DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Lanseria X51

Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ

September 2015

Gaut: 002/11-12/E0124

Part 2 of 2

BOKAMOSO

LANDSCAPE ARCHITECTS &
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PV4 CHRIS HARRIS - NEW FILE LANSERIA MIXED NODE — FRANCOISE - MARK FILE OCP.

Ontvangs

From: Mike Kirby [mike@tiniebez.co.za]
Sent: 13 October 2009 09:04 AM
To: 'Lizelle Gregory'
Subject: RE: Lanseria Mixed Use node Meeting 16 October 2009

Hi Lizelle,
We now know that the meeting is definitely going ahead as planned- 10 am in our offices. As soon as I receive the maps from our Draughtsman I will send a copy of the briefing report. We would very much appreciate if you send someone along in your place.

Kind regards

Mike Kirby
Town Planning Consultant

Tinie Bezuidenhout and Associates
Town and Regional Planners
(011) 467 1004

From: Lizelle Gregory [mailto:lizelleg@mweb.co.za]
Sent: 12 October 2009 08:24 AM
To: mike@tiniebez.co.za
Subject: RE: Lanseria Mixed Use node Meeting 16 October 2009

Dear Mike

Thank you for inviting me to the meeting. Unfortunately, I will not be able to attend the meeting of Friday, but I am more than willing to send a representative to attend and supply me with feedback. If necessary, I can meet with you before Friday or after Friday's meeting to discuss the EIA matters regarding the property. We can also conduct a preliminary sensitivity analysis for you to use during the meeting of Friday.

Regards

Lizelle

From: mike@tiniebez.co.za [mailto:mike@tiniebez.co.za]
Sent: 09 October 2009 12:29 PM
To: lizelleg@mweb.co.za
Subject: Lanseria Mixed Use node Meeting 16 October 2009

Dear Lizelle

RE of Ptn 22 of the Farm Bultfontein, ptn 164 of the farm Nooitgedacht and Ptns 27 and 73 of the Farm Nietgedacht

This practice has been requested by Syndev Properties CC to commence an investigation into the feasibility of the development of the above properties as part of the propsed Lanseria Mixed Use Node.

As a first step a meeting is planned comprising the following consultancies:
Harold Wattrus Land Surveyor
Harm Schreurs Traffic Engineer
James Croswell Civil Engineer
Lizelle Gregory EIA Consultant
Tommy van Graan Electrical Engineer

The purpose of this email is to establish whether you are able to attend this meeting at our offices at 10am on Friday 16 October 2009.

A short report describing the sites, their respective localities in the proposed node and in relation to approved Council policies will be forwarded to you prior to the meeting,

Your early reply by telephone or email would be greatly appreciated.

Kind regards

Mike Kirby
Town Planning Consultant

Tinic Bezuidenhout and Associates
Town and Regional Planners
(011) 467 1004

Fauna and Flora Study

GALAGO ENVIRONMENTAL

Fauna and Flora Specialists

638 Turf St
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Flora and Fauna Habitat Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 533-JQ & PORTION 164 OF THE FARM NOOITGEDACHT 534-JQ

April 2011

GDARD reference number:

Report Compiled and edited by:	Ms. Vanessa Marais of Galago Environmental
Report authors:	Dr. I.L. Rautenbach (Pri. Sci. Nat: Ph.D, T.H.E.D.), Mr. W.D. Haacke (Pri. Sci. Nat: M.Sc), Mrs. P. Lemmer (Cert. Sci. Nat: B.Sc.) Mr. R.F. Geyser
Avifauna Report verified by:	Dr. Alan C. Kemp (Pri.Sci. Nat.)
Botany Report verified by:	Dr L.A. Coetzer (D.Sc., Pri. Sci. Nat.)

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FIGURES:

1. Introduction:

Galago Environmental CC was appointed to conduct a mammal, bird, reptile, amphibian and plant survey for Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ proposed for mixed residential and commercial development.

2. Location of the study site:

The study site lies on the corner of Road R512 and 6th Road, a short distance north of highway N14.

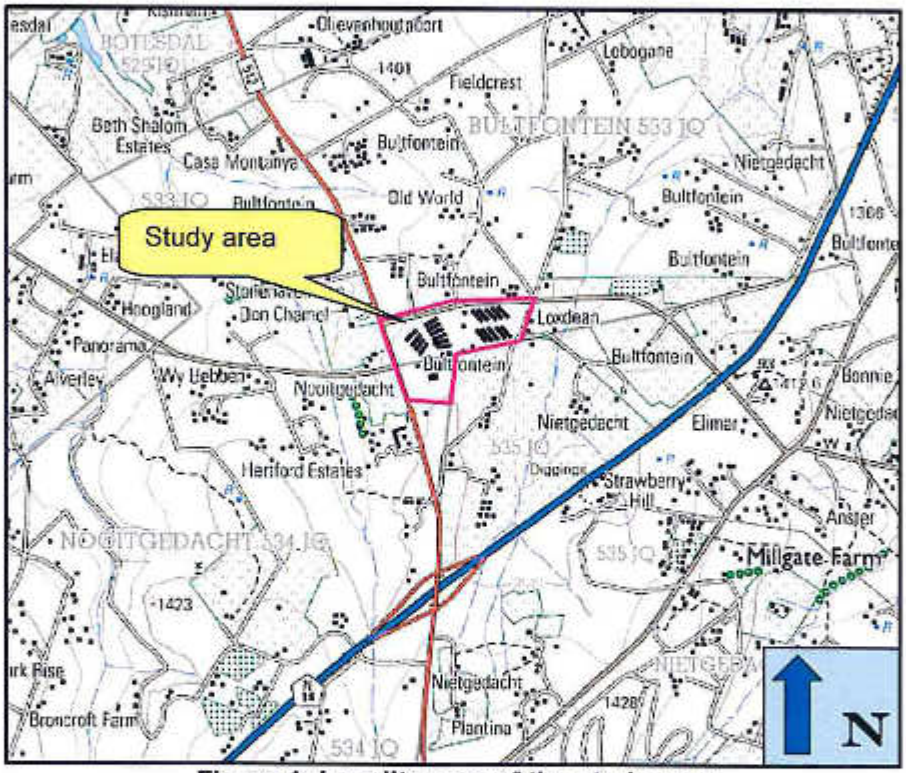

Figure 1: Locality map of the study area

3. Participating Specialists

This investigation was conducted by the following specialists:

Specialists	Aspect Investigated	Qualifications	Prof. Registration	Date of Field Survey
Rautenbach, I.L.	Mammalogy	Ph.D., T.H.E.D.	Pr. Nat. Sci.	1 March 2011
Haacke, W.D.	Herpetology	M.Sc. (Zoology)	Pr. Nat. Sci.	26 February 2011
Geyser, R.	Avifauna		Pending	26 February 2011
Lemmer, P.	Botany	B.Sc.	Cert. Sci. Nat	1 March 2011
Coetzer, L.A.	Botany Review	D.Sc.	Pr. Nat. Sci.	
Kemp, A.C.	Avifauna review	Ph.D.	Pr. Nat. Sci.	
Marais, V.	Environmental Impacts and maps	BL Landscape Architecture		26 February 2011

5. Vegetation assessment:

Mucina & Rutherford (2006) classify the vegetation of this area as Egoli Granite Grassland, with archaean granite and gneiss of the Halfway House Granite at the core of the Johannesburg Dome supporting leached, shallow, coarsely grained, sandy soil poor in nutrients.

The two vegetation areas were distinguished as follows:

- *Eragrostis – Hyparrhenia* grassland; and
- Mixed alien and indigenous vegetation.

Most of the study site comprised Mixed alien and indigenous vegetation. The natural grassland on the site was kept short. The study site had only limited connectivity with natural grassland to the south. No recommendations are made with regard to exclusion of land. All alien invaders must be removed from the study site. See Appendix A for the Flora report.

6. Fauna assessment:

The **mammal** study found that the study site has been entirely transformed by intensive farming practices and infrastructure. No natural elements of note remain. The proposed development will therefore not result in a loss of ecological sensitive and important habitat units, ecosystem function (e.g. reduction in water quality, soil pollution), loss of mammal habitat, nor of loss/displacement of threatened or protected species.

The site furthermore contains no sensitive ecosystems, nor poses a threat to sensitive systems on adjoining properties. See Appendix B for the Mammal report.

The **avifauna** study found that in general, the entire study site is disturbed by past and present human activities as well as human presence on and surrounding the site. Natural areas are small and fragmented and the surrounding areas are increasingly being developed to make room for residential development. The disturbed grassland area will only attract the more common grassland avifauna species and the rest of the study site will attract bird species that are able to adapt to the transformed and disturbed areas. None of the 27 Red Data avifauna species recorded for the 2527DD q.d.g.c. are likely to make use of the habitat systems identified on and within 500 m surrounding the study site on a permanent or temporarily basis due to a lack of suitable breeding, roosting and foraging habitat. See Appendix C for the Avifauna report.

The **herpetological** study found that the sloping terrain and dense grassland do not appear to be particularly suitable for reptiles and amphibians. No Red Data species are expected to occur here. Of the protected species, the Giant Bullfrog, recorded from this grid cell, has not been confirmed from this site and the habitat does not appear suitable. The range of the Southern African Python, another protected species, does not enter this area. The terrain in general is viewed as suitable to support only relatively low population densities of herpetofauna. The normally recommended conservation measures should concentrate on an awareness campaign amongst the labour force, directed at avoiding unnecessary killing and promoting the removal and release of species into nearby undisturbed or conservation areas. See Appendix D for the herpetological report.

7. Mitigation:

Mitigation proposed is that only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas.

8. Environmental sensitivity:

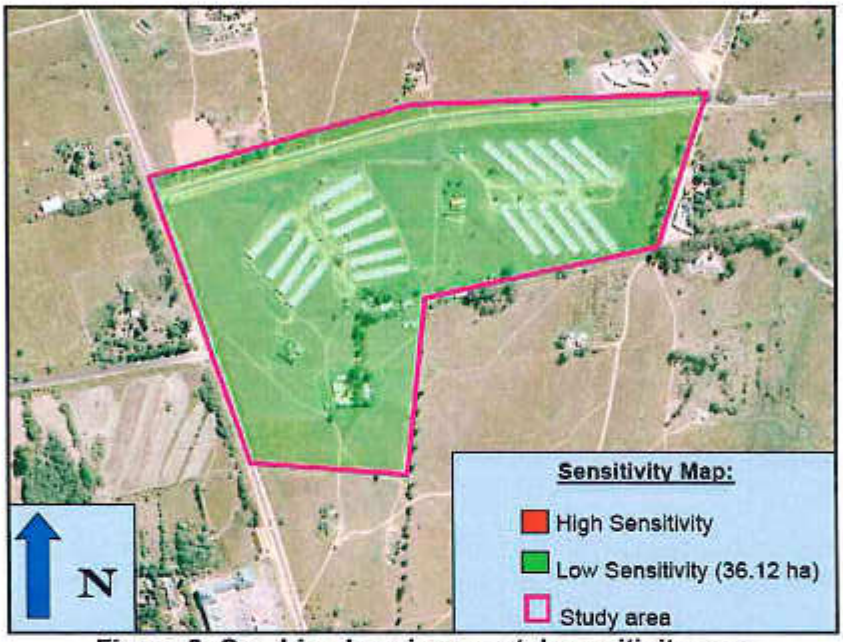

Figure 2: Combined environmental sensitivity map

Sensitivity mapping rules:

BIODIVERSITY ELEMENT	SENSITIVITY MAPPING RULE
Flora communities	Sensitive flora communities
Fauna habitat	Sensitive fauna habitat

9. Conclusion:

The site has a low environmental sensitivity since it has been degraded through past disturbances on the site.

10. GDARD biodiversity requirements

From: GDARD Biodiversity Information (GDARD)
[GDACE_BiodiversityInfo@gauteng.gov.za]
Sent: 02 March 2011 03:00 PM
To: Madeleen van Schalkwyk
Subject: RE: Biodiversity requirements for Nietgedacht, Nooitgedacht and Bultfontein

Dear Madeleen

With regard to the above project, specialist biodiversity studies are required to investigate the following aspects:

* Reptiles, with specific reference to *Homoroselaps dorsalis* (Striped Harlequin Snake).

The absence of wetlands on site should be verified. Should a wetland be located, a wetland specialist study will be required.

April 2011.

X51

GALAGO ENVIRONMENTAL

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Flora Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 533-JQ & PORTION 164 OF THE FARM NOOITGEDACHT 534-JQ

April 2011

Report author: Mrs. P. Lemmer (Cert. Sci. Nat: B.Sc.)
Report verified/reviewed by: Dr. L.A. Coetzer (D.Sc., Prof. Nat. Sci.)

VERIFICATION STATEMENT

Petro Lemmer is a Certified Natural Scientist with the S.A. Council for Natural Scientific Professions. This statement serves to verify that the flora report compiled by Petro Lemmer has been prepared under my supervision, and I have verified the contents thereof.

Declaration of Independence: I, Dr. L.A. Coetzer (421009 5029 089) declare that I:

- am committed to biodiversity conservation but concomitantly recognize the need for economic development. Whereas I appreciate the opportunity to also learn through the processes of constructive criticism and debate, I reserve the right to form and hold my own opinions and therefore will not willingly submit to the interests of other parties or change my statements to appease them
- abide by the Code of Ethics of the S.A. Council for Natural Scientific Professions
- act as an independent specialist consultant in the field of botany
- am subcontracted as specialist consultant by Galago Environmental CC for the proposed Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ development project described in this report
- have no financial interest in the proposed development other than remuneration for work performed
- have or will not have any vested or conflicting interests in the proposed development
- undertake to disclose to the Galago Environmental CC and its client as well as the competent authority any material information that have or may have the potential to influence the decision of the competent authority required in terms of the Environmental Impact Assessment Regulations, 2006.

L.A. Coetzer

Dr. L.A. Coetzer

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FIGURES:

TABLES:

1. INTRODUCTION

Galago Environmental was appointed to conduct a vegetation survey on Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ scheduled for mixed residential and commercial development. The objective was to determine which species might still occur on the site. Special attention had to be given to the habitat requirements of all the Red List species that may occur in the area. This survey focuses on the current status of threatened plant species occurring, or which are likely to occur on the study site, and a description of the available and sensitive habitats on the site and within 200 meters of the boundary of the site.

2. OBJECTIVES OF THE STUDY

- To assess the current status of the habitat component and current general conservation status of the area;
- To list the perceptible flora of the site and to recommend steps to be taken should endangered, vulnerable or rare species be found;
- To highlight potential impacts of the development on the flora of the proposed site; and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

3. SCOPE OF STUDY

This report:

- Lists the more noticeable trees, shrubs, herbs, geophytes and grasses observed during the study;
- Indicates medicinal plants recorded and lists alien species;
- Comments on connectivity with natural vegetation on adjacent sites;
- Comments on ecological sensitive areas;
- Evaluates the conservation importance and significance of the site with special emphasis on the current status of resident threatened species; and
- Offers recommendations to reduce or minimise impacts, should the proposed development be approved

4. STUDY AREA

4.1 Regional vegetation

The study site lies in the quarter degree grid cell 2528CA (Pretoria). Mucina and Rutherford (2006) classified the area as Egoli Granite Grassland, with archaean granite and gneiss of the Halfway House Granite at the core of the Johannesburg Dome supporting leached, shallow, coarsely grained, sandy soil poor in nutrients. This grassland falls within a strongly seasonal summer-rainfall region and very dry winters with frequent frosts.

This vegetation unit is considered endangered. Its conservation target is 24%. Only about 3% of this vegetation unit is conserved in statutory reserves and a few private conservation areas. More than two-thirds of the unit has already undergone transformation, mostly by urbanization, cultivation and by building of roads. Current rates of transformation threaten most of the remaining unconserved areas.

4.2 The study site

The study site lies on the corner of Road R512 and 6th Road, a short distance north of highway N14.

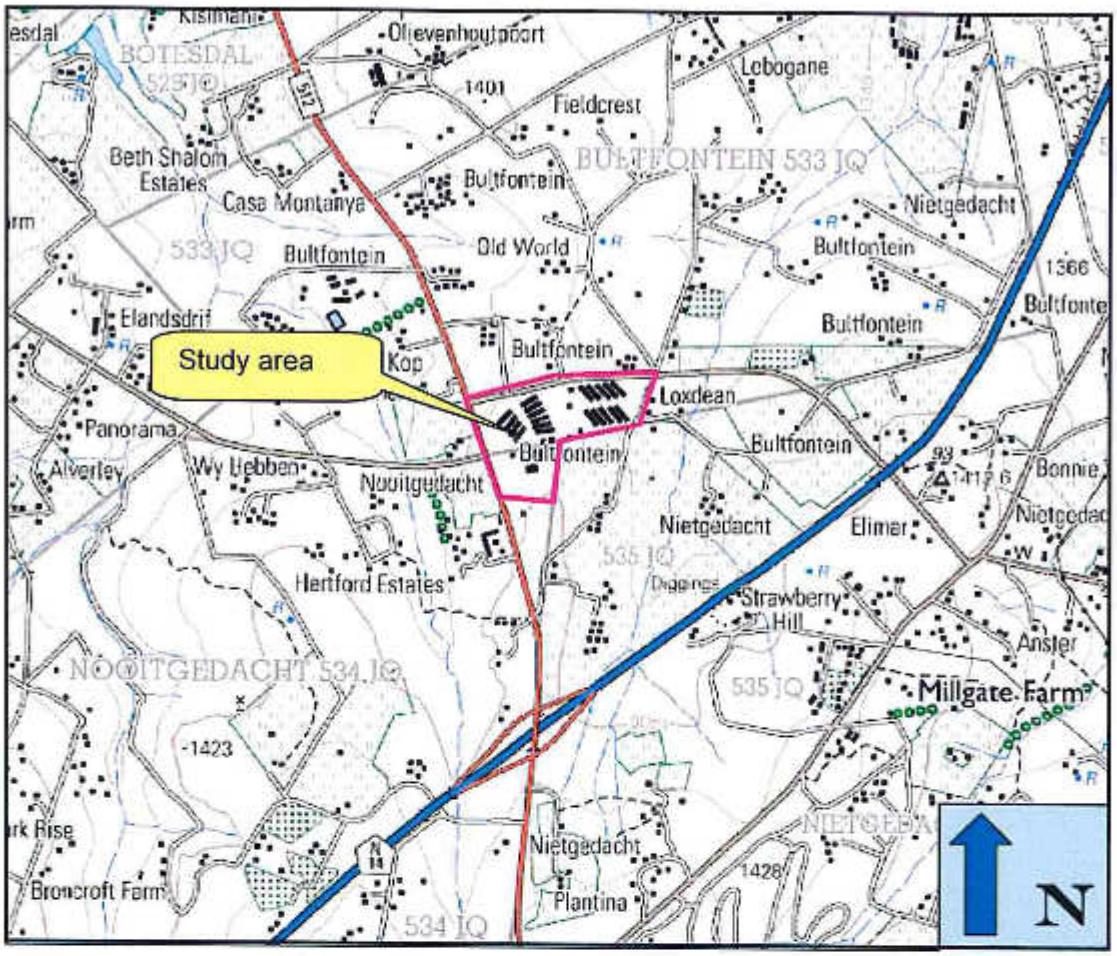

Figure 1: Locality map of the study area

5. METHOD

Information about the Red List and Orange List plant species that occur in the area was obtained from GDARD (GDACE). The Guidelines issued by GDARD (GDACE) to plant specialists were consulted to ascertain the habitat of the Red- and Orange List species concerned.

The SANBI list of plants recorded in the 2527DD quarter degree grid cell was obtained and consulted to verify the record of occurrence of the plant species seen on the study site. The vegetation map published in Mucina and Rutherford (2006) was consulted about the composition of Egoli Granite Grassland. A desktop study of the habitats of the Red List and Orange List species known to occur in the area was done before the site visit.

The study site was visited on 1 March 2011 to determine whether suitable habitat for the Red List species known to occur in the quarter degree grid cell existed and to survey the flora present on the site.

The various study units were identified (see Figure 2) and one or more plots, depending on the size and composition of the study unit, were selected at random from each study unit for detailed study. Each plot, which measured about 10m x 10m, was surveyed in a random crisscross fashion and the plants recorded. Areas where the habitat was suitable for the Red List species known to occur in the quarter degree grid cell were examined in detail.

Suitable habitat for Red List species on the neighbouring properties, where accessible, was examined to a distance of 200 m from the boundaries of the site for the presence of Red List plant species.

6. RESULTS

6.1 Study units

Two vegetation study units were identified:

- *Eragrostis – Hyparrhenia* grassland; and
- Mixed alien and indigenous vegetation.

Outside and south-east of the study site but within 200 meters of the boundary of the site an area of *Hyparrhenia* grassland occurred (see Figure 4). This grassland was not surveyed, but examined fot the presence of Red List species.

Tables 3 and 4 list the trees, shrubs, geophytes, herbs and grasses actually found on each of the surveyed areas of the study site.

6.2 Medicinal plants

The names of known medicinal plants are marked with numbers to footnotes in Tables 3 and 4 and the footnotes themselves appear at the end of the last table. Of the 59 plant species recorded on the study site, 2 species with medicinal properties were found. Their distribution in the various study units is as follows:

Table 1: Number of medicinal species in the various study units

STUDY UNIT	TOTAL NO OF SPECIES IN STUDY UNIT	NO OF MEDICINAL SPECIES IN STUDY UNIT
Eragrostis – Hyparrhenia grassland	47	2
Mixed alien and indigenous vegetation	31	0

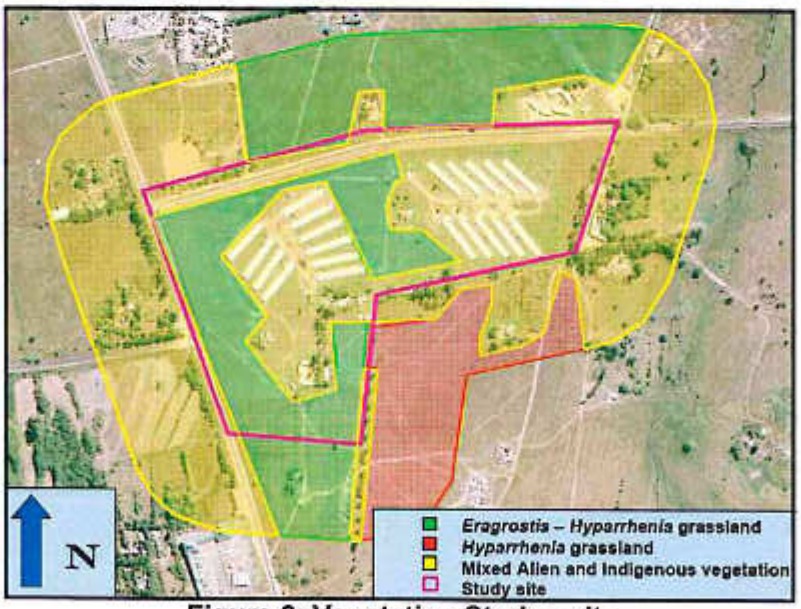

Figure 2: Vegetation Study units

6.3 Alien plants

Alien plants are not listed separately, but are included in the lists as they form part of each particular study unit. Their names are marked with an asterisk in Tables 3 and 4. Twenty alien plant species, of which two species were Category 2 Declared invaders and four were Category 3 Declared invaders, were recorded on the study site. The number of alien species in each study unit is reflected in Table 2.

Table 2: Number of Alien species in each study unit

STUDY UNIT	NO. OF ALIEN SPECIES	CAT 2	CAT 3	NOT DECLARED
Eragrostis – Hyparrhenia grassland	9	0	0	9
Mixed alien and indigenous vegetation	17	2	4	11

In terms of the regulations formulated under "The Conservation of Agricultural Resources Act" (Act No. 43 of 1983), as amended, Category 2 Declared invaders may not occur on any land other than a demarcated area.

Although the regulations under the above Act require that Category 3 Declared invader plants may not occur on any land or inland water surface other than in a biological control reserve, these provisions shall not apply in respect of Category 3 plants already in existence at the time of the commencement of said regulations. If this is the case, a land user must take all reasonable steps to curtail the spreading of propagating material of Category 3 plants.

6.4 Orange List species

The habitat was suitable for one of the five Orange List plant species known to occur in the 2527DD quarter degree grid cell, but this species, *Hypoxis hemerocallidea* (African potato) was not found. (See Annexure A for a list of the Orange- and Red List species known to occur in the quarter degree grid cell.)

6.5 Red List species

Eleven Red List plant species are known to occur in the 2527DD quarter degree grid cell, but the habitat was not suitable for any of these species.

6.6 *Eragrostis – Hyparrhenia* grassland

6.6.1 Compositional aspects and Connectivity

This study unit comprised natural grassland that was mown short, which hampered identification of the species. Connectivity with natural grassland existed to the south, but was limited by Road R512 to the west and highway N14 to the south. Of the 59 plant species recorded on the study site 47 were recorded in the *Eragrostis – Hyparrhenia grassland*. Of these, 38 were indigenous species. The following number of species in each life form was noted:

LIFE FORM	NUMBER OF SPECIES
Annual & perennial herbaceous species	27
Grasses	17
Geophytes	2
Sedges	1
Total No of species	47

6.6.2 Red– and Orange List species

The habitat of this study unit was not suitable for any of the Red List species, but was suitable for the Orange List species, *Hypoxis hemerocallidea* (African potato) known to occur in the quarter degree grid cell. None were, however, found.

6.6.3 Medicinal and alien species

Both the medicinal species recorded on the study site were found in this study unit. Nine of the 20 alien species recorded on the site were found in this study unit. None of these species were declared invaders.

6.6.4 Sensitivity

This study unit was not considered sensitive.

Figure 3: Mown *Eragrostis – Hyparrhenia* grassland.

Figure 4: *Hyparrhenia* grassland outside the boundaries of the site.

Table 3: Plants recorded in the *Eragrostis – Hyparrhenia* grassland

SCIENTIFIC NAME	COMMON NAMES
Acanthospermum glabratum	
Amaranthus hybridus subsp *hybridus* var *hybridus**	Common pigweed / Kaapse misbredie
Anthospermum rigidum subsp *rigidum*	
Aristida congesta subsp *congesta*	Tassle three-awn grass / Katstertsteekgras
Asparagus suaveolens	Wild asparagus / Katdoring
Barleria macrostegia	
*Bidens pilosa**	Blackjack / Knapsekêrel
Bulbostylis burchellii	Biesie
Chamaecrista mimosoides	
Commelina benghalensis	Blouselblommetjie
*Conyza bonariensis**	Flax-leaf fleabane / Kleinskraalhans
Conyza podocephala	
Cucumis zeyheri	Wild cucumber / Wilde agurkie
*Cymbopogon pospischilii**	Turpentine grass / Terpentyngras
Cynodon dactylon	Couch grass / Kweek
Eleusine coracana subsp *Africana*	Goose grass / Osgras
Eragrostis chloromelas	Curly leaf / Krulblaar
Eragrostis curvula	Weeping love grass / Oulandsgras
Eragrostis nindensis	Wether love grass / Hamelgras
Eragrostis patentipilosa	Footpath love grass / Voetpad eragrostis
*Euphorbia prostrata**	Hairy creeping milkweed / Harige kruipmelkkruid
Gnidia sericocephala	
*Gomphrena celosioides**	Bachelor's button / Mierbossie
Helichrysum nudifolium var *nudifolium*[1,2]	Hottentot's tea / Hottentotstee
Hermannia depressa[2,3]	Creeping red Hermannia / Rooiopslag
Heteropogon contortus	Spear grass / Assegaaigras
Hyparrhenia hirta	Common thatching grass / Dekgras
Hypoxis iridifolia	
Ipomoea sp	
Melinis repens subsp *repens*	Red top grass
Nidorella anomala	
Plantago lanceolata	Buckhorn plantain / Small weëblaar
Pogonarthria squarrose	Herring bone grass / Sekelgras
Pseudognaphalium luteo-album	
Sebaea grandis	
Sida rhombifolia subsp *rhombifolia*	Arrow leaf Sida / Taaiman
Solanum panduriforme	Poison apple / Gifappel
Sonchus dregeanus	
Sporobolus africanus	Rat's tail dropseed / Taaipol
*Tagetes minuta**	Khaki weed / Kakiebos
Themeda triandra	Red grass / Rooigras
Tribulus terrestris var terrestris	Dubbeltjie
Trichoneura grandiglumis	Small rolling grass / Klein rolgras
Urochloa mosambicensis	Bushveld signal grass / Bosveldsinjaalgras
Urochloa panicoides	Garden signal grass / Tuin beesgras
*Verbena aristigera**	Fine-leaved verbena / Fynblaar verbena
*Verbena brasiliensis**	

6.7 Mixed alien and indigenous vegetation

6.7.1 Compositional aspects and Connectivity

This study unit comprised garden vegetation and degraded grassland surrounding the chicken hatcheries. Of the 59 plant species recorded on the study site 31 were recorded in the Mixed alien and indigenous vegetation. Of these, 14 were indigenous species. The following number of species in each life form was noted:

LIFE FORM	NUMBER OF SPECIES
Annual & perennial herbaceous species	12
Tree species	11
Grasses	8
Total No of species	31

6.7.2 Red– and Orange List species

The habitat of this study unit was not suitable for any of the Red List or Orange List species known to occur in the quarter degree grid cell.

6.7.3 Medicinal and alien species

No medicinal species were recorded in this study unit. Seventeen of the 20 alien species recorded on the site were found in this study unit. Of these, two were Category 2 Declared invaders and four were Category 3 Declared invaders.

6.7.4 Sensitivity

The vegetation of this study unit was not considered sensitive.

Figure 5: Mixed alien and indigenous vegetation.

Table 4: Plants recorded in the Mixed alien and indigenous vegetation

SCIENTIFIC NAME	ALIEN CAT	COMMON NAMES
Acanthospermum glabratum		
Amaranthus hybridus subsp *hybridus* var *hybridus**		Common pigweed / Kaapse misbredie
Aristida congesta subsp *congesta*		Tassle three-awn grass / Katstertsteekgras
*Bidens pilosa**		Blackjack / Knapsekêrel
Commelina benghalensis		Blouselblommetjie
*Conyza bonariensis**		Flax-leaf fleabane / Kleinskraalhans
Cynodon dactylon		Couch grass / Kweek

SCIENTIFIC NAME	ALIEN CAT	COMMON NAMES
Eragrostis patentipilosa		Footpath love grass / Voetpad eragrostis
Eucalyptus sp*	2	
*Euphorbia prostrata**		Hairy creeping milkweed / Harige kruipmelkkruid
*Ficus elastica**		Rubber tree / Rubberboom
*Jacaranda mimosifolia**	3	Jacaranda / Jakaranda
*Melia azedarach**	3	Syringa / Sering
Melinis repens subsp *repens*		Red top grass
*Morus alba**	3	Common mulberry / Gewone moerbei
*Pennisetum clandestinum**		Kikuyu / Kikoejoe
Phytolacca dioica*	3	**Belhambra / Bobbejaandruifboom**
Pinus sp*	2	Pine tree / Denneboom
Plantago lanceolata		Buckhorn plantain / Small weëblaar
*Prunus armeniaca**		Apricot / Appelkoos
*Prunus persica**		Peach / Perske
Pseudognaphalium luteo-album		
*Quercus palustris**		Pin oak
Searsia lancea		Karee
Sida rhombifolia subsp *rhombifolia*		Arrow leaf Sida / Taaiman
Sporobolus africanus		Rat's tail dropseed / Taaipol
*Tagetes minuta**		Khaki weed / Kakiebos
Tribulus terrestris var terrestris		Dubbeltjie
Urochloa mosambicensis		Bushveld signal grass / Bosveldsinjaalgras
Urochloa panicoides		Garden signal grass / Tuin beesgras
*Verbena aristigera**		Fine-leaved verbena / Fynblaar verbena

[1] Van Wyk, B-E., Van Oudtshoorn, B. & Gericke, N. 2002.
[2] Watt, J.M. & Breyer-Brandwijk, M.G. 1962.
[3] Pooley, E. 1998.

7. FINDINGS AND POTENTIAL IMPLICATIONS

Most of the study site comprised Mixed alien and indigenous vegetation. The natural grassland on the site was kept short. The study site had only limited connectivity with natural grassland to the south.

8. LIMITATIONS, ASSUMPTIONS AND GAPS IN KNOWLEDGE

The natural grassland on the study site was mown short, which made identification of grasses and herbaceous species difficult. It was clear from plant residues that the species diversity was low. Nothing would be gained by repeating the survey before the grass is mown again.

9. RECOMMENDED MITIGATION MEASURES

The following mitigation measures were developed by GDARD (Directorate of Nature Conservation, GDACE, 2008 and 2009) and are applicable to the study site. Where appropriate, Galago Environmental's specific elaborations are given in brackets.

- An appropriate management authority (e.g. the body corporate) that must be contractually bound to implement the Environmental Management Plan (EMP) and Record of Decision (ROD) during the operational phase of the development should be identified and informed of their responsibilities in terms of the EMP and ROD.
- Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into

landscaped areas. Forage and host plants required by pollinators should also be planted in landscaped areas.

10. CONCLUSION

No recommendations are made with regard to exclusion of land. All alien invaders must be removed from the study site.

11. LITERATURE SOURCES

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ANNEXURE A: Red– and Orange List* plants of the 2527DD q.d.g.c.

Species	Flower season	Suitable habitat	Priority grouping	Conserv status	PRESENCE ON SITE
Bowiea volubilis subsp volubilis	Sep-Apr	Shady places, steep rocky slopes and in open woodland, under large boulders in bush or low forest.	B	Vulnerable[2]	Habitat not suitable
Callilepis leptophylla	Aug-Jan & May	Grassland or open woodland, often on rocky outcrops or rocky hillslopes.	N/A	Declining[2]	Habitat not suitable
Cheilanthes deltoidea subsp nov Gauteng form	Nov-Jun	Southwest-facing soil pockets and rock crevices in chert rocks.	A2	Vulnerable[1]	Habitat not suitable
Cleome conrathii	Dec-Jan Mar-May	Stony quartzite slopes, usually in red sandy soil, grassland or open to closed deciduous woodland, all aspects.	A3	Near Threatened[1]	Habitat not suitable
Delosperma leendertziae	Oct-Apr	Rocky ridges; on rather steep south facing slopes of quartzite in mountain grassveld.	A2	Near Threatened[1]	Habitat not suitable
Drimia sanguinea	Aug-Dec	Open veld and scrubby woodland in a variety of soil types	B	Near threatened[2]	Habitat not suitable
Eucomis autumnalis	Nov-Apr	Damp open grassland and sheltered places.	N/A	Declining[2]	Habitat not suitable
Gunnera perpensa	Oct-Mar	In cold or cool continually moist localities, mainly along upland streambanks.	N/A	Declining[2]	Habitat not suitable
Habenaria barbertonii	Feb-Mar	In grassland on rocky hillsides.	A2	Near threatened[1]	Habitat not suitable
Habenaria kraenzliniana	Feb-Apr	Terrestrial in stony, grassy hillsides, recorded from 1000 to 1400m.	A3	Near Threatened[1]	Habitat not suitable
Habenaria mossii	Mar-Apr	Open grassland on dolomite or in black sandy soil.	A1	Endangered[1]	Habitat not suitable
Holothrix randii	Sep-Jan	Grassy slopes & rock ledges, usually southern aspects.	B	Near Threatened[2]	Habitat not suitable
Hypoxis hemerocallidea	Sep-Mar	Occurs in a wide range of habitiats. From sandy hills on margins of dune forests to open rocky grassland. Also on dry, stony grassy slopes, mountain slopes and plateaux. Appears to be drought and fire tolerant. Grassland and mixed woodland.	N/A	Declining[2]	Habitat not suitable
Ilex mitis var mitis	Oct-Dec	River banks, stream beds, evergreen forests.	N/A	Declining[2]	Habitat not suitable
Melolobium subspicatum	Sep-May	Grassland.	A1	Vulnerable[1]	Habitat not suitable
Prunus africana	Dec-Jun	Forests, bushveld.	B	Vulnerable[2]	Habitat not suitable

[1] global status
[2] national status
* Orange listed plants have no priority grouping and are designated 'N/A'

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Avifauna Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 535 JQ AND PORTION 164 OF THE FARM NOOITGEDACHT 534 JQ

April 2011

Report edited by: Ms. Vanessa Marais of Galago Environmental
Report author: Mr. R.F. Geyser
Report verified/reviewed by: Dr. A.C. Kemp (Ph.D., Pr.Sci. Nat. (Zoology & Ecology))

VERIFICATION STATEMENT

Mr R. Geyser is not registered as a Professional Natural Scientist with the S.A. Council for Natural Scientific Professions. This statement serves to verify that the bird report compiled by Mr R.F. Geyser has been prepared under my supervision, and I have verified the contents thereof.

Declaration of Independence: I, Alan Charles Kemp (4405075033081), declare that I:

- am committed to biodiversity conservation but concomitantly recognize the need for economic development. Whereas I appreciate the opportunity to also learn through the processes of constructive criticism and debate, I reserve the right to form and hold my own opinions and therefore will not willingly submit to the interests of other parties or change my statements to appease them
- abide by the Code of Ethics of the S.A. Council for Natural Scientific Professions
- act as an independent specialist consultant in the field of zoology
- am subcontracted as specialist consultant by Galago Environmental CC for the proposed development of Bultfontein and Nooitgedacht as described in this report
- have no financial interest in the proposed development other than remuneration for work performed
- neither have nor will have any vested or conflicting interests in the proposed development
- undertake to disclose to Galago Environmental CC and its client, and the competent authority, any material information that has or may have the potential to influence decisions by the competent authority as required in terms of the Environmental Impact Assessment Regulations 2006

A.C. Kemp

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1. INTRODUCTION

Galago Environmental CC. was appointed to undertake an avifauna habitat survey for Portion 22 of the farm Bultfontein 533 JQ and Portion 164 of the farm Nooitgedacht 543 JQ (hereafter referred to as the study site), which is proposed for mixed residential and commercial development.

This report focuses on the current status of Red Data or Near Threatened species likely to occur on the proposed development site, and suggests measures for mitigation should development be approved.

2. SCOPE AND OBJECTIVES OF THE STUDY

- To qualitatively and quantitatively assess the significance of the avifaunal habitat components, and current general conservation status of the property;
- To comment on ecologically sensitive areas;
- To comment on connectivity with natural vegetation and habitats on adjacent sites;
- To provide a list of birds that occur or might occur, and to identify species of conservation importance;
- To highlight potential impacts of the proposed development on the avifauna of the study site, and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

3. STUDY AREA

The study site, 36.12 ha in extent, is situated within the 2527DD quarter degree grid cell (q.d.g.c.) and within the pentad 2555_2755 pentad within the Gauteng Province. The R552 Fourways/Lanseria road borders the site to the north and the R512 forms the western boundary of the study site. The study site is situated at an altitude of about 1 400 metres above sea level (m a.s.l.) and slopes downwards to the northwest.

The entire study site consists of a chicken farm with twenty chicken batteries and worker houses surrounded by disturbed grassland and garden habitat with mainly exotic trees and vegetation.

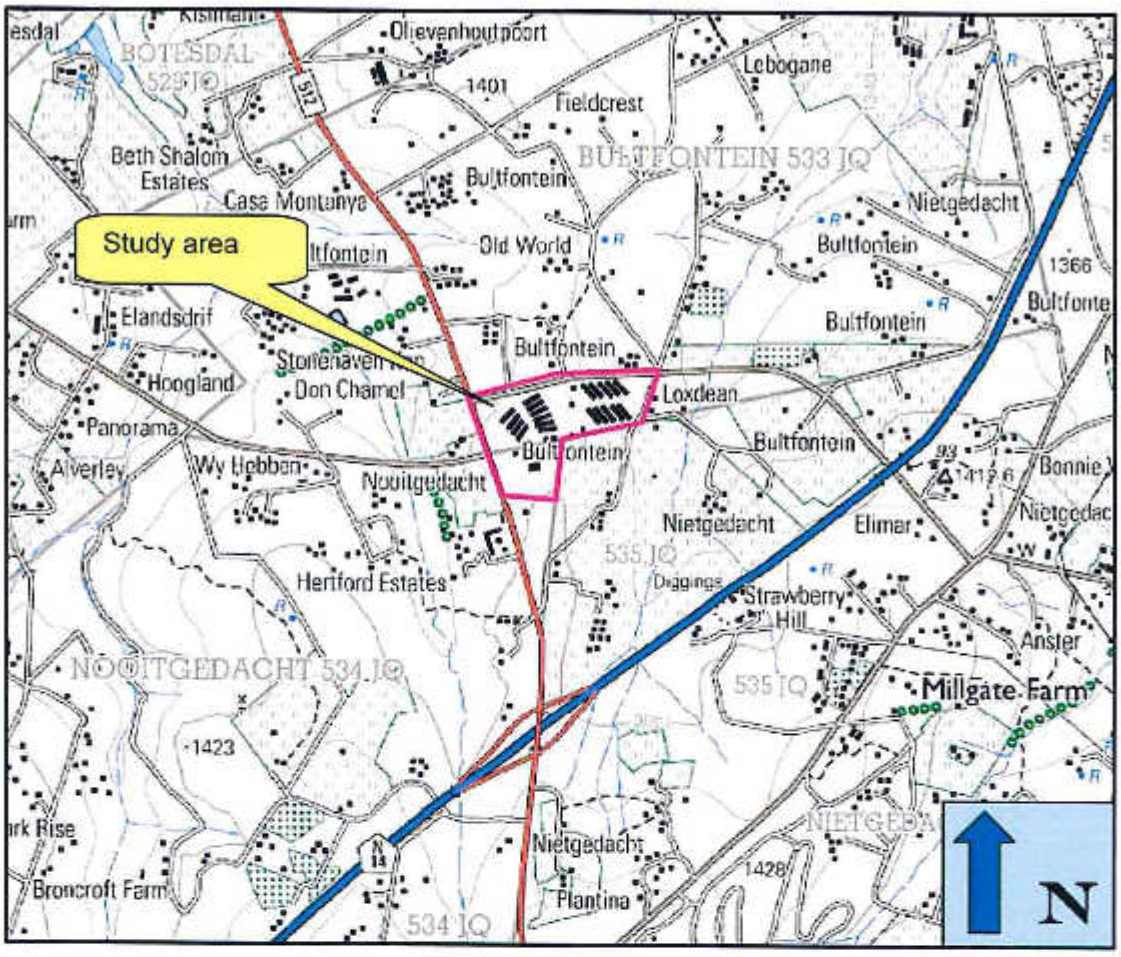

Figure 1: Locality map of the study area

4. METHODS

The site visit was conducted on 26 February 2011. During the five-hour visit the observed and derived presence of avifauna associated with the recognised habitat types of the study site, were recorded. This was done with due regard to the known distributions of Southern African avifauna.

4.1 Field Surveys

Birds were identified visually, using 10X42 Bushnell Legend binoculars and a 20X-60X Pentax spotting scope, and by call, and where necessary were verified from *Sasol Birds of Southern Africa* (Sinclair *et al.*, 2005) and *Southern African Bird Sounds* (Gibbon, 1991).

The 500 m of adjoining properties was scanned for important animal species and avifaunal habitats.

During the site visit, birds were identified by visual sightings or aural records along random transect walks. No trapping or mist netting was conducted, since the terms of reference did not require such intensive work. In addition, birds were also identified by means of feathers, nests, signs, droppings, burrows or roosting sites. Locals were interviewed to confirm occurrences or absences of species.

4.2 Desktop Surveys

The presence of suitable habitats was used to deduce the likelihood of presence or absence of species, based on authoritative tomes, scientific literature, field guides, atlases and databases. This can be done irrespective of season.

The likely occurrence of key bird species was verified according to distribution records obtained during the Southern African Bird Atlas Project 1 (SABAP1) period from 1981 to 1993 (Harrison *et al.* 1997). Earlier records of Red Data species only were obtained from the period between 1974 and 1987 according to Tarboton *et al.* (1987) and the most recent data from the current SABAP2 project which started on 1 July 2007.

The occurrence and historic distribution of likely avifauna species, especially all Red Data avifauna species recorded for the q.d.g.c. 2527DD were verified from Harrison *et al.* (1997), Tarboton *et al.* (1987) and the current SABAP2 project. The reporting rate for each avifauna species likely to occur on the study site, based on Harrison *et al.* (1997), was scored between 0 – 100% and was calculated as follows: Total number of cards on which a species was reported during the Southern African Bird Atlas SABAP1 and the current SABAP2 project period X 100 ÷ total number of cards for the particular q.d.g.c. (Harrison *et al.*, 1997) and pentad(s) (SABAP2). It is important to note that a q.d.g.c. (SABAP1 Protocol) covers a large area: for example, q.d.g.c. 2527DD covers an area of ±27 X 25 km (±693 km²) (15 minutes of latitude by 15 minutes of longitude, 15' x 15') and a pentad (SABAP2 Protocol) an area of ±8 X 7.6 km (5 minutes of latitude by 5 minutes of longitude, 5' x 5') and it is possible that suitable habitat will exist for a certain Red Data avifauna species within this wider area surrounding the study site. However, the specific habitat(s) found on site may not suit the particular Red Data species, even though it has been recorded for the q.d.g.c or pentad. For example, the Cape Vulture occurs along the Magaliesberg but will not favour the habitat found within the Pretoria CBD, both of which are both in the same q.d.g.c. Red Data bird species were selected and categorised according to Barnes (2000).

A biodiversity index, that gives an indication of which habitat system on site will hold the richest bird diversity, was calculated as the sum of the probability of occurrence of bird species within a specific habitat system on site. For each species and habitat, the probability of occurrence was ranked as: 5 = present on site, 4 = not observed on site but has a high probability of occurring there, 3 = medium probability, 2 = low probability, 1 = very low probability and 0 = not likely to occur.

3 Specific Requirements

During the site visit, the study site was surveyed visually and its habitats assessed for the potential occurrence of priority Red Data avifauna, according to GDARD's requirements for Biodiversity Assessments, Version 2 (2009), as well as for any other Red Data bird species: The priority Red Data bird species for Gauteng are in Roberts VII order and nomenclature, (Hockey *et al.*, 2005):

- Half-collared Kingfisher (*Alcedo semitorquata*)
- African Grass-Owl (*Tyto capensis*)
- White-bellied Korhaan (*Eupodotis senegalensis*)
- Blue Crane (*Anthropoides paradiseus*)
- African Finfoot (*Podica senegalensis*)
- Cape Vulture (*Gyps coprotheres*)
- African Marsh-Harrier (*Circus ranivorus*)

- Martial Eagle (*Polemaetus bellicosus*)
- Secretarybird (*Sagittarius serpentarius*)
- Lesser Kestrel (*Falco naumanni*)
- Greater Flamingo (*Phoenicopterus ruber*)
- Lesser Flamingo (*Phoenicopterus minor*)
- White-backed Night-Heron (*Gorsachius leuconotus*)
- Black Stork (*Ciconia nigra*)

No particular reference was made to the occurrence of any Red Data avifauna species on or surrounding the study site.

5. RESULTS

Avifaunal Habitat Assessment:
Two major bird habitat systems were identified within the Egoli Granite Grassland vegetation type (Mucina and Rutherford, 2006). A short description of each habitat type follows, ranked from most to least important with Figure 2 illustrating these habitats. No wetland or significant drainage areas, or rocky ridges, occur in either of the tow habitats.

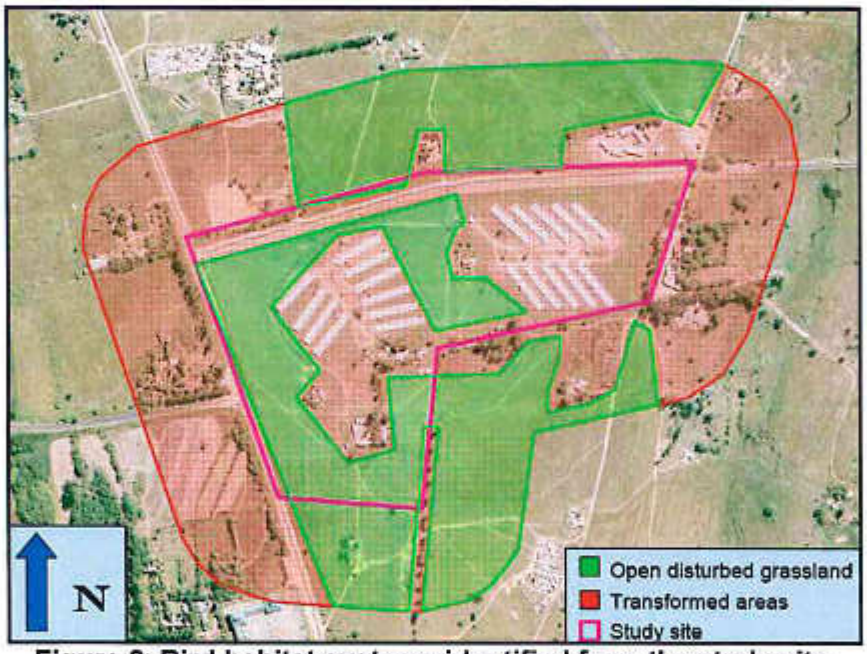

Figure 2: Bird habitat systems identified from the study site.

Open disturbed grassland:

The study site is situated within the Mesic Highveld Grassland Bioregion of the Grassland Biome and more specifically within the Egoli Granite Grassland (Gm 10) vegetation type according to Mucina and Rutherford (2006).

The landscape consists of moderately undulating plains and low hills supporting tall, usually *Hyparrhenia hirta* dominated grassland, with some woody species on rocky outcrops or rock sheets. The rocky habitat shows a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small trees (Mucina and Rutherford, 2006).

Little natural vegetation exists and the grassland is disturbed through past agricultural activities now overgrown with grasses dominated by *Eragrostis/Hypparhenia* grass. The grass surrounding the buildings is kept short.

The presence and abundance of bird species in this habitat will vary from season to season - lush and green in summer after summer rains and dry, brown, frosted or burnt during winter. The habitat favours ground-living bird species, such as lapwings, francolins, pipits, longclaws, larks and chats. These birds hunt for insects and/or breed on the ground, in burrows, or between the grasses. Weavers and widowbirds make use of such habitat for feeding on ripe seeds during late summer and early winter when the grass is not burnt, and widowbirds and cisticolas will also breed in the tall grass during summer. Species such as weavers and bishops that breed in the wetland habitat during summer will also make use of the open grassland habitat for feeding during winter after the grasses have seeded. Aerial feeding birds such as martins, swifts and swallows will also hunt for insects over the grasslands.

Figure 3: The grasslands around the chicken batteries are kept short

Gardens, transformed areas and mixed alien and indigenous vegetation:

The houses and outside buildings on the study site are surrounded by garden vegetation with predominantly exotic trees, plants and open lawn areas. Large exotic trees, mainly *Eucalyptus*, occur within the 200 m extended area.

Rural and suburban gardens have created an evergreen habitat for many bird species, where birds can hide, breed and forage for food. Natural predators such as snakes and smaller wild-cat species, which are largely persecuted by man, have been driven out of these areas, making it a relatively safe environment for birds apart from domestic cats and dogs. Many bird species have adapted to human-altered areas and these species are mainly the more common bird species found within southern Africa.

Fruit-bearing trees are also an important food supply for many bird species. Most of these bird species are not habitat specific and, due to their high level of adaptability, are also not threatened.

Exotic plantations usually do not offer a large variation in plant communities and these trees are mostly unpalatable in their live stage for insect and game species. As a result, few insect-eating bird species will occur within these plantations. A number of nectar feeding species, such as white-eyes and sunbirds, will feed on the nectar produced by the flowers of these trees, and some birds also make nests in these trees.

No or little grass growth takes place on the ground where these trees grow and seed-eating bird species are few. The roots of these trees are known to extract large volumes of water daily and the surrounding ground is normally hard and dry.

Figure 4: Garden area showing exotic trees and kikuyu lawns

Observed and Expected Species Richness

Of the 359 bird species recorded for the 2527DD q.d.g.c. (Harrison *et al.*, 1997), 89 (24.7 %) are likely to occur on the study site and 28 (29.2 %) of these bird species were actually observed on and surrounding the study site.

Our biodiversity index indicates that the largest bird diversity is likely to occur within the transformed and disturbed area, garden and exotic trees habitat system on site, with a biodiversity index (BI) of 264, followed by the open disturbed grassland (BI 249).

The bird species listed in Table 1 are in the species order according to *Roberts - Birds of Southern Africa* VIIth edition (Hockey *et al*, 2005). These comprise the 28 species actually observed on the study site (**in bold**) or likely to occur within the specific habitat(s) found on site. This does not include overflying birds or rare vagrants. The reporting rate for each species is the percentage for the q.d.g.c. according to the SABAP 1 atlas (Harrison *et al.*, 1997) and is represented by colour codes as follows: Yellow = Very Low, Light Orange = Low, Dark Orange = Medium and Red = High. Our habitat preference scores for each species are shown under the recognised habitat types on site: **OG = Open disturbed Grassland** and **SG = Suburban Gardens, disturbed and transformed,** with their possibility of occurrence in these specific habitats rated as 5 = present, 4 = High, 3 = Medium, 2 = Low, 1 = Very low, and 0 = Not likely to occur.

Table 1: Bird species observed and that are likely to occur on the study site.

SCIENTIFIC NAME	ENGLISH NAME	R RATE (%)*	Habitat preference	
		2527DD	OG	SG

SCIENTIFIC NAME	ENGLISH NAME	R RATE (%)*	Habitat preference	
		2527DD	OG	SG
Pternistis swainsonii	Swainson's Spurfowl	56	2	0
Numida meleagris	Helmeted Guineafowl	79	4	0
Indicator minor	Lesser Honeyguide	6	0	3
Jynx ruficollis	Red-throated Wryneck	18	2	3
Dendropicos fuscescens	Cardinal Woodpecker	10	0	2
Lybius torquatus	Black-collared Barbet	73	0	4
Trachyphonus vaillantii	**Crested Barbet**	82	0	5
Upupa africana	African Hoopoe	48	4	4
Phoeniculus purpureus	Green Wood-Hoopoe	53	0	3
Halcyon albiventris	Brown-hooded Kingfisher	44	0	3
Merops apiaster	**European Bee-eater**	21	5	4
Colius striatus	Speckled Mousebird	71	0	4
Urocolius indicus	Red-faced Mousebird	34	3	4
Chrysococcyx caprius	Diderick Cuckoo	28	4	4
Cypsiurus parvus	**African Palm-Swift**	9	5	5
Apus affinis	Little Swift	31	4	4
Apus caffer	White-rumped Swift	21	4	4
Corythaixoides concolor	Grey Go-away-bird	68	0	3
Tyto alba	Barn Owl	26	2	2
Bubo africanus	Spotted Eagle-Owl	14	2	2
Columba livia	Rock Dove	12	3	4
Columba guinea	**Speckled Pigeon**	57	5	5
Streptopelia senegalensis	**Laughing Dove**	94	5	5
Streptopelia capicola	Cape Turtle-Dove	75	4	4
Streptopelia semitorquata	Red-eyed Dove	48	4	4
Burhinus capensis	Spotted Thick-knee	45	4	2
Vanellus armatus	**Blacksmith Lapwing**	71	5	4
Vanellus senegallus	African Wattled Lapwing	45	3	0
Vanellus coronatus	Crowned Lapwing	80	4	3
Elanus caeruleus	Black-shouldered Kite	72	3	1
Accipiter minullus	Little Sparrowhawk	11	0	3
Accipiter ovampensis	Ovambo Sparrowhawk	4	0	2
Buteo vulpinus	Steppe Buzzard	11	2	2
Ardea melanocephala	Black-headed Heron	45	4	1
Bubulcus ibis	**Cattle Egret**	83	5	2
Bostrychia hagedash	**Hadeda Ibis**	88	5	4
Threskiornis aethiopicus	**African Sacred Ibis**	58	5	0
Terpsiphone viridis	African Paradise-Flycatcher	34	0	3
Dryoscopus cubla	Black-backed Puffback	35	0	2
Telophorus zeylonus	Bokmakierie	47	3	3
Corvus albus	**Pied Crow**	76	5	2
Lanius collaris	**Common Fiscal**	93	5	5
Hirundo rustica	**Barn Swallow**	37	5	4
Hirundo albigularis	White-throated Swallow	29	4	4
Hirundo cucullata	**Greater Striped Swallow**	40	4	5
Hirundo abyssinica	Lesser Striped Swallow	39	4	4
Hirundo spilodera	**South African Cliff-Swallow**	8	5	0
Hirundo fuligula	Rock Martin	20	2	2
Pycnonotus tricolor	**Dark-capped Bulbul**	91	2	5

SCIENTIFIC NAME	ENGLISH NAME	R RATE (%)*	Habitat preference	
		2527DD	OG	SG
Phylloscopus trochilus	Willow Warbler	13	0	3
Zosterops virens	Cape White-eye	78	0	4
Cisticola fulvicapilla	Neddicky	40	4	4
Cisticola juncidis	**Zitting Cisticola**	18	5	0
Cisticola aridulus	**Desert Cisticola**	9	5	0
Prinia subflava	Tawny-flanked Prinia	52	4	4
Prinia flavicans	Black-chested Prinia	28	4	4
Mirafra africana	**Rufous-naped Lark**	36	5	0
Turdus libonyanus	Kurrichane Thrush	38	0	3
Turdus smithi	Karoo Thrush	51	0	4
Sigelus silens	Fiscal Flycatcher	52	1	3
Muscicapa striata	Spotted Flycatcher	12	0	4
Cossypha caffra	Cape Robin-Chat	64	0	4
Saxicola torquatus	**African Stonechat**	41	5	1
Cercomela familiaris	Familiar Chat	19	2	3
Onychognathus morio	Red-winged Starling	28	0	2
Lamprotornis nitens	**Cape Glossy Starling**	46	4	5
Spreo bicolor	Pied Starling	13	3	3
Acridotheres tristis	**Common Myna (INT)**	29	5	5
Chalcomitra amethystina	Amethyst Sunbird	60	0	4
Cinnyris talatala	White-bellied Sunbird	33	0	3
Ploceus velatus	**Southern Masked-Weaver**	82	4	5
Quelea quelea	Red-billed Quelea	9	2	2
Euplectes orix	**Southern Red Bishop**	48	5	4
Euplectes albonotatus	White-winged Widowbird	26	4	2
Ortygospiza atricollis	African Quailfinch	10	3	0
Amadina erythrocephala	Red-headed Finch	2	3	0
Estrilda astrild	Common Waxbill	23	3	1
Lagonosticta rhodopareia	Jameson's Firefinch	3	0	2
Spermestes cucullatus	Bronze Mannikin	19	3	4
Vidua macroura	Pin-tailed Whydah	31	4	4
Passer domesticus	House Sparrow	55	2	4
Passer melanurus	**Cape Sparrow**	74	5	5
Passer diffusus	**Southern Grey-headed Sparrow**	57	5	5
Motacilla capensis	**Cape Wagtail**	62	4	5
Macronyx capensis	Cape Longclaw	34	3	0
Anthus cinnamomeus	**African Pipit**	22	5	0
Crithagra mozambicus	Yellow-fronted Canary	40	2	3
Crithagra atrogularis	Black-throated Canary	45	4	4
Crithagra gularis	Streaky-headed Seedeater	19	0	3
		Biodiversity Index:	249	264

*The reporting rate is calculated as follows: Total number of cards on which a species was reported X 100 ÷ total number of cards for a particular quarter degree grid cell. **INT** = Introduced or alien birds species to Southern Africa.

Red Data Species Categories for the birds (Barnes, 2000)
RE = Regionally extinct, CR = Critically Endangered EN = Endangered, VU = Vulnerable, NT = Near-threatened.

The biodiversity index gives an indication of which habitat will hold the richest bird diversity on site. The colour codes for each species are represented as follows: Yellow = Very Low, Light Orange = Low, Dark Orange = Medium and Red = High. The likelihood of occurrence of each species on site in the specific habitat systems are as follow: 5 = present, 4 = High, 3 = Medium, 2 = Low, 1 = very low, and 0 = Not likely to occur.

Threatened and Red Listed Bird Species

The following Red Data bird species were recorded for the 2527DD (Broederstroom) q.d.g.c according to Harrison *et al.* (1997) and Tarboton *et al* (1987) (Table 2).

Table 2: Red Data bird species recorded for the 2527DD q.d.g.c.

SCIENTIFIC NAME	ENGLISH NAME	REPORTING RATE (%)* SABAP1/SABAP2
Alcedo semitorquata	**Half-collared Kingfisher (NT)**	2/4.7(T)
Tyto capensis	African Grass-Owl (VU)	4/0(Tb)
Eupodotis senegalensis	White-bellied Korhaan (VU)	2/0(T)
Anthropoides paradiseus	Blue Crane (VU)	2/0(Tb)
Podica senegalensis	**African Finfoot (VU)**	<1/0.5(T)
Rostratula benghalensis	Greater Painted-snipe (NT)	<1/0
Rynchops flavirostris	African Skimmer (RE)	0/0(T)
Sterna caspia	**Caspian Tern (NT)**	<1/0.5
Gyps africanus	White-backed Vulture (VU)	3/0(T)
Gyps coprotheres	**Cape Vulture (VU)**	34/0.5(Tb)
Terathopius ecaudatus	Bateleur (VU)	0/0(T)
Circus ranivorus	**African Marsh-Harrier (VU)**	2/0.5(T)
Circus macrourus	Pallid Harrier (NT)	0/0(T)
Polemaetus bellicosus	Martial Eagle (VU)	1/0(Tb)
Sagittarius serpentarius	Secretarybird (NT)	3/0(Tb)
Falco naumanni	**Lesser Kestrel (VU)**	1/0.9(T)
Falco biarmicus	**Lanner Falcon (NT)**	3/2.3(Tb)
Falco peregrinus	Peregrine Falcon (NT)	<1/0(T)
Gorsachius leuconotus	White-backed Night-Heron (VU)	0/0(Tb)
Phoenicopterus ruber	Greater Flamingo (NT)	0/0(T)
Phoenicopterus minor	Lesser Flamingo (NT)	0/0(T)
Mycteria ibis	Yellow-billed Stork (NT)	1/0(T)
Anastomus lamelligerus	**African Openbill (NT)**	0/0.5(T)
Ciconia nigra	**Black Stork (NT)**	1/0.5(Tb)
Leptoptilos crumeniferus	Marabou Stork (NT)	<1/0
Mirafra cheniana	**Melodious Lark (NT)**	1/1.4(T)
Buphagus erythrorhynchus	Red-billed Oxpecker (NT)	0/0(T)
	SABAP1 Very Low :	13
	SABAP1 Low :	5
	SABAP1 Medium :	0
	SABAP1 High :	1
	SABAP1 TOTAL :	19
	Tarboton *et al* present :	16
	Tarboton *et al* breeding:	8
	Tarboton *et al* TOTAL:	24
	SABAP2:	10

*The reporting rate is calculated as follows: Total number of cards on which a species was reported X 100 ÷ total number of cards for a particular quarter degree grid cell. T = Bird species recorded as present (light blue) and Tb = bird species

recording as breeding (dark blue) for the q.d.g.c. according to Tarboton (1987). Bird species with both reporting rates and T or Tb were recorded for the q.d.g.c. according to both Harrison *et al.* (1997) and Tarboton *et al.* (1987). The colour codes for each species are represented as follows: yellow = very low, light orange = low, dark orange = medium and red = high with reference to the specific habitat systems found on site.

Red Data Species Categories for the birds (Barnes, 2000)
RE = Regionally extinct, CR = Critically Endangered EN = Endangered, VU = Vulnerable, NT = Near-threatened.

A total of 27 Red Data avifauna species have been recorded within the 2527DD q.d.g.c. (Table 2). Eight of these appear to have disappeared from the area or were not recorded for this q.d.g.c. during the time of the southern African Bird Atlas project. It is unlikely that they will ever recur in this region again except maybe on rare occasions in protected areas. Eight of these species used to breed within the said q.d.g.c (Tarboton, 1987) and none have been recorded breeding for the q.d.g.c. during the period of the Southern African bird atlas project (SABA1). Most of the Red Data species that have been recorded indicate a low to very low reporting rate. The Cape Vulture indicates a medium reporting rate. This decline in breeding species is probably due to the large extent of development that has taken place during a short space of time. Ten of the above mentioned Red Data avifauna species have been recorded for the 2555_2755 pentad indicated in bold above. Most if not all of these birds have been recorded from Northern Farm (Diepsloot Nature Reserve) to the north east of the study site.

Summary of the Red Data bird species

Table 3 provides a list of the Red Data bird species recorded for the 2527DD q.d.g.c. according to Harrison *et al.* (1997) and an indication of their likelihood of occurrence on the study site based on habitat and food availability.

Table 3: Red Data bird species assessment for the 2527DD q.d.g.c.

SCIENTIFIC NAME	PRESENCE OF SUITABLE HABITAT AND HABITAT REQUIREMENTS	LIKELIHOOD OF OCCURRENCE ON STUDY SITE
*Alcedo semitorquata** (Half-collared Kingfisher) (NT)	None on site: Requires fast-flowing streams, rivers and estuaries, usually with dense marginal vegetation (Maclean, 1993), especially perennial streams and smaller rivers with overhanging riparian vegetation on their banks. Nests in sand/earth banks (Tarboton *et al.*, 1987) and requires riverbanks in which to excavate nest tunnels (Harrison *et al.*, 1997). Most typically occurs along fast-flowing streams with clear water and well-wooded riparian growth, often near rapids. It most frequently favours broken escarpment terrain and requires at least 1 km up and down stream of undisturbed river and riparian vegetation while breeding. It occurs from sea-level to 2000 m.a.s.l. in southern Africa. Usually perches low down on the banks of rivers and streams, often on exposed roots, as well as exposed rock and low overhanging tree branches.	Highly Unlikely Due to a lack of suitable breeding and foraging habitat. Uncommon and easily overlooked; quiet streams (Marais & Peacock, 2008).
*Tyto capensis** (African Grass-Owl) (VU)	None on site: Occurs predominately in rank grass, typically but not always at fairly high altitudes. Breeds mainly in permanent and seasonal vleis, which it vacates while hunting or during post-breeding although it will sometimes breed in any area of long grass, sedges or even weeds (Van Rooyen, pers comm.) and not necessarily associated with wetlands (Tarboton *et al.*, 1987) although this is more the exception than the rule. Foraging mainly confined to tall grassland next to their wetland vegetation and rarely hunts in short	Highly unlikely No suitable breeding, roosting and foraging habitat were identified on and surrounding the study site

SCIENTIFIC NAME	PRESENCE OF SUITABLE HABITAT AND HABITAT REQUIREMENTS	LIKELIHOOD OF OCCURRENCE ON STUDY SITE
	grassland, wetlands or croplands nearby (Barnes, 2000). Mainly restricted to wet areas (marshes and vleis) where tall dense grass and/or sedges occur. Prefers permanent or seasonal vleis and vacates the latter when these dry up or are burnt. Roosts and breeds in vleis but often hunt elsewhere e.g. old lands and disturbed grassland although these are suboptimal habitat conditions (Tarboton *et al.*, 1987). May rarely occur in sparse *Acacia* woodland where patches of dense grass cover are present (Harrison *et al.*, 1997).	
*Eupodotis senegalensis** (White-bellied Korhaan) (VU)	None on site: Occurs in fairly tall, dense grassland, especially sour and mixed grassland, in open or lightly wooded, undulating to hilly country. In winter, occasionally on modified pastures and burnt ground (Harrison *et al.*, 1997).	Highly unlikely Due to high human presence on site and disturbance surrounding the study site. Scarce in Gauteng and secretive resident; widespread (Marais & Peacock, 2008)
*Anthropoides paradiseus** (Blue Crane) (VU)	None on site: Midlands and highland grassland, edge of Karoo, cultivated land and edges of vleis (Maclean, 1993). Nests in both moist situations in vleis which have short grass cover and in dry sites far from water, usually exposed places such as on hillsides; forages in grassland and cultivated and fallow lands; roosts communally in the shallow water of pans and dams (Tarboton *et al.*, 1987). Short dry grassland, being more abundant and evenly disturbed in the eastern "sour" grassland, where natural grazing of livestock is the predominant land use. Prefers to nest in areas of open grassland (Barnes, 2000) In the Fynbos biome it inhabits cereal croplands, cultivated pastures and avoids natural vegetation. By contrast, it is found in natural vegetation in the Karoo and grassland biomes, but it also feeds in crop fields (Harrison *et al*,. 1997).	Highly unlikely Due to the small extent of the grassland, disturbance surrounding the study site and high human presence on the study site. Localised but common in the south-eastern Gauteng (Marais & Peacock, 2008)
*Podica senegalensis** (African Finfoot) (VU)	None on site: Occurs mostly along quiet, wooded streams and rivers flanked by thick riparian vegetation and overhanging trees. Also dam verges, especially where there is sufficient overhanging vegetation and reed cover. Avoids both stagnant and very fast-flowing watercourses, with a preference for clear, rather than silted water (Hockey *et al.*, 2005).	Highly unlikely Due to a lack of suitable breeding and foraging habitat, high human presence on site and disturbance surrounding the study site. Scarce in Gauteng and secretive resident; widespread (Marais & Peacock, 2008)

SCIENTIFIC NAME	PRESENCE OF SUITABLE HABITAT AND HABITAT REQUIREMENTS	LIKELIHOOD OF OCCURRENCE ON STUDY SITE
Rostratula benghalensis (Greater Painted-snipe) (NT)	None on site: Dams, pans and marshy river flood plains. Favours waterside habitat with substantial cover and receding water levels with exposed mud among vegetation, departing when water recedes beyond the fringes of vegetation. Rare in seasonally flooded grassland and palm savanna (Hockey *et al.*, 2005).	Highly unlikely Due to a lack of suitable foraging habitat. Uncommon visitor and resident (Marais & Peacock, 2008).
Sterna caspia (Caspian Tern) (NT)	None on site: Occurs along coast, mostly in sheltered bays and estuaries. Inland, at large water bodies, both natural and man-made, with preference for saline pans and large impoundments. Coastal breeding habitat primarily offshore islands, but with increasing use of sandy beaches and islands in saltworks, where protection is offered. Inland, breeds on small, low islets in pans and dams (Hockey *et al.*, 2005).	Highly unlikely Due to a lack of suitable foraging and breeding habitat. Non-breeding winter visitor to large water bodies in Gauteng (Marais & Peacock, 2008).
Gyps africanus (White-backed Vulture) (VU)	None on site: Their presence is dependent on the availability of food. Lightly wooded arid savanna, including Mopane *Colophospernum mopane* woodland; but absent from forest, true deserts, and the treeless grass- and shrubland of the south and central Karoo (Hockey *et al.*, 2005).	Highly unlikely Due to a lack of suitable foraging and breeding habitat. ... (Marais & Peacock, 2008)
*Gyps coprotheres** (Cape Vulture) (VU)	They mostly occur in mountainous country, or open country with inselbergs and escarpments; less commonly as visitors to savannah or desert (Maclean, 1993). Forage over open grassland, woodland and agricultural areas; usually roosts on cliffs, but will also roost on trees and pylons (Barnes, 2000). It is reliant on tall cliffs for breeding but it wanders widely away from these when foraging. It occurs and breeds from sea level to 3 100 m.a.s.l. Current distribution is closely associated with subsistence communal grazing areas characterised by high stock losses and low use of poisons and, to a lesser extent, with protected areas (Harrison *et al.*, 1997), but their presence is ultimately dependent on the availability of food.	Highly unlikely Due to a lack of suitable foraging and breeding habitat. Breeds in Magaliesberg; uncommon wanderer elsewhere; mostly SW & NW Gauteng (Marais & Peacock, 2008).
*Circus ranivorus** (African Marsh-Harrier) (VU)	None on site: Almost exclusively inland and coastal wetlands (Hockey *et al.*, 2005). Wetland and surrounding grasslands. Most highveld wetlands > 100 ha support a breeding pair (Tarboton & Allan, 1984). Nests in extensive reed beds often high above water. Forages over reeds, lake margins, floodplains and occasionally even woodland. Almost entirely absent from areas below 300 mm of rainfall (Harrison *et al.*, 1997). Marsh, vlei, grassland (usually near water); may hunt over grassland, cultivated lands and open savanna (Maclean, 1993). Dependant on wetlands, particularly permanent wetlands for breeding, roosting and feeding. May utilise small wetlands 1-2 ha in extent for foraging, but larger wetlands are required for breeding (Barnes, 2000).	Highly unlikely There are no suitable foraging, breeding or roosting habitat for this species on the study site. Declining resident of large vleis, occurs mainly in south-eastern Gauteng (Marais & Peacock, 2008)

SCIENTIFIC NAME	PRESENCE OF SUITABLE HABITAT AND HABITAT REQUIREMENTS	LIKELIHOOD OF OCCURRENCE ON STUDY SITE
*Polemaetus bellicosus** (Martial Eagle) (VU)	None on site: Tolerates a wide range of vegetation types, being found in open grassland, scrub, Karoo, agricultural lands and woodland. It relies on large trees (or electricity pylons) to provide nest sites (Barnes, 2000) as well as windmills and even cliffs in treeless areas. It occurs mainly in flat country and is rarer in mountains, and it also avoids extreme desert, and densely wooded and forested areas (Harrison *et al.*, 1997 & Barnes, 2000).	Highly unlikely Due to a lack of suitable habitat and disturbance cause by the large scale development surrounding the study site. Uncommon local resident (Marais & Peacock, 2008).
*Sagittarius serpentarius** (Secretarybird) (NT)	None on site: Open grassland with scattered trees, shrubland, open *Acacia* and *Combretum* savanna (Hockey *et al.*, 2005). Restricted to large conservation areas in the region. Avoids densely wooded areas, rocky hills and mountainous areas (Hockey *et al.*, 2005 & Barnes, 2000). Requires small to medium-sized trees with a flat crown for nesting, and often roosts in similar locations. Nesting density only about 150 km^2/pair (n = 4, Kemp, 1995).	Highly unlikely Due to the small extent of the study site and the disturbance surrounding it. Uncommon in open areas within Gauteng (Marais & Peacock, 2008).
*Falco naumanni** (Lesser Kestrel) (VU)	None on site: Non-breeding Palaearctic migrant. Forages preferentially in pristine open grassland but also hunts in converted grassland such as small scale pastures provided the conversion is not as total as in plantation forestry or in areas of consolidated agricultural monoculture (Barnes, 2000; Hockey *et al*, 2005) such as maize, sorghum, peanuts, wheat, beans and other crops (Tarboton & Allan, 1984) where they hunt for large insects and small rodents, but avoid wooded areas except on migration. They roost communally in tall trees, mainly *Eucalyptus*, in urban areas (Barnes, 2000), often in towns or villages, but also in farm lands (pers. obs). Favour a warm, dry, open or lightly wooded environment, and are concentrated in the grassy Karoo, western fringes of the grassland biome and southeast Kalahari. Generally avoids foraging in transformed habitats but occurs in some agricultural areas, including croplands, in Fynbos and Renosterveld of the Western Cape (Hockey *et al.*, 2005). Large numbers congregate in sweet and mixed grasslands of the highveld regions.	Unlikely Only on rare occasions. Localised summer migrant (Marais & Peacock, 2008).
*Falco biarmicus** (Lanner Falcon) (NT)	None on site: Most frequent in open grassland, open or cleared woodland, and agricultural areas. Breeding pairs generally favour habitats where cliffs are available as nest and roost sites, but will use alternative sites such as trees, electricity pylons and building ledges if cliffs are absent (Hockey *et al.*, 2005). Mountains or open country, from semi desert to woodland and agricultural land, also cities (Maclean, 1993), even on forest-grassland ecotones. Generally a cliff nesting species and its wider distribution is closely associated with mountains with suitable cliffs. Able to breed on lower rock faces than Peregrine Falcon *Falco peregrinus* and also utilises the disused	Highly unlikely Due to a lack of suitable breeding habitat. Uncommon resident in open areas in Gauteng (Marais & Peacock, 2008).

SCIENTIFIC NAME	PRESENCE OF SUITABLE HABITAT AND HABITAT REQUIREMENTS	LIKELIHOOD OF OCCURRENCE ON STUDY SITE
	nests of other species, such as crows, other raptors and storks, on cliffs, in trees and on power pylons, and also quarry walls (Tarboton *et al*,. 1987). Generally prefers open habitats e.g. alpine grassland and the Kalahari, but exploits a wide range of habitats – grassland, open savanna, agricultural lands, suburban and urban areas, rural settlements – in both flat and hilly or mountainous country. Also breeds in wooded and forested areas where cliffs occur (Harrison *et al*., 1997).	
Falco peregrinus (Peregrine Falcon) (NT)	None on site: Resident *F. p. minor* mostly restricted to mountainous riparian or coastal habitats, where high cliffs provides breeding and roosting sites. Breeding pairs prefer habitats that favour specialised high speed, aerial hunting, e.g. high cliffs overhanging vegetation with raised and/or discontinuous canopy (eg forest, fynbos, woodland), or expanses of open water. Also uses quarries and dam walls, and frequents city centres, e.g. Cape Town, where tall buildings substitute for rock faces. Migrant *F. p. calidus* in more open country, often coastal, even roosting on ground on almost unvegetated salt flats.	Highly unlikely Due to a lack of suitable breeding habitat. Could move through the area on rare occasions. Uncommon resident and summer migrant in Gauteng (Marais & Peacock, 2008)
Mycteria ibis (Yellow-billed Stork) (NT)	None on site: Utilises diverse wetlands and permanent and seasonal habitats, including alkaline and freshwater lakes, river, dams, pans, flood plains, large marshes, swamps, estuaries, margins of lakes or rivers, flooded grassland and small pools or streams where there are areas of shallow water free of emergent vegetation (Tarboton *et al*., 1987); less often marine mudflats and estuaries (Hockey *et al*., 2005). Nests colonially on large trees adjacent to productive wetlands, but only locally and erratically during ideal conditions.	Highly unlikely Due to a lack of suitable habitat. Common at large wetlands within Gauteng; erratic elsewhere (Marais & Peacock, 2008).
*Ciconia nigra** (Black Stork) (NT)	None on site: Dams, pans, flood plains, shallows of rivers, pools in dry riverbeds, estuaries and sometimes on marshland and flooded grassland; uncommon at seasonal pans lacking fish. Associated with mountainous regions (Hockey *et al*., 2005) where they nest (Maclean, 1993) on cliffs (Harrison *et al*., 1997). Feeds in shallow water, but occasionally on dry land, in streams and rivers, marshes, floodplains, coastal estuaries, large and small dams; it is typically seen at pools in large rivers.	Highly unlikely Due to a lack of suitable breeding and foraging habitat.
Mirafra cheniana (Melodious Lark) (NT)	None on site: Occurs in grassland dominated by *Themeda triandra* grass in South Africa. Occasionally in planted pastures of *Eragrostis curvula* and *E. tef*. Avoids wet lowlands, favouring fairly short grassland (< 0.5 m), with open spaces between tussocks, at 550 – 1 750 m.a.s.l. with annual rainfall of between 400 – 800 mm p/a (Hockey *et al*., 2005).	Unlikely Due to a lack of suitable habitat. Localised resident in Gauteng (Marais & Peacock, 2008) where suitable habitat occurs.

*Priority Red Data bird species according to GDARD.

6. FINDINGS AND POTENTIAL IMPLICATIONS

The habitat systems on the study site will not favour any of the above mentioned Red Data avifauna species due to a lack of suitable breeding, roosting and foraging habitat on the study site. The rest of the area within 500 m surrounding the study site is also unsuitable for any Red Data avifauna species due to high human density and human presence and the area being transformed by man to make place for roads, residential, businesses and agricultural purposes.

No particular reference was made to the possible occurrence of any Red Data avifauna species on or surrounding the study site.

7. LIMITATIONS, ASSUMPTIONS AND GAPS IN KNOWLEDGE

The on-site bird survey was done outside the main breeding season of most species and during the time when some of the Palaearctic and intra-African migrants had already migrated to the north. This, however, will not have an effect on recording Red Data species, since most Red Data species are resident to South Africa and the few Red Data species that are Palaearctic migrants are mainly threatened in their northern hemisphere distribution ranges. The general assessment of species rests mainly on the 1987 atlas for birds of the then-Transvaal (Tarboton *et al.*, 1987) and comparison with the 1997 SABAP atlas (Harrison *et al.*, 1997), so any limitations in either of those studies will by implication also affect this survey and conclusions (although ongoing-data collected for the current SABAP 2 atlas was taken into account where applicable).

8. RECOMMENDED MITIGATION MEASURES

The following mitigation measures are proposed by the specialist:

- Where possible, **work should be restricted to one area at a time**, as this will give the smaller birds, mammals and reptiles a chance to weather the disturbance in an undisturbed zone close to their natural territories.
- **No vehicles should be allowed to move in or across the wet areas or drainage lines and possibly get stuck.** This leaves visible scars and destroys habitat, and it is important to conserve areas where there are tall reeds or grass, or areas were there is short grass and mud.
- The contractor must ensure that no fauna is disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.
- It is suggested that where work is to be done close to the drainage lines, these areas **be fenced off during construction,** to prevent heavy machines and trucks from trampling the plants, compacting the soil and dumping in the system.
- During the construction phase, noise must be kept to a minimum to reduce the impact of the development on the fauna residing on the site.
- Alien and invasive plants must be removed.

9. CONCLUSION

In general, the entire study site is disturbed by past and present human activities as well as human presence on and surrounding the site. Natural areas are small and fragmented and the surrounding areas are increasingly being developed to make room for residential development. The disturbed grassland area will only attract the more common grassland avifauna species and the rest of the study site will attract bird species that are able to adapt to the transformed and disturbed areas. None of the 27 Red Data avifauna species recorded for the 2527DD q.d.g.c. are likely to make use of the habitat systems identified on and within 500 m surrounding the study site on a permanent or temporarily basis due to a lack of suitable breeding, roosting and foraging habitat.

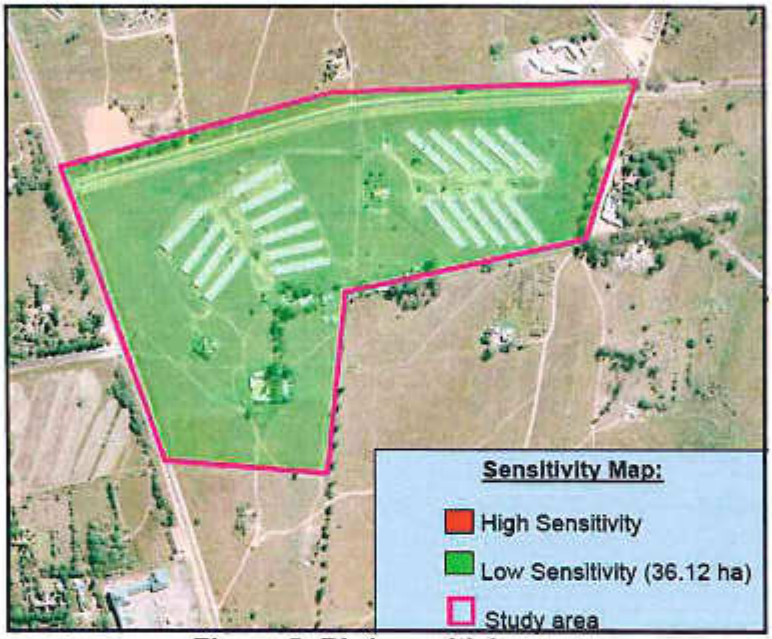

Figure 5: Bird sensitivity map

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Herpetofaunal Habitat Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 533 JQ AND PORTION 164 OF THE FARM NOOITGEDACHT 534 JQ

April 2011

Report author: **Mr. W.D. Haacke** (M.Sc., Pri. Sci. Nat)

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1. INTRODUCTION

Galago Environmental CC was appointed to undertake a reptile and amphibian habitat survey of Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ (elsewhere referred to as the study site), scheduled for mixed residential and commercial development.

The objective was to determine which species might still occur on the study site. This survey focuses on the current status of threatened herpetofaunal species occurring, or which are likely to occur, on the proposed development site, with emphasis on the Giant African Bullfrog (*Pyxicephalus adspersus*).

2. OBJECTIVES OF THE HABITAT STUDY

- To assess the current status of the habitat component and current general conservation status of the property;
- To provide lists of reptiles and amphibians which occur or might occur, and to identify species of conservation importance;
- To highlight potential impacts of the development on the herpetofauna of the study site; and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

3. SCOPE OF STUDY

This report:

- Is a reptile and amphibian survey based on sightings and literature, with comments on preferred habitats;
- Comments on ecologically sensitive areas;
- Evaluates the conservation importance and significance of the site, with special emphasis on the current status of resident threatened species;
- Offers recommendations to reduce or minimise impacts, should the proposed development be approved.

4. STUDY AREA

The study site lies north of the N14 against the eastern side of the R512 near the Lanseria airport and consists of portions of the farms Bultfontein 533 JQ and Nooitgedacht 534 JQ. It was previously a poultry farm with two groups of 10 chicken battery sheds. The proposed development of this site is for residential, commercial and business purposes, for which existing buildings and structures will be removed. The surface area is 36.12 ha and the shape is angular. It is situated in the quarter degree grid cell 2527 DD. The biotype is Egoli Granite Grassland (Mucina *et al*, 2006). The tall

grass around the buildings had been harvested and rolled into bales. The general habitat is extremely disturbed by the presence of buildings, such as the chicken sheds and feeding silos, and associated activities. Allthough trees are relatively rare on the study site, they are mainly exotics, such as *Eucalyptus*, *Melia azedarach* and other garden plants. The substrate consists of clayey sand, with a high content of small stone chips.

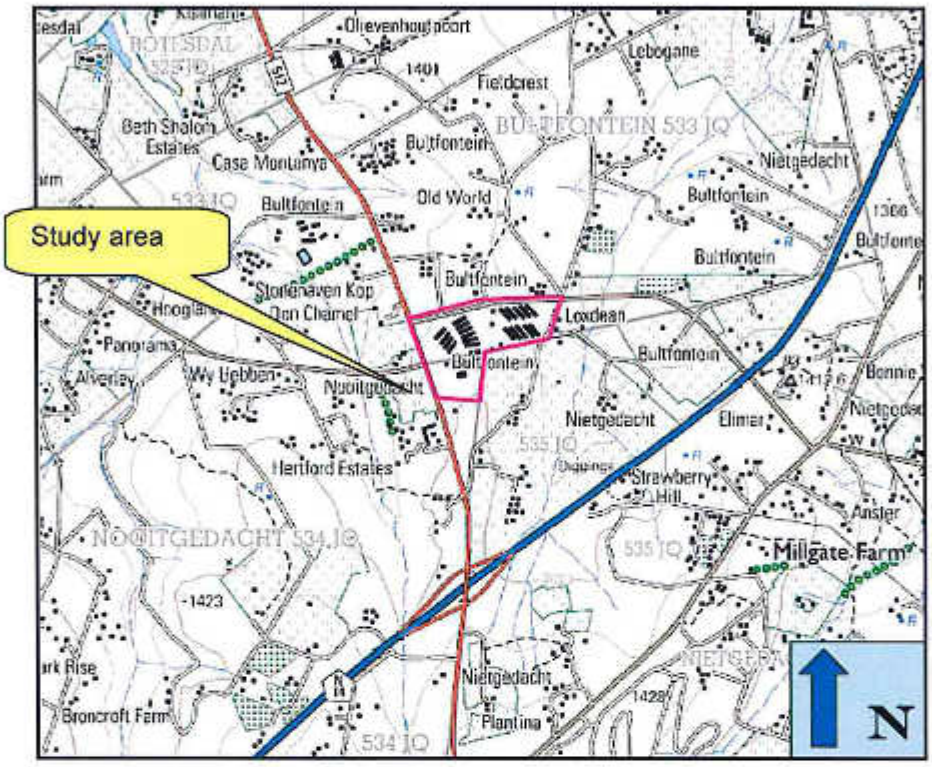

Figure 1: Locality map of the study area

5. METHOD

A site visit was conducted on 26 February 2011. During this visit, the recognised habitat types of the study site were recorded to allow deductions of what herpetofauna associated with them may occur here. This was done with due regard to the known distribution of Southern African herpetofauna.

The 500 meters of adjoining properties were scanned for important faunal habitats.

Figure 2: View from the eastern edge of the site westwards down the middle lane between the two blocks of chicken houses of the eastern block. Note the length of the grass, which has been harvested.

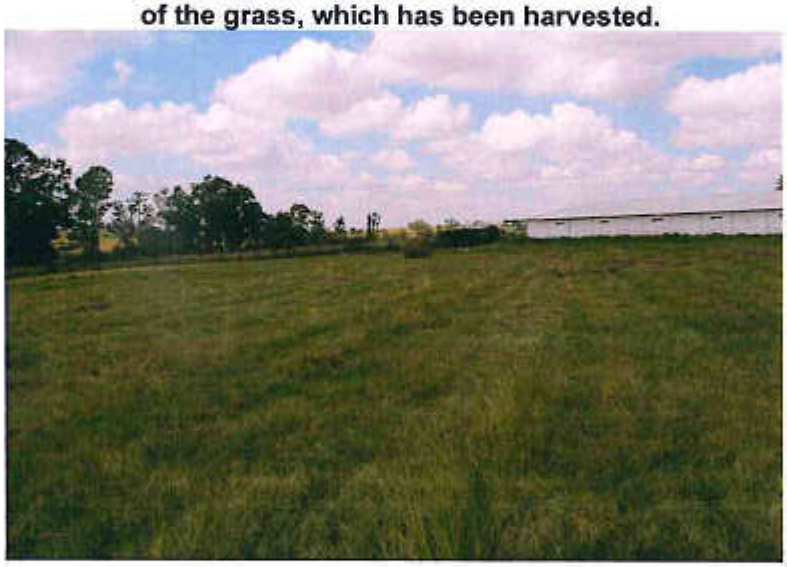

Figure 3: View southwards from eastern edge of site, showing short harvested grass, the end southeastern chicken house and the *Eucalyptus* row beyond the fence line.

Figure 4: View northwards from inner angle of the site past the most southeastern chicken house of the western block across the short harvested grassland with rolls of cut grass.

5.1.1 Field Surveys

During the site visits it was attempted to identify reptiles and amphibians visually during random transect walks. Possible retreats in reptile habitats were inspected for any inhabitants. It is also possible to identify amphibians by their calls, but none were seen or heard.

The probability of occurrences of herpetofaunal species was based on their respective documented (SARCA Reptile Survey 2006 –2009, Minter *et al*, 2004) geographical distribution ranges and the suitability of the on-site habitat. In other words, *high* probability would be applicable to a species with a distributional range overlying the study site as well as the presence of prime habitat occurring on the study site. Another consideration for inclusion in this category is the inclination of a species to be common, i.e. normally occurring at high population densities.

Medium probability pertains to a herpetofaunal species with its distribution range peripherally overlapping the study site, or the required habitat on the site being sub-optimal. The size of the site as it relates to its likelihood to sustain a viable breeding population, as well as its geographical isolation, is also taken into consideration. Species categorised as *medium* normally do not occur at high population numbers, but cannot be deemed as rare. A *low* probability of occurrence will mean that the species' distribution range is peripheral to the study site and habitat is sub-optimal. Furthermore, some herpetofauna categorised as *low* are generally deemed rare.

Based on the impressions gathered during this visit and records in the Transvaal Museum, the documentation of the herpetofauna of the then Transvaal by Dr N. H. G. Jacobsen (Unpublished Ph.D. thesis, University of Pretoria, 1989) and his internal report for the Gauteng Province (1995), the 'SARCA Reptile Survey 2006 – 9' and the "Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland" (Minter, et al, 2004), the following list of species which may occur on this site was compiled. The latest

frog nomenclature is based on Du Preez & Carruthers (2009). The vegetation type was classified according to the standard handbook by Mucina and Rutherford (eds) (2006).

5.1.3 Specific Requirements

During the visit the site was surveyed and assessed for the potential occurrence of Red Data and specially protected species such as:

- Giant Bullfrog (*Pyxicephalus adspersus*);
  This frog has been recorded from this and some adjacent quarter degree grid cells to the east, while none are known from the next cell to the west. This could mean that the population density tapers off to the west. The terrain is too sloping for the formation of breeding ponds and the stony to rocky substrate does not allow burrowing. This portion of the terrain is thus not suitable as breeding or dispersal area. The site slopes to the northeast towards a drainage valley, which forms part of the Hennops River system. The pools in the drainage valley are not considered suitable bullfrog habitat, due to the running water and deep pools. Although the current recorded distribution of the Giant Bullfrog indicates its presence in the relevant quarter degree grid cell, the actual situation on site is not suitable and its potential presence is unlikely.

- Striped Harlequin Snake (*Homoroselaps dorsalis*);

  This snake has been recorded from this quarter degree grid cell. However, due to its cryptic subterranean lifestyle, its presence is extremely difficult to verify. No termitaria, of which the moribund specimens are suitable retreats, were noticed. The presence of this species is likely, but not confirmed.

- Southern African Python (*Python natalensis*);

  The presence of this species is highly unlikely, as the site is well outside its documented range.

6. RESULTS

Amphibians:
The study site is hard and stoney with a slope towards the northeast and is therefore generally unsuitable for the formation of shallow ponds for breeding. As dispersal area for the Giant Bullfrog, the substrate is also unsuitable for burrowing, essential for aestivation and hibernation. This also applies to the plots in the 500m extended surrounding area. The area west of the R512 is intensively farmed and ploughed. To the east the grassland is tall and very dense and is not suitable habitat for bullfrogs. The drainage valley to the east will be utilised by other frog species as listed for reproduction before either dispersal or continued aquatic existence.

Reptiles:
Reptiles, unlike bullfrogs, do not have specific foraging and aestivation areas, as they tend to be opportunistic in their choices. No intact or moribund termitaria were noticed on the site or on the surrounding 500m area. No other potential retreats for the Striped Harlequin Snake or other reptiles, such as rocks, logs or burrows, were observed. However, several of the listed reptiles are grassland species, which utilise the available

habitat. The only reptile observed was the commensal Speckled Skink (*Trachylepis punctatissima*), which was encountered on a building during the inspection.

Table 1: The reptiles and amphibians that could occur on the site:

SCIENTIFIC NAME	COMMON NAME	PROBABILITY OF OCCURRENCE
CLASS: AMPHIBIA	**AMPHIBIANS**	
Order: ANURA	**FROGS**	
Family: Bufonidae	**Toads**	
Amietophryne gutturalis	Guttural Toad	Low
Amietophryne garmani	Eastern Olive Toad	Low
Schismaderma carens	Red Toad	Low
Family: Pipidae	**Platannas**	
Xenopus laevis	Common Platanna	Medium
Family: Pyxicephalidae	**Common Frogs**	
Tomopterna cryptotis	Tremolo Sand Frog	Low
Tomopterna natalensis	Natal Sand Frog	Low
Cacosternum boettgeri	Boettger's Caco	Medium
Famiily: Hyperoliidae	**Reed Frogs**	
Kassina senegalensis	Bubbling Kassina	Low
Family: Microhylidae	**Rubber Frogs**	
Phrynomantis bifasciatus	Banded Rubber Frog	Low
CLASS: REPTILIA	**REPTILES**	
Order: SQUAMATA	**SCALE-BEARING REPTILES**	
Suborder: LACERTILIA	**LIZARDS**	
Family: Gekkonidae	**Geckos**	
Lygodactylus capensis	Cape Dwarf Gecko	Medium
Pachydactylus affinis	Transvaal Thick-toed Gecko	Low
Pachydactylus capensis	Cape Thick-toed Gecko	Low
Famly: Agamidae	**Agamas**	
Agama aculeata distanti	Distant's Agama	Low
Family: Scincidae	**Skinks**	
Trachylepis capensis	Cape Skink	Low

SCIENTIFIC NAME	COMMON NAME	PROBABILITY OF OCCURRENCE
Trachylepis punctatissima	Speckled Skink	Medium
Trachylepis varia	Variable Skink	Low
Lygosoma sundevallii	Sundevall's Writhing Skink	Low
Panaspis wahlbergii	Wahlberg's Snake-eyed Skink	Low
Family: Gerrhosauridae	**Plated Lizards**	
Gerrhosaurus flavigularis	Yellow-throated Plated Lizard	Low
Family: Cordylidae	**Girdled Lizards**	
Chamaesaura aenea	Transvaal Grass Lizard	Low
Sub-order: SERPENTES	**SNAKES**	
Family: Leptotyphlopidae	**Thread Snake**	
Leptotyphlops incognitus	Eastern Thread Snake	Low
Family: Atractaspididae	**African Burrowing Snakes**	
Atractaspis bibronii	Bibron's Stiletto Snake	Low
Aparallactus capensis	Cape Centipede Eater	Low
Family: Colubridae	**Typical Snakes**	
Lamprophis capensis	Brown House Snake	Medium
Lycophidion capense	Cape Wolf Snake	Low
Psammophis brevirostris	Short-snouted Sand Snake	Low
Prosymna sundevallii	Sundevall's Shovel-snout	Low
Crotaphopeltis hotamboeia	Herald or Red-lipped Snake	Medium
Telescopus s. semiannulatus	Eastern Tiger Snake	Low
Dasypeltis scabra	Common or Rhombic Egg-eater	Low
Family: Elapidae	**Cobras, Mambas and others**	
Hemachatus haemachatus	Rinkhals	Low
Family: Viperidae	**Adders**	
Bitis arietans	Puff Adder	Low
Causus rhombeatus	Rhombic Night Adder	Low

Table 2: Reptiles and amphibians which were positively identified on the study site

SCIENTIFIC NAME	COMMON NAME	OBSERVATION INDICATOR
Trachylepis punctatissimus	Speckled Skink	On walls of building

7. FINDINGS AND POTENTIAL IMPLICATIONS

The habitat and substrate of this site do not appear to be particularly suitable for reptiles and amphibians. No indigenous trees with bark suitable for arboreal species occur. The substrate is predominantly hard and unsuitable for burrowing and no burrows of small mammals were observed. The limited waterbodies which exist in the area are suitable as habitat for most of the listed amphibians but they are off-site and not suitable for the Giant Bullfrog.

8. LIMITATIONS, ASSUMPTIONS AND GAPS IN KNOWLEDGE

This study site is in an area which has been farmed and the fauna is reasonably well documented, although the habitat is now seriously disturbed. For this reason the species list may not reflect the current situation as formerly non-resident species may have been introduced while other species may have been eliminated. The general impression is that the potential herpetofauna is poorly represented.

9. RECOMMENDED MITIGATION MEASURES

Mitigation measures proposed by the specialist:
Due to the apparent low density presence of herpetofauna, no specific mitigating measures are submitted.

10. CONCLUSION

The sloping terrain and dense grassland do not appear to be particularly suitable for reptiles and amphibians. No Red Data species are expected to occur here. Of the protected species, the Giant Bullfrog, recorded from this grid cell, has not been confirmed from this site and the habitat does not appear suitable. The range of the Southern African Python, another protected species, does not enter this area. The terrain in general is viewed as suitable to support only relatively low population densities of herptofauna. The normally recommended conservation measures should concentrate on an awareness campaign amongst the labour force, directed at avoiding unnecessary killing and promoting the removal and release of species into nearby undisturbed or conservation areas.

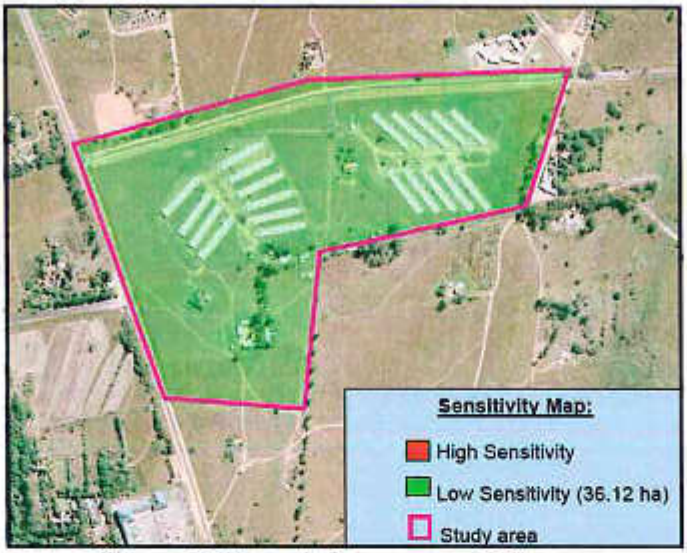

Figure 5: Herpetofauna sensitivity map

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Mammal Habitat Assessment

of

PORTION 22 OF FARM BULTFONTEIN 533 JQ & PORTION 164 OF FARM NOOITGEDACHT 534 JQ

April 2011

Report author: I.L. Rautenbach Pr.Sci.Nat., Ph.D, T.H.E.D.

Abstract

The study site has been entirely transformed by intensive farming practices and infrastructure. No natural elements of note remained. The proposed development will therefore not result in a loss of ecological sensitive and important habitat units, ecosystem function (e.g. reduction in water quality, soil pollution), loss of mammal habitat, nor of loss/displacement of threatened or protected species.

The study site furthermore contains no sensitive ecosystems or areas, nor poses a threat to sensitive systems on adjoining properties.

From a mammalian perspective, no compelling reason can be offered why the proposed development can not proceed.

Declaration of Independence: I, Ignatius Lourens Rautenbach (421201 5012 00 5) declare that I:

- am committed to biodiversity conservation but concomitantly recognize the need for economic development. Whereas I appreciate the opportunity to also learn through the processes of constructive criticism and debate, I reserve the right to form and hold my own opinions and therefore will not willingly submit to the interests of other parties or change my statements to appease them
- abide by the Code of Ethics of the S.A. Council for Natural Scientific Professions
- act as an independent specialist consultant in the field of zoology
- am subcontracted as specialist consultant by Galago Environmental CC for the project "Mammal Habitat Assessment of Portion 22 of Farm Bultfontein 533 JQ and Portion 164 of Farm Nooitgedacht 534 JQ" described in this report
- have no financial interest in the proposed development other than remuneration for work performed
- have or will not have any vested or conflicting interests in the proposed development
- undertake to disclose to the Galago Environmental CC and its client as well as the competent authority any material information that have or may have the potential to influence the decision of the competent authority required in terms of the Environmental Impact Assessment Regulations 2006

I.L. Rautenbach

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1. INTRODUCTION

Galago Environmental CC. was appointed to conduct a mammal habitat survey for Portion 22 of Farm Bultfontein 533 JQ and Portion 164 of Farm Nooitgedacht 534 JQ, elsewhere referred to as the study site, which is proposed for mixed residential and commercial development.

This report focuses on the reigning status of threatened and sensitive mammals likely to occur on the proposed development site. Special attention was paid to the qualitative and quantitative habitat conditions for Red Data species deemed present on the study site. The secondary objective of the investigation was to gauge which mammals might still reside on the site and to compile a complete list of mammal diversity of the study area.

2. SCOPE AND OBJECTIVES OF THE STUDY

- To qualitatively and quantitatively assess the significance of the mammal habitat components and current general conservation status of the property;
- Comments on ecological sensitive areas;
- Comments on connectivity with natural vegetation and habitats on adjacent sites;
- To provide a list of mammals which occur or might occur, and to identify species of conservation importance;
- To highlight potential impacts of the proposed development on the mammals of the study site, and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

3. STUDY AREA

The study site is currently used exclusively for commercially raising chickens in a series of batteries. The rest of the terrain is managed to sustain and optimize this operation. Adjoining properties are undeveloped or neglected.

The 30.40 hectares study site (2527DD) is proposed for residential, commercial and business development, and is located immediately south of the R521 at 25° 58.079'S; 27° 55.528'E. Apart from the chicken batteries a number of buildings, sheds and derelict structures are prominent, as are exotic trees.

The study site lies in the Egoli Granite Grassland (Mucina and Rutheford, 2006), but that is of academic interest since the original vegetation of the entire site has been transformed. The topography of the region is typical undulating grassland plains typical of the Highveld Grassveld biome of the interior. The substrate consists of compacted brown loam. No termitaria were recorded.

Two sets of chicken batteries are respectively fenced with electrical security fences. Inside these enclosures Kikuyu has been planted and nurtured. Outside these enclosures semi-natural grassland has been transformed and coach grass dominates. Prior to the site visit this grassy area had been mowed and the cut grass baled.

Considering the fact that the land-use practices were focussed on an intensive poultry-raising industry, the conservation status of the study site is ranked as zero.

There are no bat caves on the study site.

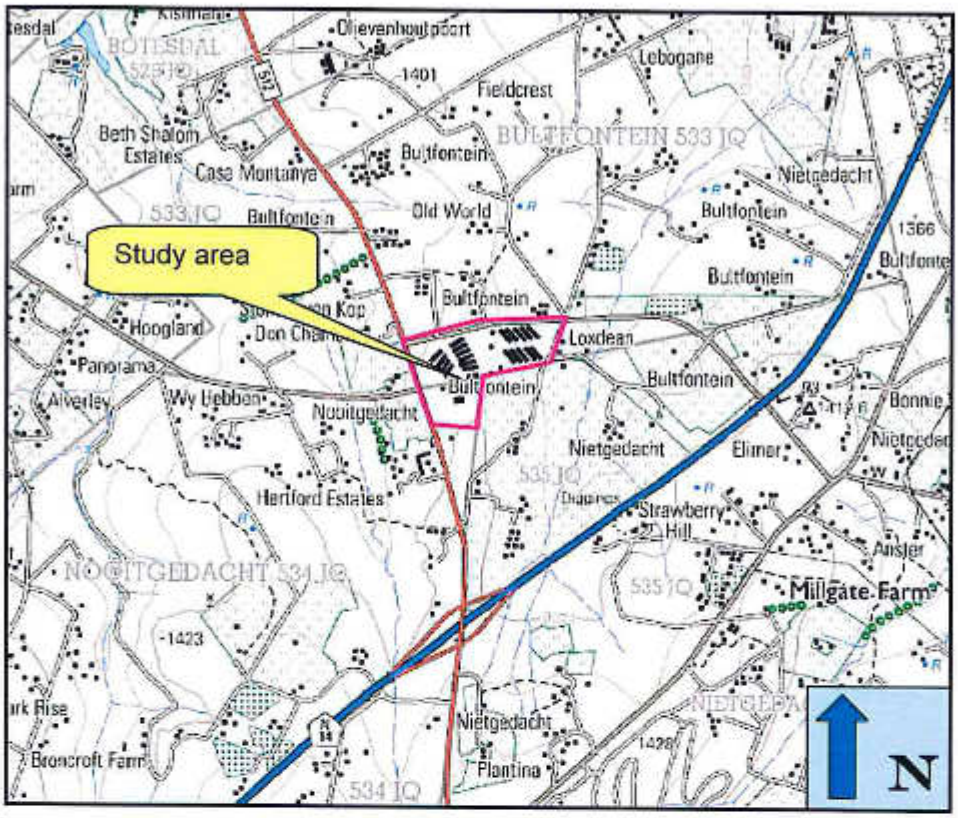

Figure 1: Locality map of the study area

4. METHODS

A four-hour site visit was conducted on 1 March 2011. During this visit the observed and derived presence of mammals associated with the recognized habitat types of the study site, were recorded. This was done with due regard to the well recorded known distributions of Southern African mammals, coupled to the qualitative and quantitative nature of recognized habitats.

The 500 meters of adjoining properties were scanned for important fauna habitats.

4.1 Field Surveys

During the site visit mammals were identified by visual sightings through random transect walks. No trapping or mist netting was conducted, as the terms of reference did not require such intensive work. In addition, mammals were also identified by means of spoor, droppings, burrows or roosting sites. Locals were interviewed to confirm occurrences or absences of species.

Three criteria were used to gauge the probability of occurrence of mammals on the study site. These include known distribution range, habitat preference and the qualitative and quantitative presence of suitable habitat.

4.2 Desktop Surveys

As the majority of mammals are secretive, nocturnal, hibernators and/or seasonal, distributional ranges and the presence of suitable habitats were used to deduce the presence or absence of these species based on authoritative tomes, scientific literature, field guides, atlases and databases. This can be done irrespective of season.

The probability of occurrences of **mammal** species was based on their respective geographical distributional ranges and the suitability of on-site habitat. In other words, *high* probability would be applicable to a species with a distributional range overlying the study site as well as the presence of prime habitat occurring on the study site. Another consideration for inclusion in this category is the inclination of a species to be common, i.e. normally occurring at high population densities.

Medium probability pertains to a mammal species with its distributional range peripherally overlapping the study site, or required habitat on the site being sub-optimal. The size of the site as it relates to its likelihood to sustain a viable breeding population, as well as its geographical isolation is also taken into consideration. Species categorised as *medium* normally do not occur at high population numbers, but cannot be deemed as rare. A *low* probability of occurrence will mean that the species' distributional range is peripheral to the study site and habitat is sub-optimal. Furthermore, some mammals categorised as *low* are generally deemed rare.

4.3 Specific Requirements

During the visit the site was surveyed and assessed for the potential occurrence of Red Data and/or ridge and wetland-associated species such as:
Juliana's golden mole (*Neamblosomus juliana*), highveld golden mole (*Amblysomus septentrionalis*), rough-haired golden mole (*Chrysospalax villosus*), African marsh rat (*Dasymys incomtus*), Angoni vlei rat (*Otomys angoniensis*), vlei rat (*Otomys irroratus*), white-tailed rat (*Mystromys albicaudatus*), rock dormouse (*Graphiurus murinus*), forest shrew (*Myosorex varius*), other shrew species, short-eared trident bat (*Cloeotis percivali*), other cave-dwelling bats, African clawless otter (*Aonyx capensis*), spotted-necked otter (*Lutra maculicollis*), marsh mongoose (*Atilax paludinosus*).

5. RESULTS

The local occurrences of mammals are closely dependent on broadly defined habitat types, in particular terrestrial, arboreal (tree-living), rupiculous (rock-dwelling) and wetland-associated vegetation cover. It is thus possible to deduce the presence or absence of mammal species by evaluating the habitat types within the context of known distribution ranges. Sight records and information from residents or knowledgeable locals audit such deductions.

Mammal Habitat Assessment

From a mammal habitat perspective only one habitat is recognized, i.e. terrestrial. There are no rocky outcrops or ridges for discerning rupiculous small mammals, neither are there wetlands or indigenous trees for mammals closely dependent on those habitats. Although there are large trees on the study site, these are mostly exotics and not suitable for arboreal mammals.

The basal cover of the terrestrial habitat is entirely transformed and not suitable for sensitive small mammals such as white-tailed rats. The grass is managed by close-cropping. Inside the enclosures which protect the batteries against theft and vandalism, the Kikuyu is tall and lush and offers ample protection and nourishment to robust small mammals, including exotic Norwegian house rats.

The 500 meters of adjoining properties consists of undisturbed grasslands to the south, disturbed grassland and some earthworks to the west, and derelict buildings to the east. Although connectivity is unrestricted, it is anticipated that only common small mammals will move to-and-thru' the property's boundary.

There are furthermore, no caves or structures suitable as daytime roosting sites for cave-dwelling bats.

Figure 2: A southerly view over a portion of the site illustrating the mowed and baled grass outside the battery enclosures, as well as the electrically-fenced batteries with the dense stand of Kikuyu in-between batteries.

Figure 3: The undisturbed grassland within 500 meters of the southern perimeter of the study site.

Expected and Observed Mammal Species Richness

All charismatic mammals of the area have been extirpated over a century ago to favour farming and are not listed. Also not listed are the medium-sized mammals which have also succumbed latterly (viz. black-backed jackals, aardvark, springhare, and even steenbok and duiker). Mammals closely reliant on arboreal, rupiculous and wetland habitats have *a priori* been omitted from the list of possible occurrences, as these habitats are absent.

Of the 20 small mammal species expected to occur on the study site (Table 1), only two were confirmed during the site visit (Table 2). It should be noted that potential occurrences are interpreted as to be possible over a period of time as a result of expansion and contractions of population densities and ranges which stimulate migration.

Table 1 lists the mammals which were observed or deduced to occupy the study site, or to be occasional visitors. All feral mammal species expected to occur on the study site (e.g. house mice, house rats, dogs and cats) were omitted from the assessment since these species normally associate with human settlements.

Most of the species of the resident diversity (Table 1) are common and widespread. All can be termed as ecologically robust, as such having the ability to survive (and even flourish) in disturbed ecosystems.

The low species diversity is due to very low habitat diversity, restricted site size and adjoining areas, and an appalling lack of conservation.

Threatened and Red Listed Mammal Species

The three Red Data species listed in Table 1 as Near Threatened or Data Deficient are discerning species and became endangered as a result of the deterioration of their preferred habitats.

The listed shrews are not necessarily endangered. Although these shrews commonly occur in gardens they have not been adequately studied to provide quantitative field data to accurately assign a conservation ranking, and are thus as a precaution considered as 'Data Deficient'. Shrews operate at the apex of the food pyramid, which means that their population numbers are significantly lower than that of their prey species or of similar-sized herbivores/granivores. Because of their diet, they are furthermore not readily trapped with conventional bait or traps, which may mean that their numbers are under-estimated.

Hedgehogs ('Near Threatened') are able to withstand predation with their passive defence mechanisms. They became endangered directly as a result of predation by humans and their pets; considering the semi-urban nature of the natural areas of the study site, its continued presence is likely.

No Red Data or sensitive species are deemed present on the study site, either since the site is too disturbed, falls outside the distributional ranges of some species, or does not offer suitable habitat(s).

Table 1: The mammals which were observed or deduced to occupy the site
(Systematics and taxonomy as proposed by Bronner et.al [2003] and Skinner and Chimimba [2005])

	SCIENTIFIC NAME	ENGLISH NAME
√	*Lepus saxatilis*	Scrub hare
√	*Cryptomys hottentotus*	African mole rat
√	*Rhabdomys pumilio*	Four-striped grass mouse
√	*Mus minutoides*	Pygmy mouse
√	*Mastomys natalensis*	Natal multimammate mouse
√	*Mastomys coucha*	Southern multimammate mouse
?	*Aethomys ineptus*	Tete veld rat
*	*Gerbilliscus brantsii*	Highveld gerbil
?	*Dendromus melanotis*	Grey pygmy climbing mouse
DD*	*Crocidura cyanea*	Reddish-grey musk shrew
DD*	*Crocidura hirta*	Lesser red musk shrew
NT*	*Atelerix frontalis*	Southern African hedgehog
√	*Neoromicia capensis*	Cape serotine bat
√	*Scotophilus dinganii*	African yellow house bat
√	*Scotophilus viridis*	Greenish yellow house bat
?	*Genetta genetta*	Small-spotted genet
?	*Genetta tigrina*	SA large-spotted genet
√	*Cynictis penicillata*	Yellow mongoose
√	*Galerella sanguinea*	Slender mongoose
?	*Ictonyx striatus*	Striped polecat

√ Definitely there or have a *high* probability to occur;
* *Medium* probability to occur based on ecological and distributional parameters;
? *Low* probability to occur based on ecological and distributional parameters.

Red Data species rankings as defined in Friedmann and Daly's S.A. Red Data Book / IUCN (World Conservation Union) (2004) are indicated in the first column: CR= Critically Endangered, En = Endangered, Vu = Vulnerable, LR/cd = Lower risk conservation dependent, LR/nt = Lower Risk near threatened, DD = Data Deficient. All other species are deemed of Least Concern.

Table 2: Mammal species positively confirmed from the study site, observed indicators and habitat.

SCIENTIFIC NAME	ENGLISH NAME	OBSERVATION INDICATOR	HABITAT
L. saxatilis	Scrub hare	Reported by staff	Short grassveld
C. hottentotus	African mole rat	Tunnel system	Universal

These two species are common and widespread. They have reticent habits and are either seldom observed or difficult to control. Scrub hares and mole rats are found on virtually all sites outside the rural edge.

6. FINDINGS AND POTENTIAL IMPLICATIONS

The study site has been entirely transformed by intensive farming practices and infrastructure. No natural elements of note remain. The proposed development will therefore not result in a loss of ecological sensitive and important habitat units, ecosystem function (e.g. reduction in water quality, soil pollution), loss of mammal habitat, nor of loss/displacement of threatened or protected species.

The site furthermore contains no sensitive ecosystems, nor poses a threat to sensitive systems on adjoining properties.

7. LIMITATIONS, ASSUMPTIONS AND GAPS IN INFORMATION

The Galago Environmental staff is amply qualified and experienced to gauge absences or presences of species on a location such as this. The team has access to ample databases and information resources, and has earlier conducted numerous intensive field surveys allowing the extrapolation of habitat diversity and quality into species occurrences. In this instance an intensive survey is deemed an expensive and fruitless experience with no or little chance of altering the opinion presented here.

Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time and budget. Discussions and proposed mitigations are to some extent made on reasonable and informed assumptions built on *bone fide* information sources, as well as deductive reasoning. Deriving a 100% factual report based on field collecting and observations can only be done over several years and seasons to account for fluctuating environmental conditions and migrations. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage. Galago Environmental can thus not accept responsibility for conclusions and mitigation measures made in good faith based on own databases or on the information provided at the time of the directive. This report should therefore be viewed and acted upon with these limitations in mind.

8. RECOMMENDED MITIGATION MEASURES

The following mitigation measures are proposed by the specialist

- Should hedgehogs be encountered during the development, these should be relocated to natural grassland areas in the vicinity.
- The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase. Care must be taken to prevent veld fires in adjoining properties. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.
- It is taken for granted that the developers will charge engineers to design benign stormwater drainage and service connections.

9. CONCLUSION

From a mammalian perspective the site is not sensitive.

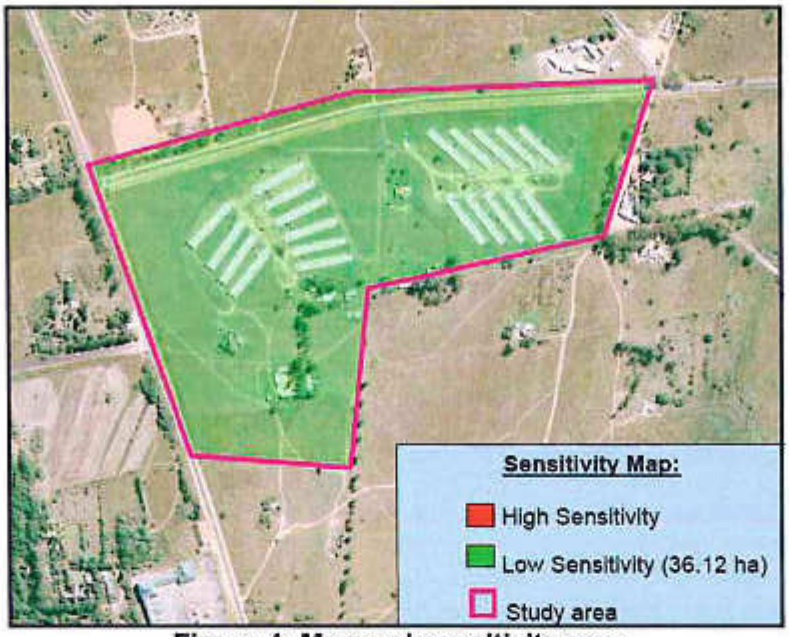

Figure 4: Mammal sensitivity map

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Bigen Africa Reports

LANSERIA X51 & X53 DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

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APPENDICES

3 ELECTRICAL SUPPLY

3.1 Capacity of Existing Primary and Secondary Electrical Infrastructure

3.1.1. Bulk Electrical Infrastructure

There is currently no bulk capacity available in the nearby area to supply a development such as Lanseria X51 & X53. The existing networks in the area are 11/22kV overhead agricultural/rural electrification networks which will not be able to cater for sufficient bulk supply for the proposed developments , even if upgraded.

3.1.2. Future Planned Bulk Upgrades

Eskom has made provision for a new bulk substation in the nearby area in the 2010-2020 master plan. The capacity which Eskom has planned for is still to be finalized. A bulk application of 30MVA (2 x 30MVA substation with 1 spare bay) has been submitted by another developer. The quotation for this supply is expected within the next 6 months.

The substation that is planned in the area is shown in Figure 1. These positions are still to be confirmed by Eskom. Preliminary Co-ordinates are listed below.

New Substation 1: S25 58 03.6 E27 55 54.0

The proposed substation site could also possibly be located on Lanseria X51.

Additional 132kV overhead lines to supply the new substation are in the planning stages, and will probably affect the land-use for Lanseria X51 & X53.

could be reduced, as some of the master planning and line studies have already been conducted as part of an existing application for a neighbouring property.

3.3 Bulk Supply to the Development

The developer will have to install new cables from the proposed substations to be built to a newly created switching station, or directly to the new substation.

A new 5.8 km 88/132 kV line will also have to be constructed to link in with the existing ring network.

4 ELECTRICAL DESIGN

All internal designs will be done according to the Eskom specifications as the internal network will be handed over to them.

4.1 Medium Voltage Reticulation

For the commercial and industrial land portions, the medium voltage network will be an 11kV underground network feeding a configuration of 315kVA and 500kVA miniature substations or dedicated 11kV bulk metering points. The substations (or bulk metering points) will be connected via a 185mm² XLPE copper cable ring network from the new dedicated switching- or sub-station.

Depending on the housing topology and target market for the residential stands, the MV reticulation may either be underground cable or overhead 11kV lines.

4.2 Low Voltage Reticulation

For the commercial and industrial land portions, the low voltage network will be an underground cable network supplied from the different miniature substations. The supply voltage will be 420/240V with a regulation of +12% / -12%. The internal low voltage reticulation will be from the miniature substations up to cluster cabinets (for lower load requirements up to 25kVA).The LV feeder cable sizes from the miniature substations will be determined at the final design stage but the following sizes of PVC insulated copper cable will be used. (see next page)

For the residential land portions, the low voltage network will be either an underground cable network or an overhead aerial bundle conductor supplied from the different miniature substations. The supply voltage will be 420/240V with a regulation

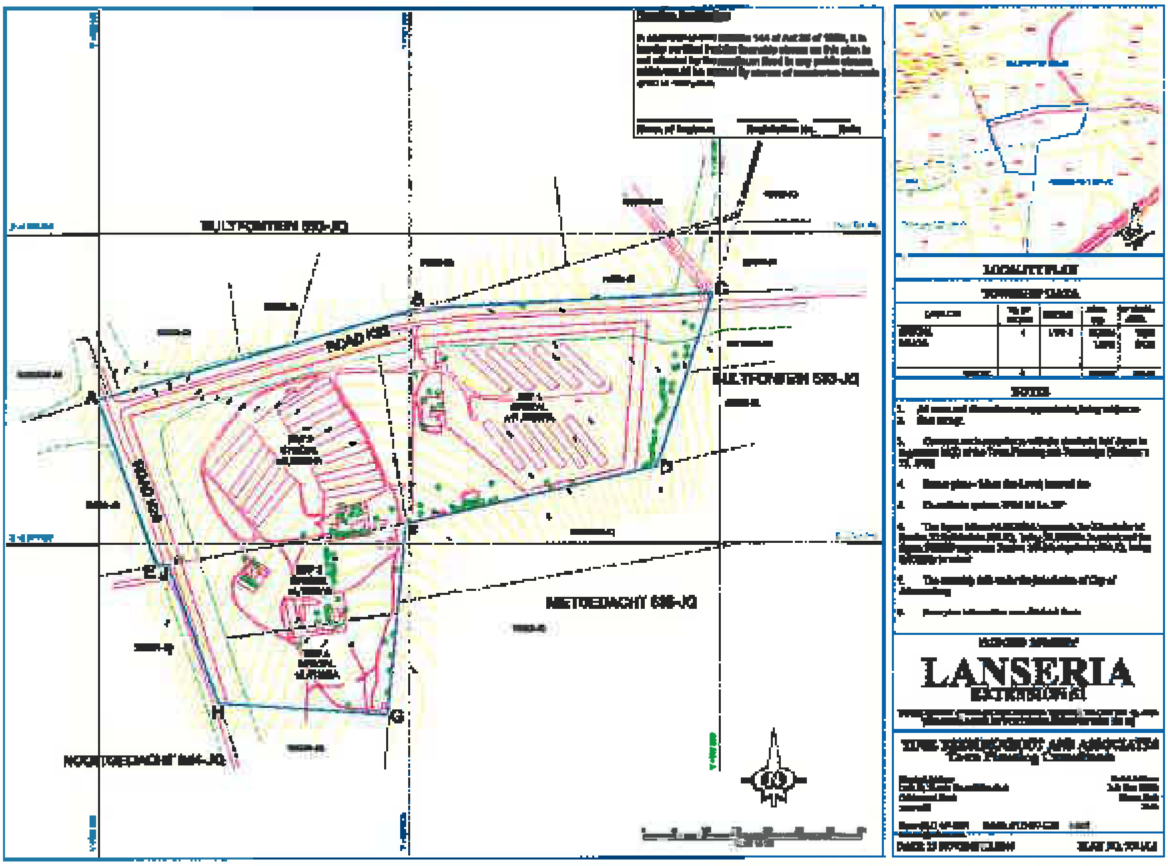
5 ESTIMATE CONSTRUCTION COST

5.1 Funding Requirements

Cost Estimates	
Internal Infrastructure X51	R 53,200,000.00
Internal Infrastructure X53	R 22,400,000.00
Substation Costs	R 50,000,000.00
Line Costs	R5,800,000.00
Sub Total	**R 131 400 000.00**
Contingencies @ 10%	**R 13,140,000.00**
Total	**R144,540,000.00**

Notes

- Excluding VAT and professional fees (Fees to be based on ECSA Guidelines)
- Infrastructure cost is based on a high level benchmark of R2800/kVA
- HV Line and substation costs are taken in full for both extensions, but can be pro-rated if both extensions are built simultaneously.
- HV Line and substation costs can be further reduced if funding is provided by neighbouring developers.


BULTFONTEIN 533-JQ
ROAD K52
ROAD K29
NIETGEDACHT 535-JQ
NOOITGEDACHT 534-JQ
LOCALITY PLAN
TOWNSHIP DATA
NOTES
LANSERIA

Prof XS1

Stephan Barkhuizen

From: Mientjie Coetzee
Sent: 19 May 2011 08:30 AM
To: Stephan Barkhuizen
Subject: FW: Bultfontein flora report and executive summary
Attachments: Bultfontein en Nooitgedacht - App A Flora.pdf; Bultfontein en Nooitgedacht - Executive summary.pdf

From: Ontvangs
Sent: 19 May 2011 08:20 AM
To: Mientjie Coetzee
Subject: FW: Bultfontein flora report and executive summary

From: Vanessa Marais [mailto:vanessam@lantic.net]
Sent: 18 May 2011 01:37 PM
To: 'Lizelle Gregory'
Subject: Bultfontein flora report and executive summary

Hi Mientjie

Skies nie meer seker wie se projek hierdie is nie.

Aangeheg die flora verslag en executive summary.

Groete

Vanessa Marais
Galago Environmental CC
638 Turf Street, Wingate Park, 0181
Tel: 012-345 4891
Fax: 086 675 6136
Cell: 082 322 5688

April 2011

X5

GALAGO ENVIRONMENTAL

Fauna and Flora Specialists
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Flora Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 533-JQ & PORTION 164 OF THE FARM NOOITGEDACHT 534-JQ

April 2011

Report author: Mrs. P. Lemmer (Cert. Sci. Nat: B.Sc.)
Report verified/reviewed by: Dr. L.A. Coetzer (D.Sc., Prof. Nat. Sci.)

VERIFICATION STATEMENT

Petro Lemmer is a Certified Natural Scientist with the S.A. Council for Natural Scientific Professions. This statement serves to verify that the flora report compiled by Petro Lemmer has been prepared under my supervision, and I have verified the contents thereof.

Declaration of Independence: I, Dr. L.A. Coetzer (421009 5029 089) declare that I:

- am committed to biodiversity conservation but concomitantly recognize the need for economic development. Whereas I appreciate the opportunity to also learn through the processes of constructive criticism and debate, I reserve the right to form and hold my own opinions and therefore will not willingly submit to the interests of other parties or change my statements to appease them
- abide by the Code of Ethics of the S.A. Council for Natural Scientific Professions
- act as an independent specialist consultant in the field of botany
- am subcontracted as specialist consultant by Galago Environmental CC for the proposed Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ development project described in this report
- have no financial interest in the proposed development other than remuneration for work performed
- have or will not have any vested or conflicting interests in the proposed development
- undertake to disclose to the Galago Environmental CC and its client as well as the competent authority any material information that have or may have the potential to influence the decision of the competent authority required in terms of the Environmental Impact Assessment Regulations, 2006.

Dr. L.A. Coetzer

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FIGURES:

TABLES:

1. INTRODUCTION

Galago Environmental was appointed to conduct a vegetation survey on Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ scheduled for mixed residential and commercial development. The objective was to determine which species might still occur on the site. Special attention had to be given to the habitat requirements of all the Red List species that may occur in the area. This survey focuses on the current status of threatened plant species occurring, or which are likely to occur on the study site, and a description of the available and sensitive habitats on the site and within 200 meters of the boundary of the site.

2. OBJECTIVES OF THE STUDY

- To assess the current status of the habitat component and current general conservation status of the area;
- To list the perceptible flora of the site and to recommend steps to be taken should endangered, vulnerable or rare species be found;
- To highlight potential impacts of the development on the flora of the proposed site; and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

3. SCOPE OF STUDY

This report:

- Lists the more noticeable trees, shrubs, herbs, geophytes and grasses observed during the study;
- Indicates medicinal plants recorded and lists alien species;
- Comments on connectivity with natural vegetation on adjacent sites;
- Comments on ecological sensitive areas;
- Evaluates the conservation importance and significance of the site with special emphasis on the current status of resident threatened species; and
- Offers recommendations to reduce or minimise impacts, should the proposed development be approved

4. STUDY AREA

4.1 Regional vegetation

The study site lies in the quarter degree grid cell 2528CA (Pretoria). Mucina and Rutherford (2006) classified the area as Egoli Granite Grassland, with archaean granite and gneiss of the Halfway House Granite at the core of the Johannesburg Dome supporting leached, shallow, coarsely grained, sandy soil poor in nutrients. This grassland falls within a strongly seasonal summer-rainfall region and very dry winters with frequent frosts.

This vegetation unit is considered endangered. Its conservation target is 24%. Only about 3% of this vegetation unit is conserved in statutory reserves and a few private conservation areas. More than two-thirds of the unit has already undergone transformation, mostly by urbanization, cultivation and by building of roads. Current rates of transformation threaten most of the remaining unconserved areas.

4.2 The study site

The study site lies on the corner of Road R512 and 6th Road, a short distance north of highway N14.

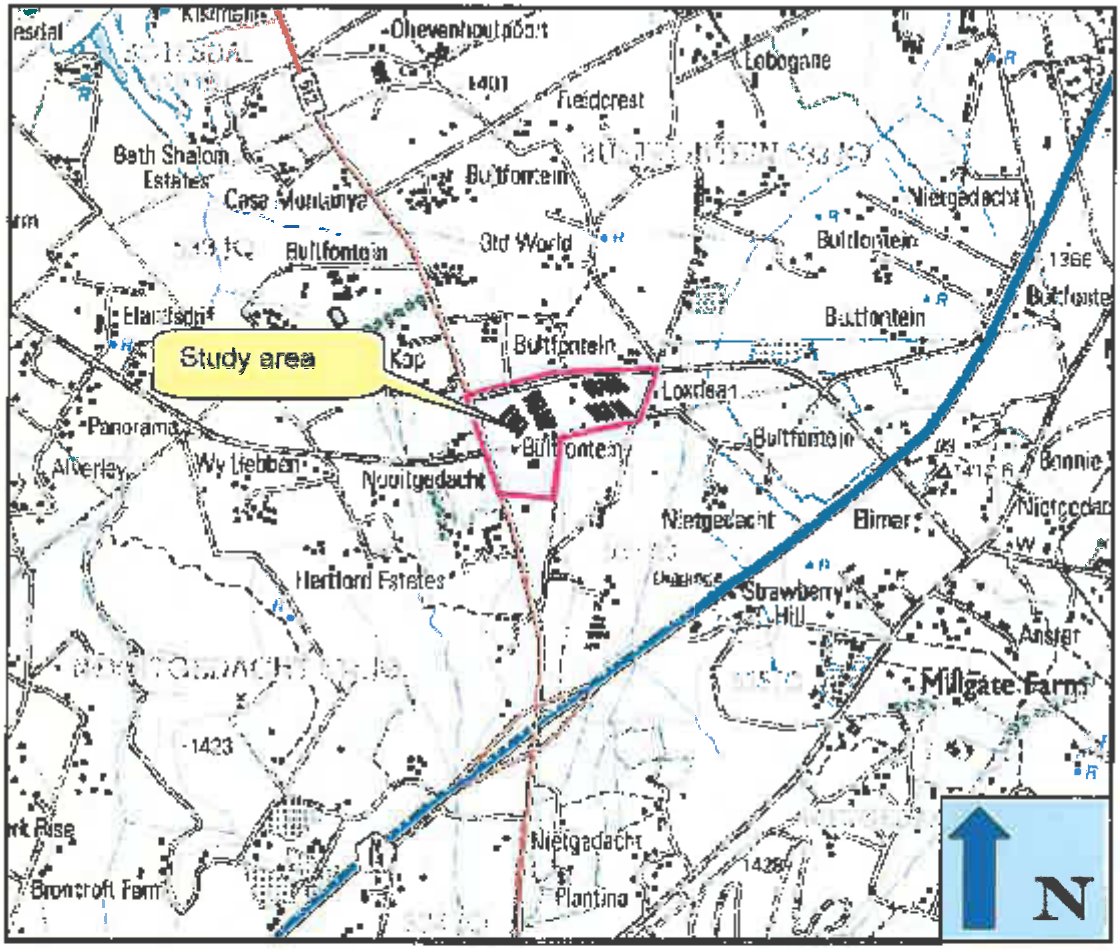

Figure 1: Locality map of the study area

5. METHOD

Information about the Red List and Orange List plant species that occur in the area was obtained from GDARD (GDACE). The Guidelines issued by GDARD (GDACE) to plant specialists were consulted to ascertain the habitat of the Red- and Orange List species concerned.

The SANBI list of plants recorded in the 2527DD quarter degree grid cell was obtained and consulted to verify the record of occurrence of the plant species seen on the study site. The vegetation map published in Mucina and Rutherford (2006) was consulted about the composition of Egoli Granite Grassland. A desktop study of the habitats of the Red List and Orange List species known to occur in the area was done before the site visit.

The study site was visited on 1 March 2011 to determine whether suitable habitat for the Red List species known to occur in the quarter degree grid cell existed and to survey the flora present on the site.

The various study units were identified (see Figure 2) and one or more plots, depending on the size and composition of the study unit, were selected at random from each study unit for detailed study. Each plot, which measured about 10m x 10m, was surveyed in a random crisscross fashion and the plants recorded. Areas where the habitat was suitable for the Red List species known to occur in the quarter degree grid cell were examined in detail.

Suitable habitat for Red List species on the neighbouring properties, where accessible, was examined to a distance of 200 m from the boundaries of the site for the presence of Red List plant species.

6. RESULTS

6.1 Study units

Two vegetation study units were identified:

- *Eragrostis – Hyparrhenia* grassland; and
- Mixed alien and indigenous vegetation.

Outside and south-east of the study site but within 200 meters of the boundary of the site an area of *Hyparrhenia* grassland occurred (see Figure 4). This grassland was not surveyed, but examined fot the presence of Red List species.

Tables 3 and 4 list the trees, shrubs, geophytes, herbs and grasses actually found on each of the surveyed areas of the study site.

6.2 Medicinal plants

The names of known medicinal plants are marked with numbers to footnotes in Tables 3 and 4 and the footnotes themselves appear at the end of the last table. Of the 59 plant species recorded on the study site, 2 species with medicinal properties were found. Their distribution in the various study units is as follows:

Table 1: Number of medicinal species in the various study units

STUDY UNIT	TOTAL NO OF SPECIES IN STUDY UNIT	NO OF MEDICINAL SPECIES IN STUDY UNIT
Eragrostis – Hyparrhenia grassland	47	2
Mixed alien and indigenous vegetation	31	0

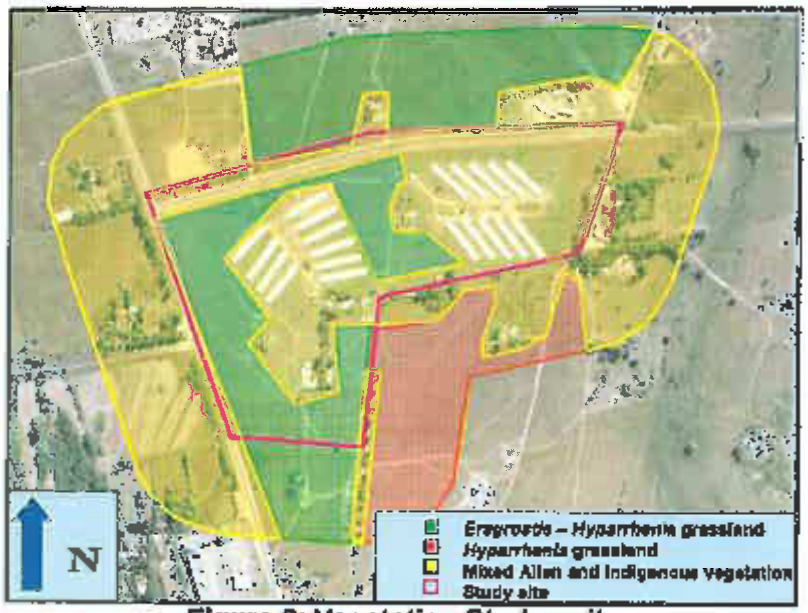

Figure 2: Vegetation Study units

6.3 Alien plants

Alien plants are not listed separately, but are included in the lists as they form part of each particular study unit. Their names are marked with an asterisk in Tables 3 and 4. Twenty alien plant species, of which two species were Category 2 Declared invaders and four were Category 3 Declared invaders, were recorded on the study site. The number of alien species in each study unit is reflected in Table 2.

Table 2: Number of Alien species in each study unit

STUDY UNIT	NO. OF ALIEN SPECIES	CAT 2	CAT 3	NOT DECLARED
Eragrostis – Hyparrhenia grassland	9	0	0	9
Mixed alien and indigenous vegetation	17	2	4	11

In terms of the regulations formulated under "The Conservation of Agricultural Resources Act" (Act No. 43 of 1983), as amended, Category 2 Declared invaders may not occur on any land other than a demarcated area.

Although the regulations under the above Act require that Category 3 Declared invader plants may not occur on any land or inland water surface other than in a biological control reserve, these provisions shall not apply in respect of Category 3 plants already in existence at the time of the commencement of said regulations. If this is the case, a land user must take all reasonable steps to curtail the spreading of propagating material of Category 3 plants.

6.4 Orange List species

The habitat was suitable for one of the five Orange List plant species known to occur in the 2527DD quarter degree grid cell, but this species, *Hypoxis hemerocallidea* (African potato) was not found. (See Annexure A for a list of the Orange- and Red List species known to occur in the quarter degree grid cell.)

6.5 Red List species

Eleven Red List plant species are known to occur in the 2527DD quarter degree grid cell, but the habitat was not suitable for any of these species.

6.6 *Eragrostis – Hyparrhenia* grassland

6.6.1 Compositional aspects and Connectivity

This study unit comprised natural grassland that was mown short, which hampered identification of the species. Connectivity with natural grassland existed to the south, but was limited by Road R512 to the west and highway N14 to the south. Of the 59 plant species recorded on the study site 47 were recorded in the *Eragrostis – Hyparrhenia grassland*. Of these, 38 were indigenous species. The following number of species in each life form was noted:

LIFE FORM	NUMBER OF SPECIES
Annual & perennial herbaceous species	27
Grasses	17
Geophytes	2
Sedges	1
Total No of species	47

6.6.2 Red– and Orange List species

The habitat of this study unit was not suitable for any of the Red List species, but was suitable for the Orange List species, *Hypoxis hemerocallidea* (African potato) known to occur in the quarter degree grid cell. None were, however, found.

6.6.3 Medicinal and alien species

Both the medicinal species recorded on the study site were found in this study unit. Nine of the 20 alien species recorded on the site were found in this study unit. None of these species were declared invaders.

6.6.4 Sensitivity

This study unit was not considered sensitive.

Figure 3: Mown *Eragrostis – Hyparrhenia* grassland.

Figure 4: *Hyparrhenia* grassland outside the boundaries of the site.

Table 3: Plants recorded in the *Eragrostis – Hyparrhenia* grassland

SCIENTIFIC NAME	COMMON NAMES
Acanthospermum glabratum	
Amaranthus hybridus subsp *hybridus* var *hybridus**	Common pigweed / Kaapse misbredie
Anthospermum rigidum subsp *rigidum*	
Aristida congesta subsp *congesta*	Tassle three-awn grass / Katstertsteekgras
Asparagus suaveolens	Wild asparagus / Katdoring
Barleria macrostegia	
*Bidens pilosa**	Blackjack / Knapsekêrel
Bulbostylis burchellii	Biesie
Chamaecrista mimosoides	
Commelina benghalensis	Blouselblommetjie
*Conyza bonariensis**	Flax-leaf fleabane / Kleinskraalhans
Conyza podocephala	
Cucumis zeyheri	Wild cucumber / Wilde agurkie
*Cymbopogon pospischilii**	Turpentine grass / Terpentyngras
Cynodon dactylon	Couch grass / Kweek
Eleusine corscana subsp *Africana*	Goose grass / Osgras
Eragrostis chloromelas	Curly leaf / Krulblaar
Eragrostis curvula	Weeping love grass / Oulandsgras
Eragrostis nindensis	Wether love grass / Harnelgras
Eragrostis patentipilosa	Footpath love grass / Voetpad eragrostis
*Euphorbia prostrata**	Hairy creeping milkweed / Harige kruipmelkkruid
Gnidia sericocephala	
*Gomphrena celosioides**	Bachelor's button / Mierbossie
Helichrysum nudifolium var *nudifolium*[1,2]	Hottentot's tea / Hottentotstee
Hermannia depressa[2,3]	Creeping red Hermannia / Rooiopslag
Heteropogon contortus	Spear grass / Assegaaigras
Hyparrhenia hirta	Common thatching grass / Dekgras
Hypoxis iridifolia	
Ipomoea sp	
Melinis repens subsp *repens*	Red top grass
Nidorella anomala	
Plantago lanceolata	Buckhorn plantain / Small weeblaar
Pogonarthria squarrose	Herring bone grass / Sekelgras
Pseudognaphalium luteo-album	
Sebaea grandis	
Sida rhombifolia subsp *rhombifolia*	Arrow leaf Sida / Taaiman
Solanum panduriforme	Poison apple / Gifappel
Sonchus dregeanus	
Sporobolus africanus	Rat's tail dropseed / Taaipol
*Tagetes minuta**	Khaki weed / Kakiebos
Themeda triandra	Red grass / Rooigras
Tribulus terrestris var terrestris	Dubbeltjie
Trichoneura grandiglumis	Small rolling grass / Klein rolgras
Urochloa mosambicensis	Bushveld signal grass / Bosveldsinjaalgras
Urochloa panicoides	Garden signal grass / Tuin beesgras
*Verbena aristigera**	Fine-leaved verbena / Fynblaar verbena
*Verbena brasiliensis**	

6.7 Mixed alien and indigenous vegetation

6.7.1 Compositional aspects and Connectivity

This study unit comprised garden vegetation and degraded grassland surrounding the chicken hatcheries. Of the 59 plant species recorded on the study site 31 were recorded in the Mixed alien and indigenous vegetation. Of these, 14 were indigenous species. The following number of species in each life form was noted:

LIFE FORM	NUMBER OF SPECIES
Annual & perennial herbaceous species	12
Tree species	11
Grasses	8
Total No of species	31

6.7.2 Red– and Orange List species

The habitat of this study unit was not suitable for any of the Red List or Orange List species known to occur in the quarter degree grid cell.

6.7.3 Medicinal and alien species

No medicinal species were recorded in this study unit. Seventeen of the 20 alien species recorded on the site were found in this study unit. Of these, two were Category 2 Declared invaders and four were Category 3 Declared invaders.

6.7.4 Sensitivity

The vegetation of this study unit was not considered sensitive.

Figure 5: Mixed alien and indigenous vegetation.

Table 4: Plants recorded in the Mixed alien and indigenous vegetation

SCIENTIFIC NAME	ALIEN CAT	COMMON NAMES
Acanthospermum glabratum		
Amaranthus hybridus subsp *hybridus* var *hybridus**		Common pigweed / Kaapse misbredie
Aristida congesta subsp *congesta*		Tassle three-awn grass / Katstertsteekgras
*Bidens pilosa**		Blackjack / Knapsekêrel
Commelina benghalensis		Blouselblommetjie
*Conyza bonariensis**		Flax-leaf fleabane / Kleinskraalhans
Cynodon dactylon		Couch grass / Kweek

SCIENTIFIC NAME	ALIEN CAT	COMMON NAMES
Eragrostis patentipilosa		Footpath love grass / Voetpad eragrostis
Eucalyptus sp*	2	
*Euphorbia prostrata**		Hairy creeping milkweed / Harige kruipmelkkruid
*Ficus elastica**		Rubber tree / Rubberboom
*Jacaranda mimosifolia**	3	Jacaranda / Jakaranda
*Melia azedarach**	3	Syringa / Sering
Melinis repens subsp *repens*		Red top grass
*Morus alba**	3	Common mulberry / Gewone moerbei
*Pennisetum clandestinum**		Kikuyu / Kikoejoe
Phytolacca dioica*	3	**Belhambra / Bobbejaandruifboom**
Pinus sp*	2	Pine tree / Denneboom
Plantago lanceolata		Buckhorn plantain / Smal weeblaar
*Prunus armenieca**		Apricot / Appelkoos
*Prunus persica**		Peach / Perske
Pseudognaphalium luteo-album		
*Quercus palustris**		Pin oak
Searsia lancea		Karee
Sida rhombifolia subsp *rhombifolia*		Arrow leaf Sida / Taaiman
Sporobolus africanus		Rat's tail dropseed / Taaipol
*Tagetes minuta**		Khaki weed / Kakiebos
Tribulus terrestris var terrestris		Dubbeltjie
Urochloa mosambicensis		Bushveld signal grass / Bosveldsinjaalgras
Urochloa panicoides		Garden signal grass / Tuin beesgras
*Verbena aristigera**		Fine-leaved verbena / Fynblaar verbena

[1] Van Wyk, B-E., Van Oudtshoorn, B. & Gericke, N. 2002.
[2] Watt, J.M. & Breyer-Brandwijk, M.G. 1962.
[3] Pooley, E. 1998.

7. FINDINGS AND POTENTIAL IMPLICATIONS

Most of the study site comprised Mixed alien and indigenous vegetation. The natural grassland on the site was kept short. The study site had only limited connectivity with natural grassland to the south.

8. LIMITATIONS, ASSUMPTIONS AND GAPS IN KNOWLEDGE

The natural grassland on the study site was mown short, which made identification of grasses and herbaceous species difficult. It was clear from plant residues that the species diversity was low. Nothing would be gained by repeating the survey before the grass is mown again.

9. RECOMMENDED MITIGATION MEASURES

The following mitigation measures were developed by GDARD (Directorate of Nature Conservation, GDACE, 2008 and 2009) and are applicable to the study site. Where appropriate, Galago Environmental's specific elaborations are given in brackets.

- An appropriate management authority (e.g. the body corporate) that must be contractually bound to implement the Environmental Management Plan (EMP) and Record of Decision (ROD) during the operational phase of the development should be identified and informed of their responsibilities in terms of the EMP and ROD.
- Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into

landscaped areas. Forage and host plants required by pollinators should also be planted in landscaped areas.

10. CONCLUSION

No recommendations are made with regard to exclusion of land. All alien invaders must be removed from the study site.

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ANNEXURE A: Red– and Orange List* plants of the 2527DD q.d.g.c.

Species	Flower season	Suitable habitat	Priority grouping	Conserv status	PRESENCE ON SITE
Bowiea volubilis subsp volubilis	Sep-Apr	Shady places, steep rocky slopes and in open woodland, under large boulders in bush or low forest.	B	Vulnerable[2]	Habitat not suitable
Callilepis leptophylla	Aug-Jan & May	Grassland or open woodland, often on rocky outcrops or rocky hillslopes.	N/A	Declining[2]	Habitat not suitable
Cheilanthes deltoidea subsp nov Gauteng form	Nov-Jun	Southwest-facing soil pockets and rock crevices in chert rocks.	A2	Vulnerable[1]	Habitat not suitable
Cleome conrathii	Dec-Jan Mar-May	Stony quartzite slopes, usually in red sandy soil, grassland or open to closed deciduous woodland, all aspects.	A3	Near Threatened[1]	Habitat not suitable
Delosperma leendertziae	Oct-Apr	Rocky ridges; on rather steep south facing slopes of quartzite in mountain grassveld.	A2	Near Threatened[1]	Habitat not suitable
Drimia sanguinea	Aug-Dec	Open veld and scrubby woodland in a variety of soil types	B	Near threatened[2]	Habitat not suitable
Eucomis autumnalis	Nov-Apr	Damp open grassland and sheltered places.	N/A	Declining[2]	Habitat not suitable
Gunnera perpensa	Oct-Mar	In cold or cool continually moist localities, mainly along upland streambanks.	N/A	Declining[2]	Habitat not suitable
Habenaria barbertonii	Feb-Mar	In grassland on rocky hillsides.	A2	Near threatened[1]	Habitat not suitable
Habenaria kraenzliniana	Feb-Apr	Terrestrial in stony, grassy hillsides, recorded from 1000 to 1400m.	A3	Near Threatened[1]	Habitat not suitable
Habenaria mossii	Mar-Apr	Open grassland on dolomite or in black sandy soil.	A1	Endangered[1]	Habitat not suitable
Holothrix randii	Sep-Jan	Grassy slopes & rock ledges, usually southern aspects.	B	Near Threatened[2]	Habitat not suitable
Hypoxis hemerocallidea	Sep-Mar	Occurs in a wide range of habitiats. From sandy hills on margins of dune forests to open rocky grassland. Also on dry, stony grassy slopes, mountain slopes and plateaux. Appears to be drought and fire tolerant. Grassland and mixed woodland.	N/A	Declining[2]	Habitat not suitable
Ilex mitis var mitis	Oct-Dec	River banks, stream beds, evergreen forests.	N/A	Declining[2]	Habitat not suitable
Melolobium subspicatum	Sep-May	Grassland.	A1	Vulnerable[1]	Habitat not suitable
Prunus africana	Dec-Jun	Forests, bushveld.	B	Vulnerable[2]	Habitat not suitable

[1] global status
[2] national status
* Orange listed plants have no priority grouping and are designated 'N/A'

April 20

X51

GALAGO ENVIRONMENTAL

Fauna and Flora Specialists

638 Turf St
Wingate Park, 0181
Tel: 012-345 4891
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Flora and Fauna Habitat Assessment

of

PORTION 22 OF THE FARM BULTFONTEIN 533-JQ & PORTION 164 OF THE FARM NOOITGEDACHT 534-JQ

April 2011

GDARD reference number:

Report Compiled and edited by:	Ms. Vanessa Marais of Galago Environmental
Report authors:	Dr. I.L. Rautenbach (Pri. Sci. Nat: Ph.D, T.H.E.D.), Mr. W.D. Haacke (Pri. Sci. Nat: M.Sc), Mrs. P. Lemmer (Cert. Sci. Nat: B.Sc.) Mr. R.F. Geyser
Avifauna Report verified by:	Dr. Alan C. Kemp (Pri.Sci. Nat.)
Botany Report verified by:	Dr L.A. Coetzer (D.Sc., Pri. Sci. Nat.)

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FIGURES:

1. Introduction:

Galago Environmental CC was appointed to conduct a mammal, bird, reptile, amphibian and plant survey for Portion 22 of the farm Bultfontein 533-JQ and Portion 164 of the farm Nooitgedacht 534-JQ proposed for mixed residential and commercial development.

2. Location of the study site:

The study site lies on the corner of Road R512 and 6th Road, a short distance north of highway N14.

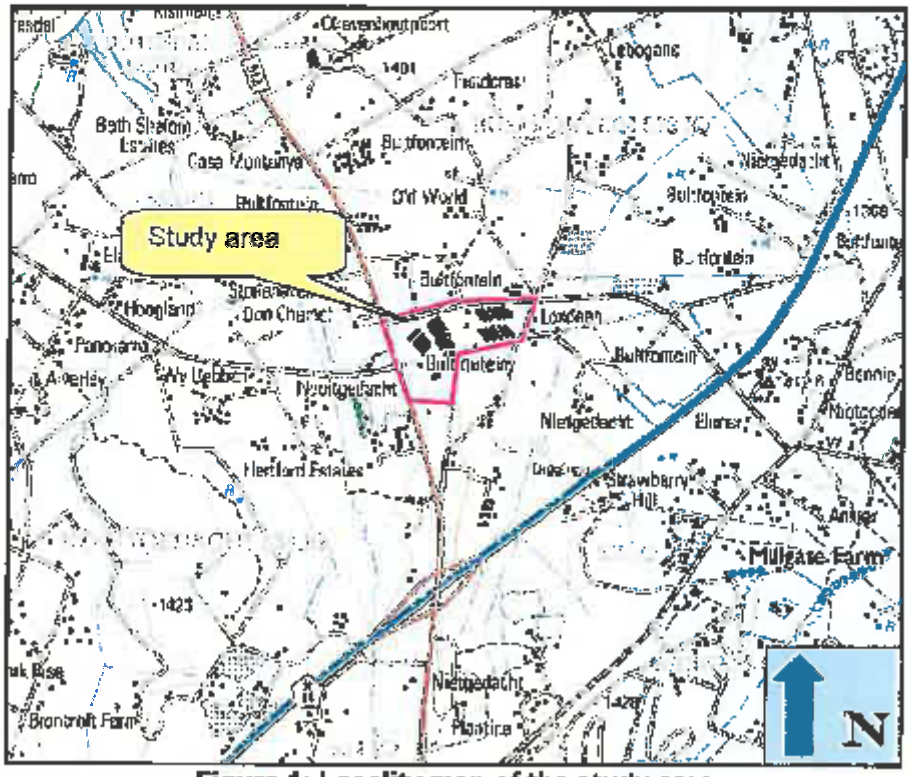


Figure 1: Locality map of the study area

3. Participating Specialists

This investigation was conducted by the following specialists:

Specialists	Aspect Investigated	Qualifications	Prof. Registration	Date of Field Survey
Rautenbach, I.L.	Mammalogy	Ph.D., T.H.E.D.	Pr. Nat. Sci.	1 March 2011
Haacke, W.D.	Herpetology	M.Sc. (Zoology)	Pr. Nat. Sci.	26 February 2011
Geyser, R.	Avifauna		Pending	26 February 2011
Lemmer, P.	Botany	B.Sc.	Cert. Sci. Nat.	1 March 2011
Coetzer, L.A.	Botany Review	D.Sc.	Pr. Nat. Sci.	
Kemp, A.C.	Avifauna review	Ph.D.	Pr. Nat. Sci.	
Marais, V.	Environmental Impacts and maps	BL Landscape Architecture		26 February 2011

5. Vegetation assessment:

Mucina & Rutherford (2006) classify the vegetation of this area as Egoli Granite Grassland, with archaean granite and gneiss of the Halfway House Granite at the core of the Johannesburg Dome supporting leached, shallow, coarsely grained, sandy soil poor in nutrients.

The two vegetation areas were distinguished as follows:

- *Eragrostis – Hyparrhenia* grassland; and
- Mixed alien and indigenous vegetation.

Most of the study site comprised Mixed alien and indigenous vegetation. The natural grassland on the site was kept short. The study site had only limited connectivity with natural grassland to the south. No recommendations are made with regard to exclusion of land. All alien invaders must be removed from the study site. See Appendix A for the Flora report.

6. Fauna assessment:

The **mammal** study found that the study site has been entirely transformed by intensive farming practices and infrastructure. No natural elements of note remain. The proposed development will therefore not result in a loss of ecological sensitive and important habitat units, ecosystem function (e.g. reduction in water quality, soil pollution), loss of mammal habitat, nor of loss/displacement of threatened or protected species.

The site furthermore contains no sensitive ecosystems, nor poses a threat to sensitive systems on adjoining properties. See Appendix B for the Mammal report.

The **avifauna** study found that in general, the entire study site is disturbed by past and present human activities as well as human presence on and surrounding the site. Natural areas are small and fragmented and the surrounding areas are increasingly being developed to make room for residential development. The disturbed grassland area will only attract the more common grassland avifauna species and the rest of the study site will attract bird species that are able to adapt to the transformed and disturbed areas. None of the 27 Red Data avifauna species recorded for the 2527DD q.d.g.c. are likely to make use of the habitat systems identified on and within 500 m surrounding the study site on a permanent or temporarily basis due to a lack of suitable breeding, roosting and foraging habitat. See Appendix C for the Avifauna report.

The **herpetological** study found that the sloping terrain and dense grassland do not appear to be particularly suitable for reptiles and amphibians. No Red Data species are expected to occur here. Of the protected species, the Giant Bullfrog, recorded from this grid cell, has not been confirmed from this site and the habitat does not appear suitable. The range of the Southern African Python, another protected species, does not enter this area. The terrain in general is viewed as suitable to support only relatively low population densities of herpetofauna. The normally recommended conservation measures should concentrate on an awareness campaign amongst the labour force, directed at avoiding unnecessary killing and promoting the removal and release of species into nearby undisturbed or conservation areas. See Appendix D for the herpetological report.

7. Mitigation:

Mitigation proposed is that only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas.

8. Environmental sensitivity:

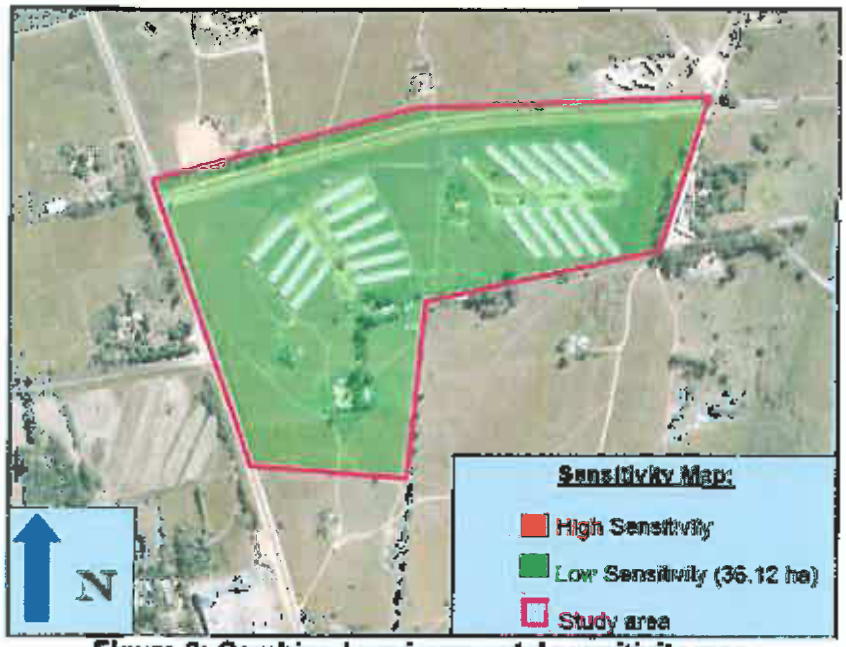


Figure 2: Combined environmental sensitivity map

Sensitivity mapping rules:

BIODIVERSITY ELEMENT	SENSITIVITY MAPPING RULE
Flora communities	Sensitive flora communities
Fauna habitat	Sensitive fauna habitat

9. Conclusion:

The site has a low environmental sensitivity since it has been degraded through past disturbances on the site.

10. GDARD biodiversity requirements

From: GDARD Biodiversity Information (GDARD)
[GDACE_Biodiversityinfo@gauteng.gov.za]
Sent: 02 March 2011 03:00 PM
To: Madeleen van Schalkwyk
Subject: RE: Biodiversity requirements for Nietgedacht, Nooitgedacht and Bultfontein

Dear Madeleen

With regard to the above project, specialist biodiversity studies are required to investigate the following aspects:

* Reptiles, with specific reference to *Homoroselaps dorsalis* (Striped Harlequin Snake).

The absence of wetlands on site should be verified. Should a wetland be located, a wetland specialist study will be required.

APPENDIX A: FLORA REPORT

APPENDIX B: MAMMAL REPORT

LANSERIA X51 & X53 DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

TABLE OF CONTENTS

1 INTRODUCTION

Bigen Africa Services has been requested to investigate the availability of electrical bulk supply and to determine internal design criteria for the proposed Lanseria X51 & X53 project. All the design philosophies stated in this report are subject to approval by Eskom.

1.1 Purpose of the Report

The purpose of this report is to provide information regarding the following.

- Existing electrical infrastructure,
- Bulk supply to the development,
- Internal electrical design; and
- Cost estimate for the development.

1.2 Background

The proposed Lanseria X51 & X52 will be zoned as "special", indicating a mix between residential, commercial and light industrial land-use . parcel. Road reserves are estimated at 20% of the total land use

2 SITE DESCRIPTION

2.1 Locality

The location of the proposed Lanseria X51 & X53 is along the southern boundary of the K33 at co-ordinates 25 58 21.7 E27 55 51.3 The development is situated within the urban boundary of the City of Johannesburg.

2.2 Supply Authority

The electrical supply authority in the area is Eskom.

3 ELECTRICAL SUPPLY

3.1 Capacity of Existing Primary and Secondary Electrical Infrastructure

3.1.1. Bulk Electrical Infrastructure

There is currently no bulk capacity available in the nearby area to supply a development such as Lanseria X51 & X53. The existing networks in the area are 11/22kV overhead agricultural/rural electrification networks which will not be able to cater for sufficient bulk supply for the proposed developments , even if upgraded.

3.1.2. Future Planned Bulk Upgrades

Eskom has made provision for a new bulk substation in the nearby area in the 2010-2020 master plan. The capacity which Eskom has planned for is still to be finalized. A bulk application of 30MVA (2 x 30MVA substation with 1 spare bay) has been submitted by another developer. The quotation for this supply is expected within the next 6 months.

The substation that is planned in the area is shown in Figure 1. These positions are still to be confirmed by Eskom. Preliminary Co-ordinates are listed below.

New Substation 1: S25 58 03.6 E27 55 54.0

The proposed substation site could also possibly be located on Lanseria X51.

Additional 132kV overhead lines to supply the new substation are in the planning stages, and will probably affect the land-use for Lanseria X51 & X53.

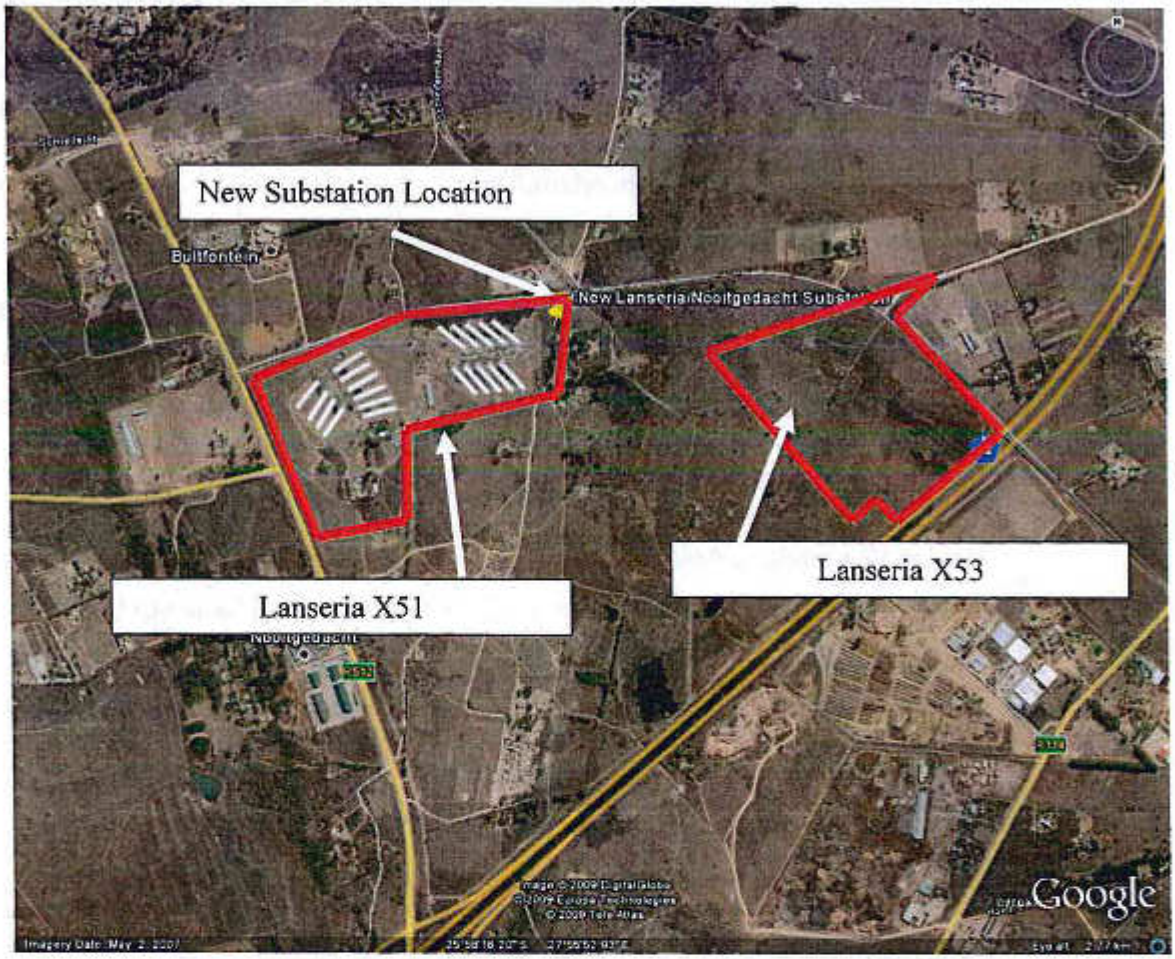


Figure 1 - New Proposed Eskom Substation Sites

3.2 Bulk Requirements

Zoning	Land Size (ha)	Useable Area (ha)	FAR	Coverage	W/m²	Bulk Requirements
Lanseria X51	27.9	22.3	4.8	60%	30	19MVA
Lanseria X53	24.7	19.7	2.4	40%	30	8MVA
Total	52.6	42	-	-	30	27MVA

To allow for sufficient lead-time for Eskom to complete correct planning, an interim bulk application should be submitted. The time required for the application process

could be reduced, as some of the master planning and line studies have already been conducted as part of an existing application for a neighbouring property.

3.3 Bulk Supply to the Development

The developer will have to install new cables from the proposed substations to be built to a newly created switching station, or directly to the new substation.

A new 5.8 km 88/132 kV line will also have to be constructed to link in with the existing ring network.

4 ELECTRICAL DESIGN

All internal designs will be done according to the Eskom specifications as the internal network will be handed over to them.

4.1 Medium Voltage Reticulation

For the commercial and industrial land portions, the medium voltage network will be an 11kV underground network feeding a configuration of 315kVA and 500kVA miniature substations or dedicated 11kV bulk metering points. The substations (or bulk metering points) will be connected via a 185mm² XLPE copper cable ring network from the new dedicated switching- or sub-station.

Depending on the housing topology and target market for the residential stands, the MV reticulation may either be underground cable or overhead 11kV lines.

4.2 Low Voltage Reticulation

For the commercial and industrial land portions, the low voltage network will be an underground cable network supplied from the different miniature substations. The supply voltage will be 420/240V with a regulation of +12% / -12%. The internal low voltage reticulation will be from the miniature substations up to cluster cabinets (for lower load requirements up to 25kVA).The LV feeder cable sizes from the miniature substations will be determined at the final design stage but the following sizes of PVC insulated copper cable will be used. (see next page)

For the residential land portions, the low voltage network will be either an underground cable network or an overhead aerial bundle conductor supplied from the different miniature substations. The supply voltage will be 420/240V with a regulation

of +12% / -12%. The internal low voltage reticulation will be from the miniature substations up to cluster cabinets or pole mount distribution enclosures. The LV feeder cable sizes from the miniature substations will be determined at the final design stage but the following sizes of PVC insulated copper cable will be used.

Cable Size PVC(mm^2)
$25mm^2$
$35mm^2$
$50mm^2$
$70mm^2$
$95mm^2$
$120mm^2$

4.3 Street and Area Lighting

The street lighting will be a separate underground cable network with control gear. The proposed streetlights will be standard street light fittings with 0.5 to 1.0m outreach, installed at a 5m mounting height on steel galvanized poles or on the LV conductor structures.. The typical 70 W HPS or 125 W MV or equivalent type of luminaires can be used. The street lighting will be fed from the control panel within the miniature substations. $10mm^2$ PVC insulate 3-core copper cable with a $10mm^2$ bare copper earth wire will be used to connect all the individual street lights.

4.4 Telecommunication

No allowance is made in the cost estimate for any telecommunication infrastructure or services.

5 ESTIMATE CONSTRUCTION COST

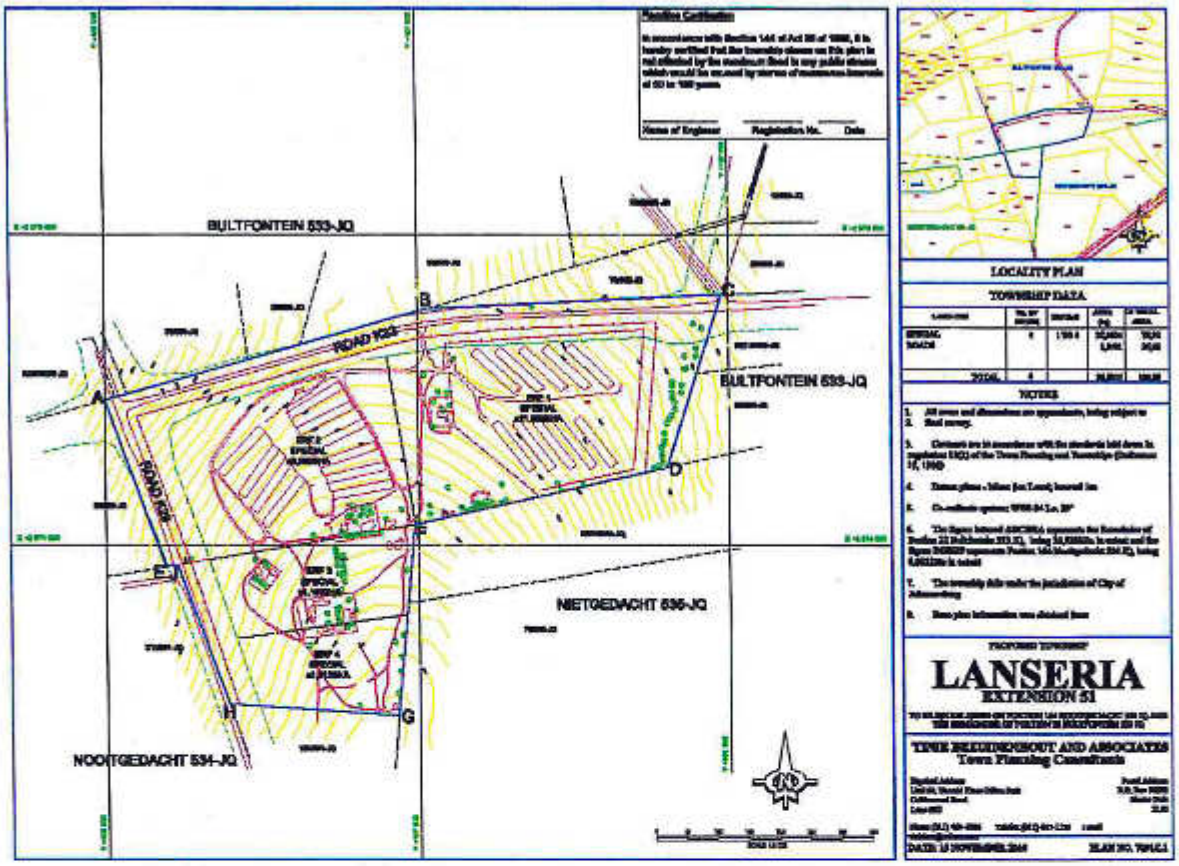
5.1 Funding Requirements

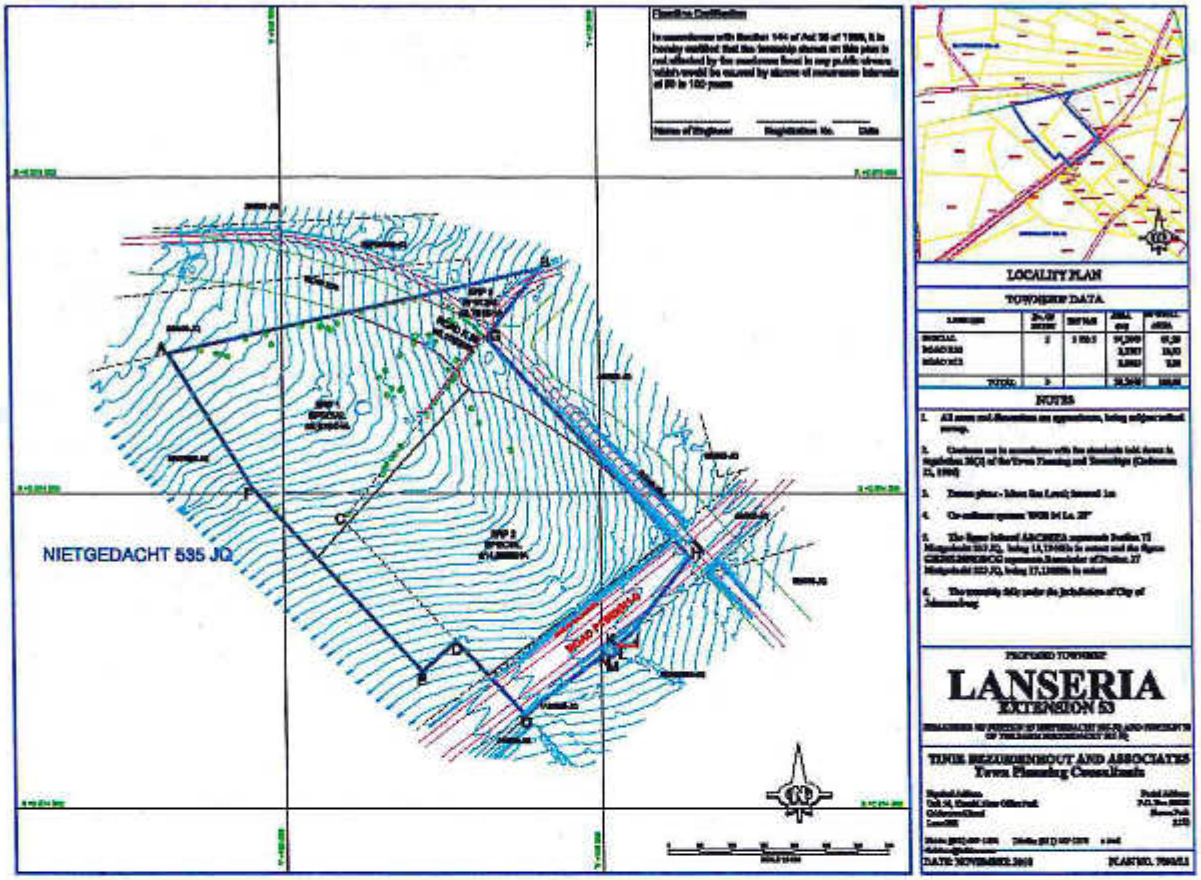
Cost Estimates	
Internal Infrastructure X51	R 53,200,000.00
Internal Infrastructure X53	R 22,400,000.00
Substation Costs	R 50,000,000.00
Line Costs	R5,800,000.00
Sub Total	**R 131 400 000.00**
Contingencies @ 10%	**R 13,140,000.00**
Total	**R144,540,000.00**

Notes

- Excluding VAT and professional fees (Fees to be based on ECSA Guidelines)
- Infrastructure cost is based on a high level benchmark of R2800/kVA
- HV Line and substation costs are taken in full for both extensions, but can be pro-rated if both extensions are built simultaneously.
- HV Line and substation costs can be further reduced if funding is provided by neighbouring developers.

Appendix A1: Locality Plan


BULTFONTEIN 533-JQ
BULTFONTEIN 535-JQ
NIETGEDACHT 536-JQ
NOOITGEDACHT 534-JQ
ROAD P32
ROAD K56
A
B
C
D
E
F
G
H
LOCALITY PLAN
TOWNSHIP DATA
NOTES
LANSERIA
EXTENSION 51
TIENIE ERASMUS OUT AND ASSOCIATES
Town Planning Consultants


NIETGEDACHT 535 JQ
LOCALITY PLAN
TOWNSHIP DATA
NOTES
PROPOSED TOWNSHIP
LANSERIA
EXTENSION 53
TINIE BEZUIDENHOUT AND ASSOCIATES
Town Planning Consultants

Lanseria x 51 → Professional

BIGEN AFRICA

Lanseria Development Node

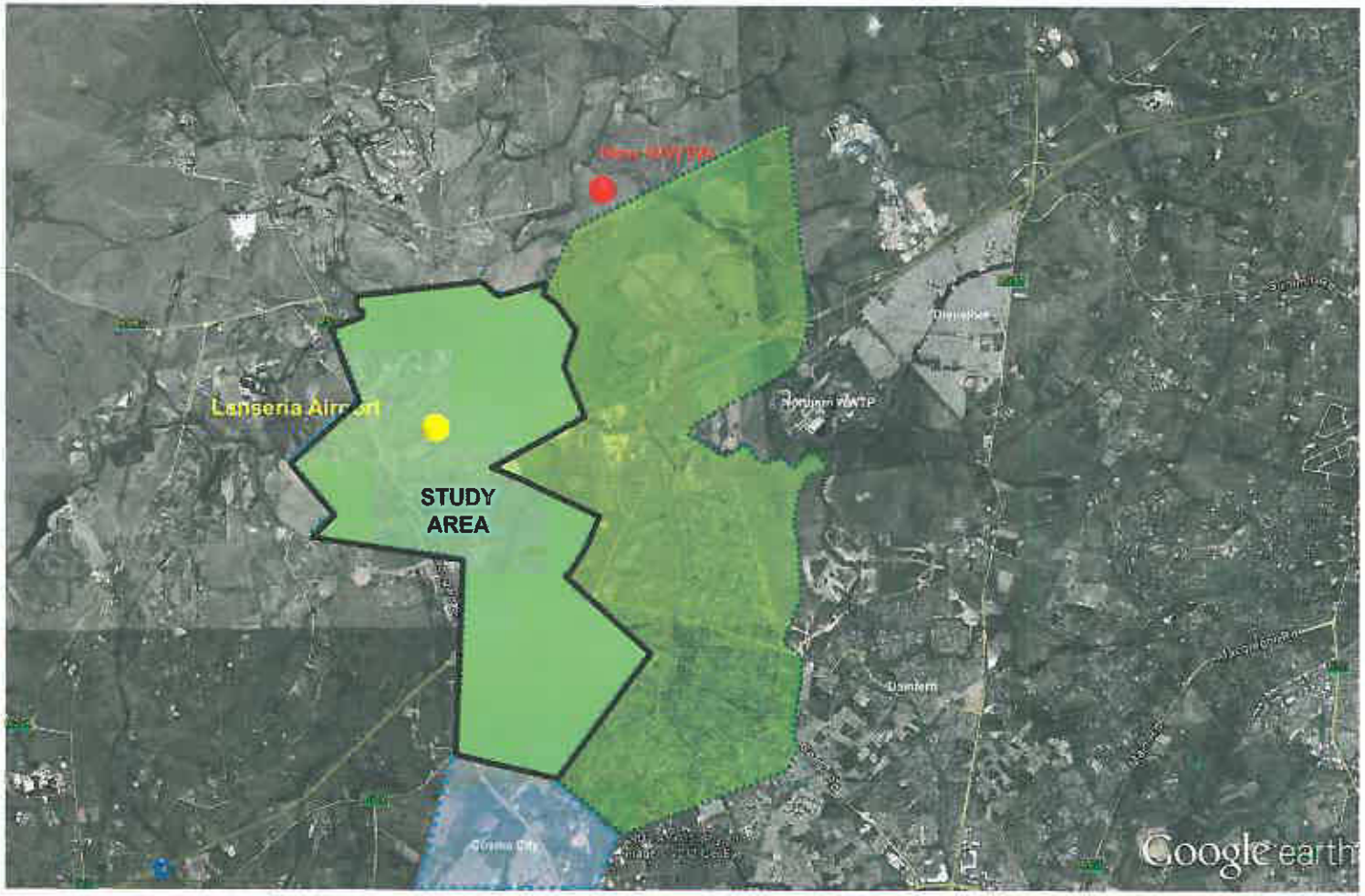
Developer's Presentation

25 July 2012

24th Oct 2012

BIGEN AFRICA

Lanseria and the Urban Edge



BIGEN AFRICA

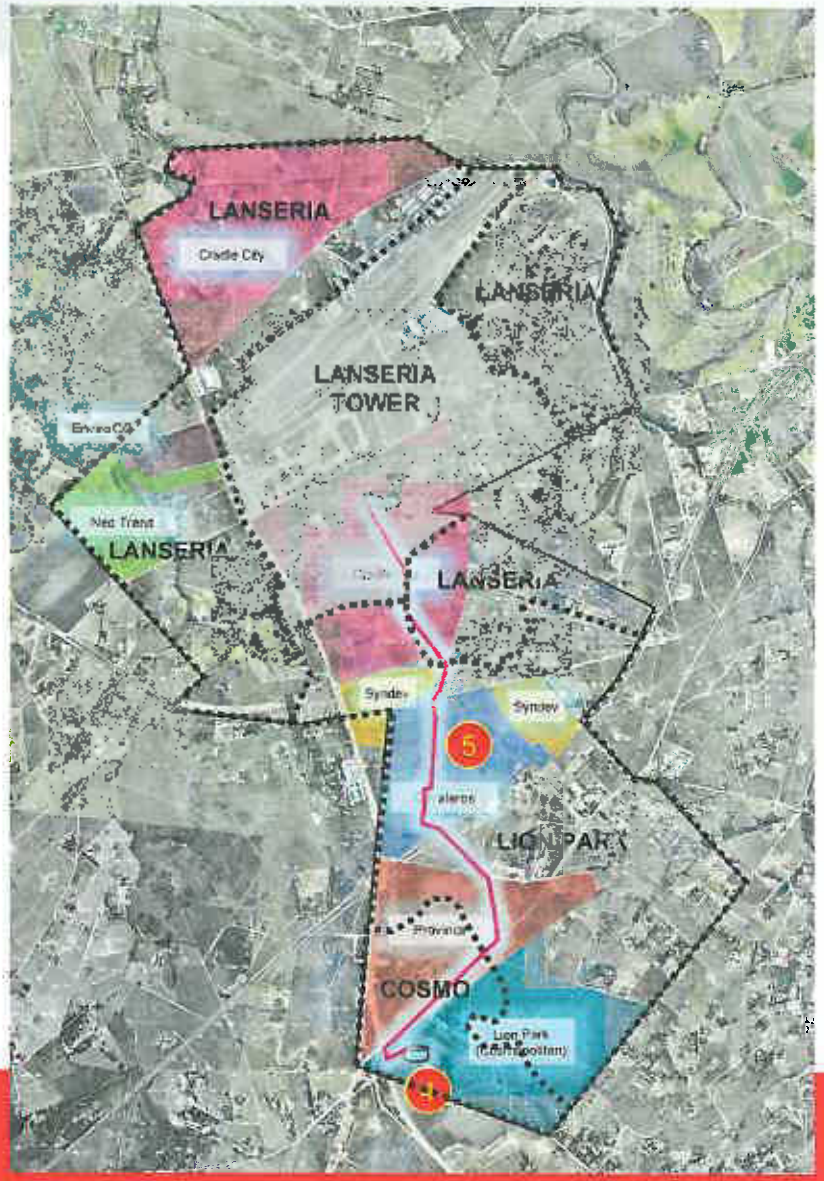
Existing Water Infrastructure and current initiatives

BIGEN AFRICA

Water Infrastructure upgrades required (cont.)

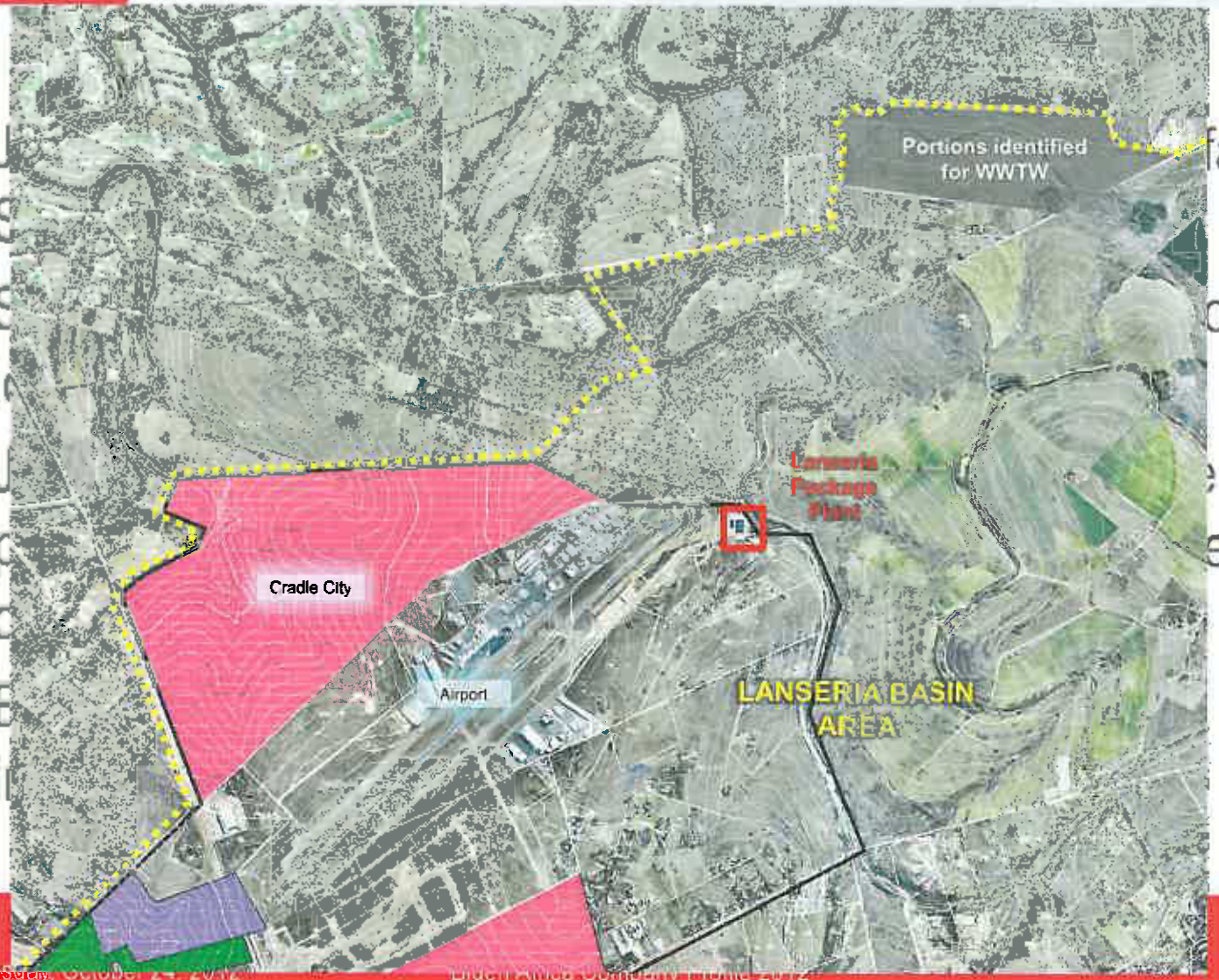
- From new Lion Park Reservoir to JW constructed Lanseria Complex*
  5. 500mm diameter line @ R25,4mil (par to existing 300/25mm dia pipe

- TOTAL UPGRADE FROM COSMO CITY TO LANSERIA* = R96,5mil
- Supply zones to be amended and Lanseria Development Area to be supplied from the Cosmo, Lion Park and Lanseria Reservoirs



* All figures as per GLS report escalated to July 2012 (Includes P&G's and Contingencies but excludes Fees and VAT

Existing Sewer Infrastructure and current initiatives



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Sewer Infrastructure upgrades required Southern Areas

- Bulk Sewer Requirements*:
  1. Construction of section of outfall main (250mm/315mm) = R1,44mil
  2. Construction of temporary pump station and rising main = R2,78mil
  3. Construction of outfall sewer (200/315/450/1350mm dia) = R27,6mil

- TOTAL REQUIREMENT FOR AREA = R31,82mil*

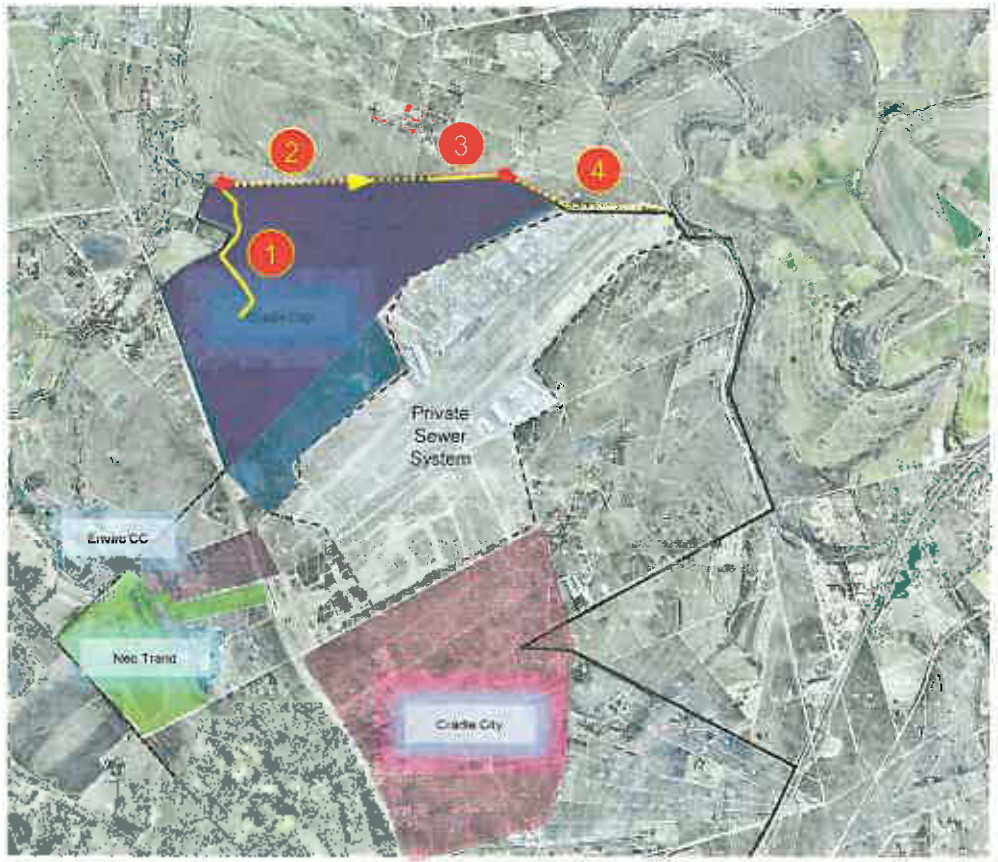
* All figures as per GLS report escalated to July 2012 (Includes P&G's and Contingencies but excludes Fees and VAT

BIGEN AFRICA

Sewer Infrastructure upgrades required Northern Areas

- Bulk Sewer Requirements*:
  1. Construction of Gravity main (250/315mm dia) = R1,2mil
  2. Construction of Pump Station and rising main = R4,49mil
  3. Construction of Section of Gravity sewer = R0.58mil
  4. Construction of Temporary pumpstation and rising main (to serve 3% of development as interim) = R3,1mil

- TOTAL REQUIREMENT FOR AREA = R9,37mil*



* All figures as per GLS report escalated to July 2012 (Includes P&G's and Contingencies but excludes Fees and VAT

Total Bulk Wet Services Requirement vs. Contributions

- Total Infrastructure to be installed to unlock developments
  - Water Pipelines, fittings and Reservoirs = R 96.5mil
  - Sewer Collectors, Pump Stations and Rising Mains = R 55.9mil (excluding modules of package plants as and when required)
- Bulk Contribution Payable as per usage
  - Water = R2,458/kl
  - Sewer = R5,973/kl
- Above figures used with estimated usage based on land use tables provided by Developers within the catchment:

BIGEN AFRICA

Conclusion and Way forward

- Contributions sufficient to fund infrastructure required under Master Plan
- Usage of surplus to be agreed upon with Johannesburg Water
  - Construction of outfall sewers
  - Contribution towards WWTW
- Solution to be phased and construction of infrastructure to be staged for implementation of scheme over duration of development of the area
- Planned dates for commencement and planned construction time to be provided to develop a phased implementation plan

Accounting and Programme

- Project Accounting up to date:
  - Time cost up to 24 July 2012 = R 87,000
  - Estimated cost up to submission of prefeasibility = R ???
- Project Invoicing
- Estimated timeframes

Wetland Report

WETLAND DELINEATION, FUNCTION AND PES ASSESSMENT FOR THE WETLAND ON PORTION 27 & 73 OF THE FARM NIETGEDACHT 535 JQ

PREPARED FOR:

BOKAMOSO LANDSCAPE ARCHITECTS AND ENVIRONMENTAL CONSULTANTS

February 2012

Prepared by:	Scientific Aquatic Services
Report author:	Stephen van Staden (Pr. Sci. Nat)
Report Reference:	SAS 211212
Date:	February 2012

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1. INTRODUCTION & TERMS OF REFERENCE

Bokamoso Landscape Architects and Environmental Consultants requested a delineation of wetland and riparian areas on Portions 27 and 73 of the Farm Nietgedacht 535-JQ as part of the Environmental Assessment and authorisation process for the proposed development of the subject property. The study area is situated to the north of the N14, to the south of 6th Road and to the northeast of Malibongwe Drive, in close proximity to the Lanseria Airport.

The purpose of the report is to determine the boundary of wetland and riparian areas and to determine the position and size of a suitable buffer around the wetland areas on the subject property. Construction within such areas may prove difficult in some parts and development may impinge on sensitive wetland habitats. In order to manage wetland features and understand the Environmental Importance and Sensitivity thereof, it is important to define the Present Ecological State of the system, understand the functioning thereof as well as the environmental and socio-cultural services that the wetland and riparian system provide. Once these aspects have been considered, the Recommended Ecological Category (REC) can be defined and objectives can be formulated to meet these requirements.

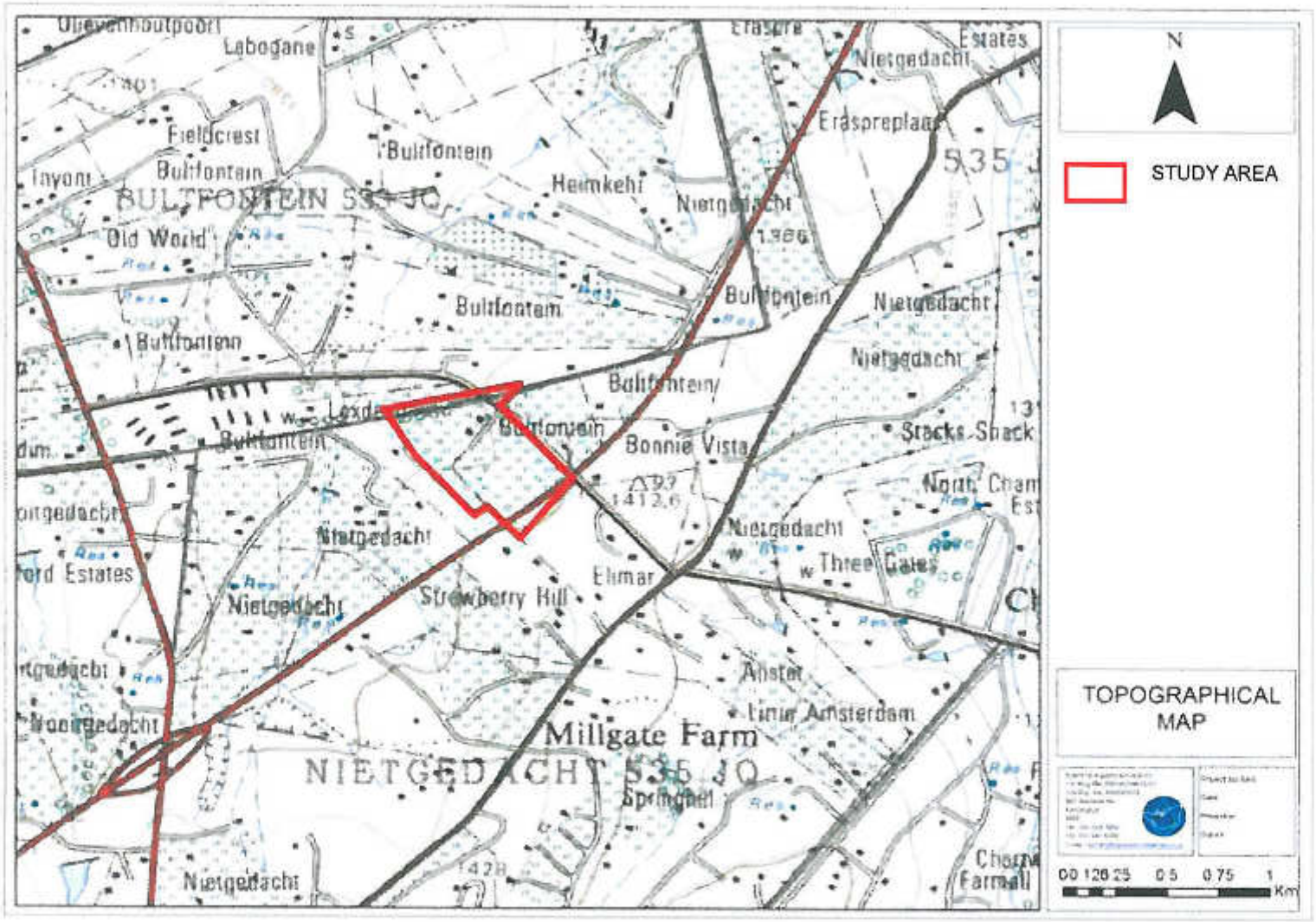

Figure 1: 1:50 000 topographic map depicting the proposed development with surrounding areas.

1.1 Assumptions and Limitations

- The wetland assessment is confined to the proposed development site as well as the immediate adjacent areas of relevance and does not include the neighbouring and adjacent properties. The general surroundings were however considered as part of the desktop assessment.
- The wetland delineation as presented in this report is regarded as a best estimate of the wetland boundary based on the site conditions present at the time of the assessment and limitations in the accuracy of the delineation due to disturbances created by dumping, alien vegetation invasion and topographic alteration are deemed possible.
- Wetlands and terrestrial areas form transitional areas where an ecotone is formed as vegetation species change from terrestrial species to facultative and obligate wetland species. Within the transition zone some variation of opinion on the wetland boundary may occur, however if the DWAF 2005 method is followed, all assessors should get largely similar results.

1.2 Legislative requirements

National Water Act

- The water act recognises that the entire ecosystem and not just the water itself in any given water resource constitutes the resource and as such needs to be conserved.
- No activity may therefore take place within a watercourse unless it is authorised by the Department of Water Affairs (DWA).
- Any area within a wetland or riparian zone is therefore excluded from development unless authorisation is obtained from DWA in terms of Section 21 (c) & (i).

National Environmental Management Act

- The National Environmental Management Act (Act 107 of 1998) and the associated Regulations (No R. 544 and No R. 545) as amended in June 2010, states that prior to any development taking place within a wetland or riparian area, an environmental authorisation process needs to be followed. This could follow either the Basic Assessment process or the EIA process depending on the scale of the impact.

2. WETLAND ASSESSMENT METHODOLOGY

2.1 South African Wetland Assessment Classification System

All wetland and riparian features encountered within the study area were assessed using *the South African Wetland Classification System* as ascribed within the *Resource Directed Measures for Protection of Water Resources* (1999). This was done in order to define the Recommended Ecological Category (REC) of the wetland features. The methodology followed is illustrated in the figure below, followed by a detailed discussion of each section.

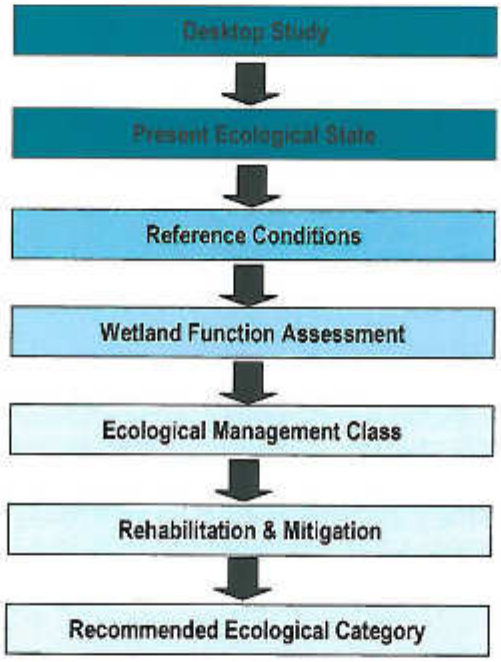

Figure 2: Wetland determination flow chart.

2.2 Ecoregion

When assessing the ecology of any area (aquatic or terrestrial), it is important to know which ecoregion the study area is located within. This knowledge allows for improved interpretation of data, since reference information and representative species lists are often available on this level of assessment to guide the assessment.

2.3 Ecostatus

Studies undertaken by the Institute for Water Quality Studies assessed all quaternary catchments as part of the Resource Directed Measures for Protection of Water Resources. In

these assessments, the Ecological Importance and Sensitivity (EIS), Present Ecological Management Class (PEMC) and Desired Ecological Management Class (DEMC) were defined, and serve as a useful guideline in determining the importance and sensitivity of aquatic ecosystems prior to assessment, or as part of a desktop assessment.

Water resources are generally classified according to the degree of modification or level of impairment. The classes used by the South African River Health Program (RHP) are presented in the table below and will be used as the basis of classification of the systems in this field, and desktop study.

Table 1: Classification of river health assessment classes in line with the RHP

Class	Description
A	Unmodified, natural.
B	Largely natural, with few modifications.
C	Moderately modified.
D	Largely modified.
E	Extensively modified.
F	Critically modified.

2.4 *Present Ecological State*

A site visit was undertaken in order to identify all natural characteristics of the wetland features within the study area, followed by characterisation of all wetland systems using the flow chart with definitions as stipulated below.

Water surface – This is found in all systems and includes all water surfaces with a vegetative cover of less than 30%.
Non-vegetated – Includes surfaces with less than 30% surface area cover of vegetation other than pioneer species. Common examples include rocky shores along Marine coastlines, Marine and Estuarine mud, and sand flats, exposed shores on the margins of lakes and dams, and riverine sand bars.
Reef – Includes ridge-like or mound-like structures formed by the colonization and growth of sedentary invertebrates.
Aquatic Bed – Includes habitats dominated by plants that growing principally on or below the water surface for most of the growing season in most years. These habitats are usually found in water less than 2meter deep. They represent a diverse group of plant communities that require surface water for optimal growth and reproduction.
Emergent – Characterised by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years, usually maintaining the same appearance form one year to another. Perennial species tend to dominant Emergent Habitats. Areas that are dominated by pioneer species, which become established during periods of low water, are not Emergent Wetlands and should be classified as Non-vegetated.
Scrub-Shrub – Includes areas dominated by woody vegetation less than 6 meter tall. It is characterised by true shrubs, young trees, and trees or shrubs that are small or stunted as a result of environmental conditions. Such communities may represent a successional stage leading to forested Wetland, or they may be relatively stable.
Forested – This class is characterised by woody vegetation that is taller than 6 meter. These habitats normally possess an over storey of trees, an understorey of young trees or shrubs, and herbaceous layer.

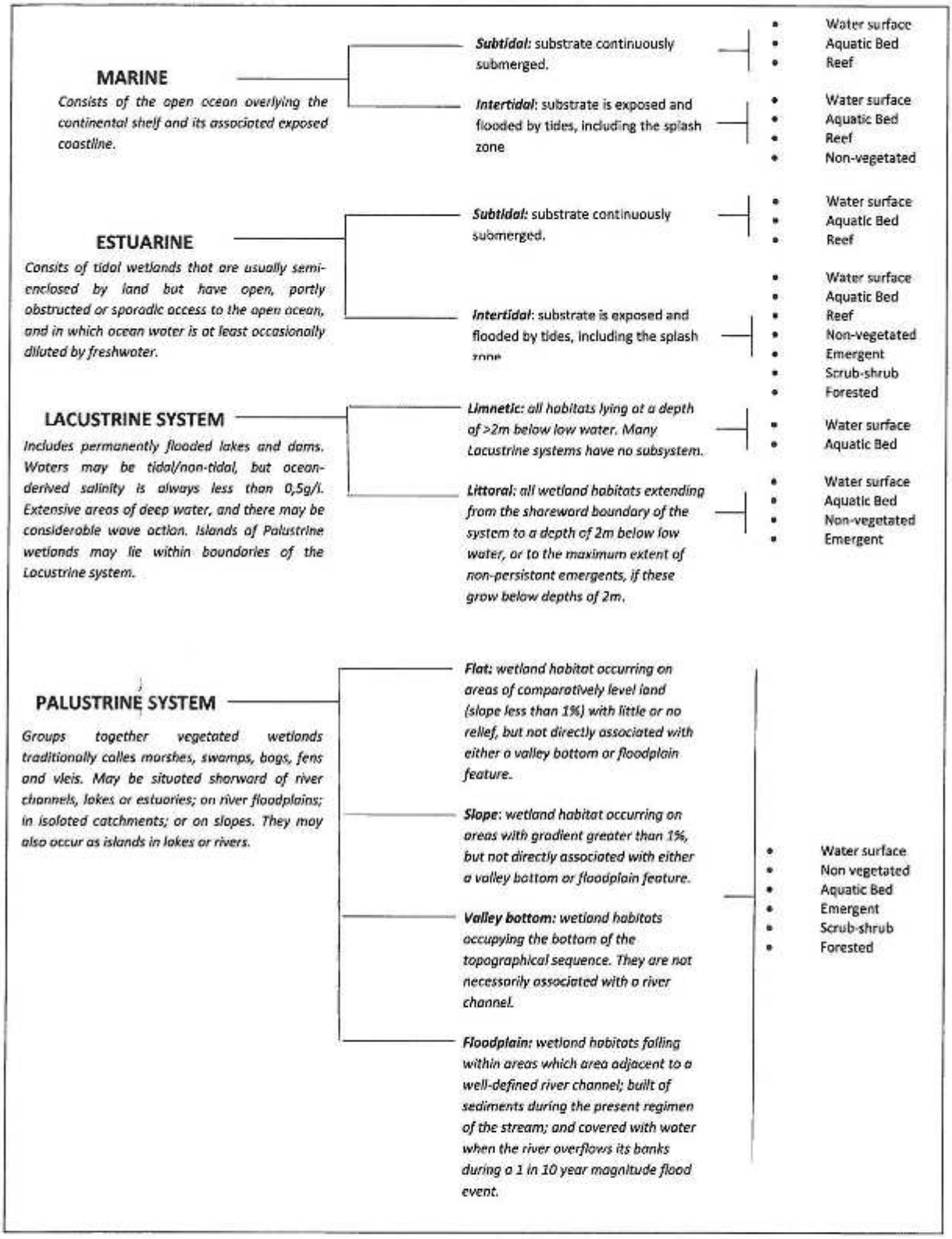

Figure 3: Wetland system characterisation.

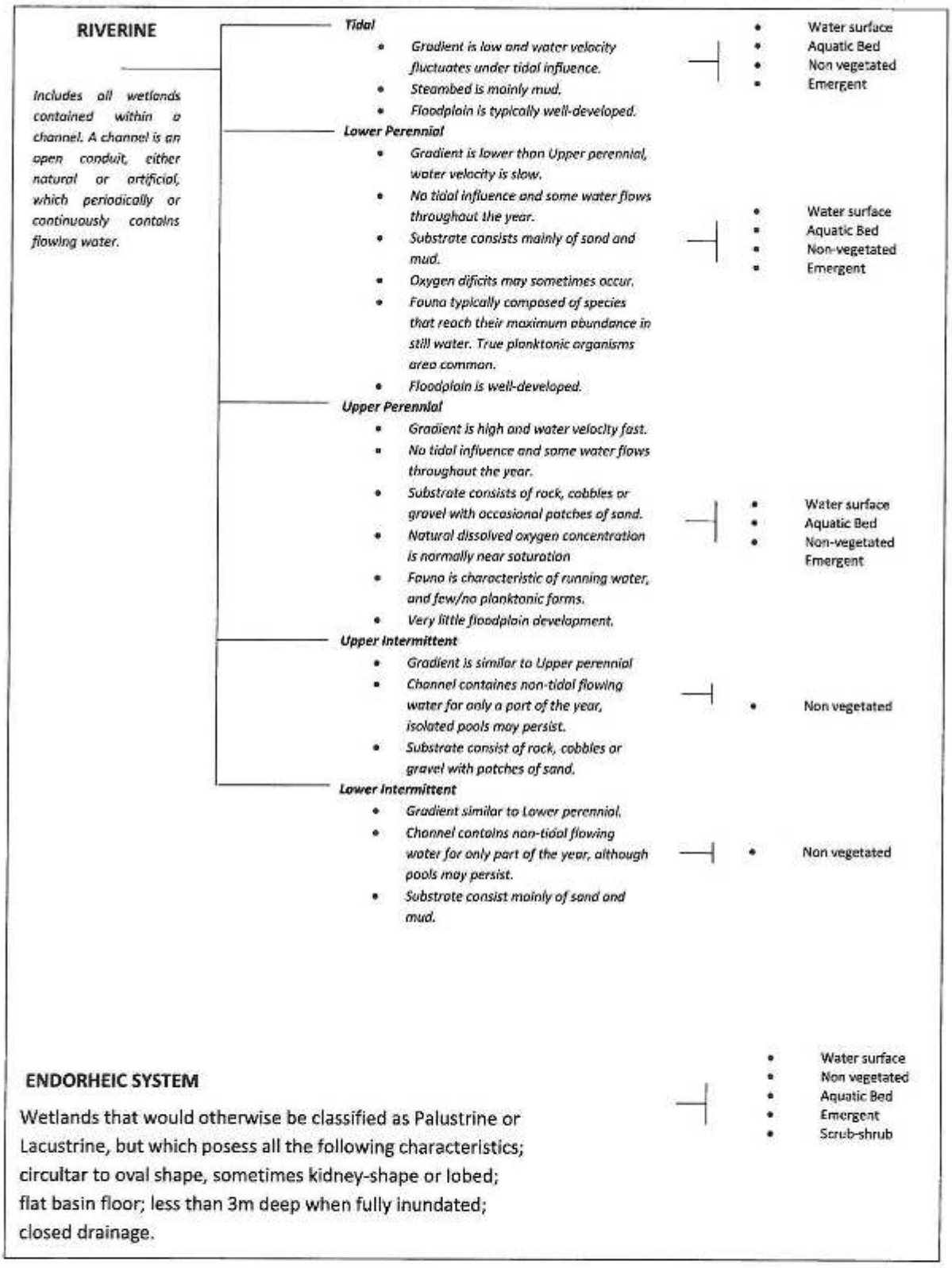

Figure 4: Wetland system characterisation[1] (continued).

[1] Department of Water Affairs and Forestry, South Africa *Version 1.0 of Resource Directed Measures for Protection of Water Resources, 1999* [Appendix W1]

After wetland systems have been classified according to the characteristics stipulated above it is important to determine any modifying aspects that may have altered the natural ecological state of the wetland system. *Resource Directed Measures* (RDM) (Dini, J; Cowan, G. & Goodman, P. First Draft: DWAF, *Version 1.0, 1999*) identifies three groups of modifiers: Water Regime Modifiers, Water Chemistry Modifiers, and Artificial Modifiers. A desktop study as well as the field assessment was used in order to determine any of these modifiers present at the subject property.

All the information gathered above as well as hydrology-, hydraulic/geomorphic-, biological criteria and water quality were then used to assign a Present Ecological Status (PES) for the wetland features. The table below lists the attributes as well as criteria assessed during the PES assessment.

Table 2: Criteria and attributes assessed during the determination of the PES.

Criteria and attributes	
Hydrological	**Hydraulic/Geomorphic**
Flow modification	Canalisation
Permanent Inundation	Topographic Alteration
Water Quality	**Biota**
Water Quality Modification	Terrestrial Encroachment
Sediment load modification	Indigenous Vegetation Removal
	Invasive plant encroachment
	Alien fauna
	Overutilisation of biota

Each of the attributes where given a score according to ecological state observed during the site visit, as well as a confidence score to indicate areas of uncertainty (table below).

Table 3: Scoring guidelines.

Scoring guidelines		Relative confidence score	
Natural, unmodified	5	Very high	4
Largely natural	4	High	3
Moderately modified	3	Moderate	2
Largely modified	2	Low	1
Seriously modified	1		
Critically modified	0		

A mean score for all attributes were then calculated and the final score was then used in the Present Ecological Status category determination as indicated in the table below.

Table 4: Present Ecological Status Category descriptions[2]

Score	Class	Description
>4	A	Unmodified, natural
>3 and <4	B	Largely natural with few modifications
>2 and <3	C	Moderately modified
2	D	Largely modified
>0 and <2	E	Seriously modified
0	F	Critically modified

2.5 Reference Conditions

"Reference conditions refer to the natural un-impacted condition of the wetland feature prior to changes due to human settlement, utilisation of the wetland feature and its resources."[3] To determine, accurate reference conditions the historical geomorphology (terrain unit, landform, substrate type, substrate erodibility, sediment dynamics), hydrology (water source, saturation zones, extent, period and depth of inundation, flow volumes) and biological attributes (vegetation communities and zonation, faunal communities, occurrence of threatened species) were determined. The reference conditions were then used as a "bench-mark" to determine an appropriate EMC class.

2.6 Wetland function assessment

"The importance of a water resource, in ecological social or economic terms, acts as a modifying or motivating determinant in the selection of the management class".[4] The assessment of the ecosystem services supplied by the identified wetlands was conducted according to the guidelines as described by Kotze *et* al (2005). An assessment was undertaken that examines and rates the following services according to their degree of importance and the degree to which the service is provided:

- · Flood attenuation
- · Stream flow regulation
- · Sediment trapping
- · Phosphate trapping

[2] Department of Water Affairs and Forestry, South Africa *Version 1.0 of Resource Directed Measures for Protection of Water Resources, 1999* [Table G2].

[3] Department of Water Affairs and Forestry, South Africa *Version 1.0 of Resource Directed Measures for Protection of Water Resources, 1999* [Appendix W3].

[4] Department of Water Affairs and Forestry, South Africa *Version 1.0 of Resource Directed Measures for Protection of Water Resources, 1999*

- · Nitrate removal
- · Toxicant removal
- · Erosion control
- · Carbon storage
- · Maintenance of biodiversity
- · Water supply for human use
- · Natural resources
- · Cultivated foods
- · Cultural significance
- · Tourism and recreation
- · Education and research

The characteristics were used to quantitatively determine the value, and by extension sensitivity, of the wetlands. Each characteristic was scored to give the likelihood that the service is being provided. The scores for each service were then averaged to give an overall score to the wetland.

Table 5: Classes for determining the likely extent to which a benefit is being supplied.

Score	Rating of the likely extent to which the benefit is being supplied
<0.5	Low
0.5-1.2	Moderately low
1.3-2	Intermediate
2.1-3	Moderately high
>3	High

2.7 *Ecological Management Class*

"A high management class relates to the flow that will ensure a high degree of sustainability and a low risk of ecosystem failure. A low management class will ensure marginal maintenance of sustainability, but carries a higher risk of ecosystem failure." [5]

The Ecological Management Class (EMC) was determined based on the results obtained from the PES, reference conditions and Ecological Importance and Sensitivity of the resource (sections above). Followed by realistic recommendations, mitigation, and rehabilitation measures to achieve the desired EMC.

[5] Department of Water Affairs and Forestry, South Africa *Version 1.0 of Resource Directed Measures for Protection of Water Resources 1999*

A wetland may receive the same class for the PES, as the EMC if the wetland is deemed in good condition, and therefore must stay in good condition. Otherwise, an appropriate EMC should be assigned in order to prevent any further degradation as well as to enhance the PES of the wetland feature.

Table 6: Description of EMC classes.

Class	Description
A	Unmodified, natural
B	Largely natural with few modifications
C	Moderately modified
D	Largely modified

2.8 Wetland delineation

For the purposes of this investigation, a wetland habitat is defined in the National Water Act (1998) as including the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterized by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent areas.

The wetland zone delineation took place according to the method presented in the final draft of "A practical field procedure for identification and delineation of wetlands and riparian areas" published by the department of Water Affairs and Forestry in February 2005. The foundation of the method is based on the fact that wetlands and riparian zones have several distinguishing factors including the following:

- The presence of water at or near the ground surface;
- Distinctive hydromorphic soils;
- Vegetation adapted to saturated soils and
- The presence of alluvial soils in stream systems.

By observing the evidence of these features, in the form of indicators, wetlands and riparian zones can be delineated and identified. If the use of these indicators and the interpretation of the findings are applied correctly, then the resulting delineation can be considered accurate (DWAF 2005).

Riparian and wetland zones can be divided into three zones (DWAF 2005). The permanent zone of wetness is nearly always saturated. The seasonal zone is saturated for a significant part

of the rainy season and the temporary zone surrounds the seasonal zone and is only saturated for a short period of the year, but is saturated for a sufficient period, under normal circumstances, to allow for the formation of hydromorphic soils and the growth of wetland vegetation. The object of this study was to identify the outer boundary of the temporary zone and then to identify a suitable buffer zone around the wetland area.

3. RESULTS OF INVESTIGATION

3.1 South African Wetland Assessment Classification System

One wetland system was identified within the boundary of the study area, running centrally through the site from northeast to southwest. The system is hereafter referred to as the wetland feature, represented in the photographs and maps below. The wetland feature consists of a palustrine, valley bottom wetland feature. The system is characterised by the formation of gleyed hydromorphic soils and the establishment of facultative and obligate wetland vegetation created by the ingress and amalgamation of upstream stormwater into the system.

Figure 5: Wetland feature with facultative and obligate wetland vegetation species.

3.3.1 Ecoregion and Ecostatus

The study area falls within the Highveld Ecoregion, and also falls within the A21C quaternary catchment.

Studies undertaken by the Institute for Water Quality Studies assessed all quaternary catchments as part of the *Resource Directed Measures for Protection of Water Resources*. In these assessments, the Ecological Importance and Sensitivity (EIS), Present Ecological

Management Class (PEMC) and Desired Ecological Management Class (DEMC) were defined, and serve as a useful guideline in determining the importance and sensitivity of aquatic ecosystems prior to assessment, or as part of a desktop assessment. This database was searched for the quaternary catchment of concern (A21C) in order to define the EIS, PEMC and DEMC. The findings are based on a study undertaken by Kleynhans (1999) as part of "A procedure for the determination of the ecological reserve for the purpose of the national water balance model for South African rivers". The results of the assessment are summarised in the table below.

Table 7: Summary of the ecological status of quaternary catchment A23A based on Kleynhans 1999

Catchment	Resource	EISC	PESC	DEMC
A21C	Jukskei River	Moderate	CLASS C (Class D based on desktop certainty)	Class C: Moderately sensitive systems

The points below summarise the impacts on the aquatic resources in this quaternary catchment:

- The aquatic resources within this quaternary catchment have been moderately affected by bed modification due to canalisation and earthworks in the catchment.
- Moderate flow modifications have taken place leading to larger flood risks.
- Some impacts from the introduced fish species/ instream biota such as *Cyprinus carpio* are likely to affect the aquatic community.
- Slight impacts as a result of inundation due to weirs construction in the catchment have taken place.
- Riparian zones and stream bank conditions are considered to be locally impacted due to alien vegetation encroachment.
- A very high impact on the aquatic community, due to altered water quality from urban runoff, is deemed likely to affect the catchment.

In terms of ecological functions, importance and sensitivity, the following points summarise the conditions in this catchment:

- The riverine systems in this catchment have a relatively low diversity of habitat types, buts includes riffles and pool habitats.
- The site has a low/ marginal importance in terms of conservation.
- The riverine resources have a relatively high sensitivity to flow requirements with the occurrence of fish as *Chiloglanis pretoriae*, *Opsaridium peringueyi* and *Amphilius uranoscopus* which are extremely flow dependent.
- The quaternary catchment has a little importance in terms of migration of aquatic species.

- The area is highly significant in terms of rare and endemic species conservation, due to the occurrence of *Opsaridium peringueyi* and *Amphilius uranoscopus*.
- The area has a moderate to low importance as a source of refugia for aquatic species.
- The catchment can be considered to be moderately sensitive to changes in water quality.
- The catchment has a low importance in terms of species richness in the area.

Figure 6: A map of the quaternary catchments of the area.

3.3.2 Wetland System Characterisation

The wetland feature identified during the assessment of the study area was categorised with the use of the Wetland System Characterisation Methodology. The results are illustrated in the figure below.

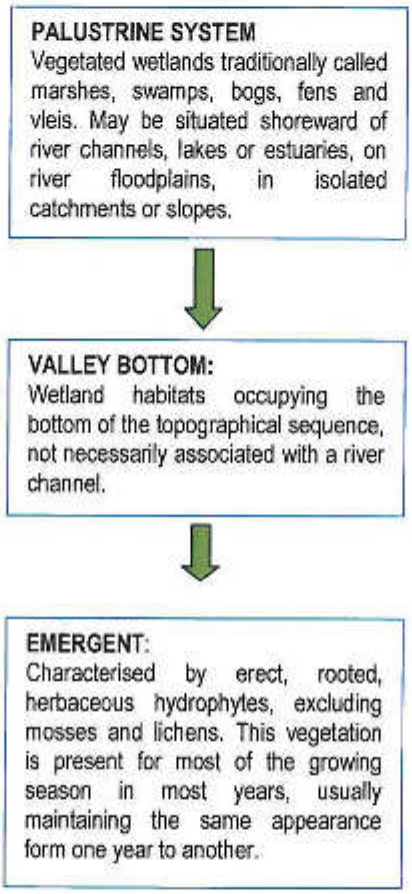

Figure 7: Wetland categorisation for the wetland feature.

3.3.3 Wetland Function Assessment

Wetland function and service provision were assessed within the study area. The average score for the wetland is presented in the following table as well as the radar plot in the figure that follows the table.

Table 8: Wetland functions and service provision.

Ecosystem service	Wetland
Flood attenuation	2.1
Streamflow regulation	1.6
Sediment trapping	2.3
Phosphate assimilation	2
Nitrate assimilation	2
Toxicant assimilation	2
Erosion control	2.6
Biodiversity maintenance	1.8
Carbon Storage	1.5
Water Supply	0.67
Harvestable resources	0.6
Cultivated foods	0.6
Cultural Significance	0.3
Tourism and recreation	0.3
Education and resource	0.3
SUM	**20.7**
Average score	**1.5**

From the results of the assessment, it is evident that the wetland feature has an overall intermediate level of ecological function and service provision. The system is moderately transformed due to alien vegetation encroachment and is unlikely to harbour populations of RDL faunal and floral species. It does however provide migratory connectivity for faunal species and can be considered important in terms of erosion control and flood attenuation services, and as such does deserve protection from development activities occurring in close proximity to the system. Alien vegetation invasion, dumping and low levels altered topography and canalisation also contribute to the transformed nature of the wetland feature. The culvert to the south of the system and the remains of man-made structures canalise portions of the wetland and alters the flow patterns in the system which leads to some localised erosion. The system is not considered to be of great importance for cultural and socio-economic purposes.

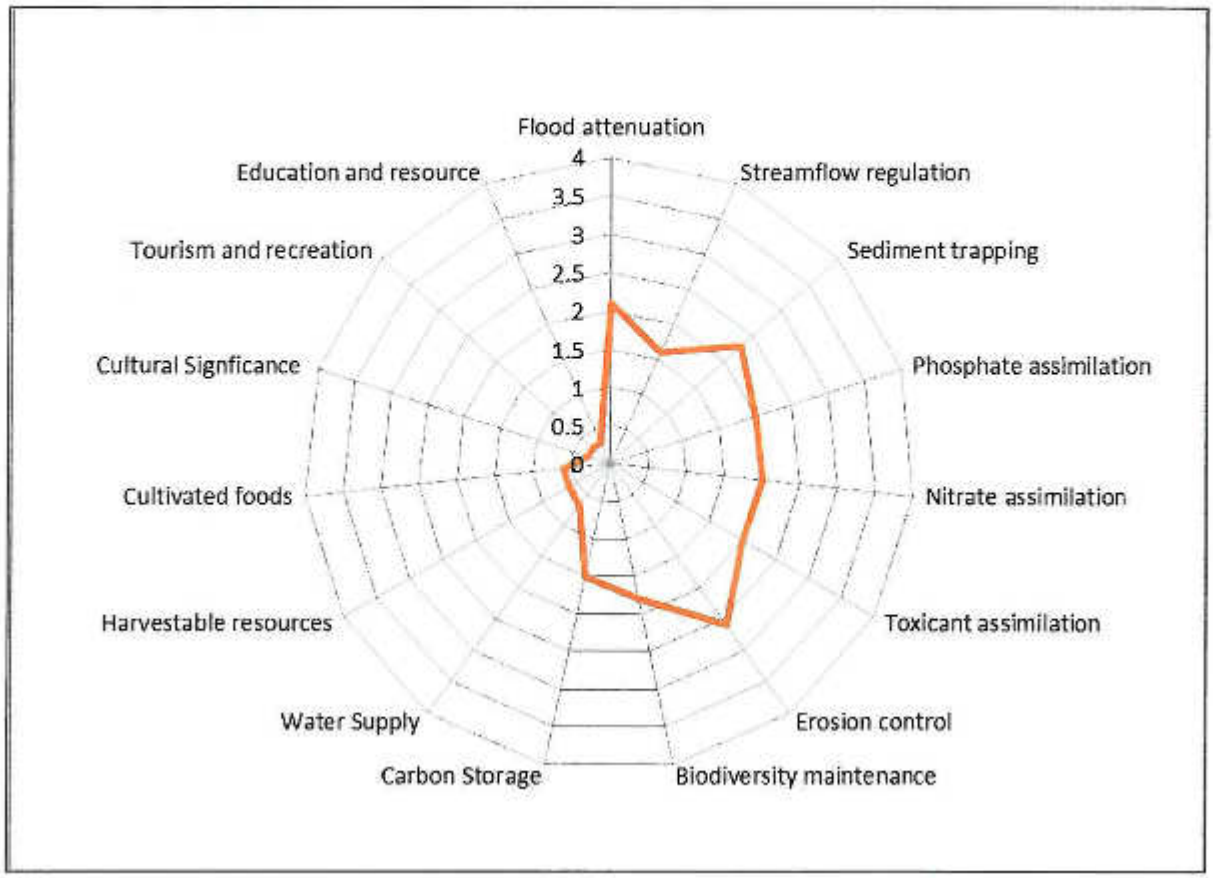

Figure 8: Radar plot of wetland services provided.

3.3.4 Present Ecological State

The result for the criteria and attributes used for the calculation of the PES is stipulated in the table below.

Table 9: Criteria and Attributes used with the calculation of the PES.

Criteria and Attributes	Score	Confidence
Hydrologic		
Flow modification	3	3
Permanent Inundation	3	3
Water Quality		
Water Quality Modification	3	2
Sediment load modification	3	3
Hydraulic/Geomorphic		
Canalisation	3	3
Topographic Alteration	3	3
Biota		
Terrestrial Encroachment	3	3
Indigenous Vegetation Removal	2	2
Invasive plant encroachment	2	3
Alien fauna	4	3
Over utilisation of biota	3	3
Total	**32**	
Mean	**2.9**	

The mean score was calculated as 2.9, indicating the PES falls within class C – Moderately Modified, bordering on a Class B system. The wetland system is considered to be in a relatively good Present Ecological State with few system modifiers present. The impacts on the system which do contribute to the lowered PES, include small areas where canalisation has taken place, low levels of topographic alterations and perceived water quality modifications, as well as moderate levels of alien plant species encroachment and the subsequent replacement of indigenous vegetation.

3.3.5 Ecological Management Class

All results obtained from the South African Wetland Assessment Classification System that were used in the determination of the appropriate EMC class, is indicated in the table below. The results obtained from the wetland assessment indicate relatively high transformation on all levels of ecology and functionality. Therefore, the EMC class deemed appropriate to enhance and maintain current ecology as well as functionality is Class C (Moderately modified).

Mitigation measures and recommendations stipulated in this report, if followed, are deemed adequate to reach this goal on a localised scale however, the catchment wide impacts on the drainage system will limit the ability to reach this EMC objective.

Table 10: Summary of results of the South African Assessment Classification System

Name	Type	System Modifiers	PES	Wetland Function Assessment	EMC
Jukskei	• Palustrine • Valley bottom • Emergent	Topographical, Alien vegetation, Water quality modifiers present.	CLASS C (Moderately modified).	Intermediate level of function and service provision.	CLASS C- (Moderately modified).

3.3.6 Wetland delineation and sensitivity mapping

NOTE: Please refer to associated shapefiles for localities and extents of wetland.

During the assessment, the following temporary zone indicators were used:

- Vegetation was used as the primary indicator for the wetland temporary zones using the presence of facultative and obligate wetland species, which relatively accurately defined the wetland boundary in numerous areas;
- Soil form was used as the secondary wetland indicator where disturbance of wetland vegetation due to alien invasive plant species has led to the boundary being unclear in places. The presence of hydromorphic (gleyed and mottled) soils was used in the delineation process;
- Terrain units were utilised to aid in identifying areas with wetland characteristics where the soil and vegetation areas were unclear. Terrain units provided the most accurate and clear indication of the wetland boundary at the time of assessment; and
- Soil wetness was also considered in the wetland delineation process.

Upon the assessment of the area, the various wetland vegetation components were assessed. Dominant species were characterised as either wetland or terrestrial species. The wetland species were then further categorised as temporary, seasonal and permanent zone species. This characterisation is presented in the table below, including the terrestrial species identified on the subject property.

Table 11: Floral species identified during wetland zone delineation

Permanent	Seasonal	Temporary	Terrestrial species
Cyperus esculentis	*Berkeya radula*	*Alternanthera pungens**	*Asparagus laricinus*
Eragrostis chloromelas	*Campuloclinium*	*Aristida congesta*	*Bidens pilosa**
Eragrostis gummiflua	*macrocephalum**	*Asclepias fruticosa*	*Eucalyptus camaldulensis**
Helichrysum rugulosum	*Cynodon dactylon*	*Bidens pilosa**	*Hypoxis spp.*
Mariscus congestus	*Elionurus muticus*	*Chamaecrista mimosoides*	*Jamesbrittenia aurantiaca*
Setaria sphacelata	*Eragrostis chloromelas*	*Conyza canadensis**	*Kohautia virgata*
	Eragrostis gummiflua	*Cynodon dactylon*	*Lepidium africanum*
	Heteropogon contortus	*Euphorbia heterophylla**	*Monsonia angustifolia*
	Microchloea caffra	*Felicia muricata*	*Nidorella anomala*
	*Oxalis latifolia**	*Hyparrhenia hirta*	*Polygala hottentotta*
	*Rumex crispus**	*Physalis angulata**	*Schkuhria pinnata**
		Pulicaria scabra	*Seriphium plumosum*
		Themeda triandra	*Tagetes minuta**
		*Verbena bonariensis**	*Verbena tenuisecta**
		Wahlenbergia calendonica	

A summary of all results and findings obtained during the wetland assessment is indicated in the table below.

Table 12: Summary of results and findings obtained during the wetland assessment.

Item	Description
Site number	1
Name	Jukskei River
Quaternary catchment	A21C
Aquatic ecoregion	Highveld
System Modifiers	Alien vegetation invasion, flow modification, topographical alteration, water quality impacts, dumping
Wetland system characterisation	Palustrine, Valley Bottom, Emergent
Wetland function and service provision	1.6– Intermediate importance
Present Ecological State	PES calculated was Class C – Moderately modified, major reason for lowered PES is alien plant invasion, canalisation, slight topographical alteration and dumping.
Ecological Management Class	Class C– Moderately modified

Wetland vegetation	Wetland vegetation used as indicator of the wetland temporary zone. 
Surface water	Used as indicator of permanent zone
Terrain units	Terrain units used as wetland temporary zone indicator.
Soil	Presence of gleyed and mottled soils used as indicator of wetland temporary zone. 

After consideration of findings during the wetland assessment, a suitable buffer zone was considered for the proposed development. According to the GDARD Minimum Requirements for Biodiversity Assessments (2008), a 30m buffer zone must be implemented around wetland features located within the Urban Edge. This buffer zone is deemed adequate to achieve the ecological management class determined by the *South African Wetland Assessment Classification System*. The wetland boundary and buffer zone is conceptually presented in the figure below. The 30m buffer zone will aid in conserving the PES of the wetland system, provided that edge effects are managed.

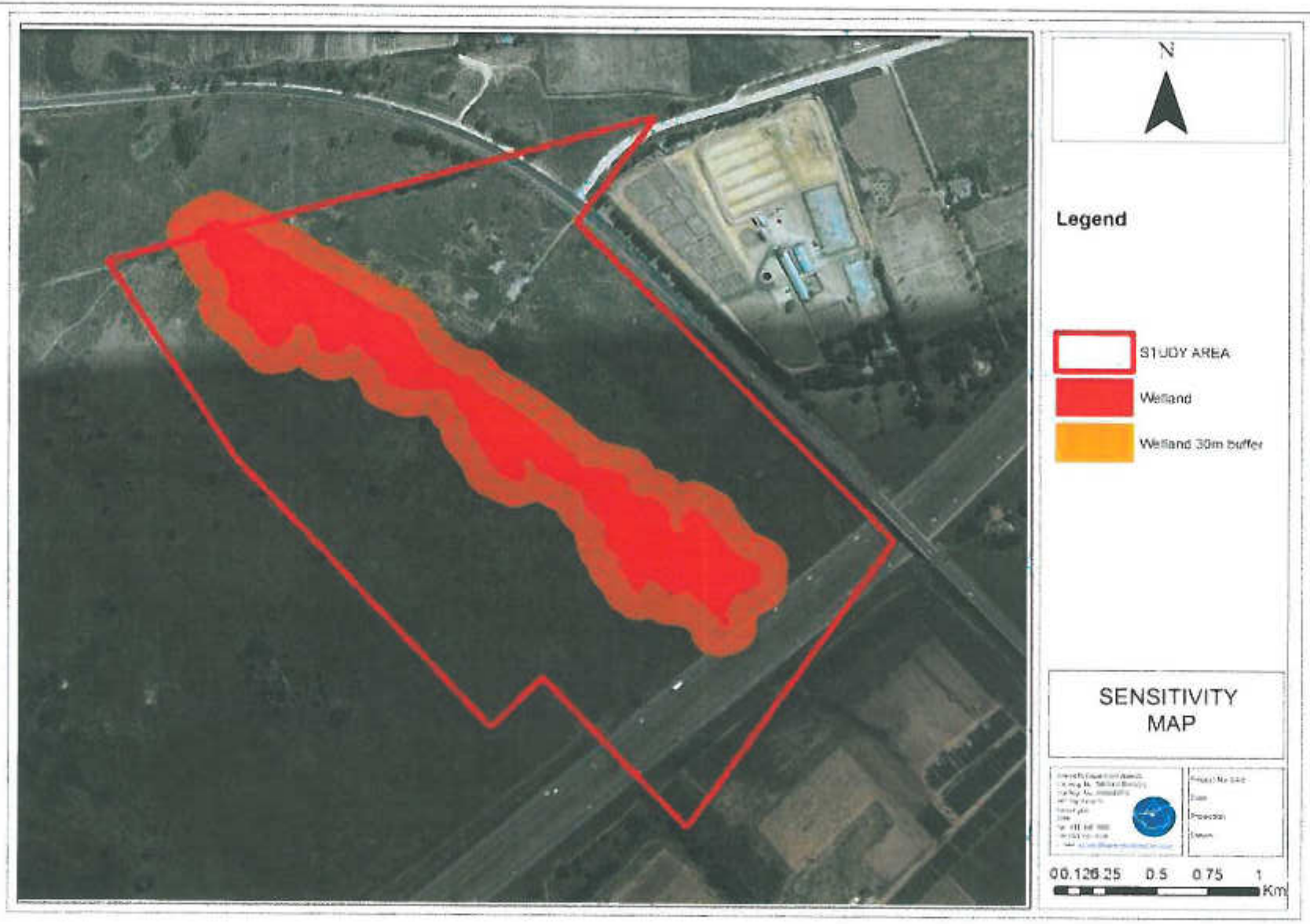

Figure 9: Conceptual wetland aerial map depicting the locations of the wetland feature and associated buffers.

4. CONCLUSIONS AND RECOMMENDATIONS

The following general conclusions were drawn on completion of the survey:

- A palustrine, valley bottom, emergent wetland, running from southeast to northwest, was identified in the centre of the study area.
- The study area falls within the Highveld Ecoregion, and also falls within the A21C quaternary catchment which is classified as a Class C system (Class D desktop) and is targeted to be managed as a Class C system.
- The wetland function and service provision assessment indicated an intermediate level of ecological function and service provision.
- The wetland feature's present ecological state was determined to fall within class C – Moderately Modified. The ecological management class determined by the *South African Wetland Assessment Classification System* is C – Moderately modified.
- A 30m buffer zone is recommended, which is deemed sufficient to maintain the Present Ecological State, limit any further impact rehabilitation could have and to maintain the ecological management class determined by the *South African Wetland Assessment Classification System*. The 30m buffer zone will result in a negligible loss of developable land, while conserving the PES of the wetland system, if edge effects are managed.

From the above assessment, several guidelines for the proposed development design are recommended. The design should ensure that the following criteria are met to ensure the ongoing functioning of the riparian zones in the vicinity of the proposed development:

- Edge effects from the proposed development must be minimised and the wetland area and associated buffer zone must be managed as an open space area.
- No development activities are to encroach upon the 30m buffer zone.
- Stormwater systems must be designed in such a way so as not to impact upon the wetland system.
- Any discharge points must be designed to minimise erosion and discharge energy and to prevent any further impacts on the wetland.
- The duration of impacts on the system should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised.
- During the construction phase, no vehicles should be allowed to indiscriminately drive through the wetland and buffer areas.
- No dumping of waste should take place within the wetland areas.
- If any spills occur, they should be immediately cleaned up.

- During construction, erosion berms should be installed to prevent gully formation. The following points should serve to guide the placement of erosion berms:
    - Where the track has slope of less than 2%, berms every 50m should be installed.
    - Where the track slopes between 2% and 10%, berms every 25m should be installed.
    - Where the track slopes between 10%-15%, berms every 20m should be installed.
    - Where the track has slope greater than 15%, berms every 10m should be installed.
- In terms of the amendments to the regulations under the Conservation of Agricultural Resources Act, 1983 and Section 28 of the National Environmental Management Act, 1998 landowners are legally responsible for the control of invasive alien plants on their properties and it is therefore recommended that the declared weed and invader species be removed.
- All areas affected by construction should be rehabilitated upon completion of the construction phase of the development. Areas should be reseeded with indigenous grasses as required.
- For a minimum period of one year after construction, active management of rehabilitated areas should take place to remove any recruited alien vegetation.
- Fires within the wetland areas must be prevented at all times.

5. REFERENCES

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Enivronemental Managment Plan

Lanseria x 51

Environmental Management Plan (EMP) – Revision 1

September 2015

B O K A M O S O

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1 Project Outline

1.1 Background

Extension 24 Commercial Leasing Co (Pty) Ltd is planning a proposed mixed township development to be known as **Lanseria Extension 51** on the Remaining Extent of Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ. ***(Refer to Figure 1: Locality Map and Figure 2: Aerial Map).*** **Bokamoso Landscape Architects and Environmental Consultants** were appointed by the applicant to compile an Environmental Impact Assessment (EIA) for the proposed developments and its associated listed activities. The size of the property is approximately **36,8305 ha** in extent.

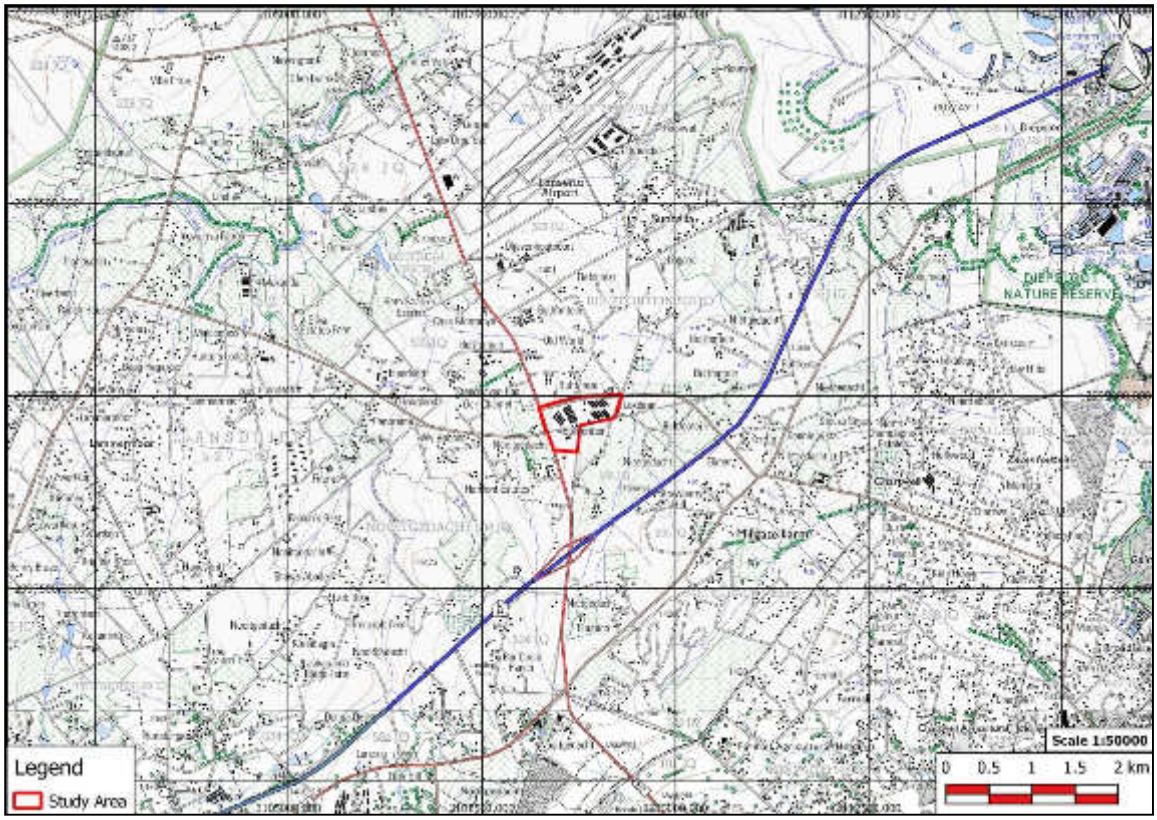


Figure 1 – Locality Map

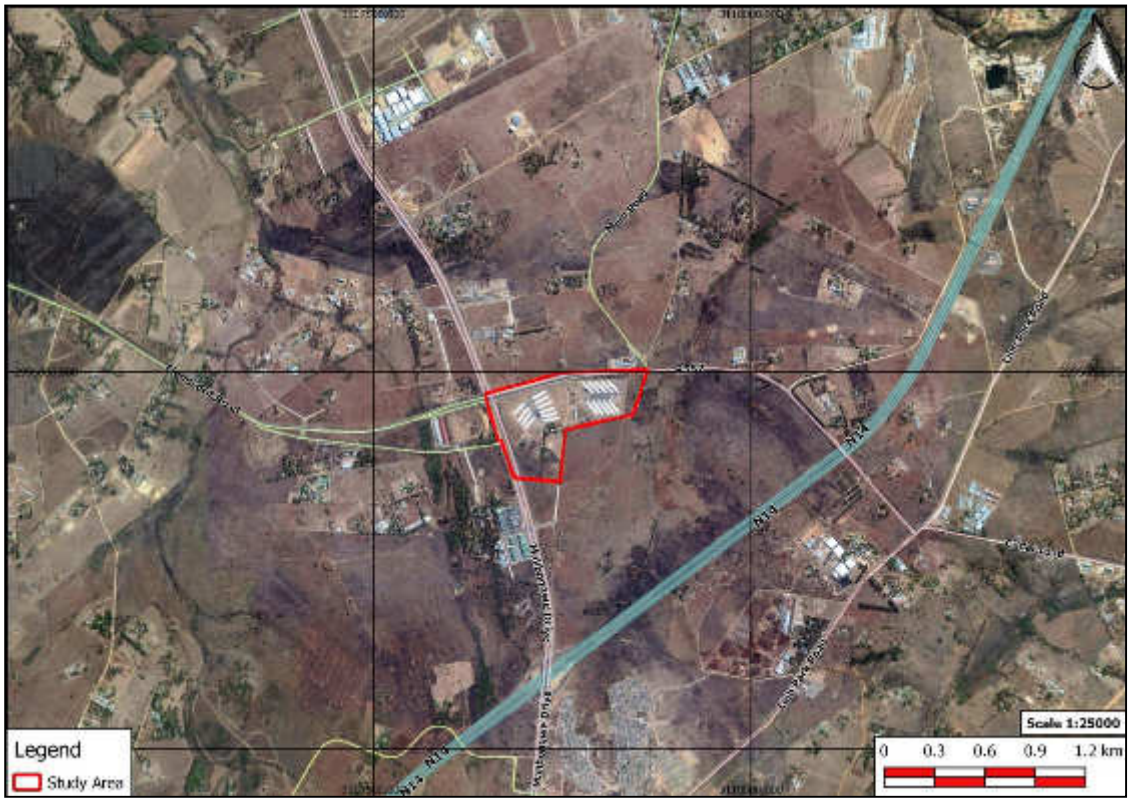


Figure 2 – Aerial Map

1.2 Project description

The proposed **Lanseria Extension 51** on the Remaining Extent of Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ. ***(Refer to Figure 1: Locality Map and Figure 2: Aerial Map).*** The size of the property is approximately **36,8305 ha** in extent.

Timeframe for construction:

The construction for the proposed Development Lanseria x 51 will commence as soon as approval for the proposed development has been granted from the relevant authorities.
The EMP will be a binding document for purposes of compliance.

1.3 Receiving Environment

Geology and Soils:

The site is underlain by bedrocks of the Halfway House Granite Site which consists mostly of granite and granite gneiss of the Basement Complex. These bedrocks have been intruded by basic igneous rocks. The residual soils are only partly or thinly developed across the site and comprise of gravelly silty sands and clayey silts. The overlying transported soils are predominantly silty (fine) sandy materials.

The EMP must include measures that prevent erosion, siltation and pollution. Dangerous excavations, the storage of topsoil and storm water management during the construction and operational phases of the development must also be addressed. Measures to be taken when additional graves and waste sites are discovered must also be included.

Hydrology and Topography:

The study area is not affected by 1:50 and 1:100 year flood lines.

No wetlands are found on the site. The western side of the study area gently drains towards the north-west and the east side drains towards the north-east.

There is a gentle slope towards the west section of the study area. The proposed development will be visible from the surrounding properties and roads that are at the same elevation and topography.

Fauna and flora:

Most of the study site comprised mixed alien and indigenous vegetation. The natural grassland on the site was kept short. The study site had only limited connectivity with natural grassland to the south.

Mammals: Considering the intensity of the proposed development, the mammal assemblage will be displaced, including the Red Data species. The site itself is so small that, at best, it only forms a part of species' home ranges. However, considering the mounting external pressures exerted on the endangered species of the neighbourhood, coupled to a disregard for their conservation welfare, it is submitted that the populations are on the decline on a road of regional extinction.

Birds: Melodious Larks were observed within the open grassland where the proposed development is to be constructed. This open grassland is also considered suitable habitat for other Red Data Species as listed above. It is recommended that the large open natural grassland area, in the middle of the site nearest to the ridge and chert ridge vegetation be left undeveloped and undisturbed.

Reptiles and Amphibians: The local herpetofauna of parts of this site is seriously depleted by long-term agricultural activities. The herpetofauna of the entire site will be more or less annihilated by urban development. Later, commensals such as the Speckled Skink, Cape Dwarf Gecko, the Tropical House Gecko and the Brown House Snake, species which can and will utilise human structures in association with man, will appear in this community.

Cultural /Historical:

No significant cultural and historical features are expected to occur on the study area. A HIA study is being conducted and will be included as part of the final EIA. It's also required that SAHRA provide comments on the proposed development.

Qualitative Environment:

Visual:

- Due to the location of the study area close to the N14 Freeway the proposed development could have a significant visual impact if it is not planned correctly. It could also have a positive impact if the development is well planned and integrated with the natural surroundings.

Noise:

- The construction phase could have a noise impact on the surrounding residents. The existing N14 Freeway close to the proposed site could have noise impacts on residential erven adjacent to these roads.

Dust:

- Dust could impact the surrounding residences if the construction will be done during the dry and windy months. The National Environmental Management: Air Quality Act (NEM:AQA) regulates dust pollution. The provisions of this act must be taken into consideration during the construction and operational phases of the development.

2 EMP Objectives and Context

Objectives

The objectives of this plan are to:

- Identify the possible environmental impacts of the proposed activity;
- Develop measures to minimise, mitigate and manage these impacts;
- Meet the requirements of the Record of Decision of GDARD and of other Authorities; and
- Monitor the project.

EMP context

This EMP fits into the overall planning process of the project by carrying out the conditions of consent as set out by the GDARD. In addition, all mitigation measures recommended in the EIA report are included in the EMP.

This EMP addresses the following three phases of the development:

- Pre-construction planning phase;
- Construction phase; and
- Operational phase.

3 Monitoring

In order for the EMP to be successfully implemented all the role players involved must have a clear understanding of their roles and responsibilities in the project.

These role players may include the Authorities (A), other Authorities (OA), Developer and/ or proponent (D), Environmental Control Officer (ECO), Project Manager (PM), Contractors (C), Environmental Assessment Practitioner (EAP), Environmental Site Officer – internal officer (ESO), Operational Phase Leasing Company (OPLC), Operational Phase Maintenance, Management and Compliance Monitoring Team (OPMMCMT), Construction and Operational Phase Security Management (COPSM) and Health and Safety Officer (HSO). Landowners, interested and affected parties and the relevant environmental and project specialists' are also important role players.

3.1 Roles and responsibilities

Developer (D)

The developer is ultimately accountable for ensuring compliance with the EMP and conditions contained in the Decision. The developer must appoint an independent Environmental Control Officer (ECO), for the duration of the pre-construction and construction phases, to ensure compliance with the requirements of this EMP. The developer must ensure that the ECO is integrated as part of the project team.

Project Manager (PM)

The project Manager is responsible for the coordination of various activities and ensures compliance with this EMP through delegation of the EMP to the contractors and monitoring of performance as per the Environmental Control Officer's monthly reports.

Environmental Control Officer (ECO)

An independent Environmental Control Officer (ECO) shall be appointed by the developer, for the duration of the construction and operational phases of the development in order to ensure compliance with the requirements of this EMP.

Contact details of appointed ECO

ECO details must be made available as soon as the developer appointed the relevant person/ company.

- The Environmental Control Officer (ECO) shall ensure that the contractor is aware of all the specifications pertaining to the project.
- Any damage to the environment must be repaired immediately after consultation between the Environmental Control Officer (ECO), Project Management, appointed Contractors, Development Management, Engineers.
- The Environmental Control Officer (ECO) shall ensure that the developer staff and/or contractor are adhering to all stipulations of the EMP.
- The Environmental Control Officer (ECO) shall be responsible for monitoring the EMP throughout the project by means of site visits and meetings. This should be documented as part of the site meeting minutes.
- The Environmental Control Officer (ECO) shall be responsible for the environmental training program.
- The Environmental Control Officer (ECO) shall ensure that all clean up and rehabilitation or any remedial action required, are completed prior to transfer of properties.

- A post construction environmental audit is to be conducted to ensure that all conditions in the EMP have been adhered to.

Contractor (C):

The contractors shall be responsible for ensuring that all activities on site are undertaken in accordance with the environmental provisions detailed in this document and that sub-contractor and laborers are duly informed of their roles and responsibilities in this regard.

The contractor will be required, where specified, to provide Method Statements setting out in detail how the management actions contained in the EMP will be implemented.

The contractors will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the environmental regulations.

Environmental Site Officer (ESO):

The ESO is appointed by the developer as his/her internal environmental representative to monitor, review and verify overall compliance with the EMP during construction and operational phases. The ESO is not an independent appointment but must be a member of the contractor's management team and the developer's operational phase management team. The ESO must ensure that he/she is involved with all aspects of the construction phase (from site clearance to rehabilitation) and the operational phase. The ESO must report to the developer and to the appointed independent ECO.

Authority (A):

The authority referred to is the Gauteng Department of Agriculture and Rural Development (GDARD).

Other Authorities (OA):

Other authorities referred to are:

- The National Department of Environmental Affairs (DEA);
- The Department of Water and Sanitation (DWS); and
- The South-African Heritage Resources Council (SAHRA).

Environmental Assessment Practitioner (EAP):

According to section 1 of the NEMA, the definition of an environmental assessment practitioner is "the individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instruments through regulations".

Operational Phase Leasing Company (OPLC)/ Developer

The company/party responsible for the leasing of the commercial/business, residential and other leasable structures/ facilities provided as part of the mixed-use development. The contact details and responsibilities of the person/s or company/s must be supplied to the ECO and GDARD prior to commencement with construction.

Operational Phase Maintenance, Management and Compliance Monitoring Team (OPMMCMT)

The team responsible for the maintenance, management and monitoring of the operational phase compliance with the EMP and all other management plans, guidelines etc.

Construction and Operational Phase Security Management (COPSM)

The team responsible for the management of the construction and operational phase security management.

Health and Safety Officer (HSO)

External Construction Phase Health and Safety Officer.

3.2 Lines of Communication

The Environmental Control Officer in writing should immediately report any breach of the EMP to the Project Manager. The Project Manager should then be responsible for rectifying the problem on-site after discussion with the contractor. Should this require additional cost, then the developer should be notified immediately before any additional steps are taken.

3.3 Reporting Procedures to the Developer

Any pollution incidents must be reported to the Environmental Control Officer immediately (within 12 hours). The Environmental Control Officer shall report to the Developer on a regular basis (site meetings).

3.4 Site Instruction Entries

The site instruction book entries will be used for the recording of general site instructions as they relate to the works on site. There should be issuing of stop work order for the purposes of immediately halting any activities of the contractor that may pose environmental risk.

3.5 ESA/ESO (Environmental Site Officer) Diary Entries

Each of these books must be available in duplicate, with copies for the Engineer and Environmental Control Officer. These books should be available to the authorities for inspection or on request. All spills are to be recorded in the ESA/Environmental Site Officer's diary.

3.6 Methods Statements

Methods statements from the responsible party (project manager/management company, engineer etc.) will be required for specific sensitive actions on request of the authorities/ECO/ESO. All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP document. For each instance wherein it is requested that the contractor submit a method statement to the satisfaction of the relevant authority/ the ECO of the ESO, the format should clearly indicate the following:

- What – a brief description of the work to be undertaken
- How- a detailed description of the process of work, methods and materials
- Where- a description and/ or a sketch map of the locality of work; and
- When- the sequencing of actions with due commencement dates and completion date estimate.

The responsible party must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the relevant authority/ ECO/ESO.

3.7 Record Keeping

All records related to the implementation of this management plan (e.g. site instruction book, ESA and/ or ESO diary, methods statements etc.) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for two years and should be available at any time for scrutiny by any relevant authorities.

3.8 Acts

1. National Environmental Management Act (Act 107 of 1998)

This Act addresses issues relating to environmental administration and it promotes sustainable development. If the involved authorities do not take the principles of the NEMA into consideration when evaluating an environmental report and/ or document, the involved authority can be held responsible for any damage to the environment (social, ecological and economical).

Implications for Development:

Not significant. The purpose of the EIA report will be to determine whether the proposed development and the development alternatives will be viable and sustainable, and to supply suitable mitigation measures that will protect the environment during the construction and the operational phases of the development.

If "fatal flaws" are identified during the EIA process, the EAP will not recommend that the project receive the go-ahead.

The 2010 Amended NEMA EIA Regulations

The Environmental Impact Assessment process followed is in terms of Government Notices No. R544, 545 and R546 published in the Government Gazette No. 33306 of 18 June 2010, promulgated in terms of the NEMA. Some minor amendments to the listed activities as listed in listing Notices 1, 2 and 3 came into effect on 29 November 2013 and such amendments are also taken into consideration.

The Regulations list activities that could have a detrimental impact on the environment (social, economic, institutional and ecological) and if a proposed development triggers any of the activities as listed in the Regulations, it will be necessary to follow an EIA Process. If only activities as listed in listing notices 1 and 3 are triggered, it will only be necessary to follow a Basic Assessment Process and if activities as listed in listing Notice 2 are triggered, it will be necessary to follow a full EIA process.

In the case of the proposed mixed-use development, activities as listed in listing notices 1, 2 and 3 are triggered and it will therefore be necessary to follow a full EIA process.

A full EIA Process consists of a Scoping Process and an EIA Process. The application process for the development is now almost completed and this EMP is attached as part of the Final EIA Report. The I&APs must forward their comments regarding the Final EIA to the assessing official at the delegated authority and to Bokamoso.

Also take note that the 2010 NEMA EIA Regulations were replaced by the 2014 Amended NEMA EIA Regulations on 4 December 2014. This application has however been submitted in terms of the 2010 EIA Regulations and therefore it will be dealt with (by GDARD and the peer review panel) in terms of the 2010 NEMA EIA Regulations.

Implications for Development:

The proposed development will trigger various activities as listed in listing notices 1, 2 and 3 of the 2010 Amended NEMA EIA Regulations and therefore it will be necessary to follow a Full EIA Process. This EMP is attached as part of the Final EIA compiled for the proposed Lanseria x51 development.

2. The National Water Act, 1998 (Act No: 36 of 1998)

In terms of Section 144 of the National Water Act it is required that the 1:50 and 1:100 year flood line be indicated on all relevant drawings submitted as part of township approval. Furthermore, the study area is affected by the Jukskei River and its tributaries. Therefore, Section 21 Water Use Licenses will be required for any development which may take place within and /or impact any water resource.

In addition a Section 21 Water Use License will be required for any construction activities or discharge of storm water within the 1:100 year flood line, or the riparian habitat, wetlands and watercourses as defined in the NWA.

Implications for Development:

No Section 21 water use licenses are required for the proposed township.

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

The purpose of the Act is "To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecological sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incident thereto".

Should the township include activities that are listed in the Act, a licence application will have to be submitted to City of Johannesburg Metropolitan Municipality.

Implications for Development:

Not Significant. At this stage it is not envisaged that the proposed development will trigger any activities as listed in the Schedules attached to the NEMA: AQA. During the construction phase dust pollution and noise pollution, also regulated by this Act, can become a significant factor, especially to the surrounding developments and landowners. It was however confirmed in the EIA that it will be possible to mitigate both dust and noise pollution to acceptable levels. The mitigation measures are supplied in this EMP.

4. National Environmental Management: Waste Act (Act 59, 2008) – NEM: WA

The purpose of the act is to reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

Impact on proposed Development:

Not Significant – The proposed development does not trigger any listed activities in terms of the Waste Act.

5. National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction of existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

It is important to note that in terms of the National Heritage Resources Act, (Act No 25 of 1999); all historical sites and materials older than 60 years are protected. It is an offence to destroy, damage, alter or remove such objects from the original site, or excavate any such site(s) or material without a permit from the National Monuments Council. Gravesites are subject to the requirements of the National Monuments Act, No. 28 of 1969.

Implications for Development:
Not significant – No features of Heritage importance are present on site.

6. National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

No red listed species were identified.

7. National Spatial Biodiversity assessment

The National Spatial biodiversity Assessment (NSBA) classifies areas worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

Specialist ecological assessments have been conducted for the study area.

4 Project activities

4.1 Pre-Construction Phase

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
General	**Project contract**	To make the EMP enforceable under the general conditions of the contract.	The EMP document must be included as part of the tender documentation for all contractor appointments		Developer	-	3
			All municipal by laws must be adhered to.				
			The DWS must be notified of any deviations from the conditions and commitments.				
			The proposed development must comply with all Sections of the National Water Services Act, 1997 (Act 107 of 1997).				
Design and planning	**Stability of structures and restriction of land use due to geology**	To ensure stability of structures	1) The layout and land uses must correspond to the stability zonation and development types recommended by the geotechnical engineer. 2) The foundation recommendations supplied by the geotechnical engineers must be adhered to. 3) Detailed foundation investigations should be done for large structures because residual dolomite material may experience settlements under load or be collapsible.		Individual Developer Engineer	-	
	Storm water design	To prevent and restrict erosion, siltation and	1) A detailed storm water management plan must be approved by the Local Authority and Council for Geoscience prior	Compilation and approval of storm water	Engineer Individual Developer	-	9

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
		groundwater pollution	to commencement of construction activities. Such approval must be submitted to DWS together with a copy of the original storm water management plans. Must be implemented according to guidelines provided by the relevant Local Authority Departments. 2) The storm water design for the proposed development must be designed to: Reduce and/ or prevent siltation, erosion and water pollution. 3) Storm water runoff should not be concentrated as far as possible and sheet flow should be implemented. 5) Energy dissipaters must be installed on the study area to break the speed of the water. 6) Surface storm water generated as a result of the development must not be channeled directly into any natural drainage system or wetland. 7) The storm water management plan should be designed in a way that aims to ensure that post development runoff does not exceed predevelopment values in: - Peak discharge for any given storm; - Total volume of runoff for any given storm; - Frequency of runoff; and - Pollutant and debris concentrations reaching water courses. 8)No natural channels will be allowed. All open channels and attenuation ponds must be lined with concrete. 9)Concentrated surface drainage is not	management plan			

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			permitted. 10) Storm water polluted by refuse, sewage and other surface pollution should be kept from coming into contact with public streams / clean water systems.				
			The developer must ensure that no wastewater may run freely into any of the surrounding streets or naturally vegetated areas and also ensure the correct positioning of construction camps and their sanitation facilities.	Correct positioning of construction camps	Engineer		
	Light pollution	To minimise light pollution	The generation of light by night events, security lighting and other lighting shall be effectively designed so as not to spill unnecessary light outward into the oncoming traffic, or into the yards of the neighbouring properties or open spaces.	Lightning effectively designed.	Architect	-	
	Visual impact	To minimize the visual impact of the proposed development.	Architectural guidelines to minimize the visual impact: The proposed development will be seen from a distance and therefore the roofs should not reflect the sun or be covered with roofing materials that have bright colours. Black or charcoal coloured roofs will blend in tastefully with the surrounding environment. Suitable plant materials should be used at strategic points to screen off impacts caused by roofs and cars in large parking areas. Existing trees and vegetation clumps should be retained as far as possible. The trees and vegetation will instantly soften the impact of the proposed permanent structures and they will bring the scale of the structures	Architectural guidelines minimizes visual impact	Architect	-	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			within the urban context down to a more human scale. The colour scheme should be taken from the palette of colours in the natural surroundings.				
Climate	**Extreme change in micro climate temperatures**	To prevent the extreme change in micro climate temperatures	Where open parking bays are involved, one tree for every two parking bays shall be indicated on the Site Development Plan which shall be approved by the Local Authority and Design Review Committee, if any.	Landscape Development Plan complies	Landscape Architect	-	
Geology and Soils	**Unsuitable Geotechnical conditions**	To prevent unsuitable Geotechnical conditions	The special precautionary measures, as indicated within the Geotechnical Report and Risk Management Report must be adhered to at all times. 1) A storm water management plan must be implemented on the study area to prevent the erosion of soil. 2) A pro-active maintenance strategy for water bearing services and other infrastructure should be implemented.	Precautionary measures implemented	Geotechnical engineer Dolomite Risk Manager	-	9
Fauna and flora	**Floral biodiversity and ecological health**	To ensure that the species introduced to the area, are compatible with the current and future quality of the ecological processes.	1) The site development plan for the proposed development shall be submitted to the local authority for approval. 2) It is important that all the plant positions, quantities and coverage per m² be indicated on a plan. 3) The proposed planting materials for the areas to be landscaped shall be non-invasive, and preferably indigenous and /or endemic. 4) As much of the existing indigenous trees, vegetation clumps and natural grassland will have to be incorporated within the proposed formal landscaping. 5) The vegetation around the Drainage channel must be retained and	The landscape development plan submitted to the local authority for approval.	Landscape Architect	-	10,11,13

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			rehabilitated where necessary. 6) Buffer zones should be adhered to.				
			The removal of Category 1 Declared invaders from the property is mandatory and Category 2 Declared invaders must be controlled.	Category 1 and 2 declared Invaders removed	Contractor ECO		3,8
Preparing Site Access	**Environmental integrity**	To avoid erosion and disturbance to indigenous vegetation	Designated routes shall be determined for the construction vehicles and designated areas for storage of equipment. Clearly mark the site access point and routes on site to be used by construction vehicles and pedestrians. Provide an access map to all contractors whom in turn must provide copies to the construction workers. Instruct all drivers to use access point and determined route.	Access to site is erosion free. Minimum disturbance to surrounding vegetation. Vehicles make use of established access routes.	Contractor	Continuous	
	Waste storage	To control the temporary storage of waste.	Temporary waste storage points on site shall be determined. These storage points shall be accessible by waste removal trucks and these points should not be located in sensitive areas /areas highly visible from the properties of the surrounding land-owners/tenants/in areas where the wind direction will carry bad odours across the properties of adjacent tenants or landowners.		Contractor ESO	-	
		Ensure waste storage area does not generate pollution	Build a bund around waste storage area to stop overflow into storm water.		Contractor	-	
		To prevent water pollution	-The storage and use of fuel and other chemicals on site must be adequately managed to prevent soil and water pollution.		Developer Contractor		

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			-Containment areas must be provided for handling of potential pollutants at refuelling depots - Transport, storage, handling and disposal of hazardous substances must be adequately controlled and managed.				
			No wastewater may run freely into any of the surrounding streets or naturally vegetated areas.		Contractor		

4.2 Construction Phase

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
Contractor's Camp	**Loss of Vegetation and topsoil**	To minimize damage to and loss of vegetation and retain quality of topsoil	Site to be established under supervision of ECO/ESO.	Minimal vegetation removed/ damaged during site activities.	Contractor	Before any construction activity commences and as and when required	5, 10, 11, 13
	Surface and ground water pollution	To minimize pollution of surface and Groundwater resources.	1) Sufficient and temporary facilities including ablution facilities must be provided for construction workers operating on the site. 2) A minimum of one chemical toilet shall be provided per 10 construction workers. The contractor shall keep the toilets in a clean, neat and hygienic condition. Toilets provided by the contractor must be easily accessible and a maximum of 50m from the works area to ensure they are utilized. The contractor (who must use reputable toilet-servicing company) shall be	Effluents managed Effectively. No pollution of water resources from site. Workforce use toilets provided.	Contractor ESO	As and when required	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			responsible for the cleaning, maintenance and servicing of the toilets. The contractor (using reputable toilet-servicing company) shall ensure that all toilets are cleaned and emptied before the builders' or other public holidays. 3) No person is allowed to use any other area than chemical toilets. 4) No French drain systems may be installed. 5) No chemical or waste water must be allowed to contaminate the run-off on site. This could possibly contaminate the drainage channel. 6) The chemical toilets may not be placed in close proximity of the adjacent dwellings to prevent odors from causing uncomforting situations. 7) Avoid the clearing of the site camp (of specific phase) or paved surfaces with soap. This could drain into the drainage channel on site and contaminate to open space system in the area.				
		To minimize pollution of surface and Groundwater resources due to spilling of materials.	1) Drip trays and/ or lined earth bunds must be provided under vehicles and equipment, to contain spills of hazardous materials such as fuel, oil and cement. 2) Repair and storage of vehicles only within the demarcated site area. 3) Spill kits must be available on site. 4) Oils and chemicals must be confined to specific secured areas within the site camp. These areas must be bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks. 5) All spilled hazardous substances must be	No pollution of the environment	Contractor ESO	Daily	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			contained in impermeable containers for removal to a licensed hazardous waste site. 6) No leaking vehicle shall be allowed on site. The mechanic/ the mechanic of the appointed contractor must supply the environmental officer with a letter of confirmation that the vehicles and equipment are leak proof. 7) No bins containing organic solvents such as paints and thinners shall be cleaned on site, unless containers for liquid waste disposal are placed for this purpose on site.				
		To minimize pollution of surface and groundwater resources by cement	The mixing of concrete shall only be done at specifically selected sites, as close as possible to the entrance, on mortar boards or similar structures to prevent run-off into drainage line, streams and natural vegetation.	No evidence of contaminated soil on the construction site.	Contractor ESO	Daily	
		To minimize pollution of surface and Groundwater resources due to effluent.	No effluent (including effluent from any storage areas) may be discharged into any water surface or ground water resource.	No evidence of contaminated water resources.	Contractor ESO	Daily	
	Pollution of the environment	To prevent unhygienic usage on the site and pollution of the natural assets.	1) Weather proof waste bins must be provided and emptied regularly. 2) The contractor shall provide laborers to clean up the contractor's camp and construction site on a daily basis. 3) Temporary waste storage points on the site should be determined. THESE AREAS SHALL BE PREDETERMINED AND LOCATED IN AREAS THAT IS ALREADY DISTURBED. These storage points should be accessible by waste removal trucks and these points should be located in already disturbed areas	No waste bins overflowing No litter or building waste lying in or around the site	Contractor ESO	Daily Weekly	5,13

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			/areas not highly visible from the properties of the surrounding land-owners/ in areas where the wind direction will not carry bad odours across the properties of adjacent landowners. This site should comply with the following: • Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. paint, lubricants, etc.; • Small lightweight waste items should be contained in skips with lids to prevent wind littering; • Bunded areas for containment and holding of dry building waste. 4) No solid waste may be disposed of on the site. 5) No waste materials shall at any stage be disposed of in the open veld of adjacent properties or within the drainage lines (No-Go areas). 6) The storage of solid waste on the site, until such time as it may be disposed of, must be in a manner acceptable to the local authority and DWS. 7) Cover any wastes that are likely to wash away or contaminate storm water.				
		Recycle material where possible and correctly dispose of unusable wastes	1) Waste shall be separated into recyclable and non-recyclable waste, and shall be separated as follows: • General waste: including (but not limited to) construction rubble, • Reusable construction material. 2) Recyclable waste shall preferably be deposited in separate bins. 3) All solid waste including excess spoil (soil,	Sufficient containers available on site No visible signs of pollution	Contractor ESO	Daily Weekly	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			rock, rubble etc) must be removed to a permitted waste disposal site on a weekly basis. 4) No bins containing organic solvents such as paints and thinners shall be cleaned on site, unless containers for liquid waste disposal are placed for this purpose on site. 5) Keep records of waste reuse, recycling and disposal for future reference. Provide information to ESO.				
			-The storage and use of fuel and other chemicals on site must be adequately managed to prevent soil and water pollution. -Containment areas must be provided for handling of potential pollutants at refuelling depots - Transport, storage, handling and disposal of hazardous substances must be adequately controlled and managed.	Correct storage and use of fuel. Containment areas provided for handling of potential pollutants at refuelling depots.	Contractor		
			If any pollution incident is experienced, DWS must be notified immediately.	Contractor			
	Increased fire risk to site and surrounding areas	**To decrease fire risk.**	1) Fires shall only be permitted in specifically designated areas and under controlled circumstances. This area may not be located in close proximity of the power lines as the natural grass within this area can easily take flame and could spread to surrounding open space system. 2) Food vendors shall be allowed within specified areas. 3) Fire extinguishers to be provided in all vehicles and fire beaters must be available on site.	No open fires on site that have been left unattended	Contractor	Monitor daily	6

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			4) Emergency numbers/ contact details must be available on site, where applicable.				
Construction site	**Geology and soils**	To prevent the damaging of the existing soils and geology.	1) The top layer of all areas to be excavated for the purposes of construction shall be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. 2) All surfaces that are susceptible to erosion, shall be protected either by cladding with biodegradable material or with the top layer of soil being seeded with grass seed/planted with a suitable groundcover.	Excavated materials correctly stockpiled No signs of erosion	Contractor	Monitor daily	
		To prevent the loss of topsoil To prevent siltation & water pollution.	1) Stockpiling will only be done in designated places where it will not interfere with the natural drainage paths of the environment. 2) In order to minimize erosion and siltation and disturbance to existing vegetation, it is recommended that stockpiling be done/ equipment is stored in already disturbed/exposed areas. 3) Cover stockpiles and surround downhill sides with a sediment fence to stop materials washing away. 4) Remove vegetation only in areas designated during the planning stage and for the purpose of construction. 5) Rehabilitation/ landscaping to be done immediately after the involved works are completed (will prevent erosion of the topsoil layer on site). 6) All compacted areas should be ripped prior to them being rehabilitated/landscaped by the contractor. 7) The top layer of all areas to be excavated must be stripped and stockpiled in areas	Excavated materials correctly stockpiled No visible signs of erosion and sedimentation Minimal invasive weed growth Vegetation only removed in designated areas	Contractor of Developer	Monitor daily	4,9

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			where this material will not be damaged, removed or compacted. This stockpiled material should be used for the rehabilitation of the site and for landscaping purposes. 8) Strip topsoil at start of works and store in stockpiles no more than 1,5 m high in designated materials storage area. 9) During the laying of any cables, pipelines or infrastructure (on or adjacent to the site) topsoil shall be kept aside to cover the disturbed areas immediately after such activities are completed. Rehabilitation of these areas shall be done directly after infill of the trenches. No rocks shall be placed on the topsoil after re-filling.				
	Erosion and siltation	To prevent erosion and siltation	1) It is recommended that the construction of the development be done in phases. 2) Each phase should be rehabilitated immediately after the construction for that phase has been completed. The rehabilitated areas should be maintained by the appointed rehabilitation contractor until a vegetative coverage of at least 80% has been achieved. 3) Mark out the areas to be excavated. 4) Large exposed areas during the construction phases should be limited. Where possible areas earmarked for construction during later phases should remain covered with vegetation coverage until the actual construction phase. This will prevent unnecessary erosion and siltation in these areas. 5) Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided.	No erosion scars No loss of topsoil All damaged areas successfully rehabilitated	Contractor ESO	Monitor daily	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			6) All embankments must be adequately compacted and planted with grass to stop any excessive soils erosion and scouring of the landscape if required. 7) The eradication of alien vegetation should be followed up as soon as possible by replacement with indigenous vegetation to ensure quick and sufficient coverage of exposed areas. 8) Storm water outlets shall be correctly designed to prevent any possible soil erosion. 9) All surface run-offs shall be managed in such a way so as to ensure erosion of soil does not occur. 10) Implementation of temporary storm water management measures that will help to reduce the speed of surface water by the individual erf owner / developer. 11) All surfaces that are susceptible to erosion shall be covered with a suitable vegetative cover as soon as construction is completed by the individual erf owner / developer.				
	Blasting	Safety during blasting operations	Blasting may only be done by specialists in the field and should be limited to localised areas. Surrounding land-owners of properties in close proximity of blasting exercises must be informed/ warned (at least one week in advance) of blasting exercises that will take place on the study area. Warning signs to warn site workers and	Blasting done by specialists Surrounding land owners informed in advance	Contractors		

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			members of the public of blasting exercises must be erected at strategic points on the study area and the area where the blasting exercises will take place must be fenced off with barrier tape. Blasting operations should be carefully controlled and the necessary safety precautions must be implemented.	Warning signs erected and barrier tape in place.			
	Hydrology	Groundwater management	1) Ongoing monitoring of groundwater levels on and in the immediate vicinity of the site is recommended.	No deviation from baseline data during regular sampling	Engineer	Monthly	
		To minimise pollution of soil, surface and groundwater	1) Increased run-off during construction must be managed using berms and other suitable structures as required to ensure flow velocities are reduced. 2) The contractor shall ensure that excessive quantities of sand, silt and silted water do not enter the storm water system.	No visible signs of erosion. No visible signs of pollution	Contractor	Monitor daily	
	Fauna and flora	To protect the existing fauna and flora.	1) All exotic invaders and weeds must be eradicated on a continuous basis. 2) Exotic invaders must be included in an alien management program for the site. Eradication must occur every 6 months. 3) No plants not indigenous to the area, or exotic plant species, especially lawn grasses and other ground-covering plants, should be introduced in the communal landscaping of the proposed site, as they will drastically interfere with the nature of the area	No exotic plants used for landscaping	Contractor ESO / Design Review Committee	As and when required Every 6 months	10,11,13
		To protect the	1) Trees that are intended to be retained	No measurable	Contractor	As and when	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
		existing fauna and flora.	shall be clearly marked on site. 2) Snaring and hunting of fauna by construction workers on or adjacent to the study area are strictly prohibited and offenders shall be prosecuted. 3)Should hedgehogs be encountered during the development, these should be relocated to natural grassland areas in the vicinity; 4) Wood harvesting of any trees or shrubs on the study area or adjacent areas shall not be allowed, especially within the Non-perennial drainage line. OFFENDERS WILL BE PROSECUTED AND A FINE WILL BE ISSUED IN ACCORDANCE WITH THE GDARD. 5) Where possible, work should be restricted to one area at a time. 6) Noise should be kept to a minimum and the development should be done in phases to allow faunal species to temporarily migrate into the conservation areas in the vicinity. 7) The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance; 8) Vegetation clumps and natural grassland areas to be retained and incorporated within the proposed development formal landscaping, must be marked and demarcated before any commencement of construction activities. These areas must be fenced off (will be seen as "No-Go" areas). 9) The trenches for the water pipelines and	signs of habitat destruction	ESO	required	5,10,11,13, 16

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			sewage lines should be as narrow as possible. Environmental damage caused by these trenches may be kept to a minimum by good forward planning and thereby reducing the actual length of time that they are open. Possible damage to wildlife is in direct proportion to the time that these trenches are open and may destroy amphibian and reptilian species.				
			• Alien and invasive plants must be removed from areas to be excluded from development and the area rehabilitated with vegetation endemic to the area; • No plants not indigenous to the area, or exotic plant species, especially lawn grasses and other ground covering plants, should be introduced in the landscaping of the proposed development, as they might spread into the areas of natural vegetation; • Forage and host plants required by pollinator species in the area should also be used in landscaped areas; • Dumping of builder's rubble and other waste in the areas earmarked for exclusion must be prevented through fencing or other management measures; • Entrance by vehicles, especially off-road cars and bakkies, off-road bicycles and quad bikes to the areas to be excluded should be		Contractor ESO	As and when required	5,10,11,13, 16

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			prohibited, both during the construction phase and during the lifespan of the project; • Foot paths should be restricted to areas where erosion can be controlled and damage to vegetation can be kept to a minimum; • The areas earmarked for exclusion from development must be fenced off during the construction phase to ensure that the developer and his contractors do not damage these areas or do not cover them with soil, builder's rubble or waste. • It is suggested that the building restrictions under the high tension power lines which transect the entire site, be used as a conservation feature by managing the grassland to attain as close as possible climax status; • Large indigenous trees should be left as part of the landscaping; and • Proper Veld Management Practices, such as fire management, should be implemented in the conservation areas.				
Social	**Noise impact**	To maintain noise levels below "disturbing" as defined in the national Noise Regulations.	1) Site workers must comply with the Provincial noise requirements as outlined. 2) Noise activities shall only take place during working hours	No complaints from surrounding residents and I & AP	Contractor	Monitored daily	16

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
	Dust impact	Minimise dust from the site	1) Dust pollution could occur during the construction works, especially during the dry months. Regular and effective damping down of working areas (especially during the dry and windy periods) must be carried out to avoid dust pollution that will have a negative impact on the surrounding environment. 2) When necessary, these working areas should be damped down in the mornings and afternoons.	No visible signs of dust pollution No complaints from surrounding residents and I & AP	Contractor	Monitored daily	2
	Safety and security	To ensure the safety and security of the public.	1) Although regarded as a normal practice, it is important to erect proper signs indicating the operations of heavy vehicles in the vicinity of dangerous crossings and access roads or even in the development site if necessary. 2) With the exception of the appointed security personnel, no other workers, friend or relatives will be allowed to sleep on the construction site (weekends included) 3) Construction vehicles and activities to avoid peak hour traffic times 4) Presence of law enforcement officials at strategic places must be ensured 5) Following actions would assist in management of safety along the road ▪ Adequate road marking ▪ Adequate roadside recovery areas ▪ Allowance for pedestrians and cyclists where necessary ▪ Although regarded as a normal practice, it is important to erect proper signs indicating the danger of the excavation in and around the development site. Putting	No incidences reported	Contractor ECO	Monitored daily	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			temporary fencing around excavations where possible.				
	Influx of people from other areas	In order to limit the influx of people from other areas	It is recommended that (where possible) only people from the local communities in and around the application site are employed.	People from local community employed.	Contractor	When required	
	Infrastructure and services		The road and services upgrading as recommended by the involved engineers to be implemented.	Road and services upgrading according to recommendation	Engineers	When required	4,15
		Installation of services	Determine areas where services will be upgraded and relocated well in advance. Discuss possible disruptions with affected parties to determine most convenient times for service disruptions and warn affected parties well in advance of dates that service disruptions will take place	No complaints from I & AP	Contractor ESO	When required	4,9
	Cultural Resources		1) It should be noted that in terms of the South African Resources Act (Act 25 of 1999) Section 35(4) no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material 2) Also important is that Section 34(1) of this act states that no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit, issued by the relevant provincial heritage resources authority. 3) If archaeological sites or graves are exposed during the construction work, it should be reported to a museum immediately, preferably to a museum with	No destruction of or damage to archaeological sites	Contractor ECO	Monitor daily	7

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			an archaeologist available, so that an investigation and evaluation of the finds can be made.				
	Visual impact	In order to minimise the visual impact	1) The disturbed areas shall be rehabilitated immediately after the involved construction works are completed. 2)Shade cloth must be used to conceal and minimise the visual impact of the site camps and storage areas 3) All equipment and materials should be stored in a designated area indicated by the ECO. 4) All areas must be kept neat and tidy and waste should be stored in the designated areas and removed on a weekly basis.	Visual impacts minimized	Contractor ESO	Monitor daily	
	Vegetation	Landscaping	1) When planting trees, care should be taken to avoid the incorrect positioning of trees and other plants, to prevent the roots of trees planted in close proximity to the line of water-bearing services from causing leaking in, or malfunctioning of the services. 2) The proposed planting materials for the areas to be landscaped should preferably be endemic and indigenous. 3) All new trees and shrubs to be planted on the study area shall be inspected for pests and diseases prior to them being planted. 4) The inspection shall be carried out by the maintenance contractor at the property of the supplier and not on the study area. 5) All trees to be planted shall be in 20L containers with a height of approximately 1,8 metres and a main stem diameter of approximately 300 mm.	Landscaping done according to landscape development plan	Landscape architect Contractor	When required	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Performance indicator*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			6) Rehabilitation of the drainage channel with indigenous vegetation should be done after construction has been completed on site.				
		Loss of plants	1) Aerate compacted soil and check and correct pH for soils affected by construction activities. 2) Make sure plant material will be matured enough and hardened off ready for planting. Water in plants immediately as planting proceeds. 3) Apply mulch to conserve moisture Plant according to the layout and planting techniques specified by the Landscape Architect in the Landscape Development plans for the site.	Landscaping done according to landscape development plan	Landscape architect Contractor	When required	
		Spread of weeds	Ensure that materials used for mulching and topsoil/ fertilisers are certified weed free. Collect certifications where available. Control weed growth that appears during construction.	Weed growth controlled	Landscape architect Contractor	When required	
		To ensure rehabilitation of the site	1) Compacted soils shall be ripped at least 200mm. 2) All clumps and rocks larger than 30mm diameter shall be removed from the soil to be rehabilitated 3) The soil shall be leveled before seeding 4) Hydro-seed the soil with Potch mixture or plant with suitable indigenous ground covering as specified) 5) Watering shall take place at least once per day for the first 14 days until germination of seeds have taken place 6) Thereafter watering should take place at least for 20 minutes every 4 days until grass have hardened off.	Grass have hardened off	Landscape architect Contractor	Once a day Then every 4 days	

4.3 Operational Phase

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
SITE CLEAN UP AND PREPARED FOR USE	**Storm water pollution**	Do not allow any materials to wash into the storm water system.	Remove erosion and sediment controls only if all bare soil is sealed, covered or re-vegetated. Sweep roadways clean and remove all debris from kerb and gutter areas. Do not wash into drains.	Contractor	-	
		Minimise waste	Decontaminate and collect waste in storage area ready for off-site recycling or disposal Arrange for final collection and removal of excess and waste materials.	Contractor	-	
ESTABLISHING PLANTS	**Slow or no re-vegetation to stabilise soil; loss or degradation of habitat**	To ensure re-vegetation to stabilize soil	Agreed schedule for regular follow-up watering, weed control, mulch supplements and amenity pruning, if needed. Replace all plant failures within three month period after planting.	Contractor	To be agreed	
MATERIALS FAILURE	***Structural damage. Loss of site materials.***		Inspect all structures monthly to detect any cracking or structural problems. Confirm with designer if there are design problems. Rectify with materials to match, or other agreed solution.	Contractor	-	
DRAINAGE FAILURE	***On-site and downstream drainage pollution or flooding***	Storm water management plan	Inspect all site drainage works and repair any failures. Confer with design engineer and to correct site problems.	Contractor	-	
SITE AUDIT	***Eventual project failure***	Successful project establishment	Routinely audit the works and adjust maintenance schedule accordingly.	Contractor	-	
GENERAL			Open fires and smoking during maintenance works are strictly prohibited.	Contractor	-	6
GEOLOGY	**Erosion of topsoil**	Prevent topsoil erosion	Due to loose topsoil, the soil must be covered by means of re-seeding and vegetation with suitable ground covering.	Engineer / Contractor /	Once off	
			A risk management plan must be designed and	Dolomite risk	Engineer	

TYPE	*Environmental risk or issue*	*Objective or requirement*	*Mitigation measure*	*Responsibility*	*Frequency of Action*	*Applicable Act no.*
			implemented. After completion it will become the responsibility of the Owners' Association. Infrastructure and ground-surface monitoring should be integral part of the risk management plan. Maintenance checks of infrastructure, the inspection of buildings, and the detection and repair/remediation of leaking services are amongst the tasks that will need to be undertaken at local council level. Findings should be recorded and entered into a database. Inspectors need to be aware or educated as to what to look for (ponding of water, cracks in the ground). Inspectors should be aware of the procedures to be followed in the event of an emergency.	management plan compiled		
REHABILITATIO N		To ensure alien and weeds are eradicated	A Rehabilitation Plan should be implemented after construction and should aim to prevent erosion and aid in the return of natural, endemic and indigenous vegetation cover to at least 80% of the rehabilitated area.	Contractor/ each home owner	Every 6 months	
			The DWS must be notified of any deviations from the conditions and commitments.			

5 Procedures for environmental incidents

5.1 Leakages & spills

- Identify source of problem.
- Stop goods leaking, if safe to do so.
- Contain spilt material, using spills kit or sand.
- Notify Environmental Control Officer
- Remove spilt material and place in sealed container for disposal (if possible).
- Environmental Control Officer to follow Incident Management Plan.

5.2 Failure of erosion/sediment control devices

- Prevent further escape of sediment.
- Contain escaped material using silt fence, hay bales, pipes, etc.
- Notify ECO.
- Repair or replace failed device as appropriate.
- Dig/scrape up escaped material; take care not to damage vegetation.
- Remove escaped material from site.
- ECO to follow Incident Management plan.
- Monitor for effectiveness until re-establishment.

5.3 Bank/slope failure

- Stabilize toe of slope to prevent sediment escape using aggregate bags, silt fence, logs, hay bales, pipes, etc.
- Notify ECO.
- ECO to follow Incident Management plan.
- Divert water upslope from failed fence.
- Protect area from further collapse as appropriate.
- Restore as advised by ECO.
- Monitor for effectiveness until stabilized.

5.4 Discovery of rare or endangered species

- Stop work.
- Notify ECO.
- If a plant is found, mark location of plants.
- If an animal, mark location where sighted.
- ECO to identify or arrange for identification of species and or the relocation of the species if possible.
- If confirmed significant, ECO to liaise with Endangered Wildlife Trust.
- Recommence work when cleared by ECO.

5.5 Discovery of archeological or heritage items

- Stop work.
- Do not further disturb the area.
- Notify ECO.
- ECO to arrange appraisal of specimen.
- If confirmed significant, ECO to liaise with National, Cultural and History Museum.
  P.O. Box 28088
  SUNNYSIDE
  0132
  Contact Mr. J. van Schalkwyk
  or
  Mr. Naude
- Recommence work when cleared by ECO

6. EMP review

1. The Site supervisor is responsible for ensuring the work crew is complying with procedures, and for informing the work crew of any changes. The site supervisor is responsible for ensuring the work crew is aware of changes that may have been implemented by GDARD before starting any works.

2. If the contractor cannot comply with any of the activities as described above, they should inform the ECO with reasons within 7 working days.

Public Participation

Proof of Site Notice

NOTICE OF EVIRONMENTAL IMPACT ASSESSMENT PROCESS

Notice is given of an application for an **Environmental Impact Assessment Process (EIA)** that was submitted to the Gauteng Department of Agriculture and Rural Development, in terms of Regulation No. R543 published in the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing **Environmental Impact Assessment Procedures (Listing Notice: 1, 2 and 3 – Government Notice R983, R984 & R985)** for the following activity:

Project Name: Proposed Lanseria X51 Mixed Land-Use Development

Property Description: Portion 22 pf the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ

Proposed Zoning Information: "Special", including Residential dwelling units, Hotels, Wholesale/Retail, Warehouse, Workshops, Showrooms, Exhibition and Distribution Centers, Restaurants, Offices, Places of Amusement, Medical Consulting Rooms and Places of Instructions.

Listing Activities Applied for:

GNR 544 (Listing Notice 1), 18 June 2010	Activity 9
GNR 545 (Listing Notice 2), 18 June 2010	Activity 15

Proponent Name: Extension 24 Commercial Leasing Co. (Pty) Ltd

Location: The proposed development is situated to the east of the R512, north of the N14 on Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.

Date of Notice: 11 August 2015 – 9 September 2015

Queries regarding this matter should be referred to:

Bokamoso Landscape Architects and Environmental Consultants CC
Public Participation registration and Enquiries: **Juanita De Beer**
Project Enquiries: **Anè Agenbacht**
P.O. Box 11375
Maroelana 0161
www.bokamoso.biz
Tel: (012) 346 3810
Fax: (086) 570 5659
E-mail: lizelleg@mweb.co.za

In order to ensure that you are identified as an Interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given above **within 30 days of this Notice.**


NOTICE OF ENVIRONMENTAL IMPACT
ASSESSMENT PROCESS

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Notice is given of an application for an **Environmental Impact Assessment (EIA) Process** that was submitted to the Gauteng Department of Agriculture and Rural Development, in terms of Regulation No. R543 published in the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing **Environmental Impact Assessment (EIA) Procedures (Notice 1, 2 and 3 – Governing Notice R544, R545 & R546)** for the following activity:

Project Name: Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.

Property Description: Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ

Proposed Zoning Information: The proposed activity will entail the construction of a mixed land-use development consisting of the following land-uses: Residential dwelling units, Hotels, Educational, Medical and Social Facilities, Retail, Offices, Entertainment, Motor Trade, Municipal and Government Institutions and Commercial Industrial land- uses. The activity will also include the construction of infrastructure associated and required for the above mentioned land-uses.

Extend of Development: The proposed development is 36, 374 hectares in extend.

Activities applied for in terms of Notice 1, 2 and 3 – Governing Notice R544, R545 & R546

GNR 544 (Listing Notice 1), 18 June 2010	Activity 9
GNR 544 (Listing Notice 1), 18 June 2010	Activity 11
GNR 544 (Listing Notice 1), 18 June 2010	Activity 18
GNR 544 (Listing Notice 1), 18 June 2010	Activity 28
GNR 545 (Listing Notice 2), 18 June 2010	Activity 4
GNR 545 (Listing Notice 2), 18 June 2010	Activity 6
GNR 545 (Listing Notice 2), 18 June 2010	Activity 13
GNR 546 (Listing Notice 3), 18 June 2010	Activity 19

Proponent Name: Extension 24 Commercial Leasing Co (Pty) Ltd

Location: The proposed development is situated to the east of the R512, north of the N14 on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.

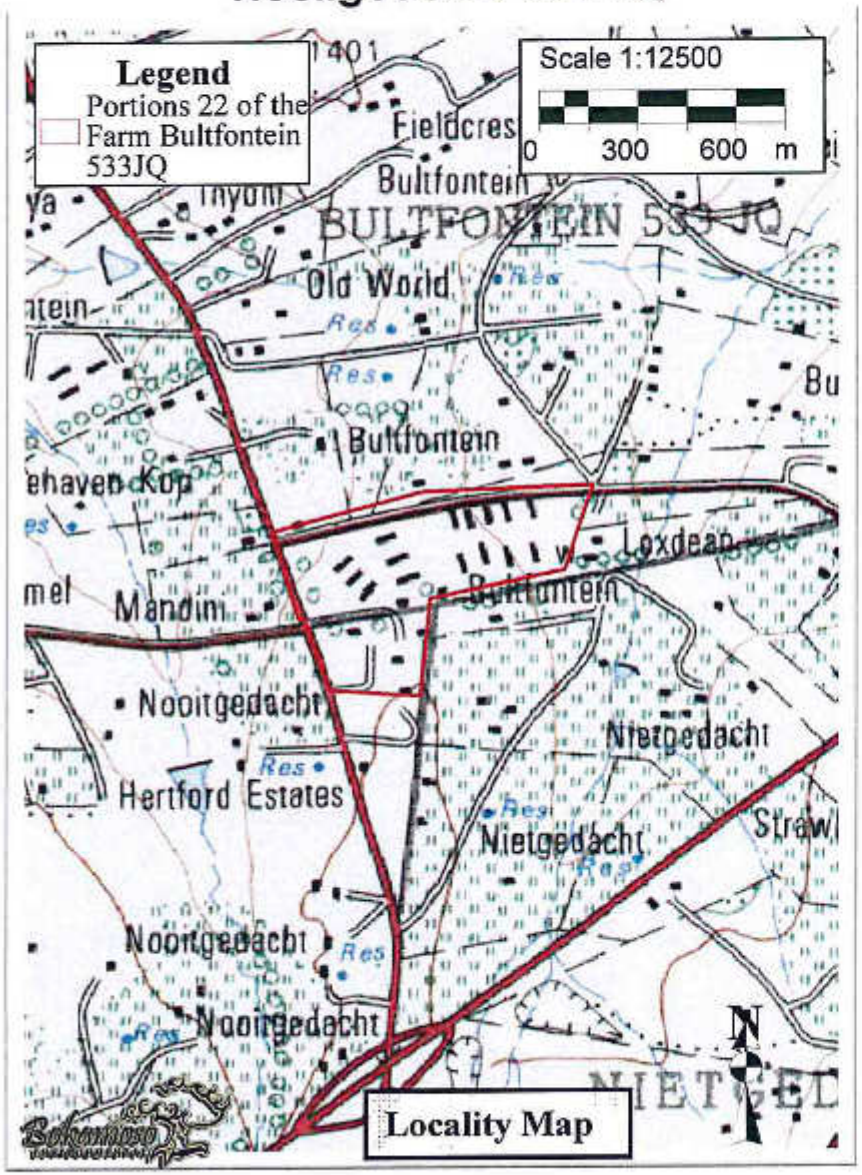
Date of Notice: 8 September 2011

Queries regarding this matter should be referred to:
Bokamoso Landscape Architects and Environmental Consultants
George Gericke
P.O. Box 11375
Maroelana 0161
www.bokamoso.net
Tel: (012) 346 3810
Fax: (086) 570 5659
email: lizelleg@mweb.co.za

In order to ensure that you are identified as an Interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given above **within 40 days of publication of this advertisement.**

Notices and Flyers that were Distributed

Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533-JQ and Portion 164 of the Farm Nooitgedacht 534-JQ



NOTICE OF ENVIRONMNETAL IMPACT ASSESSMENT PROCESS

Notice is given of an application for a Basic Assessment (BA) Process that was submitted to the Gauteng Department of Agriculture and Rural Development (GDARD), in terms of Regulation No. R543 published in the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing **Environmental Impact Assessment (EIA) Procedures (Notice 1, 2 and 3 – Governing Notice R544, R545 & R546)** for the following activity:

Project Name: Proposed Lanseria X51 Mixed Land-Use Development

Property Description: Portion 22 of the Farm Bultfontein 533-JQ and Portion 164 of the Farm Nooitgedacht 534- JQ.

Proposed Zoning Information: "Special", including Residential dwelling units, Hotels, Wholesale/Retail, Warehouse, Workshops, Showrooms, Exhibition and Distribution Centers, Restaurants, Offices, Places of Amusement, Medical Consulting Rooms and Place of Instructions.

Proponent Name: Extension 24 Commercial Leasing Co (Pty) Ltd

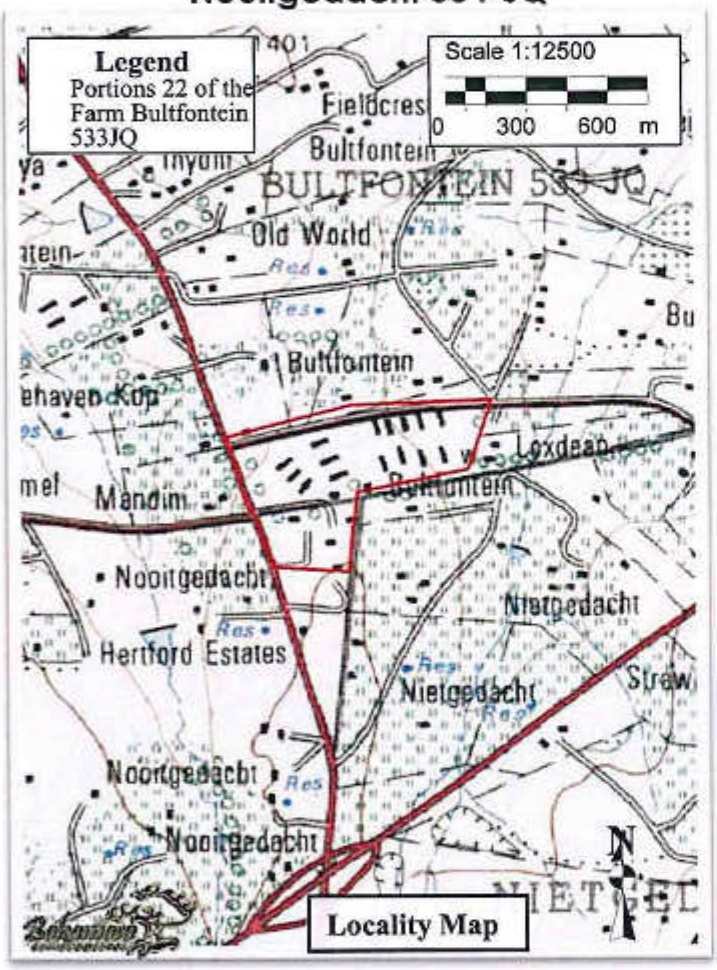
Location: The proposed development is situated to the east of the R512, north of the N14.

Date of Notice: 11 August 2015 – 9 September 2015

Queries regarding this matter should be referred to:
Bokamoso Landscape Architects and Environmental Consultants
Public Participation registration and Enquiries: **Juanita de Beer**
Project Enquiries: **Anè Agenbacht**
P.O. Box 11375
Maroelana 0161
lizelleg@mweb.co.za
Tel: (012) 346 3810
Fax: (086) 570 5659
email:

In order to ensure that you are identified as an interested and/or affected party please submit your name, contact information and interest in the matter, in writing, to the contact person given above within **30 days of publication of this advertisement.**

Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533-JQ and Portion 164 of the Farm Nooitgedacht 534-JQ



NOTICE OF ENVIRONMNETAL IMPACT ASSESSMENT PROCESS

Notice is given of an application for a Basic Assessment (BA) Process that was submitted to the Gauteng Department of Agriculture and Rural Development (GDARD), in terms of Regulation No. R543 published in the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing **Environmental Impact Assessment (EIA) Procedures (Notice 1, 2 and 3 – Governing Notice R544, R545 & R546)** for the following activity:

Project Name: Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533-JQ and Portion 164 of the Farm Nooitgedacht 534-JQ.

Property Description: Portion 22 of the Farm Bultfontein 533-JQ and Portion 164 of the Farm Nooitgedacht 534- JQ.

Proposed Zoning Information: The proposed development consisting of 2 portions zoned as ""Agricultural".

Proponent Name: Extension 24 Commercial Leasing Co (Pty) Ltd

Location: The proposed development is situated to the east of the R512, north of the N14.

Date of Notice: 13 September 2011

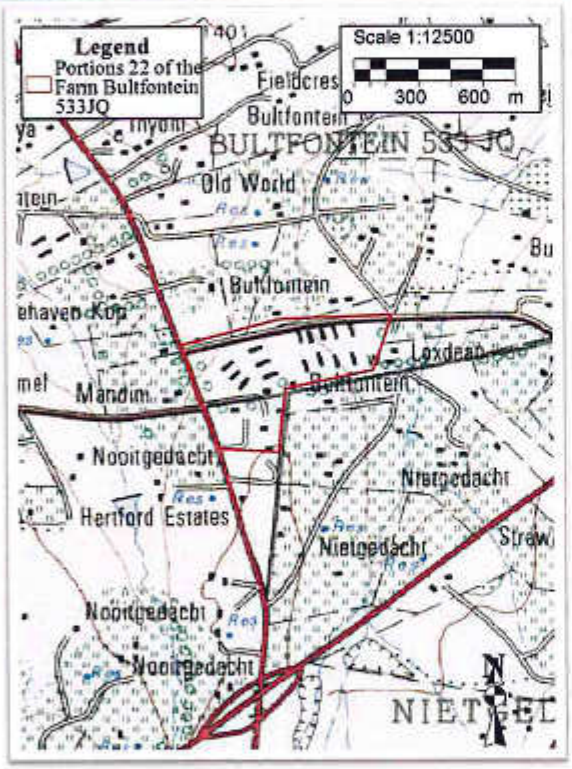
Queries regarding this matter should be referred to:

Bokamoso Landscape Architects and Environmental Consultants
George Gericke
P.O. Box 11375
Maroelana 0161
lizelleg@mweb.co.za
www.bokamoso.net
Tel: (012) 346 3810
Fax: (086) 570 5659
email:

In order to ensure that you are identified as an interested and/or affected party please submit your name, contact information and interest in the matter, in writing, to the contact person given above within **40 days of publication of this advertisement.**

Draft Scoping Report for Review

Lanseria Extension 51



All interested and affected parties are invited to review the development information and to register any issues and concerns to be included and addressed in the Final Scoping Report.

Venue: Hertford Country and Function Venue at the Reception.

Tel: 084 761 1017

Date: **4th July – 12th August 2012**

Website: www.bokamoso.net

Please do not hesitate to contact us if there are any questions in connection with the above-mentioned development.
Contact Person: Juanita De Beer
Tel (012) 346 3810 Fax (086) 570 5659
E-mail: lizelleg@mweb.co.za
Website: www.bokamoso.net

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(With an insurance option/met 'n versekeringsopsie)

Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender
Naam en adres van afsender Bobamoso, PO Box 11375, Maroeladal 0161

Customer Service
Toll free number
Tolvry nommer
0800 111 502

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntekopie
1	Van Biljon, SDH PO Box 765 Rivonia 2128					REGISTERED LETTER RD 585 454 555 ZA CUSTOMER COPY
2	Chieftain Real Estate Inc. in Ireland PO Box 181 Polokwane 0699					REGISTERED LETTER RD 585 454 564 ZA CUSTOMER COPY
3	Falcon Forest Trading 73 Sanderson,R PO Box 52368 Saxonwold 2132					REGISTERED LETTER RD 585 454 581 ZA CUSTOMER COPY
4	Chieftain Real Estate Inc. in Ireland PO Box 181 Polokwane 0699					REGISTERED LETTER RD 585 454 578 ZA CUSTOMER COPY
5	Van Biljon SDH PO Box 765 Rivonia 2128					REGISTERED LETTER RD 585 454 604 ZA CUSTOMER COPY
6	Dargawi Foundation Fakir, M PO Box 34037 Erasmia 0023					REGISTERED LETTER RD 585 454 595 ZA CUSTOMER COPY
7	Steinberg, HA PO Box 34071 Pretoria 0001					REGISTERED LETTER RD 585 454 621 ZA CUSTOMER COPY
8	Viador SA Adam, Mohamed PO Box 55835 Arcadia 0007					REGISTERED LETTER RD 585 454 618 ZA CUSTOMER COPY
9	Abdullah, ZB PO Box 14430 Laudium 0037					REGISTERED LETTER RD 585 454 649 ZA CUSTOMER COPY
10	Naidoo LA PO Box 53211 Centurion 0046					REGISTERED LETTER RD 585 454 635 ZA CUSTOMER COPY
	Total Totaal	R	R	R	R	

Number of letters posted
Getal briewe gepos .....

Signature of client
Handtekening van kliënt .....

Signature of accepting officer
Handtekening van aanneembeampte .....

Date stamp
GENLYN PARK 2011 -08- 11 0063
Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

APCT

701248

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(With an insurance option/met 'n versekeringsopsie)

Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender
Naam en adres van afsender Botanese PO Box 11375, Maroeland 0161

Toll free number
Tolvry nommer
0800 111 502

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntekopie
1	Lawrence, RD PO Box 560 Fairways 2055					RD 585 454 462 ZA
2	Liebenberg, JM Po Box 3885 Randburg, 2125					RD 585 454 459 ZA
3	Croft, A Po Box 1858 Bromhof, 2154					RD 585 454 480 ZA
4	Hertford Estates, Gamsky, D Po Box 2907 Parklands 2121					RD 585 454 476 ZA
5	Orange County Investments Po Box 1745 Pinegowrie 2123					RD 585 454 502 ZA
6	Cradel City Van Wyk, AP Po Box 368 Fionda Hills 1716					RD 585 454 493 ZA
7	Barnard, MC Po Box 986 Lanseria, 1748					RD 585 454 528 ZA
8	Coral Investment Property Shtein, J Po Box 1163 Houghton 2041					RD 585 454 516 ZA
9	Croft A Po Box ~~3885~~ 1858 Bromhof 2154					RD 585 454 547 ZA
10	Maria RJ PO Box 50581 Wierda Park 0149					RD 585 454 533 ZA
	Total Totaal	R	R	R	R	

Number of letters posted
Getal briewe gepos .....

Signature of client
Handtekening van kliënt.....

Signature of accepting officer
Handtekening van aanneembeampte.....

Date stamp
WENDYLN PARK 2011 -09- 14 0003
Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

APCT

701248

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(With an insurance option/met 'n versekeringsopsie)

Nietgedacht / Bultfontein Sunderland Ridge 18 Velmore

Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender
Naam en adres van afsender Botamoso PO Box 11375, Moreletá 0161

Toll free number
Tolvry nommer
0800 111 502

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Maritz HC PO Box 36109 Erasmia 0023					REGISTERED LETTER RD 585 454 666 ZA CUSTOMER COPY
2						
3						
4						
5						
6						
7						
8						
9						
10						
	Total Totaal	R	R	R	R	

Number of letters posted
Getal briewe gepos ....

Signature of client
Handtekening van kliënt..................

Signature of accepting officer
Handtekening van aanneembeampte..................

Date stamp
MENLYN PARK 2011 -08- 14 0063
Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

AFCT

701248

Newspaper Advertisement

Ingevolge Artikel 4(1) van die Insolvensiewet, Nommer 24 van 1936, soos gewysig, word hierby deur 'n versoeker kennis gegee van sy aansoek wat by die Hooggeregshof op die dag en tyd soos genoem, gedoen sal word, of so spoedig moontlik daarna as wat die saak verhoor kan word, om aanname van die oorgawe van sy Boedel, of van die intrekking van 'n sodanige voorafe kennisgewing van oorgawe en na verkryging van die Meester se toestemming, ingevolge Artikel 7 van die Wet.
Naam van aansoeker, beroep en adres, styl van vennootskap of firma, en name en adresse van vennote:- BOTHA; CHRISTIAAN MARTHINUS
ID: 670620 5170 08 3
Beroep: VERKOOPSMAN
Huwelikstatus: GETROUD BUITE GEMEENSKAP VAN GOEDERE
Woonagtig te: 70 SAVUTI, 382 HARDYARD STRAAT, CLUBVIEW, CENTURION
Of 'n aansoek, die Afdeling van die Hooggeregshof en datum en tyd van aansoek; of intrekking (van 'n sodanige kennisgewing van oorgawe) en datum van Meester se toestemming: Aansoek: In die Hooggeregshof van Suid-Afrika (Noord Gauteng Hoë Hof, PRETORIA)
Op: 6 OKTOBER 2011, Om: 10:00
Datum vanaf wanneer sy vermoëstaat ter insae sal lê vir 14 Dae, die Meester se Kantoor en, indien so, die Landdros se Kantoor waar dit sal lê:
Meesterskantoor: PRETORIA
Vanaf: 9 SEPTEMBER 2011
Die Prokureur vir die Aansoeker, slegs een Adres en Datum: Prokureur se Adres: POSBUS 8315, CENTURION, 0046
2 SEPTEMBER 2011
Adverteerder en Adres:
DANIE POTGIETER PROKUREURS
P/A MAGDA KETS PROKUREURS
MUCKLENEUKSTRAAT 333
BROOKLYN, PRETORIA
TEL: 012-663-5626
DATUM: 2 SEPTEMBER 2011
SEP 9(DP)181.469

DE LEEUW: H
KENNISGEWING VAN OORGAWE VAN 'N SKULDENAAR SE BOEDEL
Ingevolge Artikel 4(1) van die Insolvensiewet, Nommer 24 van 1936, soos gewysig, word hierby deur 'n versoeker kennis gegee van sy aansoek wat by die Hooggeregshof op die dag en tyd soos genoem, gedoen sal word, of so spoedig moontlik daarna as wat die saak verhoor kan word, om aanname van die oorgawe van sy Boedel, of van die intrekking van 'n sodanige voorafe kennisgewing van oorgawe en na verkryging van die Meester se toestemming, ingevolge Artikel 7 van die Wet.
Naam van aansoeker, beroep en adres, styl van vennootskap of firma, en name en adresse van vennote:- DE LEEUW; HEINRICH
ID: 810609 5291 08 3
Beroep: IT KONSULTANT
Huwelikstatus: GETROUD BUITE GEMEENSKAP VAN GOEDERE
Woonagtig te: 32A HIBISCUS, THATCHFIELD, CENTURION
Of 'n aansoek, die Afdeling van die Hooggeregshof en datum en tyd van aansoek; of intrekking (van 'n sodanige kennisgewing van oorgawe) en datum van Meester se toestemming: Aansoek: In die Hooggeregshof van Suid-Afrika (Noord Gauteng Hoë Hof, PRETORIA)
Op: 6 OKTOBER 2011, Om: 10:00
Datum vanaf wanneer sy vermoëstaat ter insae sal lê vir 14 Dae, die Meester se Kantoor en, indien so, die Landdros se Kantoor waar dit sal lê:
Meesterskantoor: PRETORIA
Vanaf: 9 SEPTEMBER 2011
Die Prokureur vir die Aansoeker, slegs een Adres en Datum: Prokureur se Adres: POSBUS 8315, CENTURION, 0046
2 SEPTEMBER 2011
Adverteerder en Adres:
DANIE POTGIETER PROKUREURS
P/A MAGDA KETS PROKUREURS
MUCKLENEUKSTRAAT 333
BROOKLYN, PRETORIA
TEL: 012-663-5626
DATUM: 2 SEPTEMBER 2011
SEP 9(DP)181.484

LOURENS: PJ
KENNISGEWING VAN AANSOEK OM SEKWESTRASIE
In die Noord Gautengse Hoërhof, Pretoria (Republiek van Suid-Afrika). In die ex-parte aansoek van: LOURENS: PETRUS JOHANNES (Id No: 790827 5145 08 7), Applikant
Getroud buite gemeenskap van goed
SCOTTSTRAAT 84, ORKNEY, 2620
GELIEWE KENNIS TE NEEM dat die Applikant aansoek sal doen na 'n Regter van die bogemelde Agbare Hof op 6 Oktober 2011 om 10:00, vir 'n Bevel vir die Vrywillige Boedel Oorgawe van die Boedel van die Applikant. GELIEWE VERDER KENNIS TE NEEM dat die aansoek ter insae sal lê by die Kantore van die Meester van die Hooggeregshof te PRETORIA, en die Landdroshof te KLERKSDORP, vir 'n tydperk van 14 (Veertien) Dae, vanaf: 12 September 2011 - 26 September 2011.
Gedateer te Klerksdorp op hede die 1ste dag van September 2011.
(GET) EH KING
KING, VILJOEN & SNYDERS ING
GOLFSTRAAT 17, KLERKSDORP, 2570
SEPT 9(KVS)181.486

SCHEEPERS L & PA
KENNISGEWING ITV ARTIKEL 4(1) VAN WET 24 VAN 1936
Kennis word hiermee gegee dat aansoek gedoen sal word om by die Hoë Hof van Suid-Afrika (Noord Gauteng Hoë Hof, Pretoria) op 5 Oktober 2011 om 10:00 of so spoedig moontlik daarna as wat die aansoek aangehoor kan word, vir die oorgawe van die boedel van SCHEEPERS; LINDA (Identiteitsnommer: 881025 0236 08 0), 'n meerderjarige weduwee vroulike persoon woonagtig te VILJOENSTRAAT 76, KRUGERSDORP-NOORD, GAUTENG PROVINSIE, getroud binne gemeenskap van goed met PETER ARTHUR SCHEEPERS (Identiteitsnommer: 680506 5138 08 5), 'n meerderjarige manlike persoon woonagtig te VILJOENSTRAAT 76, KRUGERSDORP-NOORD, GAUTENG PROVINSIE. Neem verder kennis dat die Applikante se vermoëstaat ter insae sal lê by die kantoor van die Meester van die Hoë Hof, PRETORIA en by die kantoor van die Landdroshof KRUGERSDORP vir 'n tydperk van 14 (veertien) dae vanaf 9 September 2011.
(GET) TF STOFBERG
PROKUREUR VIR APPLIKANTE
STOFBERG PROKUREURS

... 2010 INGEVOLGE ARTIKEL 56(1)(b)(i) VAN DIE ORDONNANSIE OP DORPSBEPLANNING EN DORPE, 1986
Ek, Hendrik Lochner Susan van Reed & Vennote synde die gemagtigde agent van die eienaar van voorgestelde Gedeelte 1 van Erf 653 Bethal Uitbreiding, Registrasie Afdeling I.S., provinsie Mpumalanga gee hiermee ingevolge artikel 56(1)(b)(i) van die Ordonnansie op Dorpsbeplanning en Dorpe, 1986, kennis dat ek by die Govan Mbeki Munisipaliteit aansoek gedoen het om die wysiging van die grondgebruikskema, bekend as die Govan Mbeki Grondgebruikskema 2010 deur die hersonering van die eiendom hierbo beskryf, geleë op die hoek van Fentonsteinstraat en
van Tonder Laan vanaf «Spesiaal» vir besigheid doeleindes na «Institusioneel». Besonderhede van die aansoek lê ter insae
gedurende gewone kantoorure by die Stadsekretaris, Derdevloer, Munisipale gebou, Horwoodstraat, Sentrale Besigheidsarea, Secunda vir 'n tydperk van 28 dae vanaf 02 September 2011. Besware teen of vertoë ten opsigte van die aansoek
moet binne 'n tydperk van 28 dae vanaf 02 September 2011 skriftelik tot die Stadsekretaris by bovermelde adres of by Privaatsak X1017, Secunda, 2302 ingedien of gerig word. Adres van agent: Reed & Vennote, Professionele Landmeters, Posbus 985, Secunda, 2302 Tel: 017 631 1284 Faks: 017 631 1770
Ons verwysing: HS-BL-LU-02/11
P11218 SEP 2,9(HSL)195

JOHANNESBURG NORTH, ERF 391/1
SANDTON, RANDBURG, ROODEPOORT EN HALFWAY HOUSE DORPSBEPLANNINGSKEMAS
Voorgestelde begtoestemming van: "2ND DWELLING"
Kennis geskied hiermee ooreenkomstig Klousule 18 van bogenoemde Skema, dat ekl/ons, van voornemens is om by die Stad van Johannesburg, aansoek te doen om vergunning tot bogemelde gebruik op Erf 391 Gedeelte 1, geleë te Johannesburg Noord. Besonderhede van hierdie aansoek, lê gedurende Kantoorure te Pretorius Weg 18, Van Riebeeckpark, ter insae. Enige iemand wat beswaar daarteen wil opper dat hierdie aansoek toegestaan word, moet sy beswaar en die rede daarvoor, nie later as 30/09/2011, skriftelik by die Uitvoerende Direkteur: Ontwikkelingsbeplanning, Vervoer en Omgewing, Kamer 8100, 8e Verdieping, A-Blok, Metropolitaanse Sentrum, Lovedaystraat 158, Braamfontein, en die ondergetekende(s), indien.
Naam en Adres van Applikant: SG & AE HEWITT, SKOOL WEG 9, JOHANNESBURG NOORD
ERF 391 SEPT 9,16(JOS)P)165

STERKLOOP 688-LS (PLAAS) IVYPARK UITBR. 53, GED 38
KENNISGEWING VAN GRONDONTWIKKELINGSGEBIEDAANSOEK
Noordplan Stads & Streekbeplanner BK het 'n aansoek geloods in terme van die Wet op Ontwikkelingsfasilitering, 1995 vir die vestiging van 'n grondontwikkelingsgebied en die verdeling van grond in terme van artikel 31 van genoemde wet op Gedeelte 388 van die plaas Sterkloop 688 LS. (Voorgestelde Dorp Ivypark uitbreiding 53) Die ontwikkeling sal bestaan uit 2 erwe. Erf 1 is 0,1 ha groot en die sonering is Bestaande Openbare pad om in te pas by die bestaande straat patroon van die gebied. Erf 2 is 3,82 ha groot en die sonering is Besigheid 2 om voorsiening te maak vir 'n kantoor ontwikkeling van 21 000m² B.V.O op die erf of vir 'n kantoor en besigheid ontwikkeling van 10 000m² B.V.O vir elke grondgebruik op die erf. Die relevante planne, dokumente en inligting is ter insae beskikbaar te kantoor 323/324 Hanes Towers h/v Mark en Rabe straat, Polokwane en by die Grondontwikkelings applikant vir 'n tydperk van 21 dae vanaf 9 September 2011. Die aansoek sal oorweeg word tydens 'n Tribunaalverhoor wat gehou sal word te Golden Pillow - 57 Thabo Mbeki Straat op 8 Desember 2011 om 10:00 en die voorverhoor samesprekings sal ook gehou word te Golden Pillow op 17 November 2011 om 10h00. Enige persoon wat 'n belang het by die aansoek, moet asseblief kennis neem: 1) U mag binne 'n tydperk van 21 dae vanaf die eerste publikasie van hierdie kennisgewing, die Aangewese Beampte en Grondontwikkelings applikant skriftelik van u vertoë of ondersteuning of enige ander kommentaar wat nie 'n beswaar is voorsien in welke geval nie vereis word dat u die verhoor moet bywoon nie, of 2) indien u kommentaar neerkom op 'n beswaar met betrekking tot enige aspek van die grondontwikkelingsaansoek, moet u persoonlik of u verteenwoordiger, voor die Tribunaal verskyn by die voorverhoor konferensie op die datum hierbo vermeld. Enige geskrewe beswaar of vertoë moet die naam en adres van die persoon of liggaam meld wat die beswaar of voorlegging maak, die belang wat sodanige persoon of liggaam by die saak het, vermeld, en die redes vir die beswaar of vertoë en moet binne die 21 dae ingedien word by die Aangewese beampte en grondontwikkelings applikant by sy of haar adres wat hieronder genoem word. U mag in verband hiermee die Aangewese beampte indien u enige navrae het by kantoor 323/324 Hanes Towers, h/v Mark en Rabe straat, Polokwane of Privaat Sak X 9485, Polokwane 0700
Tel 015-294-6394 en
e-pos: NeshitomboniHT@limdlgh...
GRONDONTWIKKELINGS APPLIKANT: Noordplan Stads & Streekbeplanners Hans van Rensburgstraat 19 b / Posbus 55426, Polokwane 0700, 015-291-4265
(9 & 16 Sept)

NOTICE OF LAND DEVELOPMENT AREA APPLICATION
Northplan Town & Regional Planners CC has lodged an application in terms of the Development Facilitation Act 1995 for the establishment of a land development area and subdivision of land in terms of section 31 of the said act on Portion 388 of the farm Sterkloop 688 LS. (Proposed Township Ivypark extension 53) The development will consist of 2 erven. Erf 1 is 0,1 ha and zoned for Existing Public road to fit in with the existing street pattern of the area and erf 2 is 3,32 ha zoned Business 2 to accommodate an office development of 21 000m² GLFA on the erf or an office and retail development of 10 000m² GLFA for each land use on the erf. The relevant ...

... SONJA MEISSNER-ROLOFF en/of NICOLAS JOHANNES SMITH van Plandev Stads- en Streekbeplanners, van voornemens is om by die Ekurhuleni Metropolitaanse Munisipaliteit aansoek te doen om toestemming vir die gebruik van 'n deel (± 300 m²) van Erf 3831, Midstream Estate Uitbreiding 41 vir doeleindes van 'n opvoedkundige fasiliteit (plek van onderrig). Die eiendom is geleë op die kruising van voorgestelde Provinsiale Pad K220, Mountain Peak Drive and Mt Quray Street en is aanliggend aan die bestaande Midlands Pre-Primêre Skool. Die huidige sonering van die grond ingevolge die Dorpsbeplanningskema is "Besigheid 2". Planne en/of besonderhede aangaande die aansoek lê ter insae gedurende kantoorure by die adres van die ondergetekende te Highveld Office Park, Charles de Gaullesingel, Highveld, Centurion en die Administratiewe Eenheid Hoof: Noordelike Streek, Ekurhuleni Metropolitaanse Munisipaliteit, Kamer B301, Burgersentrum, hoek van CR Swartrylaan en Pretoriaweg, Kempton Park, vir 'n tydperk van 14 dae vanaf 09 September 2011. Besware teen of vertoë ten opsigte van die aansoek moet binne 'n tydperk van 14 dae vanaf 09 September 2011 skriftelik en in tweevoud by of tot die Administratiewe Eenheid Hoof: Noordelike Streek, Ekurhuleni Metropolitaanse Munisipaliteit by bovermelde adres of by Posbus 13, Kempton Park ingedien of gerig word. Die datum van die eerste kennisgewing is 09 September 2011.
Naam: Plandev Stads- en Streekbeplanners
Posbus 7710, Centurion, 0046
Tel: 012-665-2330 Faks: 012-665-2333
ERF 3831 SEPT 2,9(P)188

OIS / Advertensieborde

Bultfontein 533 JQ, Portion 22, Nooitgedacht 534 JQ, Portion 184
NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS
Notice is given of an application for an Environmental Impact Assessment (EIA) Process that was submitted to the Gauteng Department of Agriculture and Rural Development. In terms of Regulation No. R543 published in the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing Environmental Impact Assessment (EIA) Procedures (Notice 1, 2 and 3 - Governing Notice R544, R545 & R546) for the following activity: Project Name: Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 184 of the Farm Nooitgedacht 534 JQ. Property Description: Portion 22 of the Farm Bultfontein 533JQ and Portion 184 of the Farm Nooitgedacht 534 JQ. Proposed Zoning Information: The proposed activity will entail the construction of a mixed land-use development consisting of
the following land uses: Residential dwelling units, Hotels, Educational, Medical and Social Facilities, Retail, Offices, Entertainment, Motor Trade, Municipal and Government Institutions and Commercial Industrial land- uses. The activity will also include the construction of infrastructure associated and required for the above mentioned land-uses. Extend of Development: The proposed development is 38, 374 hectares in extend. Activities applied for in terms of Notice 1, 2 and 3 - Governing Notice R544, R545 & R546 GNR 544 (Listing Notice 1), 18 June 2010 Activity 9; GNR 544 (Listing Notice 1), 18 June 2010 Activity 11; GNR 544 (Listing Notice 1), 18 June 2010 Activity 18; GNR 544 (Listing Notice 1), 18 June 2010 Activity 29; GNR 545 (Listing Notice 2), 18 June 2010 Activity 4; GNR 545 (Listing Notice 2), 18 June 2010 Activity 6; GNR 546 (Listing Notice 3), 18 June 2010 Activity 13; GNR 546 (Listing Notice 3), 18 June 2010 Activity 19. Proponent Name: Extension 24 Commercial Leasing Co (Pty) Ltd. Location: The proposed development is situated to the east of the R512, north of the N14 on Portion 22 of the Farm Bultfontein 533JQ and Portion 184 of the Farm Nooitgedacht 534 JQ. Date of Notice: 8 September 2011
Queries regarding this matter should be referred to: Bokamoso Landscape Architects and Environmental Consultants, George Gericke, P.O. Box 11375 Maroelana 0161; Tel: (012) 346 3810, Fax: (086) 570 5659, email: lizelleg@mweb.co.za, www.bokamoso.net.
In order to ensure that you are identified as an interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given above within 40 days of publication of this advertisement.
BULTFONTEIN 533 JQ SEP 9(B)186

Nietgedacht 535 JQ, Portions 27, 73
NOTICE OF ENVIRONMNETAL IMPACT ASSESSMENT PROCESS
Notice is given of an application for an Environmental Impact Assessment (EIA) Process that was submitted to the Gauteng Department of Agriculture and Rural Development. In terms of Regulation ... published in the Government Notice ... of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing Environmental Impact Assessment (EIA) Procedures (Notice 1, 2 and 3 - Governing Notice R544, R545 & R546) for the following activity: Project Name: Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ. Property Description: Portions 27 and 73 of the Farm Nietgedacht 535 JQ. Proposed Zoning Information: The proposed activity will entail the construction of a mixed land-use development consisting of
the following land-uses: Residential dwelling units, Hotels, Educational, Medical and Social Facilities, Retail, Offices, Entertainment, Motor Trade, Municipal

Velmore Estate Access Road
NOTICE OF ENVIRONMENTAL SCOPING PROCESS
Notice is given of an application for an Environmental Scoping Process that was submitted to the Gauteng Department of Agriculture and Rural Development, in terms of Regulation No. R543 published in
the Government Notice No. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing Environmental Scoping Procedures (Notice 1, 2 and 3 - Governing Notice R544, R545 & R546) for the following activity: Project Name: Velmore Estate Access Road. Property Description: The road reserve of M26/ Main Road/alignment of K103; Portion 12 of the Farm Hoekplaats 384-JR; Portion 5 of the Farm Hoekplaats 384-JR; Portion 6 of the Farm Hoekplaats 384-JR; Portion 7 of the Farm Hoekplaats 384-JR; Remainder of the Farm Hoekplaats 384-JR; Portion 27 of the Farm Mooiplaats 355-JR; Portion 28 of the Farm Mooiplaats 355-JR; Portion 71 of the Farm Mooiplaats 355-JR; Portion 78 of the Farm Mooiplaats 355-JR; Portion 67 of the Farm Mooiplaats 355-JR; and Portion 29 of the Farm Mooiplaats 355-JR. Project Description: The proposed Velmore Estate Access Road will involve the upgrading and widening of a portion of the road M26, on the K103 alignment, in front of the Velmore Estate as well as the upgrading of the internal access road into the estate. Coverage: The proposed Velmore Estate Access Road approximately 3, 24 km in length. Activities applied for in terms of Environmental Scoping Procedures (Notice 1, 2 and 3 - Governing Notice R544, R545 & R546): GNR 544 (Listing Notice 1), 18 June 2010 Activity 11; GNR 544 (Listing Notice 1), 18 June 2010 Activity 18; GNR 544 (Listing Notice 1), 18 June 2010 Activity 2[illegible]; GNR 544 (Listing Notice 1), 18 June 2010 Activity 47; GNR 546 (Listing Notice 3), 18 June 2010 Activity 10; GNR 546 (Listing Notice 3), 18 June 2010 Activity 4; GNR 546 (Listing Notice 3), 18 June 2010 Activity 16; GNR 546 (Listing Notice 3), 18 June 2010 Activity 19; GNR 546 (Listing Notice 3), 18 June 2010 Activity 24. Proponent Name: Napaj-Trading (Pty) Ltd. Location: The proposed access road is situated within the existing Velmore Estate property which is situated to the West of Zwartkop Nature Reserve, to the North-West of the Sunderland Ridge
industrial area and Rietlower Agricultural Holdings, to the South of Erasmia and Laudium and to the North of the Monavoni
and Mnandi Agricultural Holdings. The upgrading of existing roads will take place within the road reserve of the M26/ Main Road/alignment of K103. Date of Notice: 8 September 2011. Queries regarding this matter should be referred to: Bokamoso Landscape Architects and Environmental Consultants, George Gericke/ Genevieve Trodoux, P.O. Box 11375 Maroelana 0161; Tel: (012) 346 3810, Fax: (086) 570 5659, email: lizelleg@mweb.co.za www.bokamoso.net. In order to ensure that you are identified as an interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given above within 40 days of publication of this advertisement.
VELMORE ESTATE SEP 9(B)188

Egskeidings / HVK

DE VRIES/DE VRIES
ABBREVIATED SUMMONS
In the Magistrate's Court for the North West region held at Klerksdorp. Case No: DK608/11. In the matter between: MAGRIETHA JOHANNA DE VRIES (NEE COMBRINK), ID: 531231 0026 08 6, Plaintiff and JOHANNES JACOBUS FREDERIK DE VRIES. ID: 010720 5839 008, Defendant
To: JOHANNES JACOBUS FREDERICK DE VRIES Inform JOHANNES JACOBUS FREDERICK DE VRIES a male who his occupation is unknown previously residing at Zastron, Bloemfontein whose current address is unknown. Take further notice that by summons sued out of this court you have been called upon to give Notice of intention to defend within 10 days after publication hereof, to the Registrar of this court at Magistrate's Court Klerksdorp PC Pelser Building, OR Tambo Street, 2570) or at (Private Bag A5, Klerksdorp, 2570) and to serve a copy thereof of the Plaintiff or Plaintiff's Attorney which notice shall give an address referred to in Rule 13(3) for the service upon the Defendant of all notice and documents in the action, in which MAGRIETHA JOHANNA DE VRIES (nee COMBRINK) claims the following: (A) A Decree of Divorce.
(B) An order that each party retain the assets in his and/or possessions.
(C) Further and/or alternative relief.
Take further notice that if you to give such notice, judgment may be granted against you without any further notice to you. Dated and signed at Klerksdorp this [illegible] day of August 2011.
MJ DE VRIES - PLAINTIFF, Molopo Str 6, Randelspark, KLERKSDORP
DK608/11 SEP 9(DV)189

Hands/Hands
VERKORTE DAGVAARDING
In die Streekafdeling van Gauteng. Gehou te Vereeniging. Saak No: RC1215/2011(O). RECHELLE HANDS, Eiser/es -En- MATTHEW BROMLEY HANDS, Verweerder
AAN: MATTHEW BROMLEY HANDS, Gebore: 9 November 1977, 'n Meerderjarige Man, wie se volledige besonderhede aan die Eiseres onbekend is. NEEM KENNIS dat die Eiser/es hiermee 'n aksie instel ingevolge waarvan hy die volgende

... TE NEEM dat die beëdigde verklarings van KARIN THOMPSON en ARCHEBALD CLARENCE THOMPSON hierby aangeheg, gebruik sal word ter ondersteuning van hierdie aansoek. GELIEWE die aangeleentheid dienooreenkomstig ter rolle te plaas. NEEM VERDER KENNIS dat Applikante die Adres van DANIE POTGIETER PROKUREURS, P/A MAGDA KETS PROKUREURS, MUCKLENEUKSTRAAT 333, BROOKLYN, PRETORIA, aangewys het waar hulle Kennisgewings en die Betekening van alle prosesstukke in hierdie verrigtinge sal aanvaar.
ADVERTEERDER: DANIE POTGIETER PROKUREURS
TEL NR: 012-663-5626
VERW: MALINDA GELDENHUYS
P/A MAGDA KETS PROKUREURS
MUCKLENEUKSTRAAT 333
BROOKLYN, PRETORIA
DATUM: 31 AUGUSTUS 2011
THOMPSON SEP 9(DP)185

Eksekusieverkopings

ABSA BANK BEPERK//CP DE JAGER
NOTICE OF SALE IN EXECUTION
In the North Gauteng High Court, Pretoria (Republic of South Africa). Case Nr. 51847/08. In the matter between: ABSA BANK LIMITED, (Reg No: 1986/004794/06) Plaintiff -And- CORNELIS POTGIETER DE JAGER (Id: 810715 5015 08 1), Defendant
A sale in Execution will be held by the Sheriff Ellisras, at the Magistrate's Office Bela-Bela, Cnr Moffat- & Pretoria Road, Bela-Bela on 30 September 2011 at 10:00 of: Erf: Portion 34 of the Farm Kromdraai 560, Registration Division K.Q., Province of Limpopo; Measuring: 8,6853 (Eight comma five six five three) hectares. Held by Deed of Transfer T048788/2008. Improvements: 6 x Bedrooms, Lounge, Kitchen, Scullery, 4 x Bathrooms, Family Room. Particulars of the property and the improvements thereon are provided herewith, but are not guaranteed. Inspect conditions at Sheriff, Ellisras.
(Tel: 014-763-3732).
TIM DU TOIT & CO INC
Ref: N RAPPARD/AK/PB/PR1560
Tel: 012 470 7777
PR1560 SEP 9(T)190

Haasbroek & Boezaart
PROKUREURS / ATTORNEYS

STANDARD/WINSKOR 180 (EDMS) BPK
VEILING - KENNISGEWING VAN EKSEKUSIE VERKOPING
In die Noord Gauteng Hoë Hof, Pretoria (Republiek van Suid-Afrika) Saaknommer: 12234/2010. In die saak tussen: DIE STANDARD BANK VAN SA BEPERK (1962/000738/06), Eiser -En- WINSKOR 180 (EDMS) BPK - Registrasie Nommer: 2006/0[illegible]/07, Eerste Verweerder DEVAN VAN NIEKERK, Tweede Verweerder.
Ten uitvoering van 'n Vonnis van bogemelde Hof en 'n Lasbrief vir Eksekusie, word die onderstaande eiendom, Sonder 'n Reserweprys, in Eksekusie verkoop op WOENSDAG, 28 SEPTEMBER 2011 om 10:00, by die Balju se Kantore, Christ Kerk Pretoriusstraat 820, Ingang ook in Kerkstraat 813, Arcadia, Pretoria, aan die Hoogste Bieder. Volledige Verkoopsvoorwaardes lê ter insae by die Balju van Pretoria Oos se Kantoor te dieselfde adres, en sal ook voor die aanvang van die verkoping deur die Balju voorgelees word. Die volgende bykomende inligting word verskaf, maar geen aanspreeklikheid aanvaar indien dit in enige opsig foutief sou wees nie. Gedeelte 6 (Gedeelte van Gedeelte 1) van Erf 577, Lynnwood Dorpsgebied. Registrasie Afdeling: J.R., Provinsie Gauteng. Groot: 561 vierkante meter. Gehou kragtens Akte van Transport: T109848/2006. Straat Adres: The Wishbone South 471B, Lynnwood, Pretoria, Gauteng Provinsie. Sone: Residensieël. Verbeterings: Huis, bestaande uit: 1 x Sitkamer; 1 x Kombuis; 1 x Opwaskamer; 1 x Studeerkamer; 2 x Slaapkamers; 2 x Badkamers; 1 x Sleep. Woonstel, bestaande uit: 1 x Slaapkamer; 1 x Badkamer; 1 x Kombuis. Buite Geboue, bestaande uit: 2 x Motorhuise; 1 x Slaapkamer; 1 x Badkamer. Neem Kennis van die volgende vereistes van toepassing op alle Voornemende Kopers: 1. R10 000,00 terugbetaalbare registrasie fooi op datum van Veiling. 2. Voorsiening aan die Balju van die volgende FICA dokumente: 2.1 Afskrif van Identiteitsdokument. 2.2 Bewys van Residensiële Adres.
Gedateer te Pretoria hierdie 31ste dag van Augustus 2011.
HAASBROEK & BOEZAART ING
PROKUREURS VIR EISER
HB Forum, PRETORIA
Stamvrugstraat 13, Val de Grace, PRETORIA
Tel: 012-481-3555/Faks: 086-673-2397
(Verw: BVDMERWE/fg/S1234/5497)
P/A Docex, Vermeulenstraat 171
Algemene Poskantoor Gebou
Kerkstraat, PRETORIA
S1234/5497 SEPT 9(HB)190

ABSA BANK // SJ & MA LLOYD
NOTICE OF SALE IN EXECUTION
IN THE SOUTH GAUTENG HIGH COURT, JOHANNESBURG (REPUBLIC OF SOUTH AFRICA) CASE NUMBER: 2010/31103 In the matter between: ABSA BANK LIMITED Execution Creditor and LLOYD, SAMUEL JACOBUS First Execution Debtor LLOYD, MAUREEN ALICE Second Execution Debtor
TAKE NOTICE that in pursuance of a ...

Registered Interested and Affected Parties

Nr	Registered Parties	Contact details	Address
	Stakeholders		
1	Council Geo-Science	jgrobler@geoscience.org.za	
2	SAHRA Gauteng	asalomon@sahra.org.za	
		nndobochani@sahra.org.za	
3	PHRAG	maphata.ramphele@gauteng.gov.za	
4	DWA	keetm@dwaf.gov.za	
		siwelanel@dwa.gov.za	
		tshifaror@dwa.gov.za	
		mathebet@dwa.gov.za	
5	Eskom	central@eskom.co.za	
		paia@eskom.co.za	
6	SANRAL	schmidk@nra.co.za	
7	Gautrans	kumen.govender@gauteng.gov.za	
8	Randwater	mmpshe@randwater.co.za	
		nkoneigh@randwater.co.za	
9	City Of Tshwane	RudzaniM@tshwane.gov.za	
10	Spoornet	daniel.ramokone@transnet.net	
		loveous.tampane@transnet.net	
11	Department of Land Claims	CLCC@ruraldevelopment.gov.za	
	Ms Nomfundo Gobodo	Tel: 012 312 8883	
	Interested and/or Affected Parties		
1	Janine von Zeuner	janine@twotenchemicals.co.za	
		Tel: 011 300 9917/8	
2	Jonathan Woortmeyer	jfwmeyer@gmail.com	

3	Attwell Malherbe Associates acting on behalf of Orange Country Investment CC	ama123@mweb.co.za	
		Tel: 011 463 1188	
4	Etienne	EtienneA@joburg.org.za	
	CoJ		
5	Enock Makhubele	EnockM@daff.gov.za	
	Department of Agriculture forestry and fisheries	Tel: 012 319 7634	
		nhlakad@daff.gov.za	
6	Mercia Komen	mkomen@mweb.co.za	
		Cell: 082 997 7880	

Proof of Submission to I&AP's

Juanita

From: Lizelle Gregory <lizelleg@mweb.co.za>
Sent: 20 September 2011 12:12 PM
To: floram@joburg.org.za; floram@joburg.gov.za
Subject: FW: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes
Attachments: Public Notice.pdf; Public Notice 1.pdf

To whom it may concern

For the past two weeks now I tried to contact the CoJ Region A in order to determine the details of the relevant ward councillor for the Lanseria area (Region A). Please forward the attached information to the relevant councillor, or provide me with his/her details as soon as possible.

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***
- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Bokamoso
Environmental Consultants &
Landscape Architects
e: lizelleg@mweb.co.za t: [illegible] f: [illegible]
36 Lebombo Road Ashlea Gardens, Pretoria

Juanita

From: Juanita <user3@bokamoso.net>
Sent: 26 November 2013 03:13 PM
To: 'janine@twotenchemicals.co.za'; 'jfwmeyer@gmail.com'; 'ama123@mweb.co.za'
Subject: Lanseria X51 Mixed Use Develeopment - Review Invitation Notice

Dear Interested and/or Affected Party Member,

Please note that the ***Amendment Final Scoping Report for the proposed Lanseria X51 Mixed Use Development*** is available on our website: www.bokamoso.biz from today, 26 November 2013 until 17 January 2014.

Hope this finds you well.

Kind Regards/Vriendelike Groete

Juanita De Beer

Bokamoso

Landscape Architects &
Environmental Consultants cc.

T: (+27)12 346 3810 | F: (+27) 86 570 5659 | E: lizelleg@mweb.co.za | www.bokamoso.biz
36 Lebombo Street, Ashlea Gardens, Pretoria | P.O. Box 11375 Maroelana 0161

Juanita

From: Lizelle Gregory <lizelleg@mweb.co.za>
Sent: 20 September 2011 11:59 AM
To: gheath@geoscience.org.za; njanuary@jhb.sahra.org.za; maphata.ramphele@gauteng.gov.za; justicem@dwaf.gov.za; keetm@dwaf.gov.za; central@eskom.co.za; paia@eskom.co.za; schmidk@nra.co.za; chrisbu@gpg.gov.za; customerservice@randwater.co.za; info@wessanorth.co.za
Subject: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes
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- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Bokamoso
Environmental Consultants &
Landscape Architects
e: [illegible] t: +27(12)346 [illegible] f: +27 86 570 56 56
56 Lebamba Road Ashlea Gardens Pretoria

Juanita

From: Lizelle Gregory <lizelleg@mweb.co.za>
Sent: 21 September 2011 08:56 AM
To: justicem@dwaf.gov.za; malulekej@dwa.gov.za

Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Good morning Justice.

The proposed projects are located approximately 7 km south-west of Diepsloot, and approximately 2.6 km south of Lanseria Airport on the mentioned portions.

Kind regards

George Gericke

Bokamoso
Environmental Consultants &
Landscape Architects
[illegible]
36 Lebombo Road Ashlea Gardens, Pretoria

From: Maluleke Justice [mailto:MalulekeJ@dwa.gov.za]
Sent: 20 September 2011 05:32 PM
To: Lizelle Gregory

Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Dear Lizelle

It is not clear where this development is taking place, please clarify?

Wisani Justice Maluleke

Department of Water Affairs

Crocodile/ Marico Water Management Area

Tel: 012 392 1409

Cell: 082 804 9817

Fax: 012 392 1486

e-mail: teo@dwaf.gov.za

From: Lizelle Gregory [mailto:lizelleg@mweb.co.za]
Sent: 20 September 2011 11:59 AM
To: gheath@geoscience.org.za; njanuary@jhb.sahra.org.za; maphata.ramphele@gauteng.gov.za; Maluleke Justice; Keet Marius (PTA); central@eskom.co.za; paia@eskom.co.za; schmidk@nra.co.za; chrisbu@gpg.gov.za; customerservice@randwater.co.za; info@wessanorth.co.za
Subject: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

To whom it may concern

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***
- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Bokamoso
Environmental Consultants &
Landscape Architects
e: [illegible] t: +27(12)346 [illegible] f: +27 86 [illegible]
98 Lekamba Road Ashlea Gardens Pretoria

Juanita

From: Stephan Barkhuizen
Sent: 12 September 2011 07:12 AM
To: George Gericke
Subject: FW: Development plans for Portion 22 of Bultfontein 533-JQ & Portion 164 of Nooitgedacht 534-JQ.

From: Ontvangs
Sent: 08 September 2011 12:14 PM
To: Stephan Barkhuizen
Subject: FW: Development plans for Portion 22 of Bultfontein 533-JQ & Portion 164 of Nooitgedacht 534-JQ.

From: Janine von Zeuner [mailto:janine@twotenchemicals.co.za]
Sent: 08 September 2011 11:02 AM
To: lizelleg@mweb.co.za
Subject: Development plans for Portion 22 of Bultfontein 533-JQ & Portion 164 of Nooitgedacht 534-JQ.

Hello Lizelle
Two Ten Chemicals is situated across the road (Malibongwe) from the proposed development. Please register us as an I&AP.
Thank you
Janine Von Zeuner
Director
011 300 9917/8

Juanita

From: Ontvangs
Sent: 21 September 2011 08:19 AM
To: George Gericke
Subject: FW: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

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From: Maluleke Justice [mailto:MalulekeJ@dwa.gov.za]
Sent: 20 September 2011 05:32 PM
To: Lizelle Gregory
Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Dear Lizelle

It is not clear where this development is taking place, please clarify?

Wisani Justice Maluleke

Department of Water Affairs

Crocodile/ Marico Water Management Area

Tel: 012 392 1409

Cell: 082 804 9817

Fax: 012 392 1486

e-mail: teo@dwaf.gov.za

From: Lizelle Gregory [mailto:lizelleg@mweb.co.za]
Sent: 20 September 2011 11:59 AM
To: gheath@geoscience.org.za; njanuary@jhb.sahra.org.za; maphata.ramphele@gauteng.gov.za; Maluleke Justice; Keet Marius (PTA); central@eskom.co.za; paia@eskom.co.za; schmidk@nra.co.za; chrisbu@gpg.gov.za; customerservice@randwater.co.za; info@wessanorth.co.za
Subject: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

To whom it may concern

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***
- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Juanita

From: Ontvangs
Sent: 03 October 2011 10:11 AM
To: George Gericke; Stephan Barkhuizen
Subject: FW: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

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From: Maluleke Justice [mailto:MalulekeJ@dwa.gov.za]
Sent: 03 October 2011 09:12 AM
To: Lizelle Gregory
Cc: Khambule Masego (PTA)
Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Dear Lizelle

Please send us a copy of the BAR for evaluations and comments.

Wisani Justice Maluleke

Department of Water Affairs

Crocodile/ Marico Water Management Area

Tel: 012 392 1409

Cell: 082 804 9817

Fax: 012 392 1486

e-mail: teo@dwaf.gov.za

From: Lizelle Gregory [mailto:lizelleg@mweb.co.za]
Sent: 21 September 2011 08:56 AM
To: Maluleke Justice; Maluleke Justice
Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Good morning Justice.

The proposed projects are located approximately 7 km south-west of Diepsloot, and approximately 2.6 km south of Lanseria Airport on the mentioned portions.

Kind regards

George Gericke

Bokamoso
Environmental Consultants &
Landscape Architects
36 Lebombo Road Ashlea Gardens, Pretoria

From: Maluleke Justice [mailto:MalulekeJ@dwa.gov.za]
Sent: 20 September 2011 05:32 PM
To: Lizelle Gregory
Subject: RE: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

Dear Lizelle

It is not clear where this development is taking place, please clarify?

Wisani Justice Maluleke

Department of Water Affairs

Crocodile/ Marico Water Management Area

Tel: 012 392 1409

Cell: 082 804 9817

Fax: 012 392 1486

e-mail: teo@dwaf.gov.za

From: Lizelle Gregory [mailto:lizelleg@mweb.co.za]
Sent: 20 September 2011 11:59 AM
To: gheath@geoscience.org.za; njanuary@jhb.sahra.org.za; maphata.ramphele@gauteng.gov.za; Maluleke Justice; Keet Marius (PTA); central@eskom.co.za; paia@eskom.co.za; schmidk@nra.co.za; chrisbu@gpg.gov.za; customerservice@randwater.co.za; info@wessanorth.co.za
Subject: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes

To whom it may concern

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***

- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

DISCLAIMER:
This message and any attachments are confidential and intended solely for the addressee. If you have received this message in error, please notify the system manager/sender. Any unauthorized use, alteration or dissemination is prohibited. The Department of Water Affairs further accepts no liability whatsoever for any loss, whether it be direct, indirect or consequential, arising from this e-mail, nor for any consequence of its use or storage.

Juanita

From: Ontvangs
Sent: 22 September 2011 08:12 AM
To: George Gericke
Subject: FW: Notice of enviromental impact assessment process R544 R545 R546

From: Jonathan Woortmeyer [mailto:jfwmeyer@gmail.com]
Sent: 21 September 2011 09:22 PM
To: lizelleg@mweb.co.za
Cc: lrdealmeida@gmail.com
Subject: Notice of enviromental impact assessment process R544 R545 R546

George Gericke would you please register the neigbouring property owners as I&AP regarding application / assessment process. The one being portion 26/533 Bultfontein and the other portion 21 of Bultfontein JQ533 Regarding telephonic conversation with your staff no follow up as made The promised return call also did not materialised. Would you indicate the benefit and negative impact this would have on the area, taking in consideration the excising commercial activities ?
How does your application and notice affect the proposed Amari Land development, which also happen to be neigbours?
and then also register J Woortmeyer as local resident as interested party Regards Jonathan

Juanita

From: Bokamoso <ontvangs@bokamoso.net>
Sent: 04 July 2012 08:07 AM
To: user3@bokamoso.net
Subject: FW: Lanseria Extension 51

From: Mercia Komen [mailto:mkomen@mweb.co.za]
Sent: 04 July 2012 05:23 AM
To: lizelleg@mweb.co.za
Subject: Lanseria Extension 51

Good day Lizelle

Please add me to the register of I&AP for this project.

My interest lies particularly in the handling of storm water, sewage and runoff from the site. Additional interest lies in the economic and social studies which will inform feasibility.

Regards
Mercia Komen
082 997 7880

Juanita

From: Juanita <user3@bokamoso.net>
Sent: 26 November 2013 03:13 PM
To: 'janine@twotenchemicals.co.za'; 'jfwmeyer@gmail.com'; 'ama123@mweb.co.za'
Subject: Lanseria X51 Mixed Use Develeopment - Review Invitation Notice

Dear Interested and/or Affected Party Member,

Please note that the ***Amendment Final Scoping Report for the proposed Lanseria X51 Mixed Use Development*** is available on our website: www.bokamoso.biz from today, 26 November 2013 until 17 January 2014.

Hope this finds you well.

Kind Regards/Vriendelike Groete

Juanita De Beer

Bokamoso

Landscape Architects &
Environmental Consultants cc.

T: (+27)12 346 3810 I F: (+27) 86 570 5659 I E: lizelleg@mweb.co.za I www.bokamoso.biz
36 Lebombo Street, Ashlea Gardens, Pretoria I P.O. Box 11375 Maroelana 0161

Juanita

From: Juanita <user3@bokamoso.net>
Sent: 28 November 2013 04:28 PM
To: 'mkomen@mweb.co.za'
Subject: Lanseria X51 Mixed Use Develeopment - Review Invitation Notice

Dear Interested and/or Affected Party Member,

Please note that the ***Amendment Final Scoping Report for the proposed Lanseria X51 Mixed Use Development*** is available on our website: www.bokamoso.biz from today, 26 November 2013 until 17 January 2014.

Hope this finds you well.

Kind Regards/Vriendelike Groete

Juanita De Beer

Bokamoso

Landscape Architects &
Environmental Consultants cc.

T: (+27)12 346 3810 I F: (+27) 86 570 5659 I E: lizelleg@mweb.co.za I www.bokamoso.biz
36 Lebombo Street, Ashlea Gardens, Pretoria I P.O. Box 11375 Maroelana 0161

Juanita

From: User3 <user3@bokamoso.net>
Sent: 04 July 2012 09:29 AM
To: mkomen@mweb.co.za
Subject: RE: Lanseria Extension 51

Dear Mercia Komen,

Thank you for your response. I have registered you as Interested and Affected Party Member for the proposed Lanseria Extension 51 Project. I will keep you updated regarding the Process in the future.

Hope this finds you well.

Kind Regards

Juanita De Beer

Bokamoso
Environmental Consultants &
Landscape Architects
t:+27(12) 346 3810 | f: 27 86 570 5659 | e:lizelleg@mweb.co.za |
36 Lebombo Road Ashlea Gardens, PTA

From: Mercia Komen [mailto:mkomen@mweb.co.za]
Sent: 04 July 2012 05:23 AM
To: lizelleg@mweb.co.za
Subject: Lanseria Extension 51

Good day Lizelle

Please add me to the register of I&AP for this project.

My interest lies particularly in the handling of storm water, sewage and runoff from the site. Additional interest lies in the economic and social studies which will inform feasibility.

Regards
Mercia Komen
082 997 7880

Juanita

From: User3 <user3@bokamoso.net>
Sent: 03 July 2012 03:21 PM
To: janine@twotenchemicals.co.za; jfwmeyer@gmail.com; ama123@mweb.co.za
Subject: Review Notice : Lanseria Extension 51
Attachments: Review Notice.pdf

To whom it may concern

Please refer to the attached invitation to review the Draft Scoping Report for the proposed ***Lanseria X51*** project. Also note that the draft report can also be downloaded from www.bokamoso.net.

Please don't hesitate to contact our offices for any additional information or queries.

Kind Regards

Juanita De Beer

Bokamoso
Environmental Consultants &
Landscape Architects
e: lizelleg@mweb.co.za | t: +27(12) 346 3810 | f: +27 86 570 56 59
36 Lebombo Road Ashlea Gardens, Pretoria

Juanita

From: Juanita <user3@bokamoso.net>
Sent: 11 June 2015 11:01 AM
To: 'nmtongana@sahra.org.za'
Subject: RE: Studies pending for Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ and on Portion 22 of Bultfontein 533 JQ and Ptn 164 of Nooitgedacht 534 JQ

Dear Nini Mtongana,

Thank you for your response, please note that we are busy finalising the Draft EIA Report for proposed Lanseria X51 & Lanseria X53.

All the studies will be available in the Draft EIA Report for your attention.

We will keep you updated regarding the process in the future.

Kind Regards/Vriendelike Groete

Juanita De Beer
Public Participation Consultant

Bokamoso
Landscape Architects & Environmental Consultants

T: (+27)12 348 3810 I F: (+27) 86 570 5659 I E: lizelleg@mweb.co.za I www.bokamoso.biz
36 Lebombo Street, Ashlea Gardens, Pretoria I P.O. Box 11375 Maroelana 0161

From: Nini Mtongana [mailto:nmtongana@sahra.org.za]
Sent: 22 May 2015 02:34 PM
To: Bokamoso
Subject: Studies pending for Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ and on Portion 22 of Bultfontein 533 JQ and Ptn 164 of Nooitgedacht 534 JQ

Good afternoon

Please find a letter attached regarding studies pending on the case mentioned above.

Regards

Ms Nini Mtongana
Administrative Officer
Archaeology, Palaeontology & Meteorites Unit
South African Heritage Resources Agency (SAHRA)
PO Box 4637, Cape Town 8000, South Africa
Email: nmtongana@sahra.org.za
Phone: +27 (0) 21 4624502/ 2028632
Fax: +27 (0) 21 4624509
Web: www.sahra.org.za

an agency of the
Department of Arts and Culture

Date: 22 May 2015
Enquiries: Ms N Mtongana
Case ID: 4287

Bokamoso Environmental Consultants
Lebombo Gardens Building
36 Lebombo Road
ASHLEA GARDENS
0081

Dear Sir/Madam

STUDIES PENDING: MIXED LAND-USE DEVELOPMENT ON PTN 22 OF BULTFONTEIN 533JQ & PTN 164 OF NOOITGEDACHT 534JQ

The SAHRA case ID: 4287 as it relates to Mixed Land-Use Development on PTN 22 of Bultfontein 533JQ & PTN 164 of Nooitgedacht 534JQ has reference.

We wish to follow up on the status of the above project. On 05 December 2013 requested additional information in order to provide comment to Gauteng Department of Agriculture and Rural Development on the case.

Kindly advise SAHRA on the status of the project and submit the outstanding information should the project be ongoing.

You are welcome to contact our office for clarity on the above request.

Sincerely

pp. N Mtongana

Mrs Colette Scheermeyer
Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

Juanita

From: Juanita <user3@bokamoso.net>
Sent: 12 August 2015 09:57 AM
To: jgrobler@geoscience.org.za; asalomon@sahra.org.za; maphata.ramphele@gauteng.gov.za; keetm@dwaf.gov.za; siwelanel@dwa.gov.za; tshifaror@dwa.gov.za; MathebeT@dwa.gov.za; 'central@eskom.co.za'; 'paia@eskom.co.za'; 'schmidk@nra.co.za'; kumen.govender@gauteng.gov.za; mmpshe@randwater.co.za; nkoneigh@randwater.co.za; 'RudzaniM@tshwane.gov.za'; 'janine@twotenchemicals.co.za'; 'jfwmeyer@gmail.com'; 'ama123@mweb.co.za'; EtienneA@joburg.org.za; 'EnockM@daff.gov.za'; 'nhlakad@daff.gov.za'; 'mkomen@mweb.co.za'
Subject: Lanseria X51 - EIA Public Participation Process
Attachments: Public Notice 1.pdf

Dear Interested and/or Affected Party Member,

Please refer to the attached Public Notice regarding the Environmental Impact Assessment (EIA) Process for the proposed ***Lanseria X51*** Project.

Kind Regards/Vriendelike Groete

Juanita De Beer
Public Participation Consultant

Bokamoso
Landscape Architects &
Environmental Consultants

T: (+27)12 346 3810 I F: (+27) 86 570 5659 I E: lizelleg@mweb.co.za I www.bokamoso.biz
36 Lebombo Street, Ashlea Gardens, Pretoria I P.O. Box 11375 Maroelana 0161

SANDTON

Eastbury House
Hampton Park
20 Georgian Crescent
Bryanston

Tel: (011) 463 1166

P.O. Box 98960
Sloane Park
2152

E-mail: amal23@mweb.co.za
Fax: (011) 463 1422

Attwell Malherbe & Associates
TOWN AND REGIONAL PLANNERS

Fax Offering

Our Ref: MN 0318

October 2011

Bokampoo
P.O. Box 11375
Maroelana.
0161

ATTENTION: STEPHAN BARKHUIZEN

Sir,

ENVIRONMENTAL IMPACT ASSESSMENT-PORTION 22 BULTFONTEIN 593 -JQ AND PORTION 164 NOOITGEDACHT 534 -JQ.

We are acting on behalf of Orange Country Investment CC who are the owner of the Remainder of Portion 379 Nooitgedacht 534-JQ. The Hartford Junction Shopping Centre is located on the property.

We have been instructed by our clients to inform you that they are objecting to the proposed development on grounds that there is already an oversupply of retail facilities in the area. No need therefore exists for additional retail floor space such as proposed.

It will be appreciated if our client, as an objector, could be registered as an interested and affected party and if you could forward all further information and documentation to us.

Yours faithfully

M. MALHERBE

Joburg

City of Johannesburg

118 Jorissen Street
Traduna House
Braamfontein

PO Box 1049
Johannesburg
South Africa
2000

Tel +27(0) 11 587 4210
Fax +27(0) 866 277516

www.joburg.org.za

ENVIRONMENTAL REGULATORY SERVICES

Our Reference: EM 07/03
Contact: Etienne Allers
CoJ Region: A
Tel: (011) 587 4230
Fax: 0866277516

Date: 11 July 2012

Bokamoso Environmental
P O Box 11375
Maroelana
0181

CITY OF JOBURG
ENVIRONMENT DEPT
LEGO MOLEFE
Signature:
Date: 20/07/2012

Attention: Lizelle Gregory

DRAFT SCOPING REPORT: PROPOSED LANSERIA EXT.51 (GAUT 002/11-12/E0124).

The draft Scoping Report dated 29 June 2012 refers. This Department only received the report on 3 July 2012.

Description of the project:

The proposed Lanseria Extension 51 will comprise of 3 erven with the following zonings: "Special", including Residential dwelling units, Hotels, Wholesale/Retail, Warehouses, Workshops, Showrooms, Exhibition and Distribution Centres, Restaurants, Offices, Places of Amusement, Medical Consulting Rooms and Places of Instruction.

Guidelines, by-laws, Precinct Plans and policies:

The Report takes into account all relevant policies, by-laws and strategies. The study area falls within Sub-area 1 of the RSDF for Region A and the objectives of this sub-area is to "promote the development of a sound spatial structure to increase the efficiency of the urban system" and to "stimulate the economic development potential of Sub Area 1".

It should be noted that according to the Lanseria Development Framework 2020, the applicant/developer must provide their own bulk services or access to existing municipal bulk service networks.

Recommendations:

- The specialist studies that will form part of the EIA Phase should adequately address issues of concern e.g. loss of biodiversity; topographical change; loss of sensitive habitats etc. The recommendations should also be included in the EMP.

- The outcome of the specialist studies should inform the township layout. All sensitive areas must be excluded from the proposed township.

- A stormwater management plan would need to be submitted for the approval by both the Johannesburg Roads Agency and Environmental Management Department prior to the approval of the final Site Development Plan. Such plan would be required to meet the following criteria/standards:

Peak discharge	- no increase in discharge for any event of any duration up to the 25 year RI event
Volume of runoff	- no increase up to the annual 10 year rainfall
Runoff frequency	- no surface runoff for the 1 yr RI event of any duration
Water Quality	- no deterioration

- Written confirmation should be obtained from Johannesburg Water regarding the capacity of the involved Waste Water Treatment Works in order to ensure available capacity for this development.

Should you have any queries please do not hesitate to contact Etienne Allers on the numbers indicated above.

Yours faithfully

CITY OF JOBURG
ENVIRONMENT DEPT.
LEBO MOLEFE
Signature: [illegible]
30/07/2013

LEBO MOLEFE
DIRECTOR: ENVIRONMENTAL REGULATORY SERVICES.
E-mail: Lebomol@joburg.org.za
Tel: (011) 587 4204
Fax: 086 6277516

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE REGIONAL CHIEF DIRECTOR: NORTH WEST
Bothongo Plaza East, 285 Schoeman Street, Pretoria

F 086 573 2897 / 012 392-1486
P/Bag X995
PRETORIA
0001
T.L Mathebe
(012) 392 1406
E: mathebet@dwa.gov.za
16/2/7/A210/N314

Bokamoso Environmental Consultants
P.O Box 11375
Maroelana
0161

For Attention: Ane Agenbacht

DRAFT SCOPING REPORT FOR THE PROPOSED LANSERIA X 51 ON PORTION 22 OF THE FARM BULTFONTEIN 533 JQ AND PORTION 164 OF THE FARM NIETGEDACHT 535 JQ.

Reference is made to the above-mentioned proposed development; this office would like to acknowledge receipt of the above mentioned document and would like to respond as follows.

1. It is mentioned in the report that the study area is not affected by any floodlines, and no wetlands are found on the site and only a non-perennial river flows to the east and west sides away from the study area, as such the developer will not be required to apply for any water use license according to section 21 of the National Water Act, 1998 (Act 36 of 1998) [NWA], however please note that the proposed activity must comply with all sections and regulations of the NWA.
2. Please note that a detailed geotechnical investigation and dolomite stability investigation of the study area must be conducted and be part of the Environmental Impact Assessment (EIA) Report which will be submitted to this Department.
3. Stormwater management plans must be submitted to the relevant municipality for approval. Such approval must be submitted to this Department together with a copy of the original stormwater management plans.
4. The developer must obtain a letter from the municipality indicating that there is available capacity to cater for the sewage effluent to be generated by the development at the wastewater treatment works.
5. The developer must ensure that no wastewater may run freely into any of the surrounding streets or naturally vegetated areas and also ensure the correct positioning of construction camps and their sanitation facilities.

6: No construction or dumping activities should take place within the 1:50 year or 1:100 year floodline or a horizontal distance of 100m from a water resource unless authorized by this Department.

7. The storage and use of fuel and other chemicals on site must be adequately managed to prevent soil and water pollution. The developer must provide containment areas for potential pollutants at refueling depots, and must ensure that transport, storage, handling and disposal of hazardous substances is adequately controlled and managed.

8. If any pollution incident is experienced, this office must be notified immediately.

9. Mitigatory measures must be made on site to prevent pollution of the water resources including ground water component from occurring as per requirement of section 19 of the National Water Act, 1998 (Act 36 of 1998).

Any query regarding the content of this letter can be directed to the above-mentioned contact details.

Yours Faithfully

Regional Head: North West
DATE: 04/10/2012

User3

From: User3 <user3@bokamoso.net>
Sent: 03 July 2012 03:21 PM
To: janine@twotenchemicals.co.za; jfwmeyer@gmail.com; ama123@mweb.co.za
Subject: Review Notice : Lanseria Extension 51
Attachments: Review Notice.pdf

To whom it may concern

Please refer to the attached invitation to review the Draft Scoping Report for the proposed ***Lanseria X51*** project. Also note that the draft report can also be downloaded from www.bokamoso.net.

Please don't hesitate to contact our offices for any additional information or queries.

Kind Regards

Juanita De Beer

Environmental Consultants &
Landscape Architects
e: [redacted] t: +27 (12) 346 3810 f: +27 86 570 56 59
36 Lebombo Road Ashlea Gardens, Pretoria

User3

From:	Lizelle Gregory <lizelleg@mweb.co.za>
Sent:	20 September 2011 12:12 PM
To:	floram@joburg.org.za; floram@joburg.gov.za
Subject:	FW: Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes
Attachments:	Public Notice.pdf; Public Notice 1.pdf

To whom it may concern

For the past two weeks now I tried to contact the CoJ Region A in order to determine the details of the relevant ward councillor for the Lanseria area (Region A). Please forward the attached information to the relevant councillor, or provide me with his/her details as soon as possible.

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***
- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Environmental Consultants &
Landscape Architects
e: [illegible] t: +27(12)346 [illegible] f: +27 86 [illegible]
56 Eshcombe Road Ashlea Gardens, Pretoria

User3

From:	Lizelle Gregory <lizelleg@mweb.co.za>
Sent:	20 September 2011 11:59 AM
To:	gheath@geoscience.org.za; njanuary@jhb.sahra.org.za; maphata.ramphele@gauteng.gov.za; justicem@dwaf.gov.za; keetm@dwaf.gov.za; central@eskom.co.za; paia@eskom.co.za; schmidk@nra.co.za; chrisbu@gpg.gov.za; customerservice@randwater.co.za; info@wessanorth.co.za
Subject:	Nietgedacht & Bultfontein Public Notices - Environmental Scoping Processes
Attachments:	Public Notice.pdf; Public Notice 1.pdf

To whom it may concern

Please refer to the attached Background Information Documents (BID) for the following proposed projects:

- ***Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533JQ and Portion 164 of the Farm Nooitgedacht 534 JQ.***
- ***Mixed Land-Use Development on Portion 27 and 73 of the Farm Nietgedacht 535 JQ.***

Please don't hesitate to contact us for any additional information or queries.

Kind regards

George Gericke

Environmental Consultants &
Landscape Architects
[illegible]
[illegible] Pretoria

Mixed Land-Use Development on Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ
Our Ref: 9/2/233/0001

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 4287

Date: Thursday December 05, 2013

an agency of the Department of Arts and Culture

Letter

In terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999)

Attention: Extension 24 Commercial Leasing Co (Pty) Ltd

Portion 22 of the Farm Bultfontein 533 JQ and Portion 164 of the Farm Nooitgedacht 534 JQ

Thank you for your notification regarding this development.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

The quickest process to follow for the archaeological component is to contract an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place.

The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources - or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary.

If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority to indicate that there is no necessity for any further assessment.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural

significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Andrew Salomon
Heritage Officer: Archaeology
South African Heritage Resources Agency

Colette Scheermeyer
SAHRA Head Archaeologist
South African Heritage Resources Agency

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/146477
(GDARD, Ref:)

Comments & Issues Report

COMMENT AND RESPONSE REPORT-
FOR THE PROPOSED MIXED USE DEVELOPMENT ON PORTION 22 OF THE FARM BULTFONTEIN 533 JQ AND PORTION 164 OF THE FARM NOOITGEDACHT 534 JQ

Issue	Commentator	Response
It is not clear where this development is taking place, please clarify?	Justice Maluleke MalulekeJ@dwa.gov.za **Department of Water Affairs**	The proposed projects are located approximately 7km south-west of Diepsloot, and approximately 2.6 km south of Lanseria Airport on the mentioned portions.
Two ten Chemicals is situated across the road (Malibongwe) from the proposed development. Please register us as an I&AP.	Janine von Zeuner janine@twotenchemicals.co.za	Registered.
Please add me to the register of I&AP for this project. My interest lies particularly in the handling of storm water, sewage and runoff from the site. Additional interest lies in the economic and social studies which will inform feasibility.	Mercia Komen mkomen@mweb.co.za	Thank you for your response, we have registered you as Interested and/or Affected Party Member for the proposed Lanseria X51 Project. We will keep you updated regarding the process in the future.
Would you please register the neighbouring property owners as I&AP regarding application/assessment process. The one being portion 26/533 Bultfontein and the other portion 21 of Bultfontein JQ 533 regarding telephonic conversation with your staff no follow up as made. The promised return call also did not materialized. Would you indicate the benefit and negative impact this would have on the area,	Jonathan Woortmeyer jfwmeyer@gmail.com	Registered.

taking in consideration the existing commercial activities? How does your application and notice affect the proposed Amari Land development, which also happen to be neighbours? And then also register J Woortmeyer as local resident as interested party.		
We are acting on behalf of Orange Country Investment CC who are the owner of the Remainder of Portion 379 Nooitgedacht 534 JQ. The Hartford Junction Shopping Centre is located on the property. We have been instructed by our clients to inform you that they are objecting to the proposed development on grounds that there is already an oversupply of retail facilities in the area. No need therefore exists for additional retail floor space such as proposed. It will be appreciated if our client, as an objector, could be registered as an interested and affected party and if you could forward all further information and documentation to us.	**Attwell Malherbe Associates** Ama123@mweb.co.za	Registered. Noted.
• The specialist studies that will form part of the EIA Phase should adequately address Issues of concern e.g. loss of biodiversity; topographical change; loss of sensitive habitats etc. The recommendations should also be included in the EMP. • The outcome of the specialist studies should inform the township layout. All sensitive areas must be excluded from the proposed township. • A stormwater management plan would need to be submitted for the approval by both the Johannesburg Roads Agency and Environmental Management Department prior to the approval of the final Site Development Plan. Such plan would be required to meet the following criteria/standards: Peak discharge – no increase in discharge for any event of any duration up to the 25 year RI event Volume of runoff – no increase up to the annual 10 year rainfall	Etienne Allers **City of Johannesburg**	• Specialist studies are part of the EIA Report. • The outcome of the specialist studies informs the township layout. • A stormwater management plan will be submitted for the approval by both the Johannesburg Roads Agency and Environmental Management Department prior to the approval of the final Site Development Plan. • Written confirmation will be obtained from Johannesburg Water regarding the capacity of the involved Waste Water

Runoff frequency – no surface runoff for the 1 yr RI event of any duration Water Quality – no deterioration. • Written confirmation should be obtained from Johannesburg Water regarding the capacity of the involved Waste Water Treatment Works in order to ensure available capacity for this development. Should you have any queries please do not hesitate to contact Etienne Allers on the numbers indicated above.		Treatment Works in order to ensure available capacity for this development.
Reference is made to the abovementioned proposed development; this office would like to acknowledge receipt of the above mentioned document and would like to responds as follows. 1. It is mentioned in the report that the study area is not affected by any floodlines, and no wetlands are found on the site and only a non-perennial river flows to the east and west sides away from the study area, as such the developer will not be required to apply for any water use license according to section 21 of the National Water Act, 1998 (Act 36 of 1998) [NWA], however please note that the proposed activity must comply with all sections and regulations of the NWA. 2. Please note that a detailed geotechnical investigation and dolomite stability investigation of the study area must be conducted and be part of the Environmental Impact Assessment (EIA) Report which will be submitted to this Department. 3. Stormwater management plans must be submitted to the relevant municipality for approval. Such approval must be submitted to this Department together with a copy of the original stormwater management plans. 4. The developer must obtain a letter from the municipality indicating that there is available capacity to cater for the sewage effluent to be generated by the development at the wastewater treatment works. 5. The developer must ensure that no wastewater may run freely into any of the surrounding streets or naturally	T.L. Mathebe mathebet@dwa.gov.za **Department of Water Affairs**	• The study area is not affected by any floodlines, and no wetlands are found on the site and only a non-perennial river flows to the east and west sides away from the study area, as such the developer will not be required to apply for any water use license according to section 21 of the National Water Act, 1998 (Act 36 of 1998) [NWA], however please note that the proposed activity must comply with all sections and regulations of the NWA. • A detailed geotechnical investigation and dolomite stability investigation of the study area was conducted and forms part of the Environmental Impact Assessment (EIA) Report. ***Refer to Annexure G1.*** • Stormwater management plans will be submitted to the

vegetated areas and also ensure the correct positioning of construction camps and their sanitation facilities. 6. No construction or dumping activities should take place within the 1:50 year or 1:100 year floodline or a horizontal distance of 100m from a water resource unless authorized by this Department. 7. The storage and use of fuel and other chemicals on site must be adequately managed to prevent soil and water pollution. The developer must provide containment areas for potential pollutants at refueling depots, and must ensure that transport, storage, handling and disposal of hazardous substances is adequately controlled and managed. 8. If any pollution incident is experienced, this office must be notified immediately. 9. Mitigatory measures must be made on site to prevent pollution of the water resources including ground water component from occurring as per requirement of section 19 of the National Water Act, 1998 (Act 36 of 1998). Any query regarding the content of this letter can be directed to the abovementioned contact details.		relevant municipality for approval. • The developer will obtain a letter from the municipality indicating that there is available capacity to cater for the sewage effluent to be generated by the development at the wastewater treatment works. This letter will be included in the Final EIA Report • No construction or dumping activities should take place within the 1:50 year or 1:100 year floodline or a horizontal distance of 100m from a water resource unless authorized by this Department.
Thank you for your notification regarding this development. In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required. The quickest process to follow for the archaeological component is to	Andrew Salomon **SAHRA** asalomon@sahra.org.za	A Heritage study will be conducted and be included in the Final EIA Report.

contract an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place. The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites. Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources – or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary. If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority to indicate that there is no necessity for any further assessment. Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.		
The SAHRA case ID: 4287 as it relates to Mixed Land-Use Development on PTN 22 of Bultfontein 533 JQ & PTN 164 of	Ms N Mtongana **Sahra**	Thank you for your response, please note that we are busy finalizing the Draft EIA

Nooitgedacht 534 JQ has reference. We wish to follow up on the status of the above project. On 05 December 2013 requested additional information in order to provide comments to Gauteng Department of Agriculture and Rural Development on the case. Kindly advise Sahra on the status of the project and submit the outstanding information should the project be ongoing. You are welcome to contact our office for clarity on the above request.		Report for proposed Lanseria X51 & Lanseria X53. All the studies will be available in the Draft EIA Report for your attention. We will keep you updated regarding the process in the future.