 150 Townhouse units will be built. The applicant has agreed to the relocation of the Power Town community from the flood plain of the Klein Brak River to a site on the proposed development (i.e. Ptn. 1302 as indicated on the layout plan HB/C/204/9 dated February 2009. In addition to social housing a multi-purpose hall which can be used as a community hall for 150 families, and a church on the weekend and a crèche during the week. There will also be a small kiosk supplying the basic necessities for sale and an open space area for sport facilities.

Economic:

An Economic Impact Assessment was done by Urban-Econ. The report concluded that the Mossel Bay Municipal Area community can improve its ability to take advantage of the opportunities created by the proposed development by acquiring scarce skills (particularly those that are likely to be demanded by the proposed development) and expanding the breadth of skills available in the Mossel Bay Municipal area. There are two strategies that can assist the local community (and particular the poorer communities) in order to benefit more from the proposed development, namely: Training and the employment of local labour. The report has provided guidelines which will enable the developers to understand their skills demand and supply factors and where skills training can be done. These guidelines provide a broad description of ways in which possible negative impacts can be minimised to ensure maximised benefit from the proposed development. The report concluded that the proposed development will in terms of the impact on the economy result in medium to high positive impact on both the local and regional economy of Mossel Bay.

Visual impact:

A Visual Impact Assessment for the proposed development dated August 2008 was prepared by Visual Resource Management Africa cc. The assessment found that the various layout alternatives did not meet the visual management objectives due to the location and massing of structures in areas which have a high regional prominence and visual significance and which are prone to high levels of contrast created by skyline development. The study found that the existing character of the landscape would be permanently altered with little scope to reduce long term visual impacts by means of mitigation. Due to the nature of the development, the existing character of the landscape would be changed altering the sense of place which would be detrimental to the landscape character of this section of the Garden Route. VRM Africa further found that the site is suitable for development, but the that the layout should be modified to take into account the landscape character and sense of place. This could be achieved by the particular placement of structures in specific locations and retaining and enhancing the sense of place of the property. The Assessment was based on the objective of achieving the Best Practicable Environmental Option (BPEO) and proposed a revised development area to ensure the long term protection of important scenic resources and heritage sites, the minimisation of visual intrusion in scenic areas, the retention of wilderness or special areas as far as possible and a responsiveness to the area's uniqueness, or sense of place.

The Best Practicable Environmental Option that was forthcoming out of the visual impact assessment and the impacts associated with this alternative such as biophysical, social and economic impacts has not been assessed by the various specialists. The environmental consultant, Sharples Environmental Services cc did not believe it necessary to further assess this alternative as it will not be viable for the applicant. The applicant was requested to identify and describe a viable alternative which takes the recommendations of the VIA into account. In response, the applicant appointed Mr Alan Cave of Cave Klapwijk & Associates to

comment on the VIA by VRM Africa and to present a proposal to indicate how visual mitigation could be applied to the proposed layout plan for the proposed development. Mr Cave's interpretation of the findings differs from the interpretation of the findings of VRM Africa. Mr Cave has made recommendations as to how the layout can be altered to ensure that the findings of the VIA mould the layout into a layout of which the significance of the visual change on the receiving environment can be considered to be low. He goes on to note that "In context therefore while the visual impact is high the significance of the impact is considered to be low in the immediate and longer term". An amended layout, Plan No. HB/C/204/9 was submitted. Red-I has done 3D modelling of the amended layout. It is evident that buildings will be visible on the skyline as seen from the Klein Brak and the N2 national road. As a result conditions have been included in an attempt to avoid skyline development, especially as seen from Kleinbrak River.

The Department was presented with the interpretations of two visual specialists that differ from each other. It is unfortunate that there was no communication between the two specialists. It is also unfortunate that there is no time to have the VIA by VRM Africa and the report by Cave Klapwijk & Associates reviewed by a mutually agreed to independent specialist. Under the circumstances I have included recommendations of both specialists in the conditions of approval.

Policy: Regional/planning context:

The Mossel Bay / Riversdale Subregional Structure Plan has been amended on 5 March 2008 from Agricultural use to Urban development to allow for the proposed development on Portion 11 of the farm Vaale Valley 219, Hartenbos.

Service impacts of the activity:

Water will be provided from the proposed new 15Ml reservoir that will supply both the proposed Hartenbos Landgoed and possible future developments in the area. (See drawing M1607/002A dated 24 June 2008). The proposed reservoir is handled in a separate EIA process. In addition, it is proposed that a 5Ml reservoir and booster pump station will be constructed on Erf 1313 of Plan No HB/C/204/9. (See also drawing M1607/002B dated 24 June 2008), should the 15 Ml not be available by the time construction of this development commences.

In November 2007 the Department of Water Affairs and Forestry granted the Mossel Bay Municipalities request for a Section 33 declaration in order to enable the Mossel Bay Municipality to use an additional 2.8Mm^3 of water per year from the Wolwedans dam. In a letter dated 14 August 2007 the Mossel Bay Municipality confirmed that it can supply bulk services including sufficient volumes of potable water for an approximately 1700 unit residential development on the farm Vaale Valley 219. Mossel Bay Municipality has reconfirmed in a letter dated 6 June 2008 that they can provide 1835kl water per day for the proposed development.

The Mossel Bay Municipality confirmed in a letter dated 27 September 2004 that there is sufficient capacity at the Hartenbos Regional Waste Water Treatment Works to accept the estimated 1600kl sewage / day from the proposed development. In a letter dated 6 June 2006 the Mossel Bay Municipality confirmed that they can accept 1567 kl/day of sewage from the proposed development.

The Mossel Bay Municipality has confirmed in a letter dated 1 July 2009 that sufficient electrical supply capacity will be available at the Sonskynvallei 66/11kV substation to cater for the projected load growth at Hartenbos Landgoed, during period 2008 to 2012.

Traffic Impact Studies was done by VelaVKE, dated January 2006 and July 2008. The 2006 report concluded that the proposed development will have an impact on traffic volumes on the Main Road 344 between the access road and Louis Fourie Road. The 2008 Report

recommends the upgrade of a number of intersections in the area with the addition of lanes and traffic signals. The following additional requirements were also identified:

- Provision of two off-street transport stops at key intersections along MR344.
- Provision of a pedestrian walkway on one side of MR344 from TR33/1 (Oudtshoorn – Hartenbos Road) to the main access of the proposed development from MR344.

The South African National Roads Agency Limited (SANRAL) has accepted the Traffic Impact Assessment.

Alternatives:

The original layout proposal (Plan No. HB/C/204/1 dated 5 July 2005) included the following:

- 1057 Residential Zone 1 erven;
- 1 Residential Zone II Group Housing Erf;
- 2 Residential Zone III Town Housing erven;
- 106 Resort Zone II units (the 'Bush Units')
- A recreational area; as well as
- Private open space and roads.

An Alternative Layout 1, was formulated, incorporating recommendations from various interested and affected parties (I&APs) and relevant stakeholders regarding the original layout and potential impacts associated therewith. As part of this alternative, the applicant proposed to relocate the current informal settlement of Power Town in order to accommodate these residents on the property. This layout Plan No. HB/C/204/3 dated November 2006) includes:

- 1151 Residential Zone I dwellings;
- 100 Residential Zone II Group Housing Erven (the "Bush Units');
- 2 Residential Zone III Town Housing erven;
- 1 Residential Zone IV Flat Apartment erf (site for Power Town);
- A recreational area; and
- Open Space and roads.

Alternative layout 2 has taken the conditions of the Guide Plan Amendment issued on 5 March 2008 into account. (See Plan No. HB/C/204/8 dated August 2008.) Alternative layout 2, which is the applicant's preferred alternative, entails the following:

- 1376 Residential Zone I dwellings;
- 3 Residential Zone III Town Housing erven with a total coverage of 10.4ha;
- A recreational area, as well as
- Private Open Space and roads.

In terms of VRM Visual Impact Assessment, the Best Practicable Environmental Option was proposed, taking into account the recommendations and mitigation measures as set out in the Visual Impact Assessment. The environmental consultant stated that this alternative is not viable for the applicant and an amended version of Layout 2 was submitted, based on the recommendations another assessment undertaken by Mr Cave of Cave Klapwijk & Associates, as Plan No. HB/C/204/9, dated February 2009. I have considered the two visual assessment and authorised a proposed development area that excludes erven 1019 to 1053 (a total of 34 erven) and the two parking areas for 50 and 70 cars, taking into consideration the recommendations of the two visual impact assessments.

The no-go alternative (status quo) was also described.

Public Participation:

The public participation process identified a number of issues discussed above. There were no major public opposition against the proposed development. Issue raised were adequately assessed and mitigation measures are proposed as conditions of this Record of Decision.

The assistant District Roads Engineer has indicated that the scope of the development will require a Traffic Impact Assessment (TIA). The District Roads Engineer has not commented on the TIA. SANRAL has accepted the findings of the TIA.

The Provincial Department of Health has no objection to the proposed development subject to various conditions contained in their letter dated 26 August 2005.

The Department of Agriculture: Western Cape supports the change of land use of portion B of Remainder of Farm Vaale Valley 219.

Mr Horowitz of Transnet stated in a letter dated 11 November 2008 that Transnet had no objection to the proposed development.

CapeNature has raised a number of issues during the scoping process. In an e-mail of 13 February 2009, Dr Roets of CN has indicated that they have not received a copy of the final Environmental Impact Report. However, he has voiced his concern over the position of the proposed parking areas, especially in light of climate change and sea level rise.

Meetings held:

There were a number of meetings between the applicant, the Mayor of Mossel Bay Municipality, officials of Mossel Bay Municipality, the Department of Local Government and Housing and the Department of Environmental Affairs and Development Planning, amongst others on 24 April 2008, 2 October 2008 and 11 December 2008.

Reasons for the refusal of certain components

The proposed residential erven that are excised from the development as a result of the visual assessments undertaken. In terms of VRM Visual Impact Assessment, the Best Practicable Environmental Option was proposed, taking into account the recommendations and mitigation measures as set out in the Visual Impact Assessment. The environmental consultant stated that this alternative is not viable for the applicant and an amended version of Layout 2 was submitted, based on the recommendations another assessment undertaken by Mr Cave of Cave Klapwijk & Associates, as Plan No. HB/C/204/9, dated February 2009. I have considered the two visual assessments and authorised a proposed development area that excludes erven 1019 to 1053 and the two parking areas for 50 and 70 cars, taking into consideration the recommendations of the two visual impact assessments. In addition, I have placed height restrictions on numerous erven to further mitigate against the visual impact.

Furthermore, the biophysical impacts of the two parking areas located close to the beach for 50 and 70 cars with their associated access roads along existing tracks have been assessed. These access routes would cross the natural vegetation which forms a critical corridor which should not be compromised by fragmentation. According Synecology cc, who undertook a vegetation assessment the upgrading and intensified use of the existing roads that lead down to behind the primary dunes where parking areas are proposed, will have a negligible significance in terms of biota and ecological corridor functionality and the proposed parking areas if kept elementary with minimal clearing of vegetation will also not represent a significant impact at botanical level. However, in spite of Synecology's statements, CapeNature has indicated that they are concerned about the positioning of the proposed parking areas. Furthermore, the study by Conservation Management Services concluded, "The natural vegetation of the study area forms a critical corridor between the Klein Brak and Hartenbos River estuaries and river systems which should not be compromised by any kind of fragmentation. The Visual Impact Assessment of VRM Africa states, "The beach area

between the two rivers is one of the last remaining remote beach areas in this section of the Garden Route. In this regard it is recommended that this area should not be utilised as a high usage beach access point as the accumulative impacts associated with opening this area up as a beach node would radically undermine the visual significance of this area. Access along the road to the beach needs to be restricted and the route should remain a single lane with lay-bys. It is recommended that a beach parking areas for vehicles should be avoided as the accumulative visual impacts could potentially jeopardise this highly visual significant area".

Transitional arrangements

This application was submitted prior to the NEMA EIA Regulations coming into being. In terms of the NEMA EIA Regulations, an application for authorisation of an activity submitted in terms of the previous regulations and which is pending when the NEMA EIA Regulations took effect, must despite the repeal of the previous regulations be dispensed with in terms of the previous regulations as if the previous regulations were not repealed.

Subject to compliance with the conditions contained in this Record of Decision, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels.

Consideration of Appeal:

Upon careful consideration of the documentation submitted in support of the appeals, I determined that although the erven 1067 – 1072; 528 – 540; 545 – 555; 566 – 611; 643 – 681 will have a visual impact, the impact will not be significant particularly considering that the surrounding area is characterised by urban / township development. I have however determined that erven 1019 – 1053 will be visually prominent from various key points of observation and will detract from the natural setting of the area if included in the proposal.

Consequently, I have authorised a proposed development area that only excludes erven 1019 to 1053 and the two parking areas for 50 and 70 cars, taking into consideration the recommendations of the two visual impact assessments as well as additional information submitted in support of the appeals. In addition, I have placed height and buffer restrictions on numerous erven to further mitigate against the visual impact. These amendments to the layout will make the project financially viable to accommodate the social housing component which is a component of this proposal.

J. DURATION AND DATE OF EXPIRY:

This activity must commence within a period of three years from the date of issue of this decision. If commencement of the activity does not occur within this period, the Record of Decision lapses and a new application for authorization must be made in order for the activity to be undertaken.

If any condition imposed in terms of this authorisation is not being complied with, the authorisation may be withdrawn after 30 days written notice to the applicant in terms of Section 22(4). Failure to comply with any of these conditions is also an offence and may be dealt with in terms of Sections 29, 30 and 31 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) as well as any other appropriate legal mechanisms.

Provincial Government, Local Authority or committees appointed in terms of the conditions of the application or any other public authority or organisation shall not be held responsible for any

damages or losses suffered by the developer or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the developer with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Your interest in the future of our environment is greatly appreciated.

Kind regards

ANTON BREDELL
MINISTER: LOCAL GOVERNMENT,
ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

DATE : 18/8/2009

Copies to:
(1) Mr E Kruger (Mossel Bay Municipality) Fax: 044 690 5786
(2) Mr John Sharples (Sharples Environmental Services) Fax: 044 874 5953
(3) George Office Fax: 044 874 2423

Western Cape Government

MINISTRY OF LOCAL GOVERNMENT,
ENVIRONMENTAL AFFAIRS AND
DEVELOPMENT PLANNING

M 3/6/5

Mr PR Steyn
K2011133641 (South Africa) (Pty) Ltd
PO Box 242
MOSSEL BAY
6500

Cell: 082 577 2532
Email: tossie@steynsmica.co.za

Dear Mr Steyn

AMENDMENT APPLICATION: PROPOSED DEVELOPMENT ON A PORTION OF THE REMAINDER OF FARM VAALE VALLEY NO. 219, MOSSEL BAY

With reference to your application dated 1 August 2012 for the amendment of the environmental authorisation, find below the amended environmental authorisation in respect of the amendment application.

1. DECISION

By virtue of the powers conferred on me by the Environmental Impact Assessment ("EIA") Regulations (5 September 1997) and the EIA Regulations (18 June 2010), I have decided to amend the appeal Environmental Authorisation which was granted on 18 August 2009 (Reference Number: EG12/2/1-AM18-Farm Vaalevalley 219/B, Mossel Bay). The following are amended:

1.1 The applicant's details which read as follows:

"Hartenbos Landgoed (Pty) Ltd
c/o Mr W van Rensburg
Bell House
Westlake Business Park
STEENBERG
7947
Cell: 083 790 1234
Fax: (044) 878 1449"

is amended to read as follows:

"K2011133641 (South Africa) (Pty) Ltd
c/o PR Steyn
PO Box 242
MOSSEL BAY
6500
Cell: 082 577 2532
Email: fossie@steynsmica.co.za"

1.2 Section J: Duration and date of expiry that read as follows:

"This activity must commence within a period of three years from the date of issue of the decision. If commencement of the activity does not occur within this period, the Record of Decision lapses and a new application for authorisation must be made in order for the activity to be undertaken"

is amended to read as follows:

*"This environmental authorisation is valid for a period of **5 years** from the date of issue. The holder must commence with the listed activity within the said period or this environmental authorisation lapses and a new application for environmental authorisation must be submitted to the competent authority, unless the holder has lodged a valid application for the amendment of the validity period of this environmental authorisation **(i.e. the application must be submitted to the Minister responsible for environmental affairs in the Western Cape)**, before the expiry of this environmental authorisation. In such instances, the validity period will be automatically be extended ("the period of administrative extension") from the day before this environmental authorisation would otherwise have lapsed, until the amendment application for the extension of the validity period is decided. The listed activity, including site preparation, may not commence during the period of administrative extension."*

1.3 The Construction and Operational Phases Environmental Management Plans submitted as part of the application for authorisation must be amended as per the amendment applied for in this amendment application.

2. REASONS FOR THE DECISION

2.1 In reaching my decision, I took the following information into consideration:

2.1.1 The information contained in the application for the amendment of the environmental authorisation dated March 2012; and

2.1.2 Additional information received on 22 August 2012, 27 September 2012, 28 September 2012 and 3 October 2012.

2.2 Below are the reasons for the decision to amend the environmental authorisation:

2.2.1 The granting of the proposed amendment of the environmental authorisation is not likely to adversely affect the environment or the rights or interests of other parties. No new

negative impacts will result due to this amendment application being granted. The negative environmental impacts to be associated with the proposed Hartenbos Landgoed development have already been assessed during the EIA process and these impacts will remain unchanged. The mitigation measures proposed in the EIA Report (dated 5 September 2008) will still be implemented to mitigate and/or avoid the associated negative impacts already identified.

2.2.2 The owner of the property (Ms MM Smit) passed away after the appeal Environmental Authorisation was issued and the property has subsequently been placed in care of the estate. The estate transport has only been recently finalised.

2.2.3 The company (i.e. Hartenbos Landgoed (Pty) Ltd) to which the authorisation was issued is currently under liquidation. The liquidators have seized control of the assets of Hartenbos Landgoed (Pty) Ltd, one of which is the appeal Environmental Authorisation granted on 18 August 2009.

2.2.4 The following contributed to the original applicant not being able to proceed with the selling of erven:

2.2.4.1 The economy has not fully recovered since the global recession;

2.2.4.2 Fears of a double-dip recession are discouraging people to buy erven at present; and

2.2.4.3 Rising material costs for the construction of dwellings.

2.2.5 The extension of the validity period is needed in order to allow adequate time for the new owner to secure funding for the development.

2.2.6 During the site visit which was undertaken by the Environmental Assessment Practitioner (Sharples Environmental Services cc) on 26 July 2012, it was determined that the vegetation cover has remained similar, the property was still being used for agricultural purposes i.e. grazing of cattle and there were no signs of clearing activities or disturbance visible on the property, other than the clearing of alien invasive plants. The sensitive vegetated areas as identified by the Vegetation and Fauna Sensitivity Analysis conducted by Conservation Management Services (2005) and the botanical survey conducted by Synecology (2008) are still present on the property.

Your interest in the future of our environment is appreciated.

Yours faithfully

ANTON BREDELL
MINISTER OF LOCAL GOVERNMENT,
ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

DATE: 18 · 12 · 2012

~~Copies:~~ 1.. Ms M Schaaf (Sharples Environmental Services cc)
~~2. Mr J van Rensburg (Hartenbos Landgoed (Pty) Ltd)~~

Fax: (044) 874 5953
~~Fax: (044) 878 1449~~

Western Cape Government
Environmental Affairs and Development Planning

MINISTRY OF LOCAL GOVERNMENT,
ENVIRONMENTAL AFFAIRS AND
DEVELOPMENT PLANNING

M 3/6/5

Mr P.R. Steyn
K2011133641 (South Africa) (Pty) Ltd
P.O. Box 242
MOSSEL BAY
6500

Tel: (082) 577 2532
e-mail: tossie@steynsmica.co.za

Dear Mr Steyn

APPLICATION FOR THE AMENDMENT OF THE AMENDED APPEAL RECORD OF DECISION (*ENVIRONMENTAL AUTHORISATION*) FOR THE PROPOSED RESIDENTIAL DEVELOPMENT ON A PORTION OF THE FARM VAALE VALLEY 219, MOSSEL BAY (HARTENBOS LANDGOED PHASE 2)

Your application for the amendment of the abovementioned decision refers.

By virtue of the powers conferred upon myself by *the National Environmental Management Act, 1998 ("NEMA") Environmental Impact Assessment ("EIA") Regulations (GN R. 326 of 7 April 2017)*, I have decided to grant the amendment of the validity period of the amended appeal Record of Decision ("Environmental Authorisation - EA") as contained in section J of the appeal decision granted on 18 August 2009 and amended on 18 December 2012 to read as follows:

J: DURATION AND DATE OF EXPIRY

> *"This environmental authorisation is valid until* ***18 August 2019****. The holder must commence with the listed activity within the said period or the amended appeal Record of Decision (Environmental Authorisation) lapses and a new application for environmental authorisation must be submitted to the competent authority."*

The applicant must, in writing, within 14 (fourteen) calendar days of the date of this decision notify all registered Interested and Affected Parties ("I&AP's") of the outcome of the amendment application

and the reasons for the decision.

The reasons for this decision are as follows:-

- The proposed amendment will not adversely affect the environment or the rights and interests of other parties
- No new negative impacts will result due to this amendment being granted.
- The project is now ready to be developed, based on the current economic climate and the availability of funding.
- The necessary municipal planning approvals are valid and in place.

Your interest in the future of our environment is appreciated.

Yours faithfully

ANTON BREDELL
PROVINCIAL MINISTER OF LOCAL GOVERNMENT,
ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

DATE: 12/2/2018

Cc Mr Steve Kleinhans (Sharples Environmental Services) e-mail: steve@sescc.net

CURRICULUM VITAE

MICHAEL JON BENNETT

PERSONAL

Profession: Environmental Assessment Practitioner and Senior Environmental Control Officer, Sharples Environmental Services cc, George

Nationality: South African

Date of Birth: 22 October 1985

Languages: English (read, write and speak) & Afrikaans (read, write and speak)

Marital Status: Single

Drivers License: Code B

Health: Excellent

EAPASA Reg: 2021/3163

WORK EXPERIENCE

2014 – Present: Sharples Environmental Services cc, George, WC
Environmental Assessment Practitioner
I have gained extensive experience in assessments and monitoring and have worked on a variety of multidisciplinary projects and am proficient in:

- Basic Assessments Reports
- Water Use Authorisation Applications
- Environmental Monitoring and Reporting
- Environmental Management Programmes
- Environmental Control Officer Training
- Conducting Outeniqua Sensitive Coastal Area licensing applications

2016 – 2017: Sharples Environmental Services cc, Cape Town, WC
Intrim Office Manager, Environmental Assessment Practitioner

2011 – 2014: Peninsula Permits & NCC Group, Cape Town, WC
Environmental Control Officer

- Environmental Monitoring

TERTIARY EDUCATION

2010 University of Cape Town

- I hold a Bachelor of Science Degree specialising in Environmental and Geographic Science & Ocean and Atmospheric Science

PROJECTS

2022 Still Bay W. Nel & Irma Oosthuizen Trust IT 1596/2008

- Basic Assessment Report for the development of 5 residential units on erven 4139, 4140, 4141, 4142, 4143, 4144, 4145 (Erf 3997), Still Bay West, Western Cape

2022 George Octo Trading 377 cc

- Section 24 G Retrospective Environmental Authorisation for the alleged unlawful construction of a road clearance of vegetation to establish a house on remainder of Farm Holle Kloof 91 and Portion 1 of the Farm Plattekloof 131, Waboomskraal, George, Western Cape

2021 Prince Albert Jurie Klue

- Section 24 G Retrospective Environmental Authorisation for the alleged unlawful clearance of vegetation on Farm Angliers Bosch (Fernkloof), Remainder of Farm 157, Klaarstroom, Prince Albert, Western Cape

2021 Mossel Bay Mossel Bay Municipality

- Basic Assessment Report for the proposed Dana Bay Emergency Access Road on Remainder of Portion 7 of the Farm 225, Dana Bay, Mossel Bay, Western Cape

2021 Willowmore LEZMIN 2087cc

- Basic Assessment Report for the proposed development of Portion 1 of the Farm Matjiesfontein No. 206, Baviaanskloof, Division Willowmore, Eastern Cape

2020 Sedgefield Knysna Municipality

- Basic Assessment Report for the proposed housing development on erven 3861, 3865, 3866, 3917, 3918 and 5010 in Sedgefield, Knysna, Western Cape

2020 Mossel Bay Paprenax Trading 6 cc

- Basic Assessment Report for the proposed establishment of a filling station and associated business infrastructure on a portion of erf 13996, Kwanonqaba, Mossel Bay, Western Cape

2020 Ladismith Department of Transport and Public Works

- Maintenance Management Plan for the periodic maintenance of Trunk Road 31, section 4, km 30.8 to km 76.06, Barrydale to Ladismith, Western Cape

2020 Knysna Knysna Municipality

- Maintenance Management Plan for the Maintenance of the potable water pipeline system on Erven 4197, RE/1352, RE/1351, RE/1146 and 1316 in Knysna, Western Cape

2020 Humansdorp Kouga Municipality
- Environmental Control Officer for the Phase 1A of New municipal 66kV double circuit overhead line between the Melkhout substation at Humansdorp and the main intake substation at Jefferys Bay, Eastern Cape

2020 Humansdorp Kouga Municipality
- Environmental Control Officer for the Construction of a new 22kv overhead powerline between Melkhout substation and Allison Street, Humansdorp, Eastern Cape

2020 Knysna Knysna Municipality
- Environmental Control Officer for the Charlesford raw water pumping scheme: Upgrade and refurbishment of pumpstation: Mechanical and electrical, Knysna, Western Cape

2020 Seweweekspoort, Department of Transport & Public Works
- Amendment of Environmental Authorisation (Part 2, Substantive amendment) for the flood damage repairs to road structures on MR309 in Seweweekspoort, Western Cape

2019 – 2021 Seweweekspoort, Department of Transport & Public Works
- Environmental Control Officer for the flood damage repairs to road structures on MR309 in Seweweekspoort, Western Cape

2019 George George Municpality
- Environmental Control Officer for the Raising of the Garden Route Dam Spillway on Portion 3/352, Remainder of 536 of Erf 221, Erf 3055 and Erf 3056, George, Western Cape

2019 Laingsburg Department of Agriculture
- Environmental Control Officer for the Construction Of Erosion Prevention Structures Within The One In Ten Year Flood Line Of The Buffels River, Laingsburg, Western Cape

2019 Williston Williston Municipality
- Environmental Control Officer for the Upgrading of bulk water network in Williston – Phase 3, Williston, Northern Cape

2019 George George Municipality
- Environmental Control Officer for the construction of new 66kV overhead line between Ballots Bay and Glanwood substations, George, Western Cape

2019 Oudtshoorn Department of Transport & Public Works

- Environmental Control Officer for the Periodic maintenance of Trunk Road 31, Section 6, km 23.3 to km 47.8 Calitzdorp to Oudtshoorn, Western Cape

2019 Kleinbrak Mossel Bay Municipality
- Environmental Control Officer for the Upgrading of Beyers Street, Klienbrak River, Western Cape

2019 George Outeniqua Eye Clinic Body Corporate
- Environmental Control Officer for the proposed expansion of parking area on erf 5950 and part of remainder erf 464, George, Western Cape

2019 Mossel Bay Hey Innovations
- Basic Assessment Report for the proposed establishment of a residential development on Erf 2839, Great Brak River, Western Cape

2019 Oudtshoorn Oudtshoorn Municipality
- Environmental Management Programme for the Blossoms Emergency Supply Scheme, Oudtshoorn, Western Cape

2019 Humansdorp Clinkscales Maughan-Brown
- Environmental Management Programme for the proposed construction of a new 22kV overhead powerline between Melkhout Substation and Allison Street, Humansdorp, Eastern Cape

2019 George PN&MR Lotter Family Trust
- Addendum to the Environmetnal Management Programme for the Establishment of a Township (Rivendale) on Portions 5, 15, 16 and 31 of the Farm Hansmoeskraal 202, Western Cape

2019 Oudtshoorn Department of Transport and Public Works
- Basic Assessment Report for the Proposed Maintenance Activities of Trunk Road 33/4 between km 4.6 and km 14.4, Meiringspoort, Western Cape

2019 George Dynarc Capital
- Substantive amendment of environmental authorisation for the proposed Development of Portion 130, 131 and 132 of the Farm Gwayang 208

2019 George Department of Transport & Public Works
- Basic Assessment Report for the proposed Upgrading of Bridge No. 2221 on Trunk Road 2/9 at km 15.1 over the Maalgate River.

2018 - 2019 Oudtshoorn Department of Transport and Public Works
- Maintenance Management Plan for the proposed periodic maintenance of Trunk Road 31, section 6, km 23.3 to km 47.8, Western Cape

2018 - 2019 Humansdorp Clinkscales Maughan-Brown

- Applicability of the EIA regulations Checklist for the proposed new 22kV overhead line between Melkhout Substation and Allison Street, Eastern Cape

2018 - 2019 Knysna Knysna local Municipality

- Applicability of the EIA regulations Checklist for the proposed Rheenendal infill housing, subdivision and rezoning of portions of erf 42, 36 and 387 as well as erven 535, 536, 553, 54, 393, 406, 672, 673 and 68, Rheenendal, Western Cape

2018 - 2019 Knysna Knysna local Municipality

- Applicability of the EIA regulations Checklist for the proposed infill housing and subdivision of erven in Welsyndorp and the rezoning and subdivision of erven in Bosdorp, Karatara, Western Cape.

2018 Port Elizabeth ACSA P.E.

- Applicability of the EIA regulations Checklist for the proposed ACSA Port Elizabeth Airport Photovoltaic Plant, Eastern Cape Province

2018 Mossel Bay TopUp Prop Inv.

- Applicability of the EIA regulations Checklist for the proposed Farm Stall Centre and filing Station on Portion 65 of the Farm Hartenbosch 217, Hartenbos

2018 George Outeniqua Eye Clinic Body Corporate

- Basic Assessment Report for the proposed expansion of parking area on erf 5950 and part of remainder erf 464

2018 Beaufort West Beaufort West Municipality

- Environmental Control Officer for the First and Second Environmental Audit for the provision of adequate water supply within the jurisdiction of the Beaufort West municipality

2018 Mossel Bay Element Consulting Engineers

- Environmental Management Programme update for the replacement of 22kV overhead powerline between Power Town and Hartenbos and between Hartenbos and the Hartenbos sewage substation and the construction of a new 22kV overhead power line between the Midbrak and Kleinbrak Substations.

2018 Mossel Bay Element Consulting Engineers

- Environmental Control Officer for the construction of a new 22kV overhead power line between the Midbrak and Kleinbrak Substations

2018 Mossel Bay Element Consulting Engineers

- Environmental Control Officer for the Upgrade of Amy Searle Canal – Phase 5, Great Brak River

2018 Gouritsmond Hessequa Consulting Engineers

- Environmental Control Officer for the Upgrade and expansion of the Gouritsmond Water Water Treatment Works on remainder of erf 140, Gouritsmond

2018 George Biprops 14

- Environmental Control Officer for the residential development on portion 5 of the farm Kraaibosch No. 195, Groenkloof Woods: Phase C & D

2018 Knynsa Knysna Municipality

- Environmental Control Officer for upgrading of Knysna bulk water supply scheme: phase 2B

2018 Plettenberg Bay Bitou Municipality

- Environmental Control Officer for the upgrade of the Kranshoek Bulk Water Supply Scheme: Construction of Pipelines, reservoirs and associated infrastructure near Plettenberg Bay.

2018 Mossel Bay SMEC

- Environmental Control Officer for the Upgrade of Kusweg and associated infrastructure in Rheebok

2017 George EARP Construction

- Invasive Alien Management Plan for the proposed residential development on portions 21, 23, 24 & 48 of Farm Hansmoeskraal 202 near George

2017 Mossel Bay Mossel Bay Municipality

- Environmental Control Officer for the development of the new Mossel Bay municipal cemetery on erf 2001/0

2017 Knynsa Knysna Municipality

- Environmental Control Officer for the remedial work to prevent further settlement of the low-lift pump sump and retaining wall at Gouna River Pump Station

2017 Knynsa Knysna Municipality

- Environmental Control Officer for upgrading of Knysna bulk water supply scheme: phase 1

2017 George Biprops 14 (Pty) Ltd

- Environmental Control Officer for the residential development on portion 5 of the farm Kraaibosch No. 195

2017 Still Bay Hessequa Municipality

- Environmental Control Officer for the construction of a reservoir, booster pump station and associated infrastructure in Melkhoutfontein near Still Bay

2016 - 2017 Heidelberg Department of Transport & Public Works

- Environmental Control Officer for the flood damage repairs to structures in the Central Eden District Municipality Region, Heidelberg North

2016 - 2017 Riversdale Department of Transport & Public Works

- Environmental Control Officer for the flood damage repairs to structures in the Central Eden District Municipality Region, Riversdale East area

2016 - 2017 Still Bay Department of Transport & Public Works

- Environmental Control Officer for the upgrade of main road 332 near Still Bay

2016 - 2017 Mossel Bay The South Cape College

- Environmental Control Officer for the extension of the South Cape College: Phase 3, Mossel Bay Campus

2016 - 2017 Klein Brak Mossel Bay Municipality

- Environmental Control Officer for the removal of obstructions in the lower floodplain of the Klein Brak River Estuary

2016 Prince Albert Milway Trade and Invest 1014cc

- Basic Assessment for the proposed guest lodge on remainder of Farm Rietpoort 13

2016 Plettenberg Bay Bitou Municipality

- Basic Assessment for the proposed Qolweni phase 5 development near Plettenberg Bay

2016 Mossel Bay Element Consulting Engineers

- Environmental Management Programme for the replacement of 22kV overhead powerline between Power Town and Hartenbos and between Hartenbos and the Hartenbos sewage substation

2016 George SMEC

- Environmental Policy for the resurfacing of York Street, George

2016 Mossel Bay Department of Transport & Public Works

- Maintenance Management Plan for proposed upgrade of Louis Fourie Road.

2016 George Oaklands Bridge Country Estate HOA

- Maintenance Management Plan for proposed repair and maintenance of the riverbank at Oaklands Bridge Country Estate in Heather Park

2016 Gouritz Department of Transport & Public Works

- Update of the Maintenance Management Plan for proposed repair and maintenance of the Gouritz River Bridge bank protection along the R325 near Gouritzmond

2016 George Ivorybell Investment (Pty) Ltd

- Outeniqua Sensitive Coastal Area Environmental Impact Report for the proposed new house on erf 379 in Heralds Bay

2016 George George Municipality

- Environmental Assessment Report for the substantive amendment of environmental authorisation of the proposed upgrade and extension of the overhead power lines and associated substations

2016 Oudtshoorn SA Army Infantry School

- Environmental Control Officer for the construction of a fighting in built up areas (FIBUA) range on portion 10 of the farm Blaauwtjes Drift 110 in Oudtshoorn

2015 - 2016 Gouritz Department of Transport & Public Works

- Environmental Control Officer for the repair and maintenance of the Gouritz River Bridge bank protection along the R325 near Gouritzmond

2015 - 2016 Albertinia Garden Route Game Lodge (Pty) Ltd

- Environmental Control Officer for the five new units at the Garden Route Game Lodge

2015 - 2016 Mossel Bay Element Consulting Engineers

- Environmental Control Officer for the replacement of 22kV overhead powerline between Power Town and Hartenbos and between Hartenbos and the Hartenbos sewage substation

2014 - 2016 Plettenberg Bay Chauke Quanity Surveyers

- Environmental Control Officer for the Qolweni and Kwanokuthula High Density Units and engineering services

2016 Plettenberg Bay Bitou Municipality

- Environmental Control Officer for the civil engineering works for Kwanokuthula Phase 4 and the extension of Sishuba Street

2014 - 2016 Mossel Bay The South Cape College

- Environmental Control Officer for the extension of the South Cape College, Mossel Bay Campus

2016 George SMEC

- Environmental Control Officer for the resurfacing of York Street

2014 - 2015 Mossel bay The Muller Murray Trust

- Environmental Control Officer for the construction of gravity pipeline from the Nautilus take-off to the Boggomsbaai Reservoir phase 2

2015 Swellendam Casidra SOC Ltd

- Environmental Control Officer for the Grootvaderbos Groynes in the Buffeljags River

2015 George Element Consulting Engineers

- Environmental Control Officer for the upgrading and extension of overhead power lines and substations: construction of a new 66kV overhead line between Protea and Ballots Bay substation

2014 - 2015 George Department of Transport & Public Works

- Environmental Control Officer for the flood damage repair projects in the George and Knysna local municipal areas

2015 George BDE Consulting Engineers (Pty) Ltd

- Environmental Control Officer for the photovoltaic solar plant for the ACSA George Airport

2015 Heidelberg Bergstan South Africa

- Environmental Control Officer for the Duiwenhoks River stabilization works: Sites B31, B38 and B39

2015 Krakeel Element Consulting Engineers

- Environmental Control Officer for the construction of filling station at SSK Tuinrote Agri on portion 5 of the farm no. 320

2014 - 2015 Herbertsdale SMEC

- Environmental Control Officer for the flood damage repairs to structures in the Eden region: Herbertsdale area

2014 - 2015 George Department of Transport & Public Works

- Environmental Control Officer for the flood damage repair projects in the George and Knysna local municipal areas

2015 George SMEC

- Environmental Control Officer for the improvements to the Pacaltsdorp interchange and new pedestrian bridge

2014 - 2015 Still Bay De Villiers & Moore Consulting Engineers

- Environmental Control Officer for the Still Bay 66kV substation and overhead powerline

2014 Beaufort West Worley Parsons Consulting Engineers

- Environmental Control Officer for the Nelspoort bulk water supply scheme northeast of Nelspoort

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PO BOX: 443, Milnerton, 7435

AMENDED OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE

HARTLAND LIFESTYLE ESTATE DEVELOPMENT ON A PORTION OF THE REMAINDER OF THE FARM VAALEVALLEY 219, MOSSEL BAY WESTERN CAPE

APPLICANT:	Hartland Lifestyle Estate (Pty) Ltd
ENVIRONMENTAL CONSULTANT:	Sharples Environmental Services cc Original OEMPr Author: Mr. R. E. Hiseman (2008) Primary Amendment Author: Michael Bennett
DEA&DP REF:	Original: EG12/2/1 - AM18 - Farm Valle Valley 219/10 (5382) Current: 16/3/3/5/D6/29/0003/22 Addendum: 16/3/3/5/D6/29/0008/22 Amended: EG12/2/1-AM18-FARM VAALEVALLEY 219/B, MOSSEL BAY
SES REFERENCE NUMBER:	EIR/MSB/MS/36/SD/3/8/25
DATE:	3 February 2025

Chapter 1 Introduction

Sharples Environmental Services cc has been appointed by Hartland Lifestyle Estate (Pty) Ltd, the Applicant, to compile the Operational Construction Phase Environmental Management Plan (CEMP) in terms of Environmental Conservation Act (Act 73 of 1989). This CEMP is for the proposed Hartland Lifestyle Estate Phase II on a Portion of the Farm Vaalevalley 219 which is hereafter referred to as the "Property". The property is situated in the magisterial district of Mossel Bay.

This OEMPr has been compiled to ensure compliance with the requirements of the Department of Environmental Affairs and Development Planning (DEA&DP) and the environmental principles of "duty to care", while also minimizing the impact of operational phase activities on the environment.

Chapter 2 Commitment to the OEMPr

The OEMPr is required to ensure that once the construction phase has been successfully completed by the developer that there is a mechanism in place whereby the development can sustain itself, using specific procedures which will be followed by the applicant / homeowners association to maintain and ensure that rehabilitation of the natural areas is achieved. These procedures will reduce the adverse impacts of the construction phase and will ensure that future degradation is eliminated. The OEMPr will ensure that sustainable management of the residential as well as the natural environment takes place into the future.

A copy of the OEMPr will be issued to each homeowner who will have to sign acceptance of this management plan on purchase of a property in this development. This acceptance will be binding on the property owner and will be transferable to any new owner. The Homeowners association will ensure that compliance is maintained with regard to the management plan and the landowners, with penalties for non – compliance. DEAD/P or a duly appointed consultant will have to audit the applicant / homeowners association on a yearly basis.

A contingency plan must be in place if the homeowners association collapses. This contingency plan should be in the form of a property tax which the Mossel Bay municipality can levy on each landowner to ensure that sufficient funds are available to maintain the management of the natural areas of the development. This land tax should be on top of normal land taxes. The municipality must have the power in such a situation to appoint a managing authority to ensure that environmental management of the natural open space is continues.

Chapter 3 Context and Background

This operational phase EMPr is designed around the environmental issues and concerns identified during the EIA process as well as the site specific constraints to a development of this nature. The OEMPr is therefore formulated to ensure that the maintenance / operational phase activities are environmentally manageable and that potentially harmful or destructive activities are averted or minimized before otherwise preventable environmental degradation sets in.

This document will serve as the basis for a full Operational Management Plan which is required by law for “contract nature reserves” and will require updating within 5 years. This “Contract Nature Reserve” status would be achieved by the applicant applying to CapeNature to enter into a Stewardship agreement whereby the open space area is declared a “Contract Nature Reserve” with the same status as a Provincial nature reserve. The open space area will need to be assessed by a regional ecologist from CapeNature and if found to be of significant value, negotiations could be conducted to enter into a contract between CapeNature and the applicant. Various options of assistance could be negotiated which would be beneficial for both parties

Section 3.1 Location and description of Property

The Property is located approximately 2-km northeast of Hartenbos and about 2-km south west of Little Brak River township. Access to the Property entails taking the N2 Road and travelling in a south-westerly direction over the Little Brak River, until approximately 3-km further when the Hartenbos off-ramp is taken. The point of entry entails a Northwest (left) turn at the T-junction and an ensuing Northeast (right) turn at the next turning opportunity, into the old Hartenbos-Little Brak River road. This road is followed for about 1-km before turning Southeast (right) at the next available opportunity. The subsequent track leads under the N2 Road and straight to the Property. The Property is approximately 370 hectares in extent.

The railway line serves as the south-eastern boundary of the Property, with the ocean beyond that. The N2 National Road serves as the north-western boundary, with the old Hartenbos-Little Brak River road and tracts of zoned agricultural land on the other side of the N2 Road. The Little Brak River serves as the north-eastern boundary. Further north is the informal residential area of Power Town and the residential area of Little Brak River.

The Hartland Lifestyle Estate Phase I development serves as the south-western boundary, with a host of smallholdings and the Hartenbos River. Beyond that, further south, is the residential area of Hartenbos.

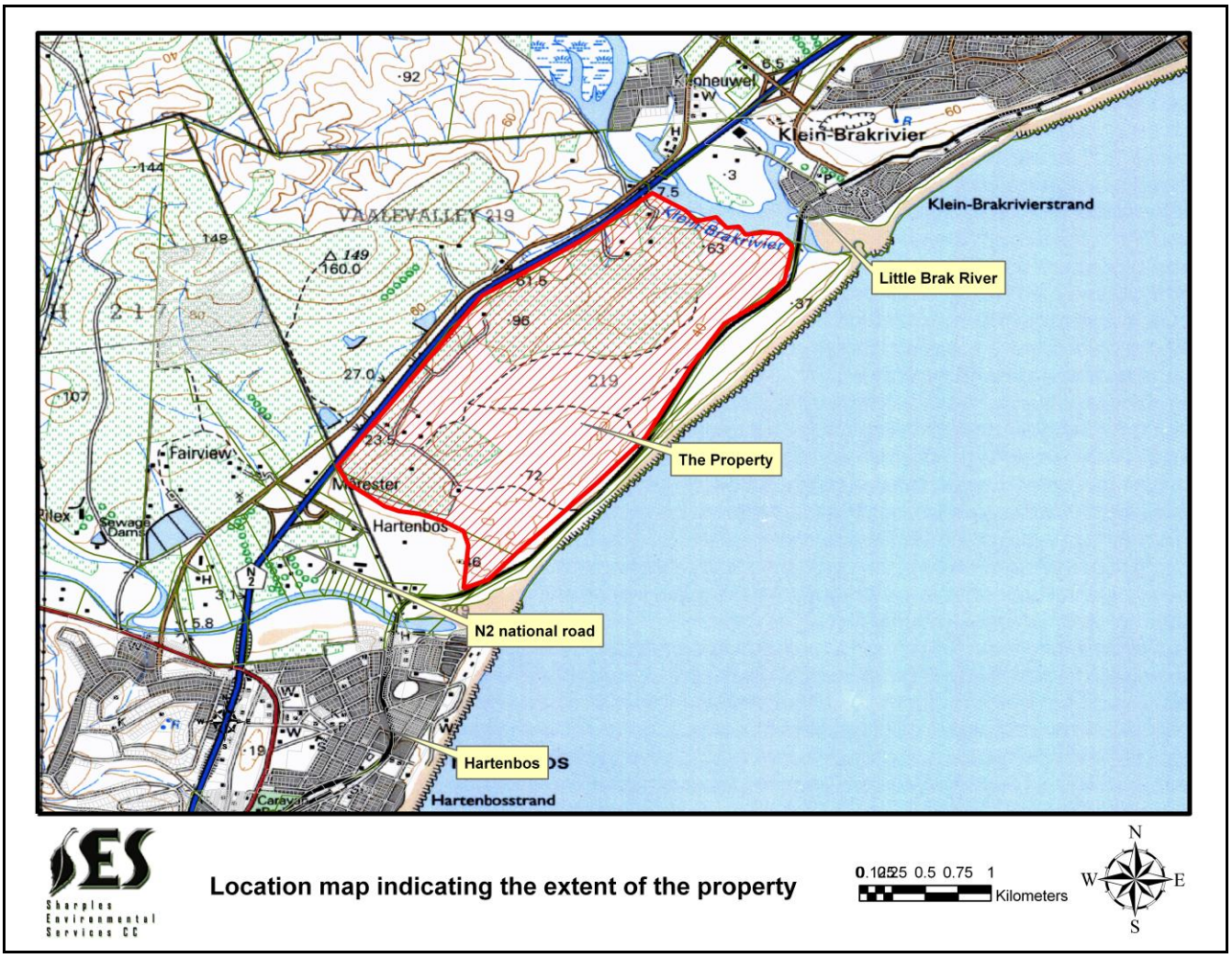


Figure 1: Enlarged part of 1: 50 000 scale map indicating the location of the Property

Section 3.2

Description of proposed activity

The proposed development consists of a telecommunication tower, a total of 2288 Residential units made up of single residential erven and general residential (including 150 Social Housing units), a 0.88ha Business Zone, 3.24ha Community Zone (consisting of a school and sports field) and an Open Space of 235ha (excluding the internal Open Spaces), which will be- managed as a nature reserve, a road network and associated infrastructure services will be accommodated on the footprint.

The main access will be from through the New Vintage Development to the southwest of Hartland and the secondary access will be from the MR 344 through the culvert under the N2 National Road.

Water will be provided from the proposed new 15Ml reservoir that will supply both the proposed Hartland Lifestyle Estate and possible future developments in the area, in addition to a 5Ml reservoir and booster pump station.

Sewerage removal will be accommodated by means of a gravity sewer network in combination with sewage pump stations. The sewage will be pumped to a point near the north-western edge of the site from where it will gravitate and siphon to the Hartenbos Regional Sewage Treatment Works.

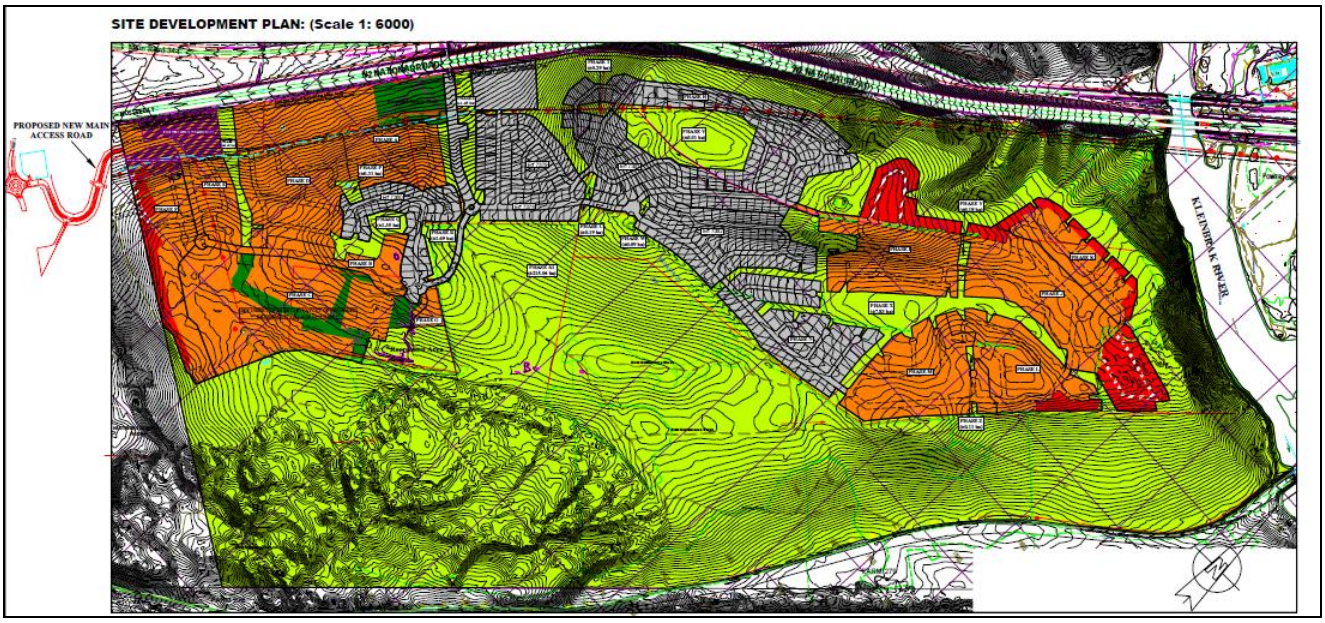


Figure 2: Site Development Plan

Figure 2: Locality of proposed Telecommunication mast

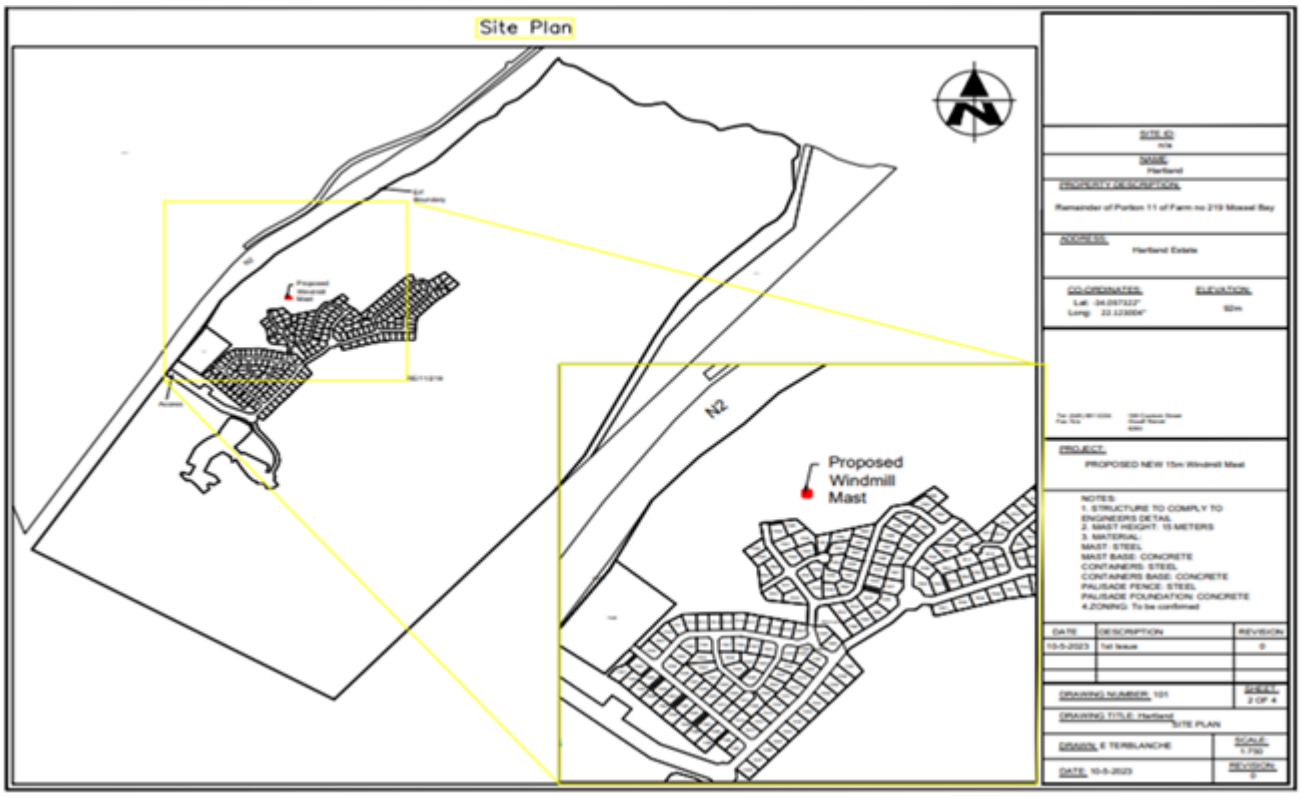


Figure 3: Proposed site plan for the telecommunication mast

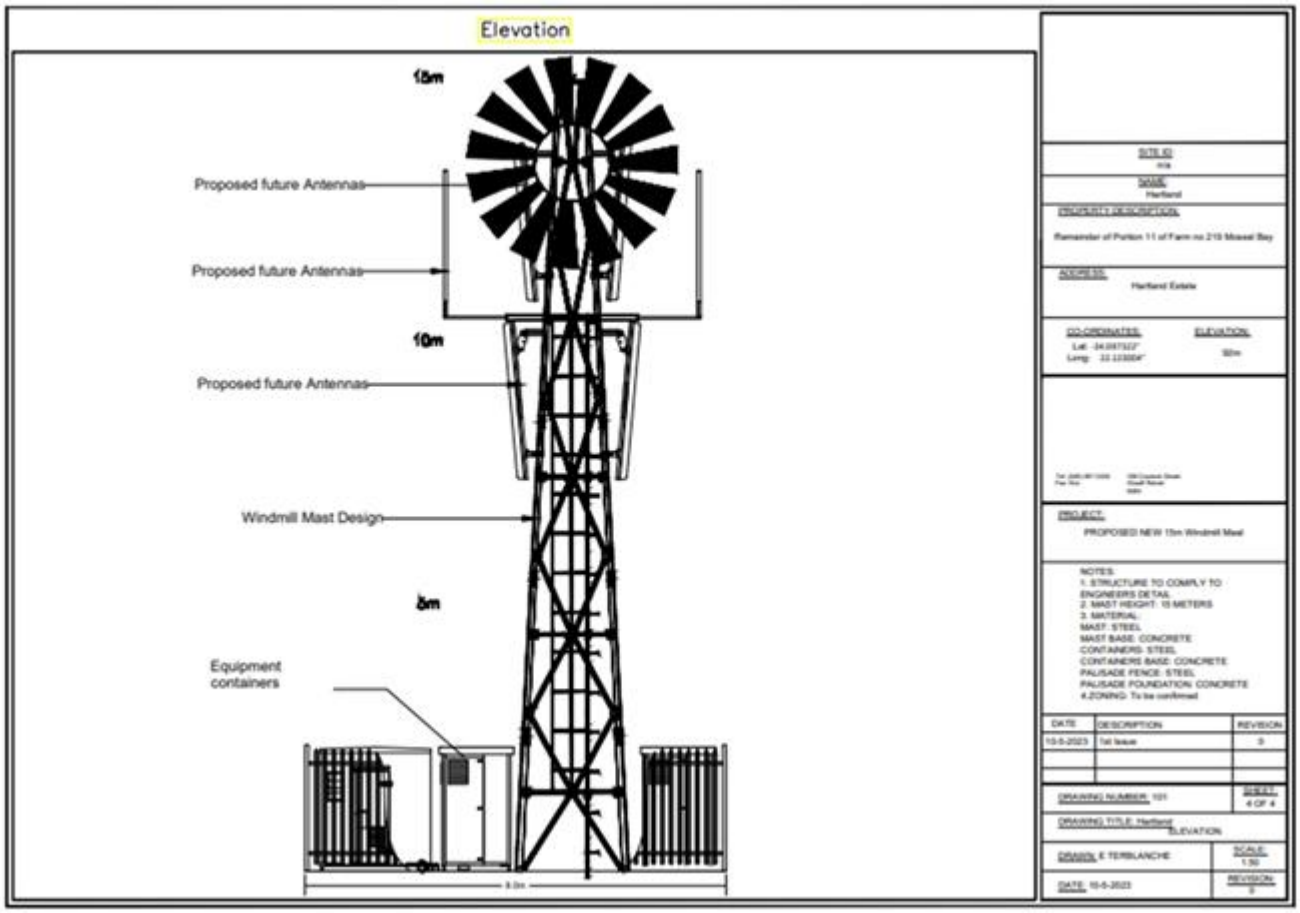


Figure 4: Elevation of Telecommunication Mast.

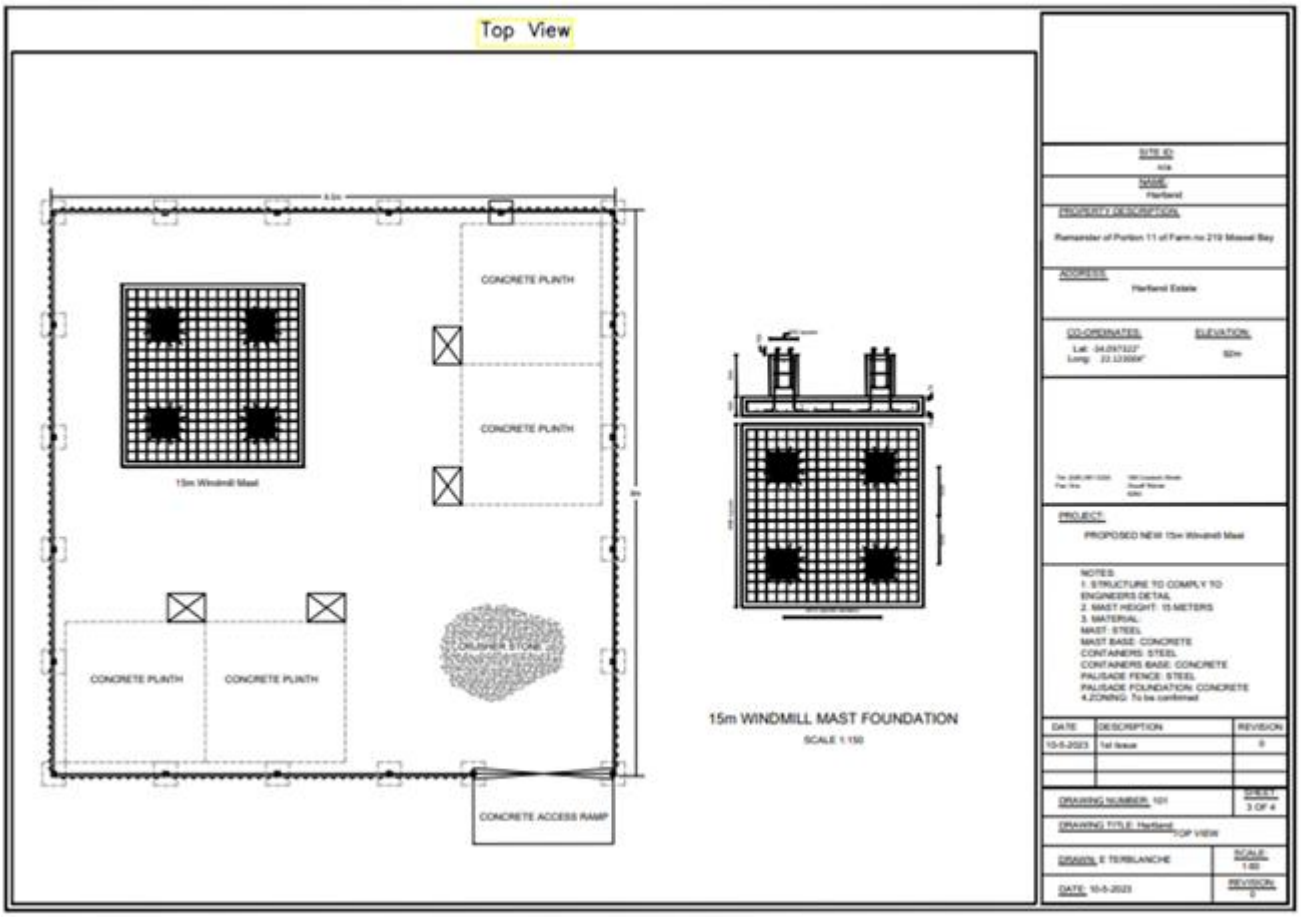


Figure 5: Top view of Telecommunication Mast.

Game species, predominantly antelope, may also be introduced on the Property in the Open Space and naturally vegetated areas nearest the coastline.

Chapter 4 Description of Receiving Environment

Section 4.1 Biophysical Environment (2008)

According to Conservation Management Services, who compiled a Vegetation and Vertebrate Fauna Sensitivity Analysis for the entire property as part of the environmental assessment process, the vegetation of the property can be broadly differentiated into transformed and un-transformed habitats. According to *Conservation Management Services* the un-transformed areas consist largely of Thicket and Fynbos / renosterveld vegetation. In the report it is noted that Vlok & Euston-Brown (2002) described the vegetation, in terms of the STEP project, as Herbertsdale Renoster Thicket. This is actually a mosaic of Gouritz Valley Thicket within a Renosterveld matrix. In terms of the CAPE project (Cape Action Plan for the Environment), the vegetation of the area is mapped as Riversdale Coast Renosterveld and Stilbaai Fynbos / Thicket mosaic.

In terms of detailed on-site investigation, it is noted that the vegetation of the study area appears to be most accurately described as a Fynbos / Thicket mosaic. There is no clear distinction between Renosterveld and Fynbos in this area, but the vegetation matrix in which the Thicket is located is clearly more of a Coastal Fynbos than Renosterveld.

4.1.1. Vegetation Sensitivity Analysis

According to *Conservation Management Services*, the general sensitivity of the dominant natural vegetation type (Fynbos / thicket) lies in the fact that the sands of the area overlie limestone, which are limited on the study area. Two species indicative of lime-rich soils are *Agathosma muirii*, and *Euchaetis burchelli*. Both of these plant species, although not yet Red Data Book species, are threatened. *Otholobium fruticans*, a Red Data Book plant which is listed as vulnerable, is also as widespread on the study area. Another very rare plant identified by the Report is *Delosperma virens*, and the small population of no more than 100 plants is notable.

Conservation Management Services indicated that another critically endangered plant of the study area is *Diosma aristata*. The population found on the property is of great significance for the conservation of this species. *Hawarthias parksiana* was also noted, and this too is a listed Red Data species (endangered).

4.1.2. Vertebrate Fauna Survey

Conservation Management Services indicated that the fauna of the study area is typical of the thicket and fynbos covered South Cape coastal areas. The fauna is relatively intact, with the exception that many of the original larger mammal species were eradicated by the end of the 19th Century.

The following description of the fauna is per vertebrate faunal group:

- **Amphibians** - The disturbed pasture area, thicket and Fynbos habitats and earth dams provide a limited range of suitable habitats for amphibians. Of the 16 species listed to occur in the area, *Conservation Management Services* could not confirm that the species were currently present.

- **Reptiles -** The following is likely to occur in the study area: 3 Tortoises; 1 Chameleon; 21 Snakes; 5 Geckos, and; 11 Lizards. According to the Conservation Management Services, of the 43 species predicted to occur, 16 are endemic to the sub-region, most with small distribution ranges. Only 2 of the predicted species were confirmed.

- **Mammals -** The pasture, thicket and Fynbos habitats potentially provide habitat for:
  - 8 Insectivores (shrews, moles);
  - 13 Chiroptera (bats);
  - 2 Primates (monkeys);
  - 1 Lagomorph (rabbits, hares);
  - 16 Rodents (rats, mice);
  - 9 Carnivores (cats, mongooses, otters), and;
  - Ungulates (hoofed animals).

  Only 5 of the 59 species were confirmed.

- **Birds -** Birds are comparatively more mobile, than other animals and their presence does not necessarily indicate permanent residence or occupation. The earth dams on the study area support occasional water and wetland birds. The thicket habitats of the general area are important bird habitats and may contain: Chorister robin; Forest buzzard; Forest canary; Knysna warbler, and; Knysna woodpecker. The thicket habitats of the study area may also contain elements of bird fauna typical of coastal forest, Afromontane forest and thicket / fynbos ecotones. Of the 153 bird species predicted to occur in the general area, only 16 are confirmed.

Section	Biophysical Environment (2022)
4.2	

- Mark Berry was appointed to compile the Vegetation Compliance Statement.
- Robyn Phillips of Cossypha was appointed to compile the Terrestrial Biodiversity and Animal Species Compliance Statement.
- Dr James Dabrowski of Confluent aquatic consulting and research was appointed to compile the Freshwater Compliance Statement

4.2.1 Vegetation Compliance Statement

The study site is located in a coastal fynbos/thicket environment on the Southern Cape coastal plain. The indigenous species recorded in the vegetation adjacent to the site are typical thicket species, such as Searsia pterota, Sideroxylon inerme, Schotia afra, Cussonia thyrsiflora and Aloe arborescens. The 2018 Vegetation Map of South Africa classifies the main vegetation type found here as Hartenbos Dune Thicket. The latter is easy to spot with its impenetrable, thorny thicket structure. The Vegetation Map also shows Canca Limestone Fynbos and Mossel Bay Shale Renosterveld in the western part of the site, but this is speculative as the area has been almost completely transformed by past farming activities. There is evidence on site that the thicket may have extended across the site towards its western boundary.

Indigenous shrub species recorded inside the fallow land include *Felicia muricata, Helichrysum foetidum, Osteospermum moniliferum, Leysera gnaphalodes, Gnidia squarrosa, Drosanthemum intermedium, Delosperma litorale, Carpobrotus edulis, C. deliciosus (or C. deliciosus x edulis), Mesembryanthemum aitonis, Aizoon secunda (dominant), Euphorbia burmannii, Clutia daphnoides, Crassula multicava, C. expansa, Cotyledon orbiculata, Aloe ferox, Lycium cinereum, Searsia glauca, Sideroxylon inerme, Carissa bispinosa, Pelargonium capitatum, Anthospermum galioides, Exomis microphylla and Selago corymbosa.* The *Carpobrotus* species are excellent soil binders and should be salvaged for rehabilitation purposes. Geophytes recorded include *Oxalis pes-caprae, Drimia capensis, Bulbine lagopus, Brunsvigia orientalis* and *Moraea polyanthos*. The taller shrubs and trees, such as *Sideroxylon inerme, Carissa bispinosa and Searsia glauca*, are typically associated with dune thicket. *Sideroxylon inerme* (milkwood) is a protected tree species and a permit is required for its removal.

Indigenous species recorded in the dune thicket include *Schotia afra, Sideroxylon inerme, Pterocelastrus tricuspidatus, Mystroxylon aethiopicum, Gymnosporia buxifolia, Putterlickia pyracantha, Searsia glauca, S. pterota, Azima tetracantha, Diospyros dichrophylla, Phylica axillaris, Colpoon compressum, Hermannia holosericea, Agathosma apiculata, Aloe arborescens, Jordaaniella dubia, Crassula muscosa, Cussonia thyrsiflora, Pelargonium peltatum, Rhoicissus digitata and Commelina africana. Thamnochortus insignis* is the only restioid recorded inside the thicket.
All the recorded species are widespread and fairly common. Due to the time of the survey, spring flowering bulbs, especially members of the *Iridaceae* and *Orchidaceae* families, were not picked up. These will show themselves later in the spring season. Floristic association with dune thicket (Hartenbos Dune Thicket in this case) is strong with most of the recorded species regarded as important taxa in the unit. No SCC or regional endemics were recorded.

4.2.2 Terrestrial Biodiversity and Animal Species Compliance Statement

Faunal activity on the site was generally low with only common or generalist birds, small mammals, and butterflies recorded. Some of the bird species recorded on the site included Cape Spurfowl *Pternistis capensis*, Spotted Thick-knee *Burhinus capensis*, Barn Swallow *Hirundo rustica*, Karoo Prinia *Prinia maculosa*, Bokmakierie *Telophorus zeylonus*, Common Starling *Sturnus vulgaris*, and a pair of Jackal Buzzard *Buteo rufofuscus* that are known to nest in an alien tree on the southern border of the site (on the fringe of the indigenous dune thicket). Mammal diversity on the site was low with only small mammals such as Four-striped Grass Mouse *Rhabdomys pumilio* and Cape Gerbil *Gerbilliscus afra* recorded, with a high concentration of burrows observed throughout the site. Spoor of Small-spotted Genet *Genetta genetta* was observed on the edge of the dune thicket in the southern portion of the site. Only one common butterfly species was recorded during the field survey, Silverbottom Brown *Pseudonympha magus*. No faunal SCC were recorded during the site surveys. The habitat on the site is largely homogenous and generally of poor quality and is unlikely that the available habitat would support any significant populations of faunal SCC.

4.2.3 Freshwater Compliance Statement

The property falls within Primary Catchment K (Kromme) area and falls on the catchment divide of quaternary catchments K10B and K10F. The project area of interest (PAOI) (i.e., the surface area to be developed) falls within K10B. No freshwater features are indicated to occur within the development footprint. The PAOI was traversed by vehicle and by foot on the 26th of August 2022. No freshwater features were identified within the development footprint. Based on the results of the desktop review and the site survey, the sensitivity of aquatic biodiversity on Remaining Portion 11 of Farm 219 Vaale Valley can be confirmed as Low and a comprehensive specialist assessment is therefore not required.

Chapter 5 Terms of Reference

A number of standard conditions must be adhered to, to ensure that the OEMPr remains valid. The general Terms of Reference, upon which this OEMPr is based, are encapsulated in various Authority requirement lists and guidelines, which govern the compilation of Management Plans.

These conditions are designed to ensure that the Applicant / Homeowners association is bound to a particular management regime. This ensures that the environmental concerns identified in the EIA study are duly addressed and a sustainable management strategy is developed to manage the development site in perpetuity.

The general and site-specific requirements include:

- The OEMPr must be approved by the relevant decision-making authority prior to any construction activities commencing.
- The OEMPr must be included in all contract and deeds of sale documentation for the purchase of property in the development.
- The developer is responsible for this OEMPr until such time that the Homeowners association is legally constituted. Thereafter the responsibility and accountability for ensuring compliance with the conditions contained in the OEMPr reverts to the Homeowners association.

- An integrated waste management approach must be used that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste shall be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989).

- Each household must have a set of homeowners rules and regulations available and all guests must be made aware and abide by these regulations.

- The natural open space area must be clearly demarcated by a post and rail pole fence 1,2 metres high.

- Disturbance to the natural environment must be kept to a minimum or as far as possible be avoided. Rehabilitation must be undertaken where disturbance to the natural environment is unavoidable.

- The Applicant / Homeowners association should appoint a suitably experienced environmental manager or environmental management company to ensure that the mitigation/rehabilitation measures and recommendations referred to in the EMP are implemented.

- No stock farming or domestic stock must be allowed to graze in the open space areas.

- No utilization of any of the natural resources in the open space areas must be allowed. This includes wood collection, harvesting of thatching reed, hunting or removal of plants. The making of fires, dumping of domestic waste and uncontrolled fires must also be controlled.

- The applicant / homeowners association should submit an Environmental Audit to the relevant authority six months after construction has been completed: Thereafter a yearly report can be submitted to the same authority every December.

    - The audit report should indicate the date on which the construction was completed and detail compliance with the mitigation/rehabilitation measures and recommendations referred to in the EMP.
    - The applicant /homeowners association may be required to perform remedial action should the audit report reflect that rehabilitation is inadequate.

- All relevant sections and regulations contained in the National Water Act, Act 38 of 1998, regarding water pollution must be adhered to.

- The relevant authorities shall be given access to the site for the purpose of assessing and/or monitoring compliance with the maintainance/operational management plan and recommendations referred to in the OEMPr, at all reasonable times.

- All the conditions contained in this OEMPr must be adhered to.

The Environmental Authorization, if and when issued, will also have a number of conditions that must be adhered to in order to ensure that the Environmental Authorization remains valid. This Terms of Reference will therefore also need to encapsulate the conditions of the Environmental Authorization that will be issued by the DEA&DP. This will ensure that the

findings of the Environment Impact Assessment are carried through to the execution and completion of the project.

Chapter 6 How to use this Document

This document should be seen as a working document to be used by the Applicant / Homeowners association and all contractors and labourers operating on site in order to arrive at a common goal. That goal is to ensure that the operational phase activities take place in such a manner that positive environmental impacts are maximized and negative impacts are minimized as far as possible.

It is essential that this OEMPr be carefully studied, understood, implemented and adhered to as far as possible. The Applicant / Homeowners association must retain a copy of this OEMPr. All landowners must be in possession of this OEMPr.

Section 6.1 Caveat to this Report

This OEMPr has been prepared with the help of and with reference to the "Guidelines for Environmental Management Plans" produced by the DEA&DP and prepared by the CSIR. It is important to note that the OEMPr is not designed to be a tool used to manage the physical construction of the development per se but rather an effective tool, which must be used to manage the environmental impacts of the development.

This OEMPr must be seen as an integrated management plan flowing from the EMP and is designed to ensure sustainable environmental management after the construction phase. The OEMPr gives guidelines for the effective management of biodiversity for the residential and open space areas of the development into the future. It has to be accepted that at this stage there are a number of unknown factors which will require the OEMPr to be updated if the development is approved.

Section 6.2 Legal Framework

This OEMPr should be seen as binding to the Applicant / Homeowners association and any person acting on his / there behalf, including but not limited to, an agent, servant, employee or any person rendering a service to the development site.

The Applicant / Homeowners association will be responsible for ensuring that contractors and labourers do not contravene provisions of the following pieces of legislation:

- Constitution of South Africa, Act No. 106 of 1996, Section 24.
- Environmental Conservation Act (Act No. 73 of 1989).
- National Environmental Management Act (Act No. 107 of 1998), as amended.
- National Heritage Resources Act (Act 25 of 1999).
- National Water Act (Act 38 of 1998).
- National Forest Act (Act 84 of 1998).

Furthermore, *SES* strives to incorporate principles from:

- National Environmental Management: Biodiversity Act (2003).
- National Environmental Management: Protected Areas Act (2003).

The Applicant should also ensure compliance to the Occupational Health and Safety Act (Act 85 of 1993). This act stipulates that every employer must provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of its employees. This OEMPr does not detract from any other legal requirements.

Chapter 7 Purpose of this Operational Environmental Management Programme

The purpose of this OEMPr is to define the parameters for the maintainace / operational phase of the proposal. The OEMPr also provides management guidelines, which set out steps and actions and when taken, will ensure that the environment degradation is kept to an absolute minimum.

The OEMPr describes management measures in detail and in prescriptive; identifying specific individuals to undertake specific tasks. As an open-ended document, information gained during the ongoing operational phase could lead to changes in the recommendations and specifications of this document.

Aspects that will be included in this OEMPr include:

- Ecological management of all natural open spaces
- Recreational development and management of natural open spaces
- Environmental management of residential development
- Wildlife conflict management.
- Refuse and waste management.
- Fire management – fire protection and prescribed burns.
- Game introductions
- Monitoring
- Storm water system / erosion maintainace
- Environmental reporting
- Penalties, claims and damages.
- Environmental Education.
- Accommodation of staff on site.
- Discovery and Protection of Heritage Resources.
- Stormwater and Erosion control.
- Vegetation management.
- Final Rehabilitation.
- Monitoring and reporting.
- Environmental Auditing.
- Inclusion into contract documentation.

Chapter 8 Competency & Duties of the Applicant / Homeowners association

During the operational / maintance phase of the development an (operational environmental management plan) OEMPr must be developed and implemented to ensure sustainable environmental management of the whole development.

To ensure that this open space can be sustainably managed it is vitally important that sufficient sustainable funding is provided for the implementation of this OEMPr. To ensure effective management of the natural environment .a conservation management fund must be developed (section 21 (company). To ensure sustainable funding is available over this operational period the applicant (developer) should lodge a sum of money (R2 million) into a trust account. The interest from this money can be used to fund management activities until such time that there are sufficient properties sold. Once the homeowners association has been constituted a conservation management levy can be levied on all property owners in the development to fund future management actions. The first few years of the homeowners association conservation levy funding, will in all probability not produce sufficient funding to cover management costs. However once the conservation management fund has reached the same level of funding as that provided by the developer the applicant (developer) can be refunded his R2 million. The homeowners association will need to review the levy tariffs on a regular basis to ensure that there is sufficient funding available.This conservation management levy can only be used to pay for the environmental management interventions required in the future of the development.

The applicant / homeowners association will be required to appoint a suitably qualified environmental manager (EM) either fulltime or on a contract basis, to assist with the management of the natural environment. This environmental manager must be able to demonstrate he/she is of sufficient competency to undertake these services. The EM must have had at least 3 years of previous environmental management experience, in reserve management and must be available to ensure that he/she is readily available when required.

A business plan and operational budget must be developed between the applicant / homeowners association and the EM. At least R250,000-00 should be available in the first year of management in the operational phase. The applicant / homeowners association and EM will draw this budget up based on the OEMPr priorities and funding available.

The EM will need to be appointed after the construction phase of the development. Once the ECO has been signed off the EM must be appointed and must be fully aware of what is required.

The EM's duties should include the following:

- Ensuring that the environmental specifications, as per the environmental authorization and the OEMPr, are adhered to throughout the operational phase;
- Assist in finding environmentally acceptable solutions to operational problems;
- Develop a homeowners environmental focus group to assist with monitoring and active management of the natural open space areas.

- Establishing an environmental awareness program to educate applicant / homeowners association (property owners).

- Develop and distribute a bimonthly newsletter distributed to all property owners

- Ensure that he/she remains within the operational budget and motivates timorously if extra funding is required.

- Initiate all management actions required to ensure sustainable management of the whole development.

- Keep detailed records of all management activities with regards to the environment. This will involve monthly management reports and assistance with environmental audits. A yearly environmental report must be complied and forwarded to DEAD/P in December of each year.

- The EM must ensure that all contractors or labour used for managing the area are fully aware of all rules and regulations as well as any statuary legislation pertinent to this development.

- Liaise with applicant / homeowners association with regards the requirements of this OEMPr.

- Carry out all environmental monitoring prescribed in the OEMPr.

- Develop and maintain contact with Provincial conservation agency, environmental NGO`s ,eg Bot Soc ,CREW ,WESSA.

- Conduct baseline and monitoring activities and develop fauna and flora data base information of species occurring on the development.

- The EM must ensure that regular patrols are conducted in the natural area to ensure compliance with the rules and regulations and that no snares, hunting etc. are taking place.

- With approval of the applicant / homeowners association, furnish property owners or public with verbal warnings or in serious contraventions fines as laid out in this OEMPr.

- Recommend additional environmental management measures, should this be necessary.

Chapter 9 Stormwater & Erosion Control

The management / maintainace of stormwater is crucial to preventing erosion on exposed areas, during the construction and operational phase. Accelerated erosion needs to prevented, at all costs.

The steep sandy slopes bordering the Klien Brak river have been identified as being particularly sensitive to erosion events. Previous agricultural practises have caused serious erosion on this slope. The movement of cattle has over time destabilized the area causing erosion ‘slips” when heavy rainfalls occur. It is important to ensure that this area is stabilised in the construction phase but equally important to maintain these erosion structures and ensure that any new areas are stabilised timorously.

The stormwater system designed for the residential development has been designed to, transfer water from hard surfaces such as roads, roofs and paved areas into, various dissipation sumps around the residential development. The philosophy of managing the stormwater on site will be adopted, thereby reducing the need for stormwater pipelines which concentrate large volumes of water causing significant problems or damage” off site “.During the construction phase the stromwater management infrastructure will be installed which will include, specially designed dissipation sumps .
This system needs to be managed and it will be the responsibility of the applicant / homeowners association to manage and maintain this storm water system.

On a monthly basis or when heavy rainfall has occurred waste traps will have to be cleared of any obstructions, litter etc. The actual dissipation barriers, sumps etc will have to be checked at the same rate and particularly after heavy rains to ensure that these structures are still in tact and functioning. Any repairs must be conducted immediately to ensure that no erosion takes place in these areas.

If any of these systems are found to be underperforming and not dissipating the storm water this must be reported to the homeowners association for remedial action.

It is important to provide the environmental manager and contractors with a range of tools to enable them to prevent and control erosion and manage stormwater on a daily basis. It is for this reason that this OEMPr proposes a three-tier approach to the issue of stormwater management. The combination of the systems will be used to ensure that while one system is used to decelerate the speed of the overland flow of stormwater, another system will be used to dissipate the energy of the stormwater.

The proposed stormwater control system therefore entails a small and medium scale approach to the management of stormwater, each with differing erosion control structures. The OEMPr should be consulted on the scale of situation in order to decide on the most appropriate stormwater / erosion management measure.

Stormwater / erosion management measures are discussed for both the construction and operational phases.

Section 9.1

Small-Scale Erosion and Stormwater Control Measures

These control measures will entail brush packing and brush wattling (brush bound into cylindrical bundles) as well as mulching and the use of shade netting barriers (or similar) or geo-fabric barriers in areas where no brush is available. These stormwater control measures are usually placed directly across the path of flow of stormwater. Poles and logs, staked in along the contours of a slope susceptible to erosion may also be used. Seeding exposed slopes with a suitable fast-growing grass (or other) mix may also be undertaken to provide additional stability.

Section 9.2

Medium-Scale Erosion and Stormwater Control Measures

Small berms and benches cut into the slope as well as poles and logs, placed along the contours of the slope can be used for medium-scale erosion and stormwater control.

Section 9.3

Roles & Responsibilities with Erosion and Control

Which ever stormwater and erosion control measure is employed; the aim is to take care at all times to prevent erosion and pollution of soils on the development. Where there is a possibility of erosion and pollution occurring, the environmental manager is to apply the necessary approved stabilization /control method.

It is the responsibility of the environmental manager to ensure that the erosion control measures are in place throughout any period of risk. Any concentrated flows of stormwater should, where possible, be dissipated to avert any erosion.

Please note that erosion control methods might need to be supplemented or improved during the construction/operational phase. Such additional erosion control measures should be implemented in consultation with the applicant / homeowners association.

Section 9.4

Brush-Packing & Mulching

Brush-packing or mulching, is done by covering the exposed surface with organic plant material such as branches, plant cuttings and leafy material. This method should be employed on all steep exposed slopes or where an area is vulnerable to either wind or water erosion. Brush-packing or mulching is a valuable soil erosion control method due to the following:

- It assists with the retention of moisture in the soil.
- It protects the exposed soil from wind erosion while at the same time trapping wind blown sand particles.
- Traps wind blown seeds.
- It functions as a protection against rain splash erosion.
- It eventually decays and contributes to the organic content of the topsoil

Mulched material should be spread on the entire site to be treated up to a depth 50mm. If mulch material is too thinly spread out it will be ineffective in protecting the area, but if it is too dense it will suppress plant growth.

Chapter 10 Management of natural open spaces

Recommendations were made by Conservation Management services (June 2005) for the operational management of the open space areas on this development. These recommendations are intended to mitigate nature conservation measures in the open space areas and must be implemented.

These open space areas have been identified as sensitive environmental areas where no residential construction will take place. However these areas need to be managed to maintain ecological biodiversity and to provide limited and controlled recreational access to the residents living in this development.

Management would include a fire management programme, alien vegetation follow-up control, habitat restoration, low impact utilization and erosion control. To achieve this, a homeowners association would have to be formed for the general development with a management committee to be formed once the developer has completed the development, This management committee could appoint a suitably qualified environmental management team to manage these sensitive open spaces under contract or appoint a fulltime conservation manager.

To ensure “buy in “from the homeowners association a certain amount of low impact utilization of the open space will be required to attract their involvement. The type of activities envisaged on these trails would be walking, jogging, bird watching, cycling and guided nature trails.

CapeNature have a land Stewardship programme which seeks to form partnerships with landowners who have unique pieces of natural fauna and flora which are not formally protected by existing national or provincial nature reserves. Application should be made to CapeNature to consider this natural open space as a “Contract Nature Reserve”. This will give it the status of a provincial nature reserve. This “contract status“nature reserve will unlock certain services from CapeNature. These services could include assistance with controlled burns, environmental auditing, field ranger training etc. These services will have to be negotiated with the signing of the contract. There is concern that CapeNature is under staffed but if a contract is signed CapeNature is obliged to deliver.

Once the initial clearing stage of alien vegetation on the open space area has been completed and the rehabilitation process started as per the EMP the maintainace management of the area needs to begin.

Section 10.1

Maintenance Management

Maintainace management would consist of following up on the alien vegetation removal plan, monitoring ,repairing and replanting of indigenous plants that perish in the rehabilitated areas and monitoring and repairing rehabilitated erosion areas damaged by high rainfall / wind incidents. Follow-up sessions should be scheduled at least two years in advance. The alien plant removal and rehabilitation schedule must be audited in accordance with the EMPr audit frequency.

Section 10.2

Maintenance Management- rehabilitated areas

The areas which have been rehabilitated by revegetating indigenous plant species or the areas which were badly eroded and required stabilization need constant follow up which will require replacement of mortalities in terms of plants and repacking of erosion barriers where necessary.

Plant rehabilitation follow up can take place by restocking of various indigenous species used in the original rehabilitation programme. These plants could be sourced from an indigenous nursery. Plants must be “hardened “and need initial watering. Replacement of indigenous species and weeding of alien species needs to take place on a 6 monthly basis.

Erosion rehabilitation areas need to be inspected on a 6 monthly basis but also after heavy rainfall events. Replacing and repositioning of erosion barriers and the replanting of vegetation will be the main management tasks. Attention must be given to identifying new erosion points and the stabilization of these areas.

Maintenance of nature trails, access tracks, sign boards, decks etc. Will require ongoing maintenance.

Section 10.3

Maintenance Management – nature trail/access tracks

Mowing of the access roads/nature trails should take place at least every three months or according to rate of growth of ground vegetation or rainfall. Hand operated weed-eaters could be used on the narrow nature trail and a small tractor mounted mower must be used on the access tracks/ firebreaks where grass block sections should be used to stabilise sections of known erosion areas. Where trails pass close to high vegetation, trimming of vegetation will have to take place. This can be done by using a “kapmes “or a pruning shears.

Section 10.4

Maintenance Management- signboards, decks etc.

Any damaged or loose sections of timber need to first be repaired and then treated. Timber work will need treatment with wood preservatives every year. Surfaces which are flaking will need a light sanding followed by a good quality wood preservative such as “Rubol” or “Timbercare”. Timber signboard frames will need the same treatment. The actual interpretive

signboards will usually require replacement every 4 – 5 years. Trimming of grass for, 50 metres around the structures every 3 months will be required.

Section 10.5

Trails

These trails will take the form of a system of well laid out single track trails traversing sections of the natural open space. These trails will have to follow contour lines where possible and it is not likely that any removal of indigenous vegetation will take place. Existing vehicle tracks and disturbed cattle paths will be incorporated into the trail where possible. The trail system will have various access points so that residents can have easy access to these trails. This natural area lends itself to this system of trails with stunning estuarine and sea views as well interesting vegetation habitats. Once the rehabilitation of the open space is completed, residents will find these trails an inviting area in which they can practise various pastimes.

The layout of this trail system will have to be planned on the ground and according to features in the landscape (see Fig No 2 for proposed trail layout). Erosion barriers will be installed on all steep slopes or erosion prone areas. Untreated wood chips will be laid on the trail path to stabilize the path. A series of trail direction indicator boards will be erected to clearly demarcate the trail. At various vantage points raised wooden decks will be erected. These decks would act as protection from excessive trampling by hikers etc. The surface area of such a deck would be no greater than 2m x 3m and would be raised from the ground to allow light under the structure so that vegetation can still grow under it. The decking would be slated timber with gaps to allow rain water penetration. At these points interpretation boards and rustic seating will be provided. A wide range of interpretation can be carried out covering various ecological systems for example, estuarine, terrestrial and marine themes. These interpretation stations would consist of rail and post timber frames with screen printed information boards attached to them. Coastcare have produced an excellent range of interpretation boards particularly for the coastal zone. The artwork for these interpretive boards is available at no charge from Marine and Coastal Management (Coastal management section Cape Town)
The trail system will have to be zoned so as to incorporate different activities. Cycling is not compatible with walking or running. It might be necessary to have a different route for bicycles however this can only be accessed when actually laying out the trail route.

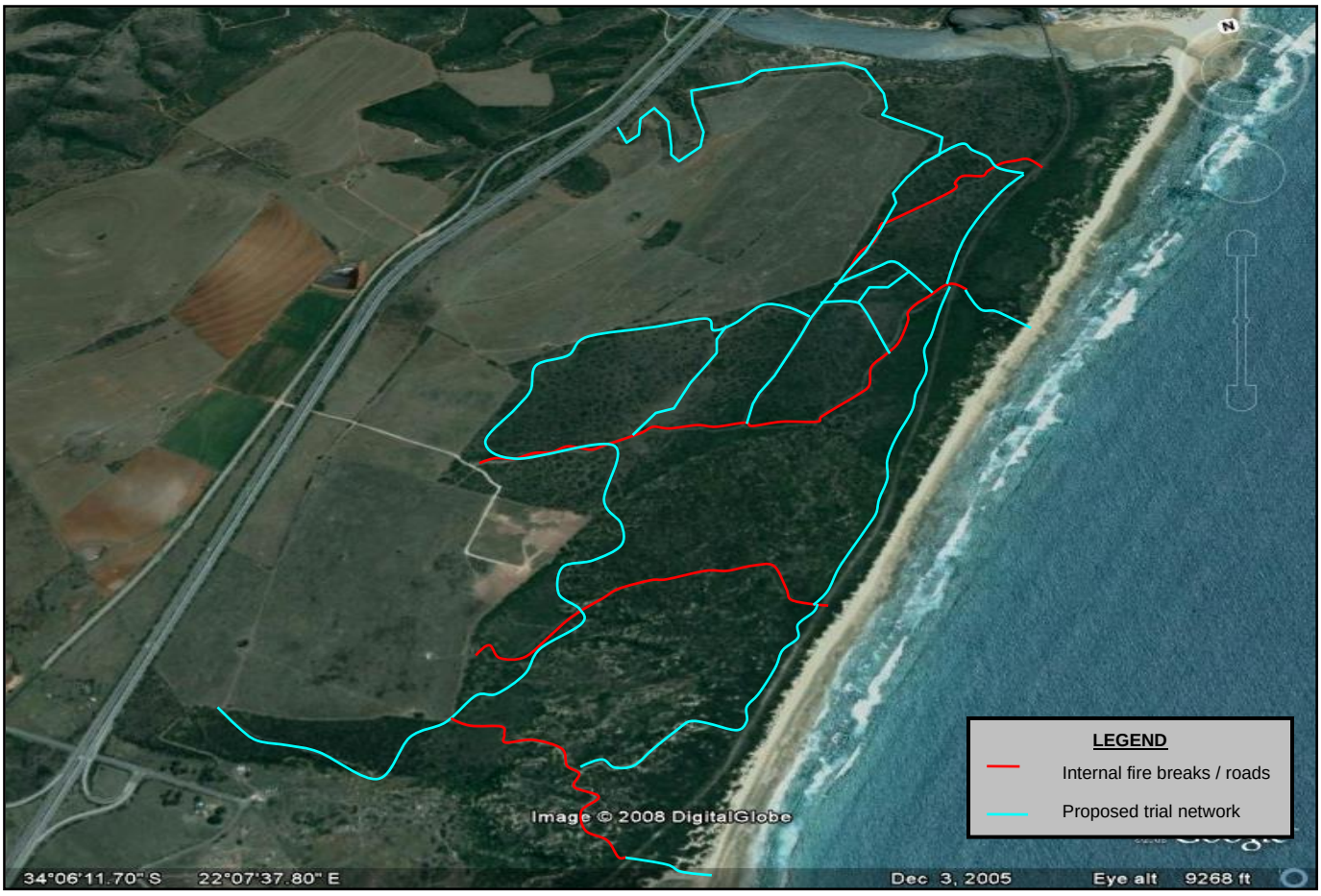


Figure 3 – Proposed nature trial network

Chapter 11

Fire Management

The fynbos biome according to Fuggle and Rabie (1996) occupies approximately 2,7% of southern Africa and consists of the richest flora of all southern Africa biomes. It includes the Cape Floristic Kingdom with exceptionally high levels of regional and local endemism. The richness of the Fynbos Biome is due to the high change / turnover of moderately rich communities along environmental gradients (beta diversity) and high turnover within communities along geographical gradients (gamma diversity). In other words the floristic composition displays unique changes over very small distances giving rise to many rare species. To ensure high and rich levels of species composition, conservation of rare and threatened plant and animal species, effective management techniques are essential to sustain this biome. Fuggle and Rabie (1996) state that the maintainace of diversity in fynbos communities are poorly understood and therefore fire in this respect plays a major role as an effective management tool.

The planning of veld management is according to Bothma (1996) based on a thorough knowledge of the vegetation, the variability thereof, grazing/ browsing capacity and the quality of the veld, the reaction of the vegetation to grazing, browsing, burning and bush clearance and the growth process during the life cycle of plants.

A fire management programme will be developed to protect the sensitive open space from wildfires which could destroy red data species of vegetation and animals. Wildfires at the wrong time of year could be very detrimental to some of these species.

To ensure that these wildfires do not destroy this area a fire management programme which will identify a system of fire breaks, burning blocks and planned controlled burns will be developed. Conservation Management services (vegetation and vertebrate fauna sensitivity analysis June 2005) referred to a statement from Dr. Annelise Schutte-Vlok (CapeNature) that " Only one development has implemented and maintained an ecological fire management programme over the past 9 years." The fact that the bulk of this open space is one homogenous area free of structures which need protection will ensure that cost effective ecological fire management can take place and that this development can be a leader in best practise management of open space in the Southern Cape.

Section 11.1

Timing of Burn

The timing of a burn is vitally important in fynbos vegetation. Fynbos vegetation is adapted to fires in those seasons with the highest fire risk. This is the time when most natural fires would have occurred. The best time for controlled burns in fynbos is during late Summer to mid Autumn. This information is based on monitoring of vegetation recovery after fires as well as the needs of the smaller wildlife such as tortoises and birds (Vlok 1996).

The recommended burning regime is therefore from late January to late April. Eden District Council fire management are rather loath to issue burning permits in high risk periods however if the fire plan is properly motivated and the ecological benefits highlighted this issue can be sorted out.

Section

Fire Protection Agencies (FPA)

The recent establishment of fire protection agencies in the southern Cape is as a direct result of section 20 of the National Veld and Forest Fire Act, (Act No 101 of 1998) and the regulations set out in the schedule. (Government notice R.665 16 May 2003 as amended by Govt. notice R.953 4 July 2003). Fire Protection Agencies (FPA) are basically forums in which landowners get together to formally address the veld and forest fire risks in an area. FPA`s assist landowners to predict veld fires, prevent veld fires and manage veld fires. In the Hartenbos area the Southern Cape Fire protection association has already been registered and is an operational FPA. The Homeowners association **MUST**, become members of this FPA and actively take part in it's activities.

Fire Protection Agencies provide expertise in fire management and planning and can provide basic equipment at times of need. Items such, as fire rakes, fire beaters, drip torches and vehicle mounted fire pumps are available for use by members of the FPA at no charge.

Section 11.3

Working on fire Programme

This programme is a poverty relief initiative funded by the Department of Water Affairs and Forestry (now know the Department of Water and Sanitation) and provides skills acquisition and job creation in the veldfire fighting field. Various firebases are situated in fire prone regions around South Africa. The nearest fire base is at Witfontien (George) . This team is managed by CapeNature who provides training and the basic infrastructure for the base. These teams are trained to SETA standards and are experienced in the latest fire fighting techniques.

Working on Fire, have trained, personnel who are proficient in controlling wildfires as well as the capability of managing controlled fires. Outside of the fire season these personnel are used to make firebreaks on state land. These Working on Fire teams are available to the public to perform controlled burns and for the making of firebreaks at competitive rates.

Section 11.4

Legal Procedures before Burning can take place

There are certain legal aspects which need to be considered before any burning can take place. At present the requirements are determined in terms of the Forest Act 122 of 1984 , Regulation 5 of Provincial Notice 745 of 1977, the local requirements of the Eden District Council, the Conservation of Agricultural Resources Act of 1983 and section 20 of the National Veld and Forest Act (Act No 101 of 1998) . These regulations are set out to protect landowners from reckless fire management practises and legal claims for losses caused by runaway fires.

As mentioned already it is mandatory for this development to be a member of the local fire protection agency. At present the local Southern Cape FPA is not fully functional so it is important that the environmental manager or designated management company must liase with both the FPA and the Eden District Council disaster management control centre based in George.

Basic legal requirements

- The local agricultural extension officer must be informed, in writing of the intention to burn.
- The Eden district council and the Sothern Cape FPA must be notified in writing of the intention to burn. A Fire Plan must be submitted which must include: A map of the area, indicating all firebreaks, water points where fire trucks can fill up, escape routes and ignition points. This fire plan must also indicate what equipment is available and what is actually going to be on site. A fire team with appropriate levels of training must be nominated with a fire boss and crew boss identified. The date/dates of the proposed burn must be declared.
- The local Mossel Bay municipality must also be notified of the proposed burn and there fire station placed on standby on the day of the fire.
- All the surrounding neighbours must be warned in writing .
- Adequate firebreaks must be in place according to the prescribed minimum requirements of the Southern Cape FPA.
- A Burning permit must be issued by the Eden District Council after an inspection carried out by the Southern Cape FPA fire control officer.

Weather conditions play an important role in successfully controlling controlled fires. It would be advisable to study the long range weather forecast from the SA Weather website in advance of the controlled fire to ensure that weather conditions remain stable at time of burning.

It would be advisable to obtain a Working on Fire team to assist with the firebreak preparations and to carry out the controlled burn or obtain the services of a competent fire management company . These experts have vast experience and although there are costs involved it will be money well spent. Controlled fires have a habit of becoming wildfires in the hands of inexperienced staff.

Section 11.5

Fire threats

Fire threats to the open space need to be identified and at present the main threat would be from the railway line on the southern boundary on the property. The prevailing winds are the south easterly wind in summer and the north westerly in winter. The Outeniqua Choe Choe uses this line regularly and is powered by a steam train. This steam train used to run on the George – Knysna line and was often guilty of starting runaway fires destroying vast tracts of pine forest and natural vegetation. This train has only operated for a few years on the Mossel bay – George line and the potential for a wildfire is therefore real. As mentioned before the highest risk is in the Mid January to May. Firebreaks need to be maintained and this preparation should take place before the fire season.

Section 11.6

Fire Management Blocks and Firebreaks

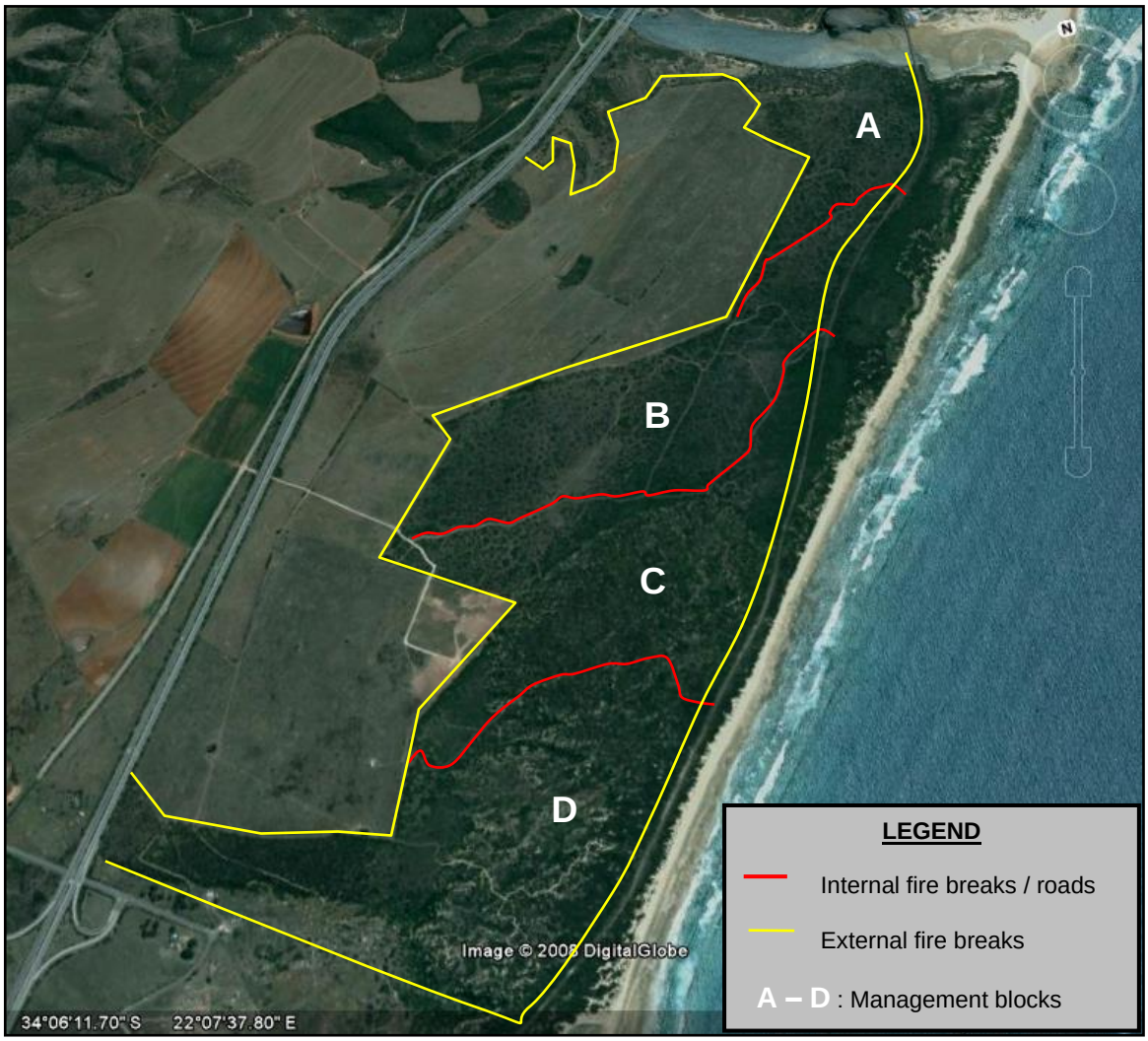
The open space area will be divided up into fire management blocks. Some of these blocks will have vegetation which does not readily ignite such as unit FT 7 (Indigenous thicket) while other blocks will be more fire prone ie. unit FT 4 (fynbos vegetation). The area to be managed by controlled burns is roughly 170 ha. It can be divide up into basically 3 – 4 blocks .These blocks will be demarcated by existing management tracks which will be maintained and managed as firebreaks (see Fire block map)

At present there are a series of farm tracks in this open space which afford access to the area to carryout management tasks. These tracks need to be incorporated into the block burning plan and maintained and incorporated into the fire break system as well as the nature trail system. These tracks could also form the internal firebreaks needed to control block burns. Due to poor road maintance in the past some of these management tracks have eroded due to high rainfall and will need to be stabilized with grass-blocks (ground cover to re-establish) or closed down and rehabilitated. It is important that there is a mosaic of veld age of the vegetation over the whole open space area. Each block will therefore be burnt at different times to reduce the chance of a wildfire destroying the whole area in one fire event. The burning cycle in this coastal area should be every 12 years. Some areas will however not burn and others will readily burn (fynbos).

Block	2009	2012	2015	2018
A	Fire			
B			Fire	

C		Fire		
D				Fire

Firebreaks are mandatory; however there are certain areas where a firebreak is not required. On the eastern boundary of the development we have the Klien Brak river which is a natural boundary forming a natural firebreak. The boundary along the railway line needs to be cleared to a 10 metre firebreak and maintained each year as this is the main fire risk area. The buffer between the main residential development and the open space area needs to be 10 metres wide and maintained on a yearly basis. At times of controlled burns this firebreak must be increased by 10 metres by slashing the veld to lower the flame height. The western flank of the development requires a 10 metre firebreak which must be shared with the neighbouring development. All internal firebreaks need to act as management tracks as well and need to be cleared / slashed 5metres on either side of the track. (see fig No 3 firebreak map)



Map 1 - Fire Management Blocks and Firebreaks

Chapter 12 Residential Development Maintenance Management plan

The residential area of the development needs to work in harmony with the natural environment open space areas to ensure that the natural area remains ecologically intact. To this end Conservation Management Services (June 2005) identified various potential threats to the sensitive natural environment by the proposed residential development. Recommendations were made for the operational management plan for the residential area which was incorporated into this plan.

The residential area will require a separate management plan from the natural open space management plan. The residents of this development will form a home owners association with each member signing acceptance of the home owner's management plan / rules and regulations which they will have to abide to. Penalties would need to be incurred for non compliance by residents and any changes to the management plan would need to be approved by DEAD/P before implementation. Each individual homeowner will be responsible for his/her own property. A management committee consisting 6 members duly appointed by the homeowners association must be appointed to manage the whole development (Open space and residential areas). They will achieve this by using the maintenance management plans provided by the developer. The home owners association should also appoint a manager or management team to assist with the management of this development.

With the emphasis on climate change and the spotlight on renewable energy, it would be prudent to incorporate the following aspects into any future management of the environment. Water, alien invasive plants, domestic animals, possible wildlife conflict, non-compliance of management plan, suggested plants for residential gardens and management of storm water system.

Section 12.1 Possible Wildlife conflict

Possible wildlife conflict

When new residential developments intrude into natural areas there is always the chance of conflict occurring with naturally occurring wildlife. These conflicts can negatively affect the residents of these developments as well as negatively affecting the wildlife.

Residents may not have domestic cats on this development as they have an extremely negative impact on the natural wildlife. Nesting birds, ground birds and birds in general are heavily targeted by cats. Small mammals such as mice, shrews and moles are likewise affected. Genetic crossbreeding of domestic cats with the African wildcat is a known problem in residential areas and must be avoided.

Dogs should be limited to two per household but must be controlled by secure fencing of the property. Dogs may accompany their owners on the trails / jogging trails but only on a fixed lead. Owners will be responsible for any faeces from their animals and must remove them themselves. Feeding of dogs outside of dwellings must be avoided at all costs as this will encourage wildlife to scavenge. Species such as little grey mongoose and possibly, vervet monkeys could come into conflict with residents through this type of feeding. In turn these species could have negative dietary problems in the future from this food source.

Waste management of domestic refuse is an important factor in managing wildlife conflict. All domestic waste on each residential site must be deposited in refuse containers that are able to close securely.

Species such as porcupines, moles and various birds may become perceived “problems “. These species must be managed and no animal/ bird /reptile species may be killed or injured. The homeowners management committee can be contacted to assist with any long term conflict problems.

The feeding of birds by means of artificial birdfeeders must be discouraged. Indigenous fruit bearing trees and shrubs can be planted in gardens which will provide sufficient food and refuge.

Section 12.2

Residential Gardens

Gardening in the coastal zone is quite challenging as salt laden winds, drought periods (climate change) and low nutrient sandy soils reduce the range of plants that can withstand these conditions. Local indigenous vegetation can withstand these harsh conditions as they have evolved with them over thousands of years.

Residential gardens and the type of plant, grass and tree species occurring in them can have an extremely negative impact on the natural open spaces if the wrong or invasive species are propagated in them. There are many red data plant species in the open space areas and these need to be carefully protected by not coming into competition from “ escaped “exotic garden plants which could rapidly out compete these indigenous species causing their disappearance. Residents will be required to propagate “Waterwise indigenous gardens “on their properties. This will not preclude them from having small beds of flowering plants for cut flower purposes. These however will have to be restricted to container pots or troughs.

No gardening will be allowed in the natural open spaces or in the private open spaces within the residential development. The private open spaces in the residential area must be managed by the homeowners association or appointed agents.

The use of herbicides must be strictly controlled as they can have a devastating effect on pollinator insect species which are often host specific. Only the prescribed herbicides listed in the alien vegetation section may be used where necessary. No toxic poisons are to be used.

Section 12.3

Species which may not be planted

This list is not definitive but it lists potential problem “escapee” plants which should definitely not be introduced.

All proclaimed weeds under Notice 2485 of 1990 National Department of Agriculture Conservation of Agricultural Resources (Act 43 of 1983) may not be propagated in this development including any other exotic tree species with a growth form which is unlike the growth form of the locally indigenous vegetation and which may dominate the landscape .

Cosmos
Pansies
Nasturtium
Pampas grass
Lantana spp.
Minotok tree
Pine trees
Monkey puzzle trees
Palm trees

Section 12.4

Some Species which could be propagated

This list is not restrictive and as long as no invasive vegetation is used in the development the integrity of the naturally occurring plants will remain intact. Local nurseries will be able to provide species suitable for the coastal zone. The following list will give some guidelines.

Shrubs

Chrysanthemoides monilifera	Bitoubos
Felicia filifolia	
Metalasia muricata	
Aloe ferox	
Agathosma spp.	
Carrisa bispinosa	
Colpoon compressum	
Erica spp.	
Felicia spp.	
Grewia occidentalis	
Leucospermum spp.	
Pelargonium spp.	
Phylica ericoides	
Plumbaygo auriculata	
Portulacaria afra	
Protea spp.	
Rhus crenata	
Salvia spp.	
Agapanthus africanus	

Ground cover

Carpobrotas edulis
Lampranthus spp.

Grasses & Reeds

Cynodon dactylon (grass)	Kweek
Stenotaphrum secundatum	Buffalo grass
Thamnochortus erectus	Thatching reed
Thamnochortus insignis	Thatching reed

Trees

Sideroxylon inerme	White Milkwoods
Olea europaea	
Olea exasperata	
Rhus glauca	
Rhus crenata	
Rhus lancea	
Rhus chirindensis	
Schoita afra	
Tarchonanthus camphorates	
Pterocelastrus tricuspidatus	
Buddleja saligna	
Buddleja salviifolia	
Erythrina caffra	Coastal coral tree
Polygala myrtifolia	September bossie
Ekebergia capensis	Cape Ash
Pittosporum viridiflorum	Outeniqua yellowwood
Cassine peragua	
Ekebergia capensis	
Virgilia oroboides	
Celtis africana	
Cunonia capensis	
Passerina rigida	
Passerina filiformis	
Metalasia muricata	
Gymnosporia nemorosa	
Cassine eucleiformis	
Maytenus acuminate	
Rhamnus prinoides	
Pterocelastrus tricuspidatus	
Diospyros dichrophylla	

Section 12.5

Water

In the future water will become a limiting factor for gardening as water availability and cost will make it prohibitively expensive to maintain “green manicured “lawns and flowerbeds. Coupled to this is the fact that “climate change “and it’s effects are already a fact which is affecting our daily lives. One of these “effects is the occurrence of droughts and increased flood events. It is therefore important to set the standard at the start of this development in terms of water conservation and utilization.

Water - will be supplied from the bulk municipal source. The water from the source will be managed according to water saving principles:

- As a start each dwelling must have at least a 2000 litre rainwater storage tank which is connected to the gutter system of the house.

- The use of irrigation systems must be encouraged as this is an efficient method for irrigating small areas. Indigenous vegetation which is recommended for the development will require very little if any watering once established.

- The use of mulch will also reduce water evaporation and will ensure that the soil remains moist. Mulch can be in the form of untreated chipped wood. Ground creepers and ground cover will also assist in keeping the soil moist.

- Have timed irrigation systems with the focus on the hours when the least evaporation occurs;

  All hoses to be fitted with trigger gun spray nozzles to limit wastage.

- All external taps to only be linked to rain storage tanks to prevent the use of potable (drinkable) water to be used for activities such as gardening and car washing;

- Washbasin and shower taps to be fitted with flow reduction devices, aerators and motion sensors to ensure water conservation and prevent that they can be left running;
- Toilets should be fitted with reduce flow or preferably a duel flush system;

- Re-use household waste water for gardening and/or flushing;

- All drains fitted with grease traps which are included in a maintenance schedule;

- A vehicle wash bay constructed which ensures that contaminated water is routed to the correct waste water stream and not storm water systems;

- Dry sweeping of garden and construction gear in preference to washing to limit water consumption;

- If biodegradable, non-toxic soaps, shampoos and detergents are used exclusively in the household, the waste water streams can be directed to catchment ponds for re-use as irrigation;

- Watering hoses fitted with trigger gun spray nozzles;

- Taps around the estate fitted with locks to prevent unauthorised use and included on a maintenance schedule to detect and repairs leaks;

- Washing appliances (dishwashers and washing machines) filled only to the minimum level required for effective functioning;

- Appliances used only when sufficiently full to warrant operation;

- High pressure hoses used wherever possible to reduce water consumption;

- Physical brushing or sweeping used in preference to water cleansing wherever possible (e.g. cleaning pathways); and

- Swimming pools must be connected to rainwater gutter system and backwashing water is to be reused.

Section 12.6

Waste and Energy saving Guidelines

Operational Waste and Energy Guidelines should focuses on mechanisms that need to be implemented by the landowners.

Electricity – will be supplied by the Municipality. Internal reticulation will be according to the appointed Electrical Engineers standards. The following energy saving mechanisms should be implemented:

- Energy saving bulbs in all structures, alternatively use low voltage or compact fluorescent lights;
- Use energy saving geysers and geyser blanket.
- Use proper insulation to reduce the need for air conditioning;
- Solar glazing or energy efficient windows to reduce the need for air conditioning;
- Maximize the use of solar heating;
- Structures should be orientated to optimize use of ambient weather and climate, conditions for heating and cooling;
- Natural light used wherever possible during the day in preference to artificial light (Trade off between using large windows for use of sunlight but this may require additional air-conditioning);
- Programmed lighting (Especially in low usage areas such as conference halls);
- Cold rooms and freezers fitted with counter-weight doors to ensure that they cannot left open unnecessarily;
- Use of solar heating maximized.

Sewage – No French drains or individual septic tank will be allowed on site.

Material - material used during construction or in the life-cycle of the project should be focused on renewable and recyclable elements:

- Select building materials for durability to minimize maintenance or replacement;
- Use standard materials to increase the potential for re-use and re-cycling;

- Materials should be sourced locally where possible; and
- Use recycled shuttering, door and window frames, sanitary ware, concrete aggregate and roofing materials.

Renovations/ building maintenance:

- Paint - Water based paints should be used wherever possible;
- Renovations and maintenance planned to minimize the production of waste;
- Waste segregation and recycling planned prior to commencement; and
- Any waste generated segregated to maximize re-use or recycling.

Chapter 13 Archaeological and Heritage resources

An Archaeological Heritage Impact Assessment was conducted by MAPCRM cc and noted a number areas and artefacts considered sensitive from a heritage and archaeological point of view. It will be important for the applicant / homeowners association to ensure that all recommendations included in the report compiled by MAPCRM cc dated 28 September 2005 are implemented. Permits as stipulated in the afore mentioned report, will have been obtained from Heritage Western Cape for the development phase and must be placed on file with the applicant / homeowners association after completion of the development as reference material

If any heritage resources are unearthed or discovered during management actions work in that area is to be suspended immediately. These heritage resources may include, among others, features of previous human activity, such as:

- Human remains;
- Fossil bones;
- Stone tools / artefacts;
- Coins;
- Rock art & engravings;
- Pottery & ceramics;
- Shell middens / marine shell heaps; and
- Old structural remains.

The applicant / homeowners association must be notified immediately and a competent and qualified heritage specialist and / or archaeologist must be contacted to make an assessment of the feature and to give further advice and instructions.

An Archaeological Heritage site visit was undertaken by Dr. Peter Nilssen on 27 April 2021. The recommendation in his report, dated 5 May 2021 are as follows:

- Because of their vulnerable context and in order to protect them in the short to medium term, it is strongly recommended that the graves at waypoint HD32 (Figure 3) should be fenced as soon as possible and that a buffer of at least 2 to 3 meters between the graves and the fence should be observed. A decision about the future of the graves should also be made as soon as

possible. It is requested that Heritage Western Cape provides input as to the best way forward in terms of relocating the graves to a more suitable site on the property or conserving the graves in situ with suitable measures for maintenance and protection. It is this author's opinion, pending results of research into living descendants or relatives of the deceased, that the former option of relocation may be preferable. This issue may require further discussion between all interested and affected parties and with consideration of Section 36 of the National Heritage Resources Act (Act No.25 of 1999).

- Due to the scarcity of heritage resources - noted in both the Nilssen 2005 report and during the recent site inspection - in the area currently under development (Figure 3), it is recommended that full time archaeological monitoring is not necessary but that part time monitoring involving daily site inspections by a suitably accredited professional archaeologist should be implemented when bulk excavations and earthworks are in progress. Dalmar or a representative should inform the appointed archaeologist of their excavation and earthworks schedules to ensure that fresh earthworks are inspected for potential buried heritage resources.

- Because the original archaeological heritage impact assessment was done 16 (sixteen) years ago, it is recommended that recorded heritage resources falling within the development footprint shown in Figure 2 should be revisited and re-evaluated and that a fresh assessment be made of their significance and requirements for mitigation. It is recommended that only heritage occurrences considered being of medium to high significance or that were proposed for mitigation need to be investigated and re-evaluated. Due to higher incidences of Stone Age materials in certain portions of the development footprint (see Figure 2), it may be necessary to implement full time archaeological monitoring in those areas.

- Any heritage resources of high significance, but that currently fall outside the development footprint must be avoided by increased vehicular and pedestrian activity on the property. It may be necessary to revisit such sites and make appropriate arrangements for their protection and conservation.

- As stated previously, the recommendations made here need to be reviewed and responded to by Heritage Western Cape in light of the current situation as well as the earlier assessment by this author in 2005. HWC is requested to give advice on the best way forward in order to attain and maintain compliance with the heritage / archaeological component of the EA.

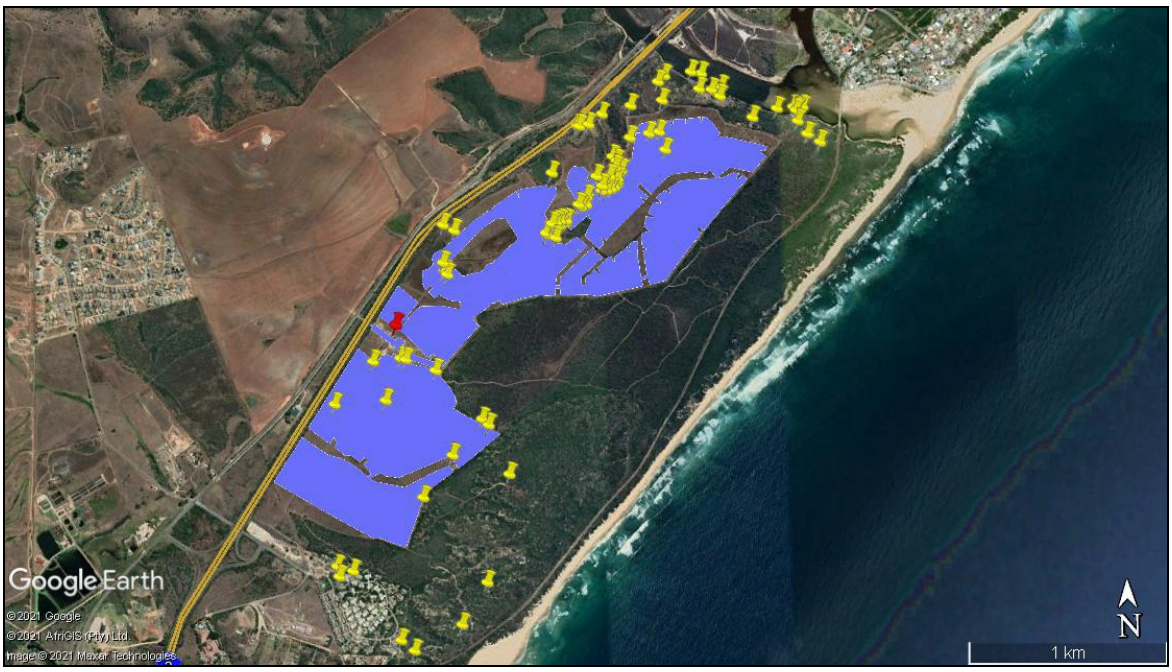


Figure 6: Hartland Development footprint in blue with heritage occurrences recorded in 2005 indicated by yellow markers (Nilssen 2005). The red marker is the location of the graves at waypoint HD32 (see

Figure 3). Note that many of the documented heritage resources fall outside the Hartland Development footprint, but that a few in the south-west are in an area that is already developed. Courtesy of HilLand Environmental, Dalmar Beleggings and Google Earth 2021

Figure 7: Enlarged from Figure 2 showing the current and imminent development phases in green (Hartland Villas, Phase 1 and Phase 3), GPS fixed tracks (red lines) of the archaeological foot survey and documented heritage resources (yellow markers, Nilssen 2005). Note that HD32 is approximately 20 meters NE of the actual location of the graves enclosed with a white circle. The labourers cottages were at waypoint HW33. Courtesy of HilLand Environmental, Dalmar Beleggings and Google Earth 2021.

Chapter 13 Game Management and introductions of game species

Historical game species in the Southern Cape were documented by Skead (1980) who obtained his information from early travellers venturing into the interior from the Cape. Few records are available with regards to the South Cape due to the wagon routes used by the early travellers being located more inland. The coastal areas were therefore not well documented. However various travellers recorded different locations for game due to wildlife populations moving into different areas following good rains to obtain new grazing. It must also be remembered that the habitat has changed considerably from these early times and the current habitat is often not suitable anymore for the original species. In the case of this development previous agricultural activities have impacted severely on the natural environment. Historically game was not confined to fences or human constraints such as roads or railway lines. Game never stayed in one place and moved where ever grazing, water or nutrients (natural licks) were available. Species such as Elephant, Hippopotamus and Cape Buffalo frequented the coastal plains of the Southern Cape at the time of the Khoi-san and early settler occupation. The skeletal remains of Elephant, Hippopotamus and Buffalo have been found in the coastal belt in recent times particularly when foundations have been dug for housing developments.

Although the report by Conservation Services (June 2005) does not identify a large diversity of large game species occurring in this natural area it still has an important collection of small species which can be sustainably supported in this small area (170 ha).

It is important to note at this stage that game introductions into this area will have to be carefully considered due to the high incidence of red data plant species. The management objectives of this area will be predominately to preserve renosterveld vegetation which includes these red data plant species. The next consideration would be the habitat. Only species which are known to have occurred naturally in the area historically and for which the habitat is still suitable could be considered for reintroduction.

Section 13.1

Wildlife – Human conflict

It must be remembered that this is a residential development which will be supporting a relatively small natural area. There will therefore not be much of a “carrying capacity” in terms of numbers and of species. The fact that the natural area will not be fenced off thereby allowing the movement of wildlife onto public open space in the residential area must be kept in mind. The movement of wildlife into the residential area will be minimal if game numbers are kept at low numbers. Wildlife introductions could increase the potential for conflict situations.

The possibility of conflict situations arising between wildlife and property owners must be kept to a minimum. Naturally occurring species such as Bushbuck can live in harmony with residential development but must have ‘flight paths ‘ and natural refuge areas to ‘withdraw” into. Bushbuck can however be very aggressive at certain times of the year and people have been severely injured by bushbuck rams. It is also not a good idea to bring in so called ‘tame animals ‘ as these animals are never tame and are potentially a problem which could later on manifest itself by way of injuring people seriously or by damaging residential gardens. These so called introductions of “tame animals” could lead to the possible “removal” of these specimens with possible negative reactions from property owners.

Section 13.2

Wildlife introductions

The condition of vegetation is an important factor when determining wildlife introductions. This open space will be in the process of being rehabilitated after being cleared of alien vegetation. It will therefore be very susceptible to erosion and grazing pressure if game species are introduced too early in the rehabilitation period. Other factors apart form food must also be considered such as interspecific competition.

This natural area does not lend itself to habitat manipulation which is what would be required to introduce certain species, such as Springbuck. Springbuck select poor quality veld and will probably select the newly rehabilitated areas. They will not be able to utilise the Fynbos and Thicket areas and are therefore not recommended for introduction.

We therefore need to consider species such as Bontebok which occurred on the grassy renosterveld lowlands of the Overberg. Bontebok feed on grass and short resprouting vegetation which occurs by way of regular burning. They are also water dependant , which means that adequate permanent water must be provided. There is a possibility of an

introduction of this species but an assessment would need to be made once rehabilitation has occurred (at least 5 years).

As can be seen a “Cautionary Approach” needs to be applied with introductions to this area. It is strongly suggested that the naturally occurring species occurring on the site at present be maintained and that no new introductions be made in the foreseeable future. The situation can be re evaluated in 5 years time when this management plan needs to be revised. During management of this open space observations of wildlife will be documented and a clearer picture will be revealed of numbers and species present.

It will be possible to introduce species such as Grysbok, Bushbuck and Duiker (which are known to occur at present) earlier than the suggested 5 years but only in very low numbers. Genetic contamination is a potential problem when species have been introduced from geographically different area. The mentioned species for introduction would need to come from local (South Cape) stock.

CapeNature have a strict translocation policy with regard to wildlife introductions. Before any translocations are considered the local conservation services officer based in George should be contacted to advise on the latest policy for game translocations. Permits will have to be obtained from CapeNature for possession and transporting of any introduced species .

Chapter 14 Control of Alien & Invasive Plant Species

Section 14.1 Alien Vegetation flow- up removal plan

Once the initial clearing of alien vegetation has taken place during the construction phase of this development, it is vitally important that a follow-up plan is developed to control the regeneration that will occur after the initial clearing.

This removal plan will be an ongoing project as the seed bed of some of these alien species can last for up to 40 years (*Acacia cyclops)* . Once the initial clearing of aliens has taken place the follow up phase needs to first concentrate it’s efforts in the fynbos areas, and then in the thicket areas. Alien regeneration will occur in areas were there is not too much competition from indigenous plants and where sunlight is not too restricted (fynbos and open grassland areas).

Wildfires and controlled burns will affect alien regeneration drastically.

Alien species particularly *Acacia cyclops* can be expected to explode after a fire which assists in germinating the seed bed. Large areas of seedlings will appear after the burn. These can be left for the first 3 months as there will be a high natural mortality rate of these seedlings due to competition. A few control methods can be used at after this stage. A herbicide spray such as Garlon /Contact can be applied by spraying the young seedlings. A more labour intensive method would be to hand pull the young seedlings.
Any young trees from 6 months to 2 years can be hand pulled using a tree popper.

Opuntia spp (Cactus) will need to be controlled by continuous removal of material which must be burnt and NOT dumped in compost heaps or landfill dumps as it readily roots and will re invest areas in which it has been cut but not removed. See frequency of follow up below.

Agave americana (Sisal) will need to be controlled by means of injecting MSMA into the main stem. See frequency of follow up.

Eucalyptus spp (Bluegum) can be controlled by felling with a saw or by "ring barking / frilling " the lower base of the tree. A herbicide can be applied by brush or spraypack.

Biological control of aliens is a long term control method which does not require any physical management.

Some of these control agents are present on the site and consist of the flower- galling midge *Dasineura dielsi* which is present on the *Acacia cyclops*. The gall is formed in the place of the seed pods which reduces the seed production to almost zero. Therefore no new seed is added to the seed bed.

Opuntia spp or Prickly pear has an agent called *Cactobastis cactorum* commonly known as the cactus moth. This agent has been very successful to date.

Alien plant removal and rehabilitation schedule

Type of Alien	Management action	Treatment	Time scale	Priority
Acacia cyclops	Pull seedlings by hand /tree puller Large trees –cut at base	None None	2 years 2 years	High High
Opuntia ficus-Indica	Injected or sprayed. If cut ALL material must be removed and burnt	MSMA	1 year	High
Eucalyptus spp	Ring bark / Frill or cut down large trees	Garlon/Contact	2 years	Medium
Agave americana	Inject	MSMA	2 years	Medium

All vegetation clearance must be undertaken with utmost care to ensure that only that vegetation, which needs to be removed, is removed.

Eradication of alien plants must be completed in such a manner that indigenous vegetation is not damaged.

It is important to remove both young plants (saplings) and old trees that are seed bearing. Different strategies can be employed to remove different species, but all methods will involve manual labour. Chain saws and brush cutters, or tree pullers should be used where necessary. Chemical follow up should be used on alien species to ensure effective kill rate. It is important to tackle the smaller, more dispersed plants first, and then the larger stands of alien vegetation

Maintenance and follow-up sessions should be scheduled at least two years in advance (see schedule above). The alien plant removal and rehabilitation schedule must be audited on a

regular basis by an independent environmental auditor appointed by the applicant / homeowners association duly approved by DEAD/P

Section 14.2

Clearing of small alien plants

The best method of clearing small plants is by hand pulling them. Trees younger than 1 year will be able to be removed by using a tree puller. It is easier to pull these saplings after rain when the soil is moist. They must then be stacked for removal to a recognised waste site, or alternatively mulched on site. Mulched material can be use as a ground cover, and for stabilizing sandy sections on the trails.

Section 14.3

Clearing of alien trees

Alien trees must be cut down with chain saws and then chopped into smaller portions. Some species of alien plants like *Eucalyptus spp* trees are coppicing species and will re-grow from roots and stumps. This means that a chemical such as Roundup or Garlon will need to be used to prevent the trees from re-sprouting. These chemicals can either be sprayed onto the stump with a knapsack sprayer or painted on with a paintbrush. Another alternative to prevent re-growth is to strip the bark from the remaining part of the stump (ring barking). *Acacia cyclops* which is the predominant alien tree specs will not coppice if cut low enough.

Section 14.4

Methods for controlling alien vegetation

Biological control, chemical control, mechanical clearing, and burning have all been used with varying results. Each method has been successful but nearly all require follow-up control. The most successful clearing projects have included an integrated approach to account for initial clearing and continued management.

28.3.1 Mechanical control:

- Mature non-coppicing trees must be cut as low as possible and no herbicide treatment is needed on the cut stumps.
- Debris may be removed immediately from site to be burned in a safe area, mulched or used as firewood.
  - Large branches should be used as firewood.
  - Smaller branches should be mulched.
  - Alien material containing seed must be removed from the site and burned.
- Should debris be left on site:
  - In sparser areas, where felled debris will not hinder follow-up operations, plants can be felled and left *in situ*.
  - In dense areas, stack debris in rows five metres apart parallel to the contours to facilitate follow-up operations.
- Removal of debris to a distance of 20 m from urban fringe to reduce fire hazard.
- Low density seedling regeneration must be hand pulled.
- Hand pulling around pockets of indigenous vegetation (1m swathe around clumps)

28.3.2 Chemical control:

- Follow-up visitation no later than three months after initial operation.
- Follow-up control will be needed because soil stored seed may stay dormant in soil for up to 50 years.
- Follow-up control will involve a combination of hand pulling and foliar spraying.
- Seedlings, saplings and coppice can be foliar sprayed.
- Follow-up spray operation when sufficient regeneration has taken place.
- Blanket or foliar spray.

28.3.3 Tools

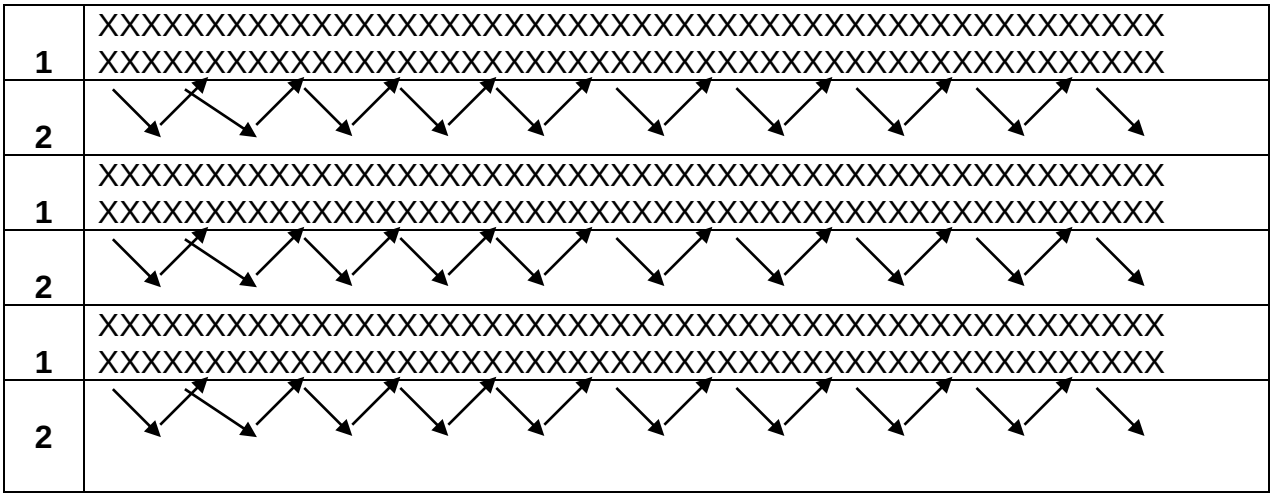
- Loppers, bow saws and chainsaws
- 12 –15 litre back pack spray units
- Flat fan nozzles or solid cone and 1 bar constant flow valves

28.3.4 Herbicide

- Triclopyr Ester 480 (Selective herbicide).
- Triclopyr Ester 480 at 1% solution.
- 0.5% Actipron and dye.

28.3.5 Team composition

- 6 persons, each being equipped with a lopping shear, bow saw and herbicide applicator, must first sweep through the area in individual lanes 5 metres apart. These persons target all plants less than 8 cm in basal diameter, felling, stacking and applying herbicide. De-branching should only be used to facilitate stacking of larger branches.
- 2 chainsaw operators thereafter follow through these lanes felling all plants more than 8 cm in basal diameter. Two assistants are responsible for stacking and herbicide application.
- For the denser areas, methodology must follow the illustration below. All rows are five metres wide. Swathes labelled 1 must be cut first and the debris placed back into these swathes. Thereafter debris generated in swathes labelled 2, must be placed into swathes labelled 1.



28.3.6 Follow up

Once the source of the problem has been removed, namely the seed bearing trees, it is important to follow up on any seedlings and saplings that may have grown in the interim. If this is not done the effort of the removal of the adult trees will have been wasted, as the alien vegetation problem will intensify.

Chapter 15 Environmental Monitoring and Reporting

Other forms of management that will be required are monitoring. Monitoring records the success or lack of success of management interventions or activities and natural trends. These are measured over time and recorded for later evaluation and possible change of management techniques.

Priority monitoring would consist of

1/ Alien vegetation removal programme,
2/ Rehabilitation of eroded areas
3/ Plant rehabilitation success.
4/ Wildlife observations
5/ Monitoring of trail use and possible erosion areas.

Monitoring should take place at certain points on the nature trails to track changes such as possible erosion points. Fixed point photography and vegetation marked plot methods can be used for monitoring.

The homeowners association could involve their members in other forms of monitoring, particularly, game observation and bird counts. Rare and endangered plant monitoring can be carried out by members of the homeowners association with assistance from the George branch of the Botanical Society of South Africa and CREW.

Training of these homeowners to perform monitoring tasks could be seen as part of the management of this natural area and a way of having meaningful involvement from the homeowners association.

The following section details the need for monitoring the implementation of the principles of this EMP as well as the level of monitoring required.

Section 15.1 Environmental monitoring by applicant / homeowners association (HOC)

Regular monitoring of all the environmental management measures and components should be carried out by the applicant / homeowners association or appointed management agent in order to ensure that the provisions of this OEMPr are adhered to. Ongoing and regular reporting on the progress and implementation of this program should be undertaken, as per the requirements of the environmental authorization. A monthly management report is a prerequisite and must incorporate the key management actions in the OEMPr. This report

must be submitted to the applicant / homeowners association a monthly basis. A yearly report must be submitted to DEAD/P in December every year.

Section 15.2 Monitoring by HOC

It is likely that as part of the conditions of approval the establishment of a Homeowners association committee will be included. The HOC will be chosen by the Homeowners association. It will comprise of individuals interested and knowledgeable in the management of the open space areas (nature areas).The HOC will convene regularly and coordinate and control management of the open space areas. The HOC would be responsible for monitoring the management tasks carried out in the open space They could also manage a volunteer group of people made up of interested residents or environmental NGO`s to assist with the management of the open space.

Section 15.3 Habitat monitoring

The condition of the sensitive vegetated areas must be monitored regularly in order to ensure that management activities are not impacting negatively on the condition of the natural vegetation. The most effective way to achieve this is by means of numerous fixed point photographic sites. In this way, a record of any shift in habitat condition can be maintained and potential impacts be detected at an early stage.

Chapter 16 Record Keeping

All the administrative procedures and minutes of management meetings, monthly management reports, non compliance incidents, audit reports and financial records must be clearly documented and filed on a master file and lodged with the applicant / homeowners association. A monthly report must be written up detailing management actions and costs incurred. This report can then be used as a newsletter to inform the homeowners of how their conservation levy is being spent.

Chapter 17 Environmental Auditing

An independent audit report, in terms of the OEMPr must be submitted to the DEAD/P once a year at the beginning of December. This audit must be carried out every year and must be submitted by the applicant / homeowners association at their expense. The applicant / homeowners association must appoint an environmental auditor once the homeowners association is formed and must ensure that DEAD/P approves the auditor's credentials. There must be an audit contract between the auditor and homeowners association for at least 5 years.

The audit report should indicate the following:

- Detail the rehabilitation measures of the site including the removal of alien vegetation.

- A section of the report must comment on the progress with regards to the fire management plan.
- Effectiveness and state of repair of the storm water system.
- Report on the monitoring carried out during the reporting period.
- Compliance with the rules and regulations of the homeowners association as laid out in this OEMPr.
- Game introductions and mortalities.

The DEAD/P may require remedial action should the audit report reflect that rehabilitation or compliance is inadequate. If the audit report is not submitted, the DEA&DP may give 30 days written notice and may have such an audit undertaken at the expense of the applicant and may authorize any person to take such measures necessary for this purpose.

Chapter 18 Penalties, Claims and Damages

The applicant / homeowners association will be responsible for all costs incurred in the rehabilitation and maintance management of the site and for ensuring that all procedures required to rehabilitate and manage the site are implemented. If third parties are called to the site to perform management and rehabilitation procedures, the applicant / homeowners association will be responsible for their conduct and actions. These third parties will be contractually bound to these penalties. It is therefore vitally important that adequate supervision or a management contractor is appointed.

Each homeowner will be contractually bound to these penalties which will be managed by the applicant / homeowner association. The DEA&DP, as per requirements stipulated in their legislation, may impose penalties on the applicant / homeowners association if conditions contained in this OEMPr are contravened.

Section 18.1 Issuing of penalties and fines

Fines will be issued for the transgressions listed below. Fines may be issued per incident at the discretion of the applicant / homeowners association. Such fines will be issued in addition to any remedial costs incurred as a result of noncompliance with the specifications of the Operational Environmental Management Plan.

The applicant / homeowners association will inform the landowner of a contravention and the amount of the fine in writing. The fine will be added to the offending landowners conservation levy. All funds generated in this manner must be utilized in management actions. .

Please note that payment of any fines in terms of this section of the OEMPr shall not absolve the offender from being liable from prosecution in terms of any law.

Section	
18.2	**Procedure for issuing fines**

Any avoidable non-compliance with the conditions of the OEMPr shall be considered sufficient ground for the issuing of a penalty or fine.

Possible offences, which should result in the issuing of a fine or written warning, include, but are not limited to:

Class I contraventions

- Littering
- Not adhering to waste/ food management policy.

Class II contraventions

- Dogs off lead on trails
- Dog's feces not cleared up by owner.
- Feeding of wildlife
- Hikers not staying on the demarcated trails
- Domestic stock in natural open spaces
- Non compliance with cat policy

Class III contraventions

- Damage or collection of any flora or fauna
- Unauthorized fires;
- Hunting, killing, snaring, trapping, chasing or disturbance of any wildlife.
- Use of any toxic poison.
- The operation of any vehicle, quad bike, motorcycle off demarcated roads.
- Non compliance with alien vegetation management policy

In the event of non-compliance the following recommended process shall be followed:

The applicant / homeowners association shall issue a notice of non-compliance to the landowner stating the nature and magnitude of the contravention and motivating the need for compliance. This notice will be regarded as a written warning in less serious cases. In cases of a more serious magnitude a fine and remedial action will be mandatory. Fines levied as a result of transgressions of this OEMPr shall be determined in accordance to the following fine structure.

Class I contraventions – R500-00

Class II contraventions – R1000-00

Class III contraventions – R5000-00

In the case of non-compliance giving rise to physical environmental damage or destruction, the applicant / homeowners association shall be entitled to undertake or cause to be

undertaken such remedial works as may be required to make good such damage and to recover from the landowner the full costs incurred in doing so.

Chapter 19 Inclusion into Contract Documentation

This OEMPr should be included into all contracts compiled for property owners purchasing a property in the development as well as any contractor or sub-contractors employed by the applicant / homeowners association. This OEMPr should be available to all potential purchasers of property in this development before purchase.

Chapter 20 Conclusion

It is likely that if the conditions, requirements and recommendations of the above OEMPr are implemented as described and the stakeholders adhere to the various management measures, then this development could stand out as a best practise example for sustainable management of sensitive natural environments within a residential development.