DRAFT ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED KLEINFONTEIN SETTLEMENT

Kleinfontein Portions 38, 90, 96 and Farm Kleinfontein 368 JR and Portions 63, 67, 68 and RE of Portion 14 of the Farm Donkerhoek 365 JR

January 2015 **GAUT: 002/12-13/E0177**

Part 1

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LIST OF ABBREVIATIONS

CBD: Central Business District

C-Plan: Conservation Plan

DEA: Department of Environmental Affairs

DFA: Development Facilitation Act

DRMS: Dolomite Risk Management Section

EAP: Environmental Assessment Practitioner

ECA: Environmental Conservation Act

EIA: Environmental Impact Assessment

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IEMA: Institute of Environmental Management and Assessment

EIAR: Environmental Impacts Assessment Report

EMM: Ekurhuleni Metropolitan Municipality

CoT: City of Tshwane

DWA: Department of Water Affairs

EMP: Environmental Management Plan

GAPA: Gauteng Agricultural Potential Atlas

GDARD: Gauteng Department of Agriculture and Rural Development

GSDF: Gauteng Spatial Development Framework

I&AP: Interested and affected party

IDP : Integrated Development Plan

NSBA: National Spatial Biodiversity Assessment

NEMA : National Environmental Management Act

ORTIA: O.R. Tambo International Airport

PoS: Plan of Study

SACLAP: The South African Council of the Landscape Architects Profession

SAHRA: South African Heritage Resources Agency

SR: Scoping Report

SDF: Spatial Development framework

TIA: Traffic Impact Assessment

UNCED : United Nations Conference on Environment and Development

WMA: Water Management Area

WWTP: Waste Water Treatment Plant

GLOSSARY OF TERMS

Agricultural Hub: An area identified for agricultural use by GDARD according to the Draft Policy on the Protection of Agricultural Land (2006).

Alien species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

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Applicant: Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in the National Environmental Management Act (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006.

Biodiversity: The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are apart.

Conservation of Agricultural Resources Act (Act No. 43 of 1983): This Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

Development Facilitation Act (DFA) 1995 (Act 67 of 1995): This Act formulates a set of general principles to serve as guidelines for land development.

Ecology: The study of the inter relationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object and/or organism. Also defined as the surroundings within which humans exist and are made up of the land, water, atmosphere, plant and animal life (micro and macro), interrelationship between the factors and the physical or chemical conditions that influence human health and well-being.

Environmental Impact Assessment: Assessment of the effects of a development on the environment.

Environmental Management Plan: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

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GDARD Draft Ridges Policy, 2001: According to the GDARD Draft Ridges Policy no development should take place on slopes steeper than 8.8%.

GDARD Draft Red Data Species Policy, 2001: A draft policy to assist with the evaluation of development applications that affected Red Data plant species.

GDARD Requirements for Biodiversity Assessments Version 2 (2012): GDARD requirements for biodiversity assessments.

GIDS: The GIDS focuses on the mapping and management of biodiversity priority areas within Gauteng. The GIDS includes protected areas, irreplaceable and important sites due to the presence of Red Data species, endemic species and potential habitat for these species to occur. GIDS, 2007.

National Environmental Management Act (NEMA), 1998 (Act No 107 of 1998): NEMA provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

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 ecologically 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".

National Environmental Management: Biodiversity Act, 2004 (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

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and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003): The purpose of this Act is to provide the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

National Heritage Resource 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 to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

National Veld and Forest Fire Act, 1998 (Act No. 101, 1998): The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. Furthermore the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

National Road Traffic Act, 1996 (Act No. 93 of 1996): This Act provides for all road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith.

National Water Act, 1998 (Act No 36 of 1998): The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled.

Open Space: Areas free of building that provide ecological, socio-economic and place-making functions at all scales of the metropolitan area.

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Study Area: Refers to the entire study area compassing the total area of the land parcels as indicated on the study area map.

Sustainable Development: Development that has integrated social, economic and environmental factors into planning, implementation and decision making, so as to ensure that it serves present and future generations.

Water Services Act, 1997 (Act No 108 of 1997): The purpose of this Act is to ensure the regulation of national standards and measures to conserve water.

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1. INTRODUCTION

1.1 Background

The **Kleinfontein Boerebelange Koöperasie Beperk** is planning a proposed mixed use development that is situated on **Portions 38, 90, 96 and the Remaining Extent of the Farm Kleinfontein 368 JR and on Portions 63, 67, 68 and the Remaining Extent of Portion 14 of the Farm Donkerhoek 365 JR (*Refer to Figure 1: Locality Map and Figure 2: Aerial Map.)*** The size of the property is approximately **796ha** in extent and is located in the area of jurisdiction of the **City of Tshwane Metro Minicipality** in **Gauteng Province.**

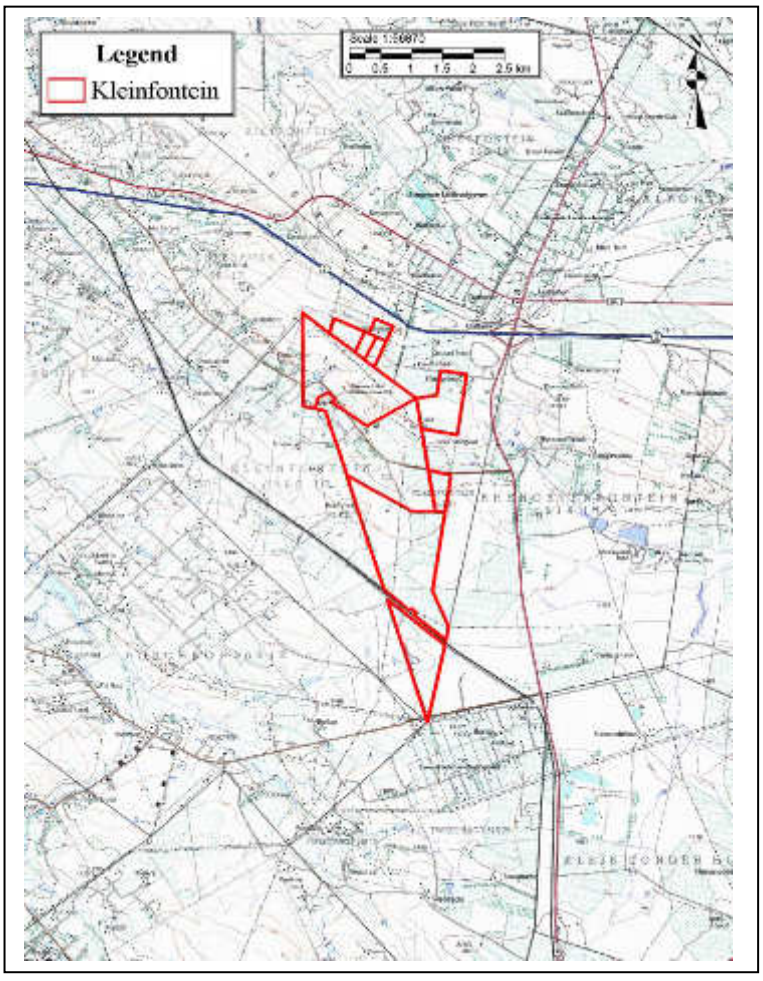

Figure 1 – Locality Map

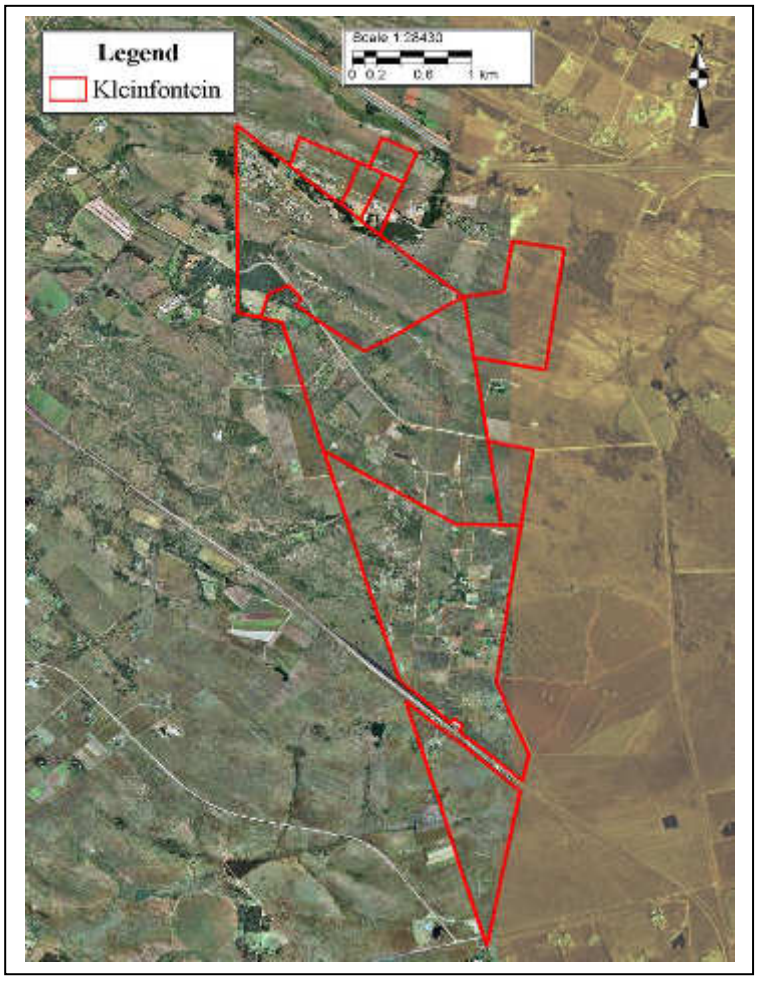

Figure 2 – Aerial Map

Please note: enlarged copies of the figures are included as Annexure A.

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The residents of Kleinfontein Nedersetting identified the area as having a rich cultural/ historical background and they felt the need to protect the area as it is known for the Battle of Donkerhoek/ Diamond Hill that occurred during the Anglo-Boer War (1899 – 1902). It is known as the largest military battle in the history of Pretoria and occurred partially on the farm Donkerhoek, therefore sometimes referred to as the Battle of Donkerhoek.

Kleinfontein Boerebelange community is quite unique in the sense that they opted to isolate themselves from the outside world by creating a residential area (formal and informal), schools, recreational facilities and a section for economical growth which posed as a means of security, i.e. protecting its people and the area at the same time. Therefore the people will be able to satisfy all their needs within the boundaries of their community and have no need to go outside as they already have everything within.

Informal settlement/ squatters are a known and common phenomenon all around South Africa and are found within all cultures and ethnic groups. Many people are homeless and in a great need of housing or in a need for a safe haven. Kleinfontein Boerebelange identified a need to accommodate these homeless Afrikaner people and provide them with a safe place to stay. Within the boundaries of Kleinfontein there are many informal settlements for people who cannot afford to reside in a proper home.

As can be seen from the above this area was created with the good intention of protecting the area and taking good care of its residents at the same time.

A Section 24G rectification application was submitted to GDARD with ***Reference number: S24G/05/10-11/0005***, to make provision for the environmental authorisations for developments that already commenced prior to 1992. This project is quite complicated as it entails some unlawful activities (development that was already undertaken) as well as some future activities/ developments for which EIA Applications, Waste License Applications as well as a Water Use Licenses have already been submitted to the relevant Authorities.

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Initially when the activity took place the owners were unaware of the relevant Legislation, Policies and authorizations that should be obtained before commencing with construction or any related activities.

The existing Kleinfontein Settlement, needs to be formalized and legally registered in the offices of the Surveyor General and Registrar of Deeds.

The formalization of the settlement will improve the proper management and control of the settlement by relevant authorities such as the City of Tshwane Metropolitan Municipality within which jurisdiction the site fall. The owner procured additional land to form part of the proposed future extensions of the Kleinfontein Settlement. Development proposals for this area make provision for longer term expansion of the settlement to provide diverse land uses for efficient functioning.

The proposed extensions include:

- A **residential settlement** providing a wide range of housing typologies to suit varying income levels;
- **Supporting social facilities** in the form of educational, religious and related infrastructure;
- **Supporting economic activities** including local retail/business outlets a manufacturing component
- **Appropriate engineering infrastructure** (roads, water, sewage and related systems) to serve the larger settlement in compliance with the Minimum Requirements of the controlling authorities;
- A **supportive rural enclave** providing for **small-scale agricultural** activities

Kleinfontein Boerebelange Koöperasie Limited appointed **Bokamoso Landscape** Architects and Environmental Consultants, as independent environmental consultants, for the Environmental Impact Assessment Application for the proposed development and its associated listed activities. The proposed development will require licenses and

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authorizations in terms of the National Environmental Management: Waste Act (NEMWA), National water Act as well as a rectification application in terms of Section 24G of NEMA. Bokamoso Environmental Consultants was also appointed to assist with the application processes associated with these Acts.

In April 2006 the Minister of Environmental Affairs and Tourism passed Environmental Impact Assessment regulations (the Regulations) in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA). The Regulations replaced the Environmental Impact Assessment (EIA) regulations, which were promulgated in terms of the Environmental Conservation Act, 1989 in 1997. The new regulations came into place on 3 July 2006. In June 2010 the Minister of Environmental Affairs (DEA) passed the Amended Environmental Impact Assessment Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA). The Amended Regulations came into effect on 2 August 2010.

The application for environmental authorization for the proposed mixed use development situated on Portions 38, 90, 96 and RE of Farm Kleinfontein 368 JR and Portions 63, 67, 68 and RE of Portion 14 of the Farm Donkerhoek 365 JR was submitted on 29 October 2012 and therefore the application must be made in terms of the New NEMA Regulations that came into place on 2 August 2010.

1.2 Environmental Assessment Practitioner (EAP) - In Line with Section 32 (2) (a) (i) and (ii)

The new Environmental Regulations require that relevant details of the Environmental Assessment Practitioner be included as part of the Scoping Report. In this regard, attached as ***Annexure C***, is a copy of the CV of the EAP for this project, Ms. Lizelle Gregory from Bokamoso Landscape Architects and Environmental Consultants. In summary details of the EAP are indicated below:

- **Name:** Lizelle Gregory
- **Company:** Bokamoso Landscape Architects and Environmental Consultants.

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- **Qualifications:** Registered Landscape Architect and Environmental Consultant (degree obtained at the University of Pretoria) with 15 years experience in the following fields:
    - Environmental Planning and Management;
    - Compilation of Environmental Impact Assessments;
    - Landscape Architecture; and
    - Landscape Contracting

Ms. L. Gregory also lectured at the Technicon of South Africa and the University of Pretoria. She is a registered member of the South African Council of the Landscape Architects Profession (SACLAP), the International Association of Impact Assessments (IAIA) and the Institute of Environmental Management and Assessment (IEMA).

1.3 Activities Applied For In Terms of NEMA

In terms of Government Notices no. R544, R545 and R546 published in the Government Gazette no. 33306 of 02 August 2010 of the National Environment Management Act, 1998(Act No. 107 of 1998) an Environmental Impact Assessment Process is required for the above-mentioned project, due to the fact that the following listed activities will be triggered/could be triggered.

Also refer to ***Annexure B*** for a copy of the Application form that was submitted to Gauteng Department of Agriculture and Rural Development (GDARD).

The applicant is applying for the following listed activities:

Activities Applied for in Terms of NEMA

Table 1: Listed activities in terms of Notices R. 544, R. 545.

Listing No. 1 R. 544, 18 June 2010	Activity 1	The construction of facilities or infrastructure for the generation of electricity where:

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		(i) The electricity output is more than 10 megawatts but less than 20 megawatts; or (ii) The output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.
Listing No. 1 R. 544, 18 June 2010	Activity 3	The construction of facilities or infrastructure for the slaughter of animals with a product throughput of: (i) Poultry exceeding 50 poultry per day; or (ii) Game and red meat exceeding 6 units per day.
Listing No. 1 R. 544, 18 June 2010	Activity 4	The construction of facilities or infrastructure for the concentration of animals for the purpose of commercial production in densities that exceed- • 20 square meter per large stock unit and more than 500 units, per facility • 8 square meter per small stock unit and; a. More than 1000 units per facility excluding pigs where (b) will apply; b. More than 250 pigs per facility excluding piglets that are not yet weaned • 30 square meters per crocodile at any level of production, excluding crocodiles; • 3 square meters per rabbit and more than 500 rabbits per facility; or • 250 square meters per ostrich and more than 50 ostriches and emus per facility or; or 2500 square meters per breeding pair.
Listing No. 1 R. 544, 18 June 2010	Activity 5	The construction of facilities or infrastructure for the concentration of: (i) More than 1000 poultry per facility situated within an urban area, excluding chicks younger than 20 days (ii) More than 5000 poultry per facility situated outside an urban area, excluding chick younger than 20 days.
Listing No. 1 R. 544, 18 June 2010	Activity 8	The construction of a hatchery or agri-industrial infrastructure outside industrial complexes where the development footprint covers an area of 2000 square meters or more.
Listing No. 1 R. 544, 18 June 2010	Activity 9	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water – (i) With an internal diameter of 0,36 metres or more; or (ii) With a peak throughput of 120 litres per second or more, excluding where: a. Such facilities or infrastructure are for transportation of water, sewage or storm water drainage inside a road reserve; or b. Where such construction will occur within urban areas but further than 32meters from a watercourse, measured from the edge of the watercourse.
Listing No. 1 R. 544, 18 June 2010	Activity 10	The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) Outside urban area or industrial complexes with a

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		capacity of more than 33 but less than 275 kilovolts; or (ii) Inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.
Listing No. 1 R. 544, 18 June 2010	Activity 11	The construction of: (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas (viii) jetties exceeding 50 square meters in size; (ix) slipways exceeding 50 squares meters in size; (x) buildings exceeding 50 square meters in size; or more where such construction occurs within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.
Listing No. 1 R. 544, 18 June 2010	Activity 13	The construction of facilities or infrastructure for the storage or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic meters.
Listing No. 1 R. 544, 18 June 2010	Activity 18	The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from: (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is the greater- But excluding where such infilling, depositing, dredging, excavation, removal or moving a) Is for maintenance purpose undertaken in accordance with a management plan agreed to by the relevant environmental authority; or b) Occurs behind the development setback line.
Listing No. 1 R. 544, 18 June 2010	Activity 21	The establishment of cemeteries of 2500 square meters or more in size.
Listing No. 1 R. 544, 18 June 2010	Activity 22	The construction of a road, outside urban areas, (i) With a reserve wider than 13,5 meters or; (ii) Where no reserve exists where the road is wider than 8 meters; or (iii) For which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.

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Listing No. 1 R. 544, 18 June 2010	Activity 29	The expansion of facilities for the generation of electricity where: (i) The electricity output will be increased by 10 megawatts or more, including where such expansion takes place on the original development footprint; or (ii) Regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more.
Listing No. 1 R. 544, 18 June 2010	Activity 37	The expansion of facilities or infrastructure for the bulk transportation of water sewage or storm water where: (a) The facility or infrastructure is expanded by more than 1000 meters in length; or (b) Where the throughput capacity of the facility or infrastructure will be increased by 10% or more- Excluding where such expansion: (i) Relates to transportation of water, sewage or storm water within a road reserve; or (ii) Where such expansion will occur within urban areas but further than 32 meters from a watercourse, measured from the edge of the watercourse.
Listing No. 1 R. 544, 18 June 2010	Activity 47	The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometer- (1) Where the existing reserve is wider than 13,5 meters; or (2) Where no reserve exists, where the existing road is wider than 6 meters- Excluding widening or lengthening occurring inside urban areas.

Table 1: Listed activities in terms of Notice No.R545

Listing No. 2 R. 545, 18 June 2010	Activity 5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.
Listing No. 2 R. 545, 18 June 2010	Activity 15	Physical alteration of undeveloped vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectare or more; Except where such physical alteration takes place for: (i) Linear development activities; or (ii) Agriculture or afforestation where activity 16 in this Schedule will apply;

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Listing No. 2 R. 545, 18 June 2010	Activity 18	The route determination of roads and designs of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before 3 July 2006 and which have not been authority in terms of the Environmental Impact Assessment Regulations, 2006 or 2009, made under section 24(5) of the Act and published in Government Notice No. R385 of 2006, - (i) It is a national road as defined in section 40 of the South African Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998); (ii) It is a road administrated by a provincial authority; (iii) The road reserve is wider than 30 meters; or (iv) The road will cater for more than one lane of traffic in both directions.

Table 2: Listed activities in terms of Notice No. R 546

Listing No. 3 R. 546, 18 June 2010	Activity 2	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic meters **(b) In Gauteng:** i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National protected Areas Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; iv. Sites or areas identified in terms of an International Convention; v. Sites identified as irreplaceable or important sites in Gauteng Conservation Plan vi. Areas larger than 2 hectares zoned for use as public open space; vii. Areas zoned for conservation purposes.	
Listing No. 3 R. 546, 18 June 2010	Activity 4	The construction of a road wider than 4 meters with a reserve less than 13, 5 meters.	**In Gauteng:** i. Protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in

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			chapter 5 of the Act and as adopted by the competent authority; iv. Sites or areas identified in terms of an international Convention; v. Sites identified as irreplaceable or important sites in the Gauteng Conservation Plan; vi. Areas larger than 2 hectares zoned for use as public open space; vii. Areas zoned for conservation purpose; viii. Any declared protected area including Municipal or Provincial Nature Reserve as contemplated by the Environmental Conservation Act, 1989 (Act No. 73 of 1989) and the Nature Conservation Ordinance (Ordinance 12 of 1983); ix. Any site indentified as land with high agricultural Hubs or Important Agricultural Sites identified in terms of the Gauteng Agricultural Potential Atlas, 2008.
Listing No. 3 R. 546, 18 June 2010	Activity 10	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 50 cubic meters. **(c)Gauteng:** i. A Protected area identified in terms of NEMPAA, excluding conservancies;	

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		ii. National Protected Areas Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; iv. Sites or areas identified in terms of an International Convention. v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vi. Within 100meter of a watercourse or within 100 meters of wetland that is not linked to a watercourse; vii. Any declared protected areas including Municipal or Provincial Nature Reserves as contemplated by the Environmental Conservation Act, 1989 (Act No. 73 of 1989), the Nature Conservation Ordinance (Ordinance 12 of 1983) and the NEMPAA.

Since the proposed development includes listed activities from No. R544, R545 and R546, an application for a full EIA process was lodged at the Gauteng Department of Agriculture and Rural Development (GDARD). The reference number ***Gaut: 002/11-12/E0177 had*** been assigned to the application.

1.4 The Town Planning Process

The Town Planning Application was made in terms of the provisions of the Development Facilitation Act (DFA), 1995. This act is specifically aimed at creating a single legal mechanism to deal with all the diverse aspects of land development in an integrated fashion. This implies that all the preparatory work must be concluded prior to the submission of the application to ensure that it may be evaluated by all role-players, taking cognisance of all the important aspects, such as access arrangements, provision of services, environmental impact etc. Plan Practice Townplanners was appointed for the DFA Application.

The purpose of the DFA application was to:

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a) obtain approval for the existing and proposed future land uses known as the Kleinfontein Settlement. The development comprise of various farm portions, which will be subdivided and rezoned according to the land uses indicated on the layout plan.
b) the amendment of the Peri-Urban Areas Town Planning Scheme 1975 by the allocation of appropriate land use rights and development restrictions to each of the subdivided erven. A formal settlement will improve the management and control of the existing and future development.
c) the removal of restrictive conditions of title: removing servitudes and legal encumbrances to enable the proper registration of the settlement by the Surveyor General and Registrar of Deeds.
d) the approval of services agreement (or agreements) to be concluded between the Municipality, the applicant and other service providers as called for in the provisions of the Act.

1.5 Scope of Work and Approach to the Study

An application form for environmental authorisation of the relevant activity as well as an Environmental Scoping Report has been submitted to GDARD. The Scoping Report and the Plan of Study for EIA, which was submitted by Bokamoso Landscape Architects and Environmental Consultants and received by the Department on 16 October 2013, had been accepted by the Gauteng Department of Agriculture and Rural Development (GDARD). In addition to the tasks that are outlined in the Plan of Study for the EIA, GDARD required the following information requirements to be addressed in the EIAR ***(refer to Annexure E).***

a. The Biodiversity assessment studies for both fauna and flora in-accordance with the Department' requirements for biodiversity assessment. ***Refer to section 6.1.2 for the impact in the Biological environment.***

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b. According to the Conservation Plan Version 3.3 section of the proposed site are designated as "Important and "Ecological Support Areas" with patches of suitable habitat for Red Listed Plant, Orange Listed Plant, Priority Red Listed Bird, Red Listed Mammals, Red Listed Invertebrate and Primary vegetation. As a result of this, all eminent impacts of the proposed activity on the above sensitivities must be considered in the EIAR. ***Refer to section 6.1.2 for the impact in the Biological environment.***

c. The layout plan must show the interconnection with the existing township(s). It must be overlaid by sensitivity map and reflect flood lines, calculated by a suitable qualified specialist and appropriate buffers around the perennial river system(s) and the Ridge. The layout map must be clear, legible and printed on a readable scale map A1 paper sheet with distinctive legend in solid colors.

d. Storm water management plan must indicate all points of inlet and outlet as well as connections with the exciting municipality systems (if there are any) and must comply with the standard and requirements of the City of Tshwane Roads and Stormwater Division.

e. The proposed area of development also falls within the Agricultural Hub according to the GAPA Version 3. Further investigation as indicated on the scoping report must be undertaken and reported in the EIA Report.

f. The development proposal must be discussed in relation to the areas planning frameworks such as the Local Authority's Spatial Planning Frameworks to determine the suitability of the propose development relative to the services and road infrastructure in the area.

g. The EIA Report must also be forwarded to SAHRA in Gauteng for comments and their response must be attached in the EIA Report.

h. Geotechnical study must be forwarded to council for geosciences for comments and this must also be attached on the EIA Report.

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i. A detailed project and site specific Environmental Management Plan (EMP) must be compiled and included in the EIAR. ***Refer to Annexure M.***

An investigative approach was followed and the relevant physical, social, economic and institutional environmental aspects were assessed. The scope of work includes the necessary investigations, to assess the suitability of the study area and the surrounding environment for the proposed activities. The scoping exercise identified the anticipated environmental aspects in an issues matrix and it also supplied a preliminary significance rating for the impacts identified. The scoping process also assessed the possible impacts of the proposed development on the surrounding environment (including the interested and affected parties).

This document represents the EIA for the proposed development. The EIA must be in line with Section 32 of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) and the Approved Plan of Study for EIA that was submitted as part of the Scoping Report.

The EIA takes into consideration the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity. A description of the property on which the activity is to be undertaken and the location of the activity on the property are described. A description of the proposed activity and any feasible and reasonable alternatives were identified. In addition, a description of the need and desirability of the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have, on the environment and community that may be affected by the activity are included.

An identification of all legislation and guidelines that we are currently aware of is considered in the preparation of this EIA Report. Furthermore a description of environmental issues and potential impacts, including cumulative impacts, are identified and discussed. Information on the methodology that will be adopted in assessing the

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potential impacts is furthermore identified, including any specialist studies or specialised processes that were/ should be undertaken. The EIA Report eventually determines whether a proposed project should receive the "go-ahead" or whether the "no-go" option should be followed. If the EAP recommends that the project receive the "go-ahead", it will (in most cases) be possible to mitigate the issues identified to more acceptable levels. Reference is also made to the mitigation of identified impacts or for further studies that may be necessary to facilitate the design and construction of an environmentally acceptable facility.

Details of the Public Participation Process (in terms of Sub-Regulation 1) are also included. Sub-Regulation 1 requires that the following information be included as part of the Public Participation Section of the EIA report:

(i) The steps undertaken in accordance with the Plan of Study For EIA,
(ii) A list of persons, organisations and government organs that were registered as interested and affected parties;
(iii) A summary of comments received from, and a summary of issues raised by the interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments;
(iv) Copies of any representations, objections and comments received from the registered interested and affected parties.

The mitigation measures and guidelines that are listed in the EIA Report are also summarised in a user-friendly document named an Environmental Management Plan (EMP). A Draft EMP is also a requirement of the EIA Process (Section 32 and 34 of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)).

2. REGISTERED OWNERS AND TITLE DEEDS

The proposed Kleinfontein Settlement is situated on eight registered farm portions as described in **Table 3** below:

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Table 3: Property Particulars

ITEM NR	FARM DESCRIPTION	PORTION NUMBER	REGISTERED LAND OWNER	TITLE DEED NUMBER	SG DIAGRAM NUMBER	LAND AREA (ha)
1	The Farm Kleinfontein 368 JR	Remainder	Kleinfontein Boerebelang Koöperasie Limited	T38786/1990	A1822/1942	460.988
2	The Farm Kleinfontein 368 JR	38	Kleinfontein Boerebelang Koöperasie Limited	T2651/1971	A5569/1968	215.317
3	The Farm Kleinfontein 368 JR	90	Kleinfontein Boerebelang Koöperasie Limited	T6652/2008	8988/2007	17.8866
4	The Farm Kleinfontein 368 JR	96	Kleinfontein Boerebelang Koöperasie Limited	T96645/2008	3887/2008	59.0226
5	The Farm Donkerhoek 365 JR	67	Kleinfontein Boerebelang Koöperasie Limited	T16982/1973	A4266/1952	8.5653
6	The Farm Donkerhoek 365 JR	68	Kleinfontein Boerebelang Koöperasie Limited	T16982/1973	A4267/1952	8.5653
7	The Farm Donkerhoek 365 JR	63	Kleinfontein Boerebelang Koöperasie Limited	T16982/1973	A4262/1952	8.5653
8	The Farm Donkerhoek 365 JR	R/14	Kleinfontein Boerebelang Koöperasie Limited	T4650/1924	A2013/1921	17.1308
	TOTAL					**796.0403**

Collectively, the 8 components of the land assembly cover approximately 796ha in extent. According to the records of the Registrar of Deeds, the land in question is encumbered by certain bonds in favour of ABSA Bank and Mr. DFB de Beer. The consent of the bondholder has been procured.

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3. LOCALITY OF THE PROPOSED DEVELOPMENT – (In line with Section 32 (c)

The study area is situated (along the N4 National Road), roughly midway between the urban areas of Tshwane and Bronkhorstspruit. It gains access off the R515 Provincial Road which intersects with the N4 National Road, linking the towns of Rayton and Cullinan in the north to urban areas such as Bapsfontein and Germiston in the south.

From the intersection off the N4 National Road as aforesaid, the study area is located a short distance south of the national road reserve taking access off a secondary access road positioned parallel and to the south of the N4. Drive time to the central business district of Tshwane from the subject property is an average of approximately 25 minutes whilst the estimated drive time to the central business district of the town of Bronkhorstspruit is approximately 20 minutes. **(Refer to Figures 1 and 2.)**

4. EXISTING ZONING AND LAND USE AND THE PROPOSED LAND-USE

4.1 Existing Zoning and Land Use

The study area is currently zoned "Agricultural".

Kleinfontein Settlement already exists and existing land uses include residential, community facilities, businesses and shops (nearly completed).

4.2 Proposed Zoning And Land Use – (In line with Section 32 (b)

The following zonings are proposed: Residential 1, Residential 2, Residential 3, Residential 6, Institutional, Business, Light Industrial, Special, Public Open Space, Nature Reserve, Educational, Sport and Recreation, Sewer Works and Public Roads. ***Refer to Figure 3, Layout Plan (also attached as Annexure C).***

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- Approximately 862 residential erven, accommodating a variety of housing typologies;
- 69 950 m² of business floor area, to provide in the need for retail and associated business activities;
- Approximately 104 400 m² earmarked for manufacturing, (light industries and associated facilities);
- Approximately 198 agricultural small holdings with an average size of approximately 1.4 ha per unit;
- 1 school site to accommodate educational facilities (both pre-primary and primary facilities);
- 1 site for religious activities and community facilities;
- A local cemetery;
- 4 sites for engineering infrastructure (reservoirs, sewage treatment facilities, maintenance facilities etc);
- 1 site for an Institution (old age home and care centre) and related community facilities;
- 14 sites for private open spaces;
- 1 site for workshop, maintenance and storage facilities;
- 6 sites for Places of Amusement, Public Offices, Places of Instruction and associated facilities.
- 1 Site for a Public Garage and convenience shop;
- 1 Site for a Telecommunication Centre; and
- sites for access control.

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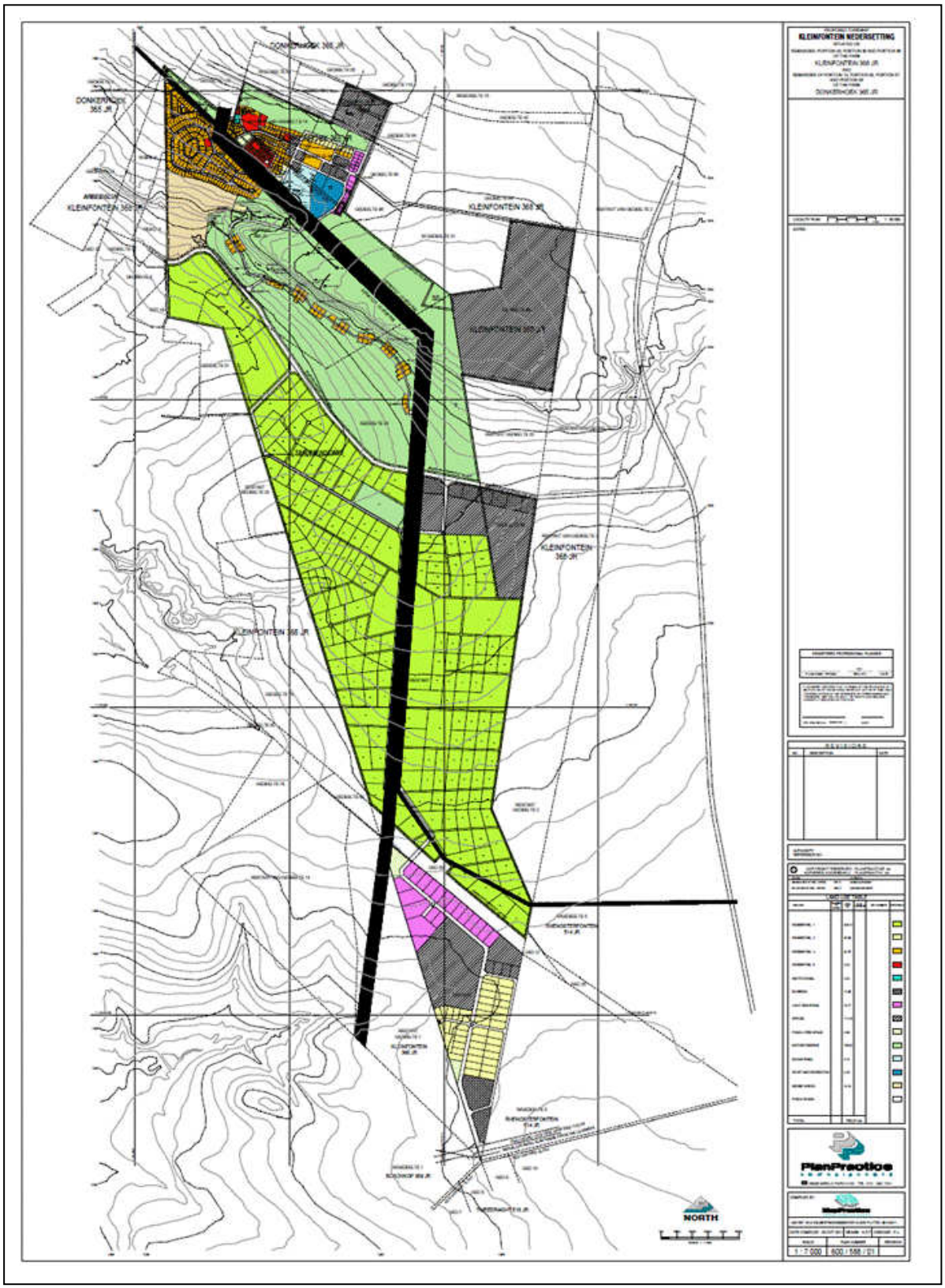

Figure 3: Proposed Layout for Kleinfontein Settlement

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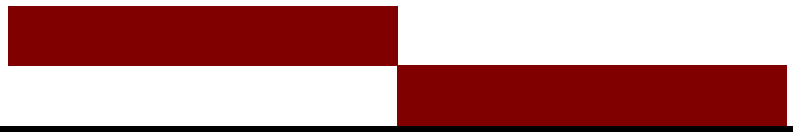
5. ALTERNATIVES IDENTIFIED – (In line with Section 32 (f) and (h))

Alternatives should be considered as a norm within the Scoping and Environmental Impact Assessment Process. These should include the No-Go Option, locality alternatives, land use alternatives and layout alternatives.

5.1 The "No-Go" Alternative

The developer purchased the properties for development purposes and did not consider the "No-Go" alternative due to the fact that a section of the Kleinfontein Development had already been developed on the study area no locality alternatives were identified**.**

Diagram 1: Environmental Issues - "No-Go" Option

Issue	Short term	Medium term	Long Term	
Geology and soils				Positive Neutral Negative
No development will not have a significant impact on the geology and soils of the study area, especially in the short term. Indirect impacts created by the edge effects of the surrounding developments could however, in long term, lead to a decrease in vegetative coverage and ever to exposed areas. Erosion and siltation problems could then be caused.				
Hydrology				Positive Neutral Negative
No development will not have a significant impact on the hydrology of the study area, especially in the short term. Indirect impacts created by the edge effects of the surrounding developments could however, in long term, lead to a decrease in vegetative coverage and ever to exposed areas. Water pollution problems could then be caused. Changes in the surface drainage patterns could also occur. Without a proper sanitation system, the risks of ground water pollution are high. At present the community abstract ground water for irrigation and domestic purposes. The development option will make the development subject to a Section 21 Water-Use License application process, which will eventually assist with water quality quantity management.				
Vegetation				Positive Neutral Negative

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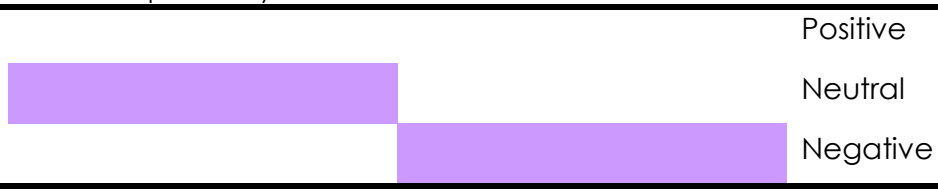
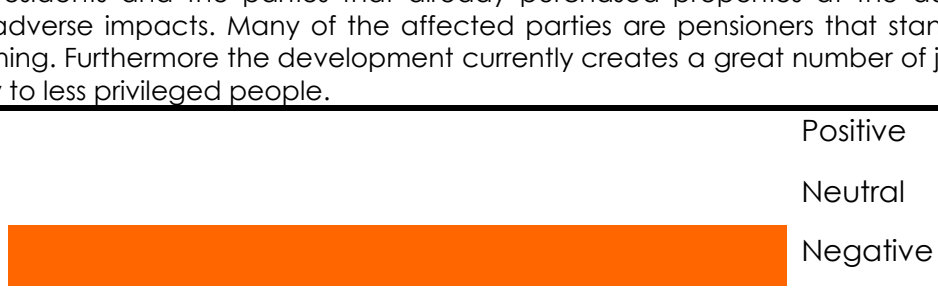
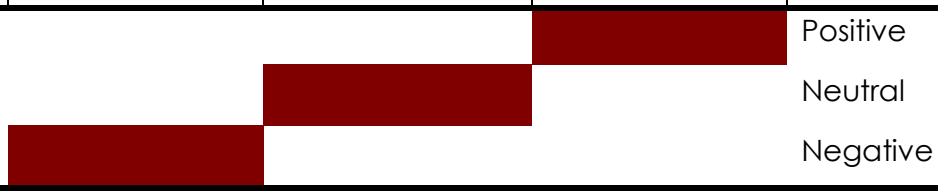
Exotic invaders currently occurring on the study area together with erosion will degrade vegetation further in future and the wetland system will not be protected and conserved. These alien species will also spread to open spaces that are linked with the study area.	
Fauna	
Fauna numbers and diversity of species will decrease over time as a result of degraded vegetation and pollution of water resources. They will also not be protected from hunting/ trapping/ killing by neighboring residents or passersby.	
Social	
A major part of the study area is currently vacant and informal settlements could establish on the study area in time. This has a major impact on the safety of security of the surrounding land owners. The current residents and the parties that already purchased properties at the development will experience adverse impacts. Many of the affected parties are pensioners that stand a change of losing everything. Furthermore the development currently creates a great number of jobs and homes to, especially to less privileged people.	
Economic	
Currently the study area does not have any economical benefits for the local community and without development will not improve. Agricultural activities in the past also proofed not profitable.If no development takes place there will be no potential for economic growth, therefore there impact on the economic will be form short term to long term negative. If no development there will be no job opportunities.	

Note: *The "no-go" option is predominantly neutral in the short and medium term, and turns negative in the long term*

Diagram 2: Environmental Issues of the proposed development

Issue	Short term	Medium term	Long Term	
Geology and soils				
If the proposed development goes ahead, the disturbed vegetation and wetlands will be rehabilitated and together with storm water management measures will drastically decrease erosion.				

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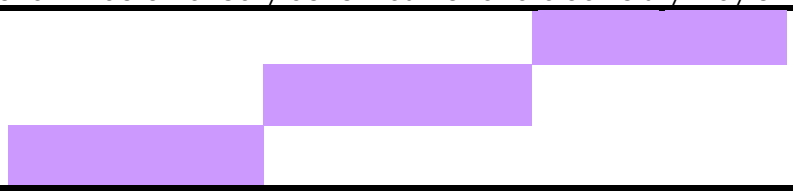
Hydrology 	
In the short term (the construction phase), the proposed development will have a negative impact on the hydrology of the study area. It is, however possible to mitigate the impacts to acceptable levels. If well planned, the long term impacts on the hydrology will be neutral or even positive. Effective temporary and permanent storm water management and guidelines to reduce impacts on the water courses and wetlands lower down the catchment.	
Vegetation 	
The proposed development will have a negative impact on the vegetation of the study area in the short term and medium term. Some of the natural grassland vegetation will be permanently lost. Weeds and exotic invaders will be removed on a continuous basis throughout the proposed development. Disturbed vegetation on site will be rehabilitated, managed and maintained as well as protected in a private open space area. The proposed development will provide the financial means to achieve this objective.	
Fauna 	
The proposed development will have a negative impact on the fauna and flora of the study area in the short term and medium term. Especially during construction some of the fauna and flora may be harm and removed from their habitat. But in medium to long term the fauna and flora will be relocated to a more suitable habitat or will adjust to the development. When habitat for fauna such as the wetland boundaries and buffers are rehabilitated, conserved, protected, maintained and managed fauna will automatically benefit as well and biodiversity may even increase.	
Social 	
From a social point of view the proposed development will have significant positive impacts. The construction phase could cause some minimal social impacts, but in the long terms the surrounding community and the larger region will benefit from this development. Security will improve with development; The development will provide job opportunities for potential buyers of residential units within the development at industrial and commercial stands which are in close proximity to their homes, cutting travel costs and time. Educational and care facilities for children are provided for and the development provides for an integrated set up with a variety of residential units and other uses.	
Economic 	

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	Negative
From an institutional and economical point of view the proposed development will have significant positive impacts. The construction and operational phase will also create some temporary and permanent job opportunities. Rates and taxes payable to the local authority; Optimal utilization of infrastructure; Job opportunities will be provided to the local communities; and Industrial and commercial uses will improve the local economy.	

Note: *From the investigations that were done, it is anticipated that the proposed development option is predominantly negative in the short term, turns neutral in the medium term and then positive in the long term.*

5.2 Land Use Alternatives

The developer considered the following two land use alternatives:

5.2.1 The "Mixed Use" Development (Alternative preferred alternative and development proposal)

In terms of this alternative, it is proposed to establish a township on the site and to include other land uses to provide a diversity of land uses. Due to the socio-economic considerations a mixed use development was regarded as the preferred alternative for the study area. The site is extremely well suited for mixed use developments due to its excellent regional accessibility via the N4. A mixed use development will supply employment opportunities in close proximity to residential areas and will contribute to the efficient economic functioning of the area.

The developer proposes the expansion of the existing Kleinfontein Settlement and associated activities with a longer-term view to developing a fully integrated Settlement which provides in all the interactive settlement components:

- A residential settlement providing a wide range of housing typologies to suit varying income levels;

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- Supporting social facilities in the form of educational, religious and related infrastructure;
- Supporting economic activities including local retail/business outlets a manufacturing component
- Appropriate engineering infrastructure (roads, water, sewage and related systems) to serve the larger settlement in compliance with the Minimum Requirements of the controlling authorities;
- A supportive rural enclave providing for small-scale agricultural activities

5.2.2 The "Residential Only" Alternative (Alternative 2)

The "Residential Only" alternative, means that the study area will be developed with residential dwelling units without provision for supporting social, economic and institutional land uses. Although the establishment of a Residential component is considered as an alternative for the site, a need arise for efficient services and job opportunities closer to the living area. The "residential only" alternative will be investigated further in the EIA phase.

5.2.3 Agricultural

According to the GAPA 3 the site is characterised by very "low" to "high" agricultural potential soils ***(refer to figure 4).*** The study area falls within the Nokeng Agricultural Hub ***(refer to figure 5).***

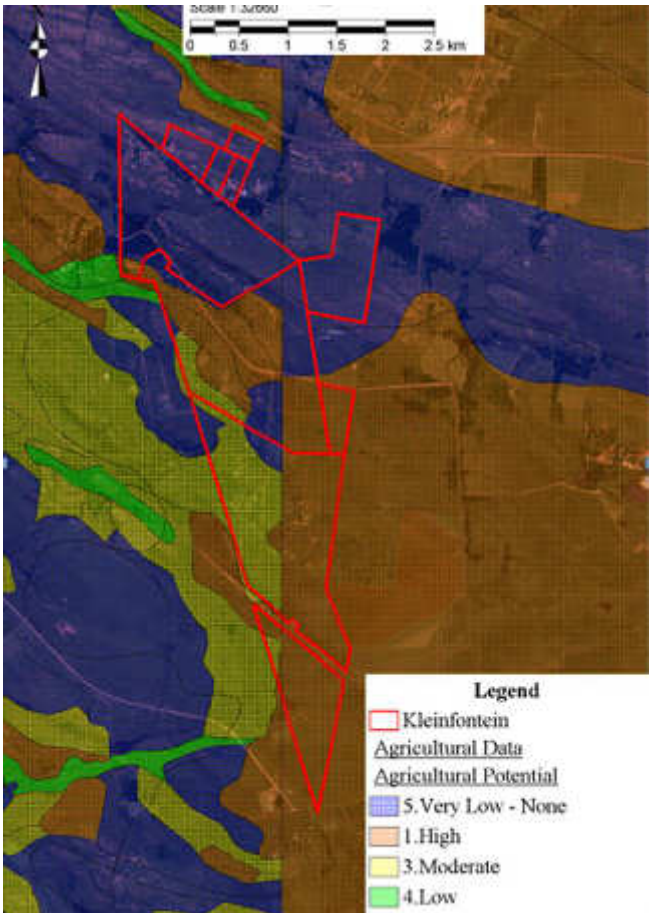

Figure 4 – Agricultural Potential Map

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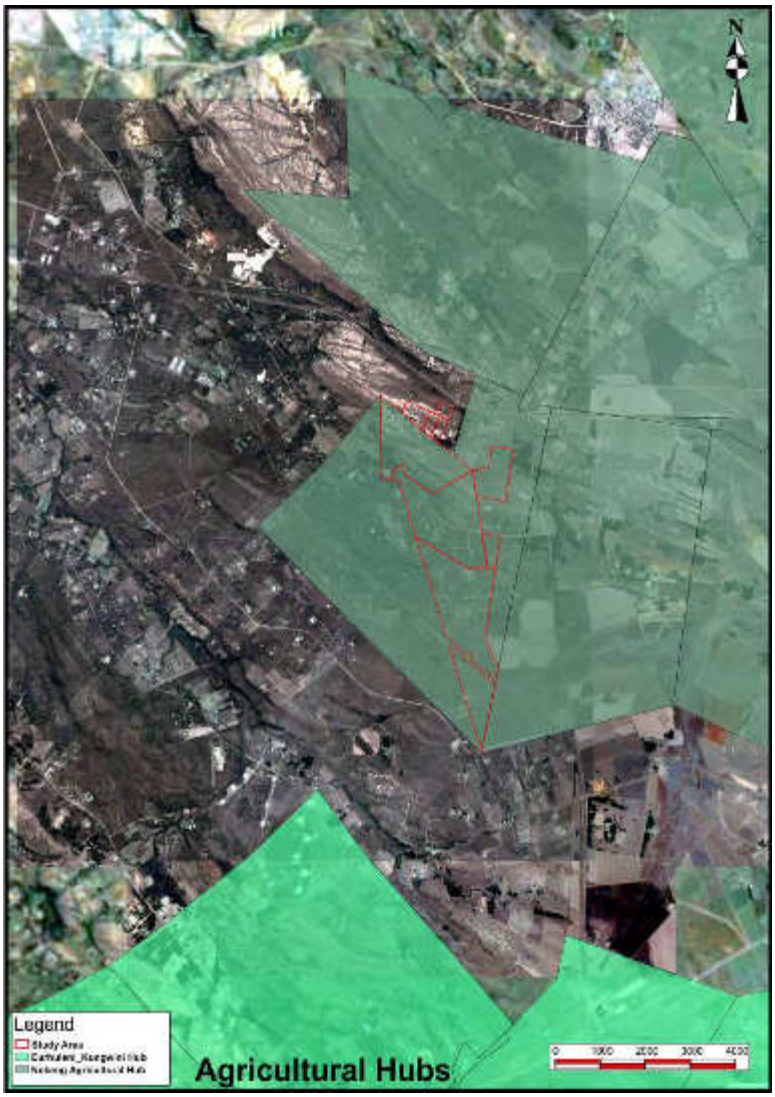

Figure 5- Nokeng Agricultural Hub Map

5.3 Locality Alternatives

Due to the fact that the Kleinfontein Settlement already exists on the site and due to the fact that properties involved were specifically obtained for purpose of the development, no locality alternatives were identified. Furthermore, it is important to note that the portion of the land is very rich in Afrikaner History, which enhances the "Sense of Place" of the study area, especially for its specific development concept.

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5.4 Layout alternatives

Refer to Figure 3 and Annexure D for the Final layout

Due to the fact that there are already settlements base in the area there will be no layout alternatives for the mixed use development. The final layout of the proposed development will form part of the current settlements. The final layout was only finalised after specialist studies were conducted to establish the sensitivities and the design criteria for the site. Various multi-disciplinary planning meetings held with civil-, traffic-, electrical-, and stormwater engineers, as well as environmentalists, architects, town planners and the developer to discuss the development potential, opportunities and constraints of the study area.

During the meetings the concept layout was place over an already prepared environmental issues/sensitivity map **(Refer to Figure 11 for the Sensitivity Map).** The layout was altered to accommodate the environmental opportunities and constraints as reflected on the sensitivity map as well as the requirements of the above mentioned disciplines.

5.5 Planning Approach

Based on the above, the planning approach to the proposed layout was done by a complete professional team consisting of Land Surveyors, Town Planners, Urban Planners, Traffic Engineers, Urban Economists, Environmental Consultants, Civil Engineers, Electrical Engineers, Geotechnical Engineers and the developer.

From the specialist and other environmental information available, the project team already compiled a preliminary layout for the development ***(figure 9).*** The proposed land-uses for the preliminary layout uses for the preliminary layout are as follows: Residential 1, Residential 2 Residential 3, Residential 6, Institutional, Business, Light Industrial, Special,

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Public Open Space, Nature Reserve, Educational, Sport and Recreation, Sewer Works and Public Roads. ***(Refer to Annexure D for an enlarged copy of the Preliminary Layout).***

An effort was already made (during the preliminary layout phase) not only to make use of the opportunities, but to utilise the terrain, site features, visibility and access to the best benefit of all, including the surrounding environment.

6. THE DESCRIPTION OF THE BIOPHYSICAL AND SOCIO-ECONOMICAL ENVIRONMENTS – (In line with Section 32 (d)

This section briefly describes the biophysical and socio-economical environments. It also lists the anticipated adverse and beneficial impacts of the proposed development on the environment. Where possible, mitigation measures were supplied for the adverse impacts and the significance of the impacts listed was also indicated in specific impact tables. In some cases the impacts have already (during the planning phase) been addressed to such an extent that it was not regarded as necessary to carry the impacts over to the significance rating section of the report.

Although it was not necessary to mitigate the positive impacts listed in the impacts tables, the positive impacts identified in this section of the report will also automatically be carried over to the significance rating section of the report to indicate the specific benefits associated with the proposed development. This will also make it possible to compare the severity of the adverse impacts with the advantages of the beneficial impacts and to eventually make an informed decision regarding the proposed development.

The following section incorporates the most important information supplied by specialist studies and reports.

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6.1 THE BIO-PHYSICAL ENVIRONMENT

6.1.1 The Physical Environment

6.1.1.1 Geology and Soils

Holland-Muter & Associates CC was appointed to conduct a Geotechnical and Dolomite Stability Report. ***(Refer to Annexure G1 for the Report).*** The report consists of a desk study that utilized information available from maps and data bank sources to determine the suitability of the site for the proposed development.

The site is underlain by formations belonging to the Pretoria Group of the Transvaal Sequence. The southern part of the site is underlain by the Silverton Formation (Vsi) consisting of shale with inter-bedded quartzite, hornfels and limestone.

The Silverton Formation is intruded by diabase dykes and sills (di). These diabase intrusions are very prevalent at certain stratigraphic levels below the Bushveld Igneous Complex in the Pretoria Group and the majority is found in the Silverton and Strubenkop Formations. Shale is silty and locally graphitic with thin interbeds of limestone. This material comprises with soft to hard, olive grey to yellow brown, well bedded, very closely jointed, fine grained, moderately to highly weathered rock which is usually characterized by outcrops.

The Silverton Formation is overlain by the Magaliesberg Formation (Vm) in the northern part of the site. The Magaliesberg Formation consists mainly of quartzite.

According to the information provided for in the report, both the lateral and vertical extent of the various soil horizons and the engineering characteristics of the materials on the land will have to be determined by a detailed on-site investigation.

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6.1.1.2 General Soils and Rocky conditions

According to the Geotechnical study these are the following conditions of the soils:

The ***Magaliesberg Quartzite Formation*** where soils are encountered, the thickness of these materials may vary from 0,2m to 9,6m. The poorly graded gravely sands, silts and clays usually dispose of a collapsible grain structure, have previous to semi-previous characteristics.

The ***Silverton Shale Formation*** usually outcrops on the higher lying areas which occur directly south of the Magaliesberg Quartzite Formation. The transported and residual soil profile becomes thicker along the slope from the higher lying topography towards the valleys.

The ***Diabase*** usually outcrops as scattered boulders with interstitial red sandy clay of shallow depth. The transported and residual Diabase have internal drainage characteristic with a relatively permeability ranging.

6.1.1.3 Drainage and services

Permeability of the soils is generally low, except in the transported and residual sands. A higher water table is often found in the Magaliesberg Quartzite, close to the river courses and in the shale during the wet seasons.

The shallow appearance of perched water conditions during the wet seasons will necessitate execution of a detailed geotechnical investigation.

Although no severe founding problems are foreseen for light residential structure, the on-site engineering properties of the soils underlying each structure will have to be determined for design and construction purposes.

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Recommendations:

- The investigated area is mainly underlain by the Magaliesberg Quartzite and Silverton Shale formations as well as sheets and dykes of diabase intrusive.
- Slope of a moderate nature and no problems with regards to slope instability are expected although steep slopes do occur which may require cut and fill operations to create stable platforms for residential structures.
- The appearance of perched water conditions on the terrain will require the execution of detail surface and subsurface test and examinations to determine the permeability of the soil on site.
- No geotechnical conditions exist to the extent of not following the proposed development to proceed.

6.1.1.1.a Issues and Impacts – Geology and Soils

Table 4: Issues and Impacts – Geology and Soils

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ☹** **Positive Impact - Not Necessary To Mitigate ☼**
1)	Stability of structures	-	☻
2)	Erosion	-	☺
3)	Stockpile areas for construction materials and topsoil	-	☺

6.1.1.1.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

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1) Stability of structures

The foundation recommendations by the geotechnical engineers should be implemented to ensure the stability of structures.

Table 5: Significance of Issue 1 (Stability of structures) After Mitigation

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during **P**lanning phase, **C**onstruction and/ or **O**perational phase **P/ C / O** Mitigation	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P & C** – Detailed foundation investigations should be done for large structures because residual dolomite material may experience settlements under load or be collapsible. **P & C** – It is recommended that excavations (for foundations and underground services) be inspected on the site to ensure that conditions at variance to that described can be noted and the necessary adjustments made. **P & C** – Detailed foundation inspections should be carried out at the time of construction to identify variances and adjust foundation designs accordingly if need be.	**M** - To be included in EMP **M** - To be included in EMP **M** - To be included in EMP **M** - To be included in EMP

Result: *Although issues can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table*

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2) Erosion

Unnecessary clearing of vegetation could lead to exposed soils prone to erosive conditions. Insufficient soil coverage after placing of topsoil, especially during construction where large surface areas are applicable could also cause erosion. To cause the loss of soil by erosion is an offence under the Soil Conservation Act (Act No 76 of 1969). The management of surface water run-off during construction is very important to prevent soils erosion on the site. If construction takes place during the rainy season, sufficient storm water management will be required to manage water runoff.

Table 6: Significance of Issue 2 (Erosion) After Mitigation

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during **P**lanning phase, **C**onstruction and/ or **O**perational phase **P/ C / O** Mitigation	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P & C –** A storm water management plan must be compiled for the construction and operational phases of the proposed development. **P & C** – 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. **P & C -** Rehabilitate exposed	**M -** To be included in EMP **L -** To be included in EMP

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	areas immediately after construction in these areas is completed (not at the end of the project).	**M -** To be included in EMP
	P & C – Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided.	**M -** To be included in EMP
	P – Specifications for topsoil storage and replacement to ensure sufficient soil coverage as soon as possible after construction must be implemented.	**M -** To be included in EMP
	P & C – All embankments must be adequately compacted and planted with grass to stop any excessive soils erosion and scouring of the landscape.	**M -** To be included in EMP
	C – Storm water diversion measures are recommended to control peak flows during thunder storms.	**M -** To be included in EMP
	P & C – 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.	**M -** To be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table.

3) Stockpile areas for construction materials and topsoil

Designated areas for stockpiling of construction materials must be specified by the Environmental Control Officer in an area that is already disturbed. Stockpiling in the wrong areas might be detrimental to fauna and flora and will deplete the soil quality. Topsoil

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should be stockpiled as specified in the EMP to ensure that the soil quality doesn't deplete and that the grass seed remain in the soil for later rehabilitation of the disturbed areas.

In addition to the impact discussed in the paragraph above, rainwater falling onto stockpiles may become polluted with dust originating from aggregate and other construction material, such as bitumen from pre-mix stockpiles. Therefore stockpiles of topsoil should be correctly covered to prevent this as well as loss of topsoil by wind erosion. The footprint of stockpile areas will be contaminated with the stored material and will require cleaning before rehabilitation.

Table 7: Significance of Issue 3 (*Stockpile areas for construction materials and topsoil)* After Mitigation

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during **P**lanning phase, **C**onstruction and/ or **O**perational phase **P/ C / O** Mitigation	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**C** - Remove vegetation only in designated areas for construction. **C** - Rehabilitation works must be done immediately after the involved works are completed. **C** -All compacted areas should be ripped prior to them being rehabilitated/landscaped. **P/C** - The top layer of all areas to be excavated must be stripped and stockpiled in areas where this material will not be damaged, removed or	**M -** To be included in EMP **M -** To be included in EMP **M -** To be included in EMP **M -** To be included in EMP

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	compacted. This stockpiled material should be used for the rehabilitation of the site and for landscaping purposes.	
	C - Strip topsoil at the beginning of works and store in stockpiles no more than 1,5 m high in designated materials storage area.	**M -** To be included in EMP
	C – Stockpiles should be covered correctly.	**M -** To be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table .

6.1.1.2 Hydrology

The study area is not affected by any rivers or streams ***(Refer to figure 6 Hydrology Maps).*** The site slopes towards the west and south-west. The relevant engineers are appointed to conduct a Storm Water Management Plan which will be included in the Final EIA Report.

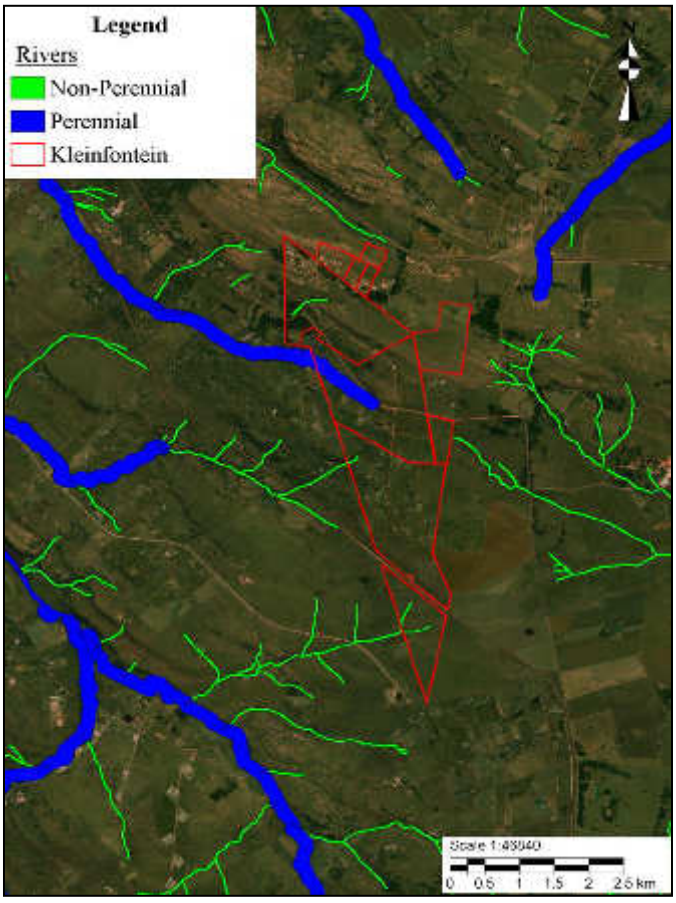

Figure 6 – Hydrology Map

6.1.1.2.a Surface Hydrology

(Refer to Figure 6, Hydrology Map)

The higher lying Magaliesberg Quartzite in the northern part of the site forms a well-defined watershed. The main drainage flows to the south west as a tributary to the Pienaars River. The Kleinfontein Spring is located on the higher topography on the Quartzite ridge.

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(Refer to Figure 6, Hydrology Map).

It is expected that the slope will be sufficient to allow for natural storm water drainage as well as for the installation of essential services. The topographical characteristics will have no detrimental effect on the development potential of the site.

Refer to Annexure G10 for the storm water layout plan.

6.1.1.2.b Sub-Surface Hydrology

(Refer to Annexure G2, for the Geo-hydrological Study)

Aurecon was appointed by Kleinfontein Boerebelange Koöperatief Bpk to conduct a Geo-hydrological report.

The findings of the report were that Aquifers present on site are classified as an intergranular and fractured aquifer according to the 1:500 000 geohydrological map. The groundwater occurrence is associated mainly with the weathered zones, as well as fault zones and dyke or sill contact zones. A large number of boreholes exist on the property but not all are in use. The yields are very well in line with that reported by Barnard (2000) for the Silverton Formation.

According to the geohydrology study in Aurecon report the water supply for the Kleinfontein development (Phase 1) consists of a fountain (natural spring) on the property and six boreholes. The coordinates as well as the sustainable yield of the borehole and fountain are shown in ***Table 1 in the Geohydrology study.***

The total usage for the period of 18 months from January 2011 to June 2012 is recorded as 62.930 Ml or 3496m³/month. **Total recorded usage is 116.537m³/day**. The total recorded usage of 116.537m³/day is approximately 50% of the potential production or 25% of available supply.
Six borehole water samples were collected as well as a sample from the fountain that flows through the V-notch weir.

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Conclusions and Recommendations

The following Conclusions and Recommendations were made by Aurecon:

Based on all the available information, test pumping data, analytical results and reserve determination, the following can be concluded:

- The groundwater, with exception of the borehole *NO,* is of excellent quality and complies with the SANS 241-1 Drinking Water Standards.
- The iron content in borehole *NO* exceeds the maximum allowable drinking water standard (Class II). The manganese concentration falls within Class II standards (suitable for short term use only). This water is not presently used.
- The combined sustainable yield calculated from the pump tests conducted on the selected production boreholes is 3.8 l/s.

6.1.1.2.c Issues and Impacts – Hydrology

Table 8: Issues and Impacts – Hydrology

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**
4)	Siltation, erosion and water pollution could occur if a stormwater management plan is not implemented.	-	☺

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5)	Lowering of groundwater.	-	☺
6)	Groundwater pollution.	-	☺
7)	Removal of vegetation coverage, increased hard surfaces and increased erosion, surface water pollution and siltation problems.	-	☻

6.1.1.2.d Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

4) Siltation, erosion and water pollution if a stormwater management plan is not implemented.

If erosion, siltation and water pollution is not addressed, the sustainability of the drainage especially in the upper section of the main tributary can be negatively impacted by the development.

Table 9: Significance of Issue 4 (Siltation, erosion and water pollution) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during **P**lanning phase, **C**onstruction and/ or **O**perational phase **P/ C / O** Mitigation	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/ C / O –** The storm water design for the proposed development must be designed to:	**M -** To be included in EMP

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	- Reduce and/ or prevent siltation, erosion and water pollution. If erosion, siltation and water pollution is not addressed, the sustainability of the drainage and the open space systems especially in the upper section of the main tributary can be negatively impacted by the development.	**M -** To be included in EMP
	- Storm water runoff should not be concentrated as far as possible and sheet runoff from paved surfaces need to be curtailed.	**M -** To be included in EMP
	- Runoff from paved surfaces should be slowed down by the strategic placement of berms.	**M -** To be included in EMP
	- The vegetation must be retained as far as possible, and rehabilitated if disturbed by construction activities to ensure that erosion and siltation do not take place.	**M -** To be included in EMP
	- No trees should be planted within five meters of the line of the water bearing services.	**M -** To be included in EMP

Result: *Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table*

5) Lowering of groundwater.

Any local or regional artificial lowering of the groundwater may impact negatively on the stability of portions of the site and the surrounding area.

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Table 10: Significance of Issue 5 (Lowering of groundwater) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/ C / O –** • Ongoing monitoring of groundwater levels on and in the immediate vicinity of the site is recommended. • Ground water management will need to form an integral part of the Dolomite Risk Management Strategy.	**M -** To be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

6) Groundwater pollution

The ground water pollution potential on the study area is regarded as medium and if not planned and managed correctly.

The storm water management plan must be designed to:

- Reduce and/ or prevent siltation, erosion and water pollution; and

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- Improve the surface and ground water quality of the study area and the lower lying areas within the catchment area.

Table 11: Significance of Issue 6 (Ground water pollution) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/C/O -** Compilation of a storm water management plan that will address storm water management during the construction and operational phases of the project	**M - T**o be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

7) Removal of vegetation coverage, increased hard surfaces and increased erosion, surface water pollution and siltation problems

Erosion and siltation will also become a problem. Due to the "cluster and space" nature of the development layout it will be possible to implement on-site attenuation of storm water throughout the entire development. Obliviously storm water management becomes more important in the development clusters with higher densities. Such areas have more hard surfaces that are less permeable. In these areas it will be important to put measures in place that will attenuate the storm water, break the speed of the storm water, distribute

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the storm water and prevent erosion and siltation. Surface water drainage will be acceptable in the areas with lower densities, on the condition that vegetation coverage in such areas is implemented and maintained to ensure a coverage of at least 75% throughout the year.

Table 12: Significance of Issue 7 (Removal of vegetation coverage, increased hard surfaces and increased erosion, surface water pollution and siltation problems) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P -** Compilation of a storm water management plan that will address storm water management during the construction and operational phases of the project	**M - T**o be included in EMP and conditions of approval

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

6.1.1.3 Wetlands

Limosella Consulting was appointed to delineate the riparian areas on the study area. ***(Refer to Annexure G2 for report).***

Mrs. Antoinette Bootsma stated that five preliminary wetland areas were identified during the initial assessment). One large wetland system was recorded on the northern part of the

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site and includes two dams. This valley bottom wetland is found at the bottom of two steep ridges and is fed by water runoff from the ridges.

Wetlands are identified based on the following characteristic attributes (DWAF, 2005):

- The presence of plants adapted to or tolerant of saturated soils (hydrophytes);
- Wetland (hydromorphic) soils that display characteristics resulting from prolonged saturation; and
- A high water table that results in saturation at or near the surface, leading to anaerobic conditions developing within 50cm of the soil surface.

Three wetlands areas were identified on the southern section of the site. A low laying pan was found to the north of the southern section with *Typha capensis (Bullrushes)* and a variety of different sedges. At the eastern boundary a small valley bottom wetland was found on the southernmost portion of the site.

Impacts and Mitigation measures supplied by Limosella Consulting

Mark out the wetlands and buffer zone areas to prevent access. Ideally a rehabilitation plan should be put into place that will address any erosion, alien vegetation encroachment or pollution of the wetlands resulting from the proposed activities. Prevention of sedimentation, pollution or input of hydrocarbons should be prioritised during the construction phase of the development. Trapping of oils and pollutants from parking areas and roads can be achieved.

In order to minimize artificially generated surface storm water runoff, total sealing of paved areas should not be permitted. Permeable material should rather be utilized for these purposes (GDACE, 2008). An ecologically-sensitive stormwater management plan should be implemented. A continuum of natural open spaces should be included to allow linkages between wetland areas. Palisade fencing should be used to allow for the continued natural movement of fauna.

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The artificial seepage wetland is not sensitive in a local or regional context, and although all wetlands are protected by various aspects, the current study finds that the contribution to local biodiversity and hydrological function can be mitigated by a variety of interventions, including for example bioswales that trap runoff from the road. The remaining four wetlands should be demarcated and retained as natural open spaces in the development.

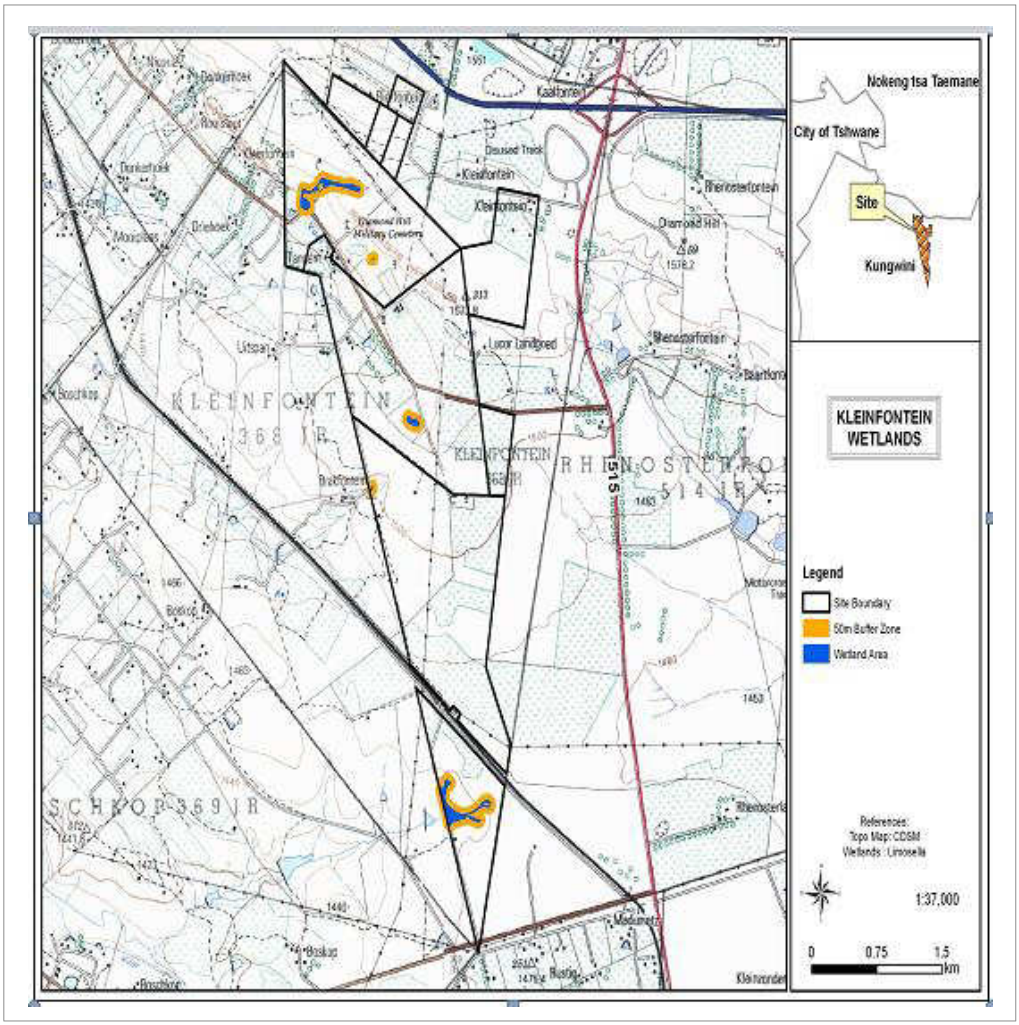

Figure 7 – Wetland Delineation Map

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Conclusion

Five wetland areas were identified by the specialist. An artificial seepage wetland was recorded adjacent to a road. This wetland is not sensitive in a local or regional context, and although all wetlands are protected by various aspects of legislation, the current study finds that the contribution to the local biodiversity and hydrological function can be mitigated by a variety if interventions, including for example biowales that trap runoff from the road.

The remaining four wetlands should be demarcated and retained as natural open space in the development.

6.1.1.3a Issues & Impact Identification – Wetlands

Table 13: Issues and Impacts – Wetlands

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
8)	Impact on wetland areas	-	**Medium ☺**

6.1.1.3.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation - Wetland

8) The construction and operational phases of the proposed development could have a detrimental impact on the wetlands if not properly planned and managed.

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Table 14: Significance of Issue 8 (Presence of wetlands) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/C/O** – The temporary drainage feature should be left intact with a narrow buffer zone of ten meters to allow natural flow of storm water down the drainage line. The wetland and associated buffer zones must be excluded from development. **P/C/O** – It is essential that the stream continuity of the main drainage line be reinstated. In this regard the following points are made: • If public open spaces within the buffer zones of the stream and wetland areas are provided it should be adequate to maintain the ecological connectivity of the riparian and in-stream ecology of the area. • It is recommended that these areas are managed adequately by restricting the movement of people to a limited number of allocated pathways and pets (e.g. dogs) should be restrained by	**M** - To be included in EMP **M** - To be included in EMP

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	a lead at all times. • It is recommended that alien and invasive vegetation (trees) are removed. This will increase the water volume flowing within the streams associated with the property and will improve the connectivity of the riparian zone.	
	C - No vehicles should be allowed to indiscriminately drive through the wetland areas. A fence should be erected along the various wetland buffer zones to prevent entry into the wetland areas and drainage line by construction vehicles and prevent storing or dumping of topsoil, construction material and other waste in the wetland/drainage line.	**M -** To be included in EMP
	C/O - All areas affected by construction should be rehabilitated upon completion of the construction phase. Areas should be reseeded with indigenous grasses as required.	**M -** To be included in EMP
	P/C - Site offices, parking areas for construction vehicles, etc. should be confined to non-sensitive areas.	**M -** To be included in EMP
	P & C – It is recommended that building regulations in terms of the flood line positions are strictly adhered to should these occur outside of the delineated buffer zones of the riparian areas.	**M -** To be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

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6.1.1.4 Topography

The topography is characterised by undulating landscape with the higher lying east west ridge at an elevation of 1577 m above mean sea level. The topography flattens out towards the south.

The higher lying Magaliesberg Quartzite in the northern part of the site forms a well-defined watershed. The main drainage flows to the south west as tributary to the Pienaars River. The Kleinfontein Spring is located on the higher topography on the Quartzite ridge.

Several tertiary drainage channels originate in the higher lying topography and drain the area with an angular drainage system towards the tributaries of the Pienaars River. The pattern of the drainage reflects that it is controlled or influenced by the local geology, intrusive or geological structures.

6.1.1.4a Issues & Impact Identification – Topography

Table 15: Issues and Impacts – Topography

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
9)	Due to the topography the development will be visible from view sheds in the flatter areas around the study area.	-/+ Depending on the architectural style and finishes	☺
10)	If not planned correctly, roofs and parking areas	-	☺

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	could reflect the sun into the eyes of oncoming traffic on the N4.		
11)	If not planned and managed correctly the lights (interior and exterior) and the signage of the development could cause visual pollution.	-	☻

6.1.1.4.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

9) Due to the topography the development will be visible from view sheds in the flatter areas around the study area as well as the N4 road.

Table 16: Significance of Issue 9 (Parts of the Development Will Be Visible From View Sheds in the Flatter Areas around the Study Area) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P** – Architectural and landscaping guidelines must be supplied in the EMP and the proposed Architectural theme must blend in with the surrounding area. **P –** The colour scheme should be taken from the palette of colours in the natural surroundings.	**M –** To be incorporated as part of the EMP **M –** To be incorporated as part of the EMP

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	P – Existing trees should be retained as far as possible on the site in order to soften the impact of the proposed permanent structures and to bring the scale of the higher structures down to a more human scale.	**M –** To be incorporated as part of the EMP
	P – Landscaping should be done in concurrence with the building construction in order to create an instant visual enhancement of the development.	**M –** To be incorporated as part of the EMP
	P – The landscaping of the proposed development should blend in with the natural vegetation of the area. Trees, shrubs and groundcovers that are endemic to the area and/or indigenous should preferably be used – landscaping that is in line with the natural vegetation of the area will not only help to reduce the visual impact of the development, but it will also create habitats for fauna and flora species.	**M –** To be incorporated as part of the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

10) If not planned correctly, roofs and parking areas could reflect the sun into the eyes of oncoming traffic and surrounding landowners

Although the nuisance factor of this impact is regarded as high, it is easy to mitigate. The roof materials used for buildings and structures must be non-reflective materials and trees with wider canopies should be planted in areas visible from the N4 Road and higher view

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sheds. Walls and earth berms could also be used to screen-off the impacts of cars in parking areas.

Table 17: Significance of Issue 10 (Roofs and Parking Areas Could Reflect the Sun into the Eyes of Oncoming Traffic and Surrounding Landowners) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/C –** Roof materials used for buildings and structures must be non-reflective materials and not bright. **P** – Suitable plant materials should be used at strategic points to screen off impacts caused by roofs and cars in large parking areas.	**L - T**o be included in EMP **L –** To be incorporated as part of the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

11) If not planned and managed correctly, the lights of the development (exterior and interior) and the lights of signage could cause visual pollution during the night.

The study area is situated in an area earmarked for urban development with houses, street lights and commercial and other developments that will increase the lighting pollution of the area.

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Table 18: Significance of Issue 11 (The Lights Of The Development (Exterior And Interior) And The Lights Of Signage Could Cause Visual Pollution During The Night) After Mitigation / Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/C –** The generation of light by night events, security lighting and other lighting shall be effectively designed so as not to spill unnecessary outward into the oncoming traffic, or into the yards of the neighbouring properties or open spaces.	**L - T**o be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

6.1.1.5 Climate

The site lies in the Transvaal Highveld in sub-humid, warm climate zone and receives summer rainfall. The average rainfall measured in the quaternary catchment and recorded by DWA is 600mm per annum. The Weinerts N-value is close to 2 indicating that chemical weathering dominates the physical weathering.

It receives the lowest rainfall (0mm) in June and the highest (106mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Bronkhorstspruit range from 17.8°C in June to 26.7°C in January.

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The region is the coldest during July when the mercury drops to 1.6°C on average during the night.

6.1.1.5.a Issues & Impact Identification – Climate

Table 19: Issues and Impacts – Climate

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
12)	Should the construction phase be scheduled for the summer months, frequent rain could cause very wet conditions, which makes it extremely difficult to build in and to do rehabilitation works of disturbed areas.	-	☻
13)	If dry and windy conditions occur during the construction phase, dust pollution could become a problem. The south-eastern winds will most probably carry some dust over the M57. Although this impact will only be a short term impact, mitigation will be necessary during the construction phase.	-	☻

6.1.1.5.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

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12) Should the construction phase be scheduled for the summer months, frequent rain could cause very wet conditions, which make it extremely difficult to build in and to do rehabilitation works of disturbed areas.

These wet conditions often cause delays to building projects and the draining of water away from the construction works (in the case of high water tables) into the water bodies of the adjacent properties, could (if not planned and managed correctly) have an impact on the water quality of these water bodies.

Table 20: Significance of Issue 12 (Should the construction phase be scheduled for the summer months, frequent rain could cause very wet conditions, which makes it extremely difficult to build in and to do rehabilitation works of disturbed areas) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/C –** Construction workers and construction vehicles and machinery must stay out of the soggy areas during the wet periods. Barrier tape should be used to demarcate the areas that are drenched with water (especially the ecologically sensitive areas and the areas covered with valuable topsoil) and it should only be removed when the appointed Environmental Control Officer (ECO)/ site supervisor/ project manager/ main contractor regard the conditions in the affected areas as favourable.	**L - T**o be included in EMP

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Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table.

13) If dry and windy conditions occur during the construction phase, dust pollution could become a problem.

The south-eastern winds will most probably carry some dust over the N4. The negative impact of dust is generally associated with the construction phase and is temporary. Sweeping of the construction site, clearing of builders' rubble and debris as well as the regular watering of the construction site (storage areas, roads etc.) must take place at least once a day.

Table 21: Significance of Issue 13 (Dust Pollution) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/C –** Sweeping of the construction site, clearing of builders' rubble and debris as well as the regular watering of the construction site (storage areas, roads etc.) must take place at least once a day.	**L - T**o be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

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6.1.2 THE BIOLOGICAL ENVIRONMENT

A Flora and Fauna Habitat Survey was conducted by Galago Environmental ***(refer to Annexure G4).***

The habitat study had the following objectives:

- To assess the current status of the habitat component and current general conservation status of the property;
- To list the perceptible flora of the site and to recommend steps to be taken should endangered, vulnerable or rare species be found;
- To provide lists of mammals, birds, reptiles and amphibians which occur or might occur, and to identify species of conservation importance;
- To highlight potential impacts of the development on the fauna and flora of the proposed site; and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

Galago Environmental obtained information about the Red Data species that occur in the area from GDARD and the Guidelines issued by GDARD was used and consulted by the plant specialist to ascertain the habitat of the Red Data species of concern.

The following Biodiversity information was requested by GDARD:

- Plants with specific reference to:
  - *Eulophia coddii*
  - *Brachvorithis conica*
  - *Ceropegia decidua*
  - *Argyrolobium campicola*
  - *Habenaria bicolor*
  - *Habenariakraezliniana*

- Mammals, with specific reference to Lutra maculicollis (Spotted-necked otter).

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- Invertebrates, with specific reference to Ichnestoma stobbai (Stobbia's Fruit chafer).
- Vegetation
- Wetlands
- Ridges
- Caves

6.1.2.1 Vegetation

The Study Area

According to Galago Environmental twelve vegetation study units were identified. Tables 3 to 13 of the Flora Assessment ***(Refer to Annexure G4)*** lists the various vegetation species such as trees, shrubs, geophytes, herbs and grasses actually found on each of the surveyed areas of the site.

***1) Tristachya – Digitaria* ridge vegetation**

Compositional aspects and Connectivity

The species diversity of this study unit was very high. Of the 412 plant species recorded on the site, 221 were recorded in the *Tristachya – Digitaria* ridge vegetation. Of these, 210 were indigenous species.

Red – and Orange List species

This vegetation was suitable for Red List species *Ceropegia decidua* subsp. *Pretoriensis* and for *Adromischus umbraticola* subsp. *umbraticola*. The latter species was found in abundance in this study unit.

Medicinal and alien species

Thirty-two of the 55 medicinal species recorded on the site and 11 of the 45 alien species recorded on the site were found in this study unit. Of the alien species, one was a Category

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1 Declared weed, one was a Category 2 invader and one was a Category 3 Declared invader.

Sensitivity

Owing to the high species diversity, the locality of the study unit on the crest of the Magaliesberg ridge and the presence of the Red List species, the vegetation study unit was considered sensitive.

2) Aristida – Seriphium plateau grassland

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 136 were recorded in the Aristida – Seriphium plateau grassland study unit. Of these, 119 were indigenous species.

Red- and Orange List species

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

Medicinal and alien species

Fifteen of the 55 medicinal species recorded on the site and 17 of the 45 alien species recorded on the site were found in this study unit. Of the alien species, four was Category 1 Declared weeds and one was a Category 2 Declared invader.

Sensitivity

The vegetation of this study was not considered sensitive.

3) Eragrostis – Protea welwitschii grassland

Compositional aspects and Connectivty

Of the 412 plant species recorded on the site, 112 were in the *Eragrostis – Protea welwitschii* grassland. Of these, 111 were indigenous species.

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Red- and Orange List species

The habitat was suitable for Red List species *Argyrolobium campicola*, however none was observed during the surveys. The habitat was suitable for the Orange List species *Boophane disticha*, (Cape poison bulb/Seeroogblom), however, no species were found.

Medicinal and alien species

Twelve of the 55 medicinal species recorded on the site were found in this study unit. One non- declared alien species, *Tagetes minuta* (Tall khaki weed) was found in very small numbers in this study unit.

Sensitivity

Due to its pristine condition/ due to the pristine condition of the ecosystem, the vegetation of this study unit was considered sensitive.

4) Acacia – Celtis disturbed savannah

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site, 87 were recorded in this study unit. Of these, 63 were indigenous species.

Red- and Orange List species

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

Medicinal and alien species

Eighteen of the 55 medicinal species recorded on the site and 24 of the 45 alien species recorded on the site were found in the study unit. Of the alien species, five were Category 1 Declared weeds, four were Category 2 Declared invaders and three were Category 3 Declared invaders.

Sensitivity

The vegetation of this study unit was not considered sensitive.

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5) Hyparrhenia – Richardia veld

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 80 were recorded in the study unit. Of these, 71 were indigenous species.

Red- and Orange List species

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

Medicinal and alien species

Twelve of the 55 medicinal species recorded on the site and nine of the 45 alien species recorded on the site were found in this study unit. Of the alien species, two were Category 1 Declared weeds and two were Category 2 Declared invaders.

Sensitivity

The vegetation of this study unit was not considered sensitive.

6) Alien thicket

Compositional aspects and Connectivity

Of the 412 plant species recorded on this site 12 were recorded in this study unit. Of these, 8 were indigenous species, of which most were grasses.

Red- and Orange List species

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

Medicinal and alien species

Four alien tree species, all Category 2 Declared invaders, were recorded in this study unit. No medicinal species were recorded in the study unit.

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Sensitivity

The vegetation of this study unit was not considered sensitive.

7) Wetland vegetation

Compositional aspects and Connectivity

According to the information provided in the report, four wetlands could occur on the site. Three, and possibly four, wetlands areas occurred on the study site. Of the 412 plant species recorded on the site 49 were recorded in the study unit. Of these, 42 were indigenous species.

Red- and Orange List species

The habitat of the Wetland vegetation was suitable for the Red List species *Trachyandra erythrorrhiza*, which flowers from September to November. The plant and its spent inflorescence can be seen without difficulty outside its flowering time. None was found in the Wetland vegetation during any of the surveys. The habitat was not suitable for any of the Orange List species known to occur in the two quarter-degree grid cells.

Medicinal and alien species

Four medicinal species were recorded in this study unit. Seven of the 45 alien species recorded on the site were found in this study unit. Of these, one was a Category 2 Declared invader.

Sensitivity

As wetlands form biological filters and drainage lines form corridors for the movement of species, which include pollinators of plant species, all the parts of this study unit were considered sensitive and should be excluded from development. A wetland specialist should determine the extent of the three wetland areas on the site and also whether the *Populus alba* thicket that occurred in the *Hyparrhenia – Helichrysum* veld concealed a wetland and if it does, what the extant of the wetland was.

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8) Hyparrhenia – Helichrysum veld

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 47 were recorded in this study unit. Of these, 42 were indigenous species.

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 *Hypoxis hemerocallidea* (African potato), which was found sparsely scattered in the *Hyparrhenia – Helichrysum* veld.

Medicinal and alien species

Thirteen of the 55 medicinal species recorded on the site and five of the 45 alien species recorded on the site were found in the study unit. Of the alien species, one was a Category 1 Declared weed.

Sensitivity

The vegetation of this study unit was not considered sensitive.

9) Hyparrhenia – Eragrostis grassland

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 38 were recorded in the study unit. Of these, 33 were indigenous species.

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 *Eucomis autumnalis* (Pineapple flower) known to occur in the quarter degree grid cells. None was however, found.

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Medicinal and alien species

Ten of the 55 medicinal species recorded on the site and five of the 45 alien species recorded on the site were found in this study unit. Of the alien species, one was a Category 1 Declared weed.

Sensitivity

The vegetation of this study unit was not considered sensitive.

10) Moist Eragrostis grassland

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 63 were recorded on the Moist *Eragrostis* grassland. Of these, 55 were indigenous species.

Red- and Orange List species

The habitat of the Moist *Eragrostis* grassland was suitable for the Orange List species *Eucomis autumnalis* (Pineapple flower) and *Hypoxis hemerocallidea* (African potato), the latter of which was found sparsely scattered in the Moist *Eragrostis* grassland.

Medicinal and alien species

Eleven of the 55 medicinal species recorded on the site and eight of the 45 alien species recorded on the site were found in this study unit. Of the alien species one was a Category 1 Declared weed.

Sensitivity

The vegetation of this study unit was not considered sensitive, but because the wetland vegetation encroaches into this study unit, a wetland specialist should determine the extent of the wetland, or delineate the outer edge and/ or boundary of the wetland.

11) Mixed alien and indigenous vegetation

Compositional aspects

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This study unit comprised natural vegetation and ornamental plants in the gardens of the township and around the residences on the rest of the study site. A survey of the gardens was not deemed necessary.

Red- and Orange List species

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

Sensitivity

The vegetation of this study unit was not considered sensitive.

12) Cultivated fields

Compositional aspects and Connectivity

Of the 412 plant species recorded on the site 42 were recorded in this study unit. Of these, 28 were indigenous species.

Red- and Orange List species

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

Medicinal and alien species

Four medicinal species were recorded in this study unit. Fourteen of the 45 alien species recorded on the site were found in this study unit. None of these species were declared invader plants.

Sensitivity

The vegetation of this study unit was not considered sensitive

Recommendations made by Galago:

The following mitigation measures are proposed by the specialist:

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- Measures to ensure that trees survive the physical disturbance from the development should be implemented. A tree surgeon should be consulted in this regard.
- Garden refuse should be collected and dumped at a central dumping site where is can be composed. Dumping of any garden refuse, at any other place, e.g. in the veld, should be strictly prohibited.

The following mitigation measures were developed by GDARD and are applicable to the study site. Where appropriate, Galago Environmental specific elaborations are given in brackets.

- An appropriate management authority that must be contractually bound to implement the EMP (Environmental Management Plan) and Environmental Authorization during the operational phase of the development should be identified and be informed of their responsibilities in terms of the EMP and Environmental Authorization.
- All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system.

Conclusion

To lessen the impact of the development on the vegetation of the site, great care should be taken to group residences on smaller lots in certain areas, rather than spreading them out over large areas.

The vegetation that's deemed sensitive should be excluded from the development and where possible, these areas must be connected to other natural grassland areas on the neighbouring properties to facilitate connectivity.

All Category 1 Declared Weeds and Category 2 and 3 Declared invader species must be removed from site.

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6.1.2.1.a Issues & Impact Identification – Flora

Table 22: Issues and Impacts – Flora

	Issue/ Impact	**Positive/ Negative / Neutral ±**	**Mitigation Possibilities High ☻ Medium ☺ Low ◙ Positive Impact - Not Necessary To Mitigate ☼**
14)	Loss of natural grassland areas	-	◙
15)	Loss of medicinal plant species	-	◙
16)	Possible loss of sensitive drainage line and seasonal stream vegetation	-	◙
17)	The eradication of weeds and exotic invaders	+	☼

6.1.2.1.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

14) The loss of natural grassland areas.

Some disturbed natural grassland areas and natural primary grassland areas will be lost due to the proposed development. However the layout makes provision for the conservation of the natural primary grassland on shallow dolomite which is regarded as sensitive.

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Table 23: Significance of Issue 14 (Loss of natural grassland areas) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Low ◙	**P/C/O –** Although some disturbed natural grassland and natural primary grassland areas will be lost due to the proposed development the sensitive natural primary grassland on shallow dolomite will be conserved and will be linked to the larger regional open space system.	**H -** To be included in EMP

Result:

Although issue can be mitigate, the significance of the impact should be determined / confirmed and assessed in the Significance Rating Table

15) Loss of medicinal plant species.

Some medicinal plant species will be lost due to the proposed development.

Table 24: Significance of Issue 15 (The loss of medicinal plant species) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not**	Mitigation Already achieved √ Must be implemented during	Significance of Issue after mitigation Low/ eliminated **L / E**

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Necessary To Mitigate ☼	planning phase, construction and/ or operational phase **P/ C / O**	Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Low ◙	**P** – As much as possible of the medicinal plant species should be removed prior to construction and be transplanted in a suitable area by a vegetation specialist.	**H -T**o be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

16) Possible loss of sensitive drainage line and seasonal stream vegetation

The seasonal stream vegetation was considered sensitive and connectivity with the surrounding grassland existed. Although the drainage line vegetation was disturbed owing to alien infestation, this vegetation community is considered sensitive because drainage lines form corridors for the movement of species, which include pollinators of plant species. These two areas will be excluded from the development and will form part of the public open space area.

Table 25: Significance of Issue 16 (Possible loss of sensitive drainage line and seasonal stream vegetation) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High** ☻ **Medium** ☺ **Low** ◙ **Positive Impact/ Neutral - Not Necessary To Mitigate** ☼	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal

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		flaw **NP**
High ☻	**P/C/O** - Entrance by vehicles, especially off-road cars and bakkies, off-road bicycles and quad bikes to the areas to be excluded should be prohibited, both during the construction phase and during the lifespan of the project. - 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, builders' rubble or waste. - As many as possible of the mature indigenous trees that occur on the site should be retained as part of the landscaping. Measures to ensure that these trees survive the physical disturbance of the development should be implemented. A tree surgeon should be consulted. - The integrity of the small wetland must be regarded inviolate, and its seasonal stability should be enhanced through the use of retention ponds for storm water, and buffer zones of regenerated natural grasslands on either side. - 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.	**H -**To be included in EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

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17) The proposed development will result in the eradication of exotic invaders and weeds.

Any Category invader that might occur on the study area must be eradicated prior to construction and throughout the operational phase of the development.

Table 26: Significance of Issue 17 (The eradication of invasive species) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Positive Impact - Not Necessary To Mitigate ☼	**P/C/O** –Category 1 Declared weeds, Category 2 Declared invaders and one Category 3 Declared invader occurred on the study area and must be eradicated prior to construction and throughout the operational phase of the development. **P/C/O** – Forage and host plants required by pollinator species in the area should also be used in landscaped areas.	**M -T**o be included in EMP **L -T**o be included in EMP

Result:

Positive impact, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

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6.1.2.2 Vertebrate Faunal Survey

Mammals

The mammal study conducted by Galago Environmental found that fifty-nine mammal species are listed ***(Table 1, refer to Annexure G4)*** as resident or likely residents, of which the presence of 18 has been confirmed. Eight species are ranked as Red Data species (Friedmann and Daly, 2004); the conservation sentiments of the Bavaria will undoubtedly serve to stabilize their on-site existence.

Mammal Habitat Assessment: According to Galago Environmental all four major mammal habitats are present on the site:

- Terristrial
- Aboreal (tree-living)
- Rupiculous (rock dwelling)
- Wetlands

Threatened and Red Listed Mammal Species: Hedgehogs, which are considered "Near Threatened" are capable to withstand predation with their passive defence mechanism. They became endangered directly as a result of predation by humans and their pets, which is a consideration in this instance.

Brown hyenas are an extremely secretive scavenger and its presence is often overlooked. Records of occurrence are to this date still accrued in the rural areas outside Pretoria.

Although not Red Listed, vlei rats are deemed 'sensitive' given their reliance on a moist and rank habitat close to water.

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

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Recommendation made by Galago:

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

- An appropriate management authority (e.g. the body corporate) that must be contractually bound to implement the Environmental Management Plan (EMP) and Environmental Authorization during the operational phase of the development should be identified and informed of their responsibilities in terms of the EMP and Environmental Authorization.
- All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system (viz. drainage line, dams and associated wetland; plateau and escarpment ridge). Development should be located on the areas of lowest sensitivity (viz. high density residential zone).

6.1.2.3 Avifauna

Avifaunal Habitat Assessment: Five major avifauna habitat systems were identified. Habitat type follows ranked from most to least important.

- Open grassland, rocky ridges and fallow fields
- Wetlands
- Acacia savannah and mixed exotic and indigenous woodland and vegetation
- Suburban, rural gardens smallholdings and transformed areas
- Exotic vegetation

Observed and Expected Species Richness: Of the 341 bird species recorded for the 2528CC q.d.g.c according to the SABAP1 data are likely to occur on the study site and 74 (36%) of these bird species were actually observed on site. The avifauna diversity index indicates that the largest bird species diversity is likely to occur within the Acacia savannah

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and the mixed exotic and indigenous vegetation habitat system on site, with a diversity index (BI) of 525, followed by the open grassland, rocky outcrop, and fallow fields (BI 444), wetland (BI 367), gardens, smallholdings and transformed area (BI 360) and exotic and alien trees (BI 317)

Findings and Potential Implications

The habitat systems on the site will not favour any of the mentioned Red Data avifauna species due to a lack of suitable breeding, roosting and other foraging habitat on and surrounding the study site.

The rest of the area within 500m surrounding the study is unsuitable for any Red Data avifauna due to a high human density and human presence and the area being transformed by man to make place for roads, residential, business and agricultural purposes.

6.1.2.3a Invertebrate Fauna

Refer to Annexure G4 for report

Galago Environmental was appointed to conduct a habitat survey of invertebrates, of known high conservation priority, for the proposed Kleinfontein development. The survey focused on the possibility that red listed invertebrate species known to occur in Gauteng, are likely to occur within the proposed development site or not. Species of high conservation priority that do not appear on red lists also received attention in the survey.

Objectives of the habitat study:

- A detailed habitat survey of possible threatened or localized butterflies, chafer beetles, mygalomorph spiders and rock scorpions;
- Evaluate the conservation importance and significance of the site with special emphasis on the current status of threatened invertebrate species;
- Recording of possible host plants of the larvae of butterfly species;

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- Literature investigation of possible species that may occur on site;
- Identification of potential ecological impacts on invertebrates that could occur as a result of the development; and
- Make recommendations to reduce or minimise impacts, should the development be approved.

Habitat characteristics and vegetation

The area is largely dominated by grass and rock species as mentioned in the vegetation section above which are known to support a high diversity of invertebrates. The area, being a predominantly high potential agricultural region, inevitably would have a high inclusion of exotic forbs.

The ecological assessment study was undertaken to determine the presence of ant RDL invertebrate species as well as the overall condition and ecological status off the proposed development site to determine the potential for the habitat to support any such species.

Butterflies

Six species of butterflies in Gauteng are listed in the revised red list and South African Red Data Book: butterflies (G.A. Henning, Terblanche & Ball, 2009). The expected presence or not of the threatened butterfly species follow.

There is considerable scope for the rocky ridges, including the rocky plateau to be corridors of considerable conservation importance, though there seems to be no threat to any of the threatened butterfly species if the study site is developed.

- **Fruit chafer *(Ichnestoma stobbiai)***

Ichnestoma stobbiai is an endangered fruit chafer that occurs in small habitat fragments of South Africa (Kryger & Scholtz, 2008. The adult species have a short life-span and the

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females are unable to fly.. Thus, the vagility of these beetles is extremely low (Kryger & Scholtz, 2008). There is suitable habitat for Ichnestoma stobbiai at the site and this beetle has been found previous to this study at the site.

- **Rock scorpions *(Hadogenes gunning)***

The rock scorpion species (Scorpiones: Ischnuridae) that are of known high conservation priority in the North-West Province and Gauteng Province. Distribution of Hadogenes gunningi is wider than perceived in the past and this unique scorpion does not qualify for threatened status (see Engelbrecht 2005). It remains however a localised species of conservation concern. Hadogenes gunningi is present at some patches of the rocky ridge at the site. There will be a threat to Hadogenes gunningi if some patches of the rocky ridge are developed.

Recommendation by Galago

- It is highly recommended that the rocky ridges and rocky plateaus not be considered for future development.
- As a part of wetland rehabilitation, indigenous vegetation is strongly recommended to be incorporated in order to effectively promote invertebrate diversity at the site.
- If developments are approved the following recommendations apply:
    - It is recommended that where possible within overall conservation goals of this site, exotic vegetation should be eradicated, especially invasive exotic species such as Acacia decurrens (green wattle).
    - Indigenous plant species are important for invertebrate conservation and if the development is approved, indigenous trees and vegetation should be conserved where possible.
    - There should be a focus to conserve patches of natural grassland and woodland vegetation.

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Conclusion from Galago Environmental:

The general biodiversity of invertebrates appears to be moderated at the residential areas and very low at parches of exotic trees. It contrast diversity of indigenous invertebrate species, such as reflected by beetles, butterflies and scorpions, appears to be high at the rocky ridge. As concluded by Galago Environmental CC, the general biodiversity of invertebrates appears to be moderate at the residential areas and very low at patches of exotic trees (exotic Acacia, Eucalyptus). In contrast diversity of indigenous invertebrate species, such as reflected by beetles, butterflies and scorpions, appears to be high at the rocky ridge. There is considerable scope for the rocky ridges, including the rocky plateau to be corridors of considerable conservation importance.

6.1.2.3b Herpetofauna

Amphibians:

This site is only partially suitable for Bullfrogs. The extension into the lowland, probably the area south of the road crossing the site, appears flat enough for the formation of shallow breeding ponds. In patches, the substrate there appears suitable as dispersal area, in which these frogs may feed and burrow to aestivate and hibernate.

The gradient of the terrain is relatively flat for the formation of shallow breeding ponds. Certain patches offer a more suitable dispersal area for feeding and creating a burrow to allow aestivation and hibernation to occur.

Reptiles:

No targeted Red Data species have been recorded in the two quarter degree grid cells of the site. The known range of the python does not extend as far as the site. The Striped Harlequin Snake is unlikely to occur here as no termitaria, which in moribund form usually provide ideal retreats, were noticed.

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Findings by Galago Environmental

This site has a variety of habitats, due to a combination of substrate and vegetation types, drainage lines and earthen dams. The rocky outcrops on the slope and the crest of the ridge provide a habitat for the rock agama, the common girdled lizard and some skinks. Further downhill the herpetofauna consists of grassveld generalists. As several taxa have only been recorded from one of the two quarter degree grid cells which cover this site, this indicates that the resident populations of these reptiles and amphibians tend to be small and disrupted.

As this site lies in a contact zone between Highveld Grassveld and the Savannah Bushveld, there is a potential overlap between some of the typical marker species, such as the northern cobras of tropical savannah, with the Rinkhals representing the southern Highveld species.

Conclusion

This site has been occupied for some time and the north-western corner is densely covered by houses. The eastern section of the rocky ridge is relatively undisturbed. The entire site is run as a communal project and houses may have some gardens surrounding them but no walls or fences are allowed so that bullfrogs would be able to move freely.

The wetlands and an adjacent open area should remain undeveloped for this frog. The rest of the listed species should be fairly well distributed, although in low densities. The proposed further development on this site will not have any seriously detrimental effects on the herpetofauna. Some commensal species,may benefit from this development.

6.1.2.4 Ecological conditions of the ridge

Refer to Annexure G4

The habitat was investigated by noting structure (rockiness, slope, plant structure/physiognomy). Relatively homogenous vegetation assemblages (communities)

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were identified based on overall appearance (mainly physiognomy) and compositions (conspicuous dominant species).

Ecological conditions

Galago Environmental states that the veld condition is often an important aspect of overall ecological conditions at a chosen site. The veld condition can be determined in various ways. A good veld condition is therefore close to a good rangeland condition, which is not necessarily ideal for the conservation of smaller fauna and flora, especially at ridges where soils are naturally poor in nutrients.

6.1.2.5 Issues & Impact Identification

Table 27: Issues and Impacts – Fauna

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
18)	If the entire area to be developed is cleared at once, smaller birds, mammals and reptiles will not be afforded the chance to weather the disturbance in an undisturbed zone close to their natural territories.	-	☺
19)	Noise of construction machinery could have a negative impact on the fauna species during the construction phase.	-	☺
20)	During the construction and operational phase (if not managed correctly) fauna species could be	-	☻

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	disturbed, trapped, hunted or killed.		
21)	Loss of habitat can lead to the decrease of fauna numbers and species.	-	◙

6.1.2.6 Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

18) If the entire area to be developed is cleared at once, smaller birds, mammals and reptiles will not be afforded the chance to weather the disturbance in an undisturbed zone close to their natural territories

Due to the size of the proposed development it is unlikely that the entire area to be developed will be cleared at once.

Table 28: Significance of Issue 18 (If the entire area to be developed is cleared at once, smaller birds, mammals and reptiles will not be afforded the chance to weather the disturbance in an undisturbed zone close to their natural territories) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/ C / O -** Where possible, work should be restricted to one area at a time. This will give the smaller birds, mammals and reptiles a chance to weather the disturbance in an undisturbed zone close to their natural territories.	**L -**To be included in EMP

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Result: *Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table*

19) Noise of construction machinery could have a negative impact on the fauna species during the construction phase

If not managed correctly, noise pollution (i.e. by machinery without noise muffing devices) could have a negative impact on the fauna and birds in the area. This will however only be a short-term impact and it is expected that many of the birds will return to the area during the operational phase.

Table 29: Significance of Issue 19 (Noise of construction machinery could have a negative impact on the fauna species during the construction phase) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/ C –** During the construction phase noise should be kept to a minimum to reduce the impact of the development on the fauna residing on the site.	**L -T**o be included in EMP

Result: *Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table*

20) During the construction and operational phase (if not managed correctly) fauna species, especially birds, could be disturbed, trapped, hunted or killed.

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There is always a risk that construction personnel or new residents of the development may disturb, trap, hunt or kill fauna on the study area. This will have a detrimental impact on the local biodiversity and will decrease fauna numbers. The issue can be mitigated if this issue is included in conservation-orientated clauses that may be built into contracts of construction personnel and residents and if council prosecute offenders of these actions. Caught animals should also be relocated to conservation areas in the vicinity.

Table 30: Significance of Issue 20 (During the construction and operational phase (if not managed correctly) fauna species could be disturbed, trapped, hunted or killed) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**C/O** - The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase. Caught animals should be relocated to the conservation areas in the vicinity. Council shall prosecute offenders. - Should hedgehogs be encountered during the development, these should be relocated to natural grassland areas in the vicinity. **O** - Conservation-orientated clauses should be built into contracts for construction personnel as well as buyers of property within the new development complete with penalty clauses for non-	**L -T**o be included in EMP **L -T**o be included in EMP

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	compliance.	

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

21) Loss of habitat can lead to the decrease of fauna numbers and species

All mitigation measures for impacts on the indigenous flora of the area should be implemented in order to limit habitat loss and maintain and improve available habitat, in order to maintain and possibly increase numbers and species of indigenous fauna. The habitat systems on the study site are highly disturbed. In addition, there is also a lack of sufficient breeding and foraging habitat.

Table 31: Significance of Issue 21 (Loss of habitat can lead to the decrease of local fauna numbers and species) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Low ◙	**P/ C - No vehicles must be allowed to move in or across the wet areas or drainage lines and possibly get stuck.** This leaves visible scars and destroys habitat. It is important to conserve areas where there are tall reeds or grass and areas where there are short grass and mud.	**L -T**o be included in EMP

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	- With proper cultivation of specific indigenous plant species the bird numbers and species in the area could even increase. Lists of plant species that attract birds to gardens are available. The area must however be kept as natural as possible. - Dumping of builders' rubble and other waste in the areas earmarked for exclusion must be prevented, through fencing or other management measures. These areas must be connected to one another and be properly managed throughout the lifespan of the project in terms of fire, eradication of exotics etc. to ensure continuous biodiversity.	

Result:

This issue cannot be mitigated and the significance of the impact should be determined / confirmed and assessed in the Significance Rating Table

6.2 DESCRIPTION OF THE EXISTING SOCIO-ECONOMIC ENVIRONMENT

6.2.1 Archaeology/Cultural History

Refer to Annexure G5 for Heritage Impact Assessment Report

Introduction

An independent Heritage consultant was appointed to undertake a heritage impact assessment report. The aim of the survey was to determine the nature and potential of cultural heritage resources found within the boundaries of the area that is to be impacted by the development.

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Cultural heritage resources are broadly defined as all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

Methodology

The following methodology was used to conduct the survey:
The objective of this study was not to undertake a detailed heritage survey, but to gain an overall understanding of the heritage sensitivities of the area and indicate how they may be impacted on through development activities. The survey took place on 15 February 2012.

In order to establish heritage significance the following method was followed:

- Investigation of primary resources (archival information)
- Investigation of secondary resources (literature and maps)
- Physical evidence (site investigation)
- Determining Heritage Significance

Identified Sites

- **Stone Age**

The period referred to as the Stone Age is the period in history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided in three periods:

- Early Stone Age (ESA) 2 million – 150 000 years ago
- Middle Stone Age (MSA) 150 000 – 30 000 years ago
- Late Stone Age (LSA) 40 000 –to approx. 1850 AD5
- Various stone tools are located on the northern ridge of the farm.
- Stone tools mainly dating from the Middle and Late Stone Age were collected on the Northern Ridge (S 25° 48' 08.4" E 028° 29' 21.2")

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- Iron Age

➢ **Iron Age**

No sites, objects or features dating to the Iron Age were identified.

➢ **Historic period**

In a radius from the GPS waypoint S 25º 48' 12.7" E 028º 29' 24.5" 5 entrenchments are visible. These entrenchments are located in an ecological sensitive area.

- Anglo-Boer War entrenchment (S 25º 48' 14.9" E 028º 29' 25.5").
- Botha's sheep "kraal" (enclosure).
- Diamond Hill Military Cemetery (S 25º 48' 22.3" and E 028º 29' 24.1").
- Marker erected by the "Pretoria Streekskomitee vir die herdenking van die Tweede Vryheidsoorlog" 10 June 2000 (S 25º 48' 20.3" E 028º 29'26.3").
- Rock pile 150th anniversary of the Great Trek 1988 (S 25º 48'09.3" E 028º29' 18.5").

Important happenings:

The Battle of Donkerhoek/Diamond Hill 11-12 June 1900

The Battle of Donkerhoek/Diamond Hill that occurred during the Anglo-Boer War (1899-1902) was the largest military battle in the history of Pretoria and occurred partially on the farm Donkerhoek therefor sometimes referred to as the Battle of Donkerhoek. It was part of the British strategy to lure the Boer defence away from Pretoria after the successful annexation of the capital on 5 June 1900, but also part of the Boer strategy to limited British access to the country east of Pretoria. General Louis Botha's men took up defence\ positions on 9-10 June 1900 on the hills east of Pretoria the main aim was to block the road and railway line to the east.

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Lord Roberts attacked on 11-12 June 1900 and occupied Diamond Hill. General Botha was afraid that this action will enable the British forces to occupy his other defences. In the night of 12/13 June he decided to stop the battle and retreat to the east. The British succeeded to drove the Boer forces from Pretoria and the Boers succeeded indelaying the British advance. Both parties claimed victory.

Rebellion

On Monday 26 October 1914, General Chris Muller, Field Cornets P.Viljoen and M.Bredenkamp and approx. 42 other men met at JJ (Kootjie) Botha's residence to object to the then government's decision to invade German-West Africa (South West Africa/Namibia).

December 1938

An original ox-wagon dating from 1853 symbolizing the Blood River wagon left Kleinfontein for the Voortrekker Monument site for the 100th anniversary celebration of the Great Trek.

June 1985

Diamond Hill Military Cemetery is declared a National Monument (current status Provincial Heritage Site).

December 1988

The 150th anniversary of the Great Trek is celebrated on Kleinfontein.

ADDITIONAL SITES OF CULTURAL SIGNIFICANCE IDENTIFIED IN THE STUDY AREA.

- **Modern Cemetery (S 25º 48' 20.9" E 028º 29' 21.3")**

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All graves and cemeteries are of high significance and are protected by various laws. Legislation with regard to graves included the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older.

Other legislation with regard to graves includes those when graves are exhumed and relocated, namely the Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended).

The possibility of sub-surface graves always exists. In the case of a subsurface grave/graves being discovered the South African Police Service (SAPS) must be contacted. If the graves are identified as historical a heritage practitioner should be contacted.

Site Significance and Assessment

Impact analysis of cultural resources under threat by the proposed development is based on the present understanding of the development.

The **significance** of a heritage site and artifacts is determined by its historical, social, aesthetic, technological and scientific value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Identification of Risk Sources

Heritage sites are fixed features in the environment, occurring within specific spatial confines, any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted on by the development can be excavated/recorded and a management plan can be compiled for future action. The northern ridge where various stone tools have been collected, is of great importance and no development should be allowed here.

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If archaeological finds are unearthed during excavations in the non-sensitive parts of the study area, work should stop and an archaeologist contacted to evaluate the situation. All graves and cemeteries are of high significance whether historical or recent.

The following project actions may impact negatively on archaeological sites and other features of cultural importance. The actions are most likely to occur during the construction phase of a project.

Implications for the Development

- Based on what was found and its evaluation, it is recommended that a development can continue in the area, on condition of acceptance of the following recommendations :

    - The mitigation actions proposed for the identified sites should be implemented before development takes place.
    - If construction takes place and any archaeological sites are exposed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

THE WAY FORWARD

A section 38 application in line with the National Heritage Act (Act 25 of 1999) should be submitted to the Provincial Heritage Authority of Gauteng for comments.

Legal requirements

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

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authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material.

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.

6.2.1.a Comments from SAHRA

SAHRA has no objection to the development (in terms of the archaeological component of the heritage resources) subject to the following conditions:

- If any new evidence of archaeological sites or artefacts, paleontological fossils, graves or other heritage resources are found during development, construction or mining, SAHRA and a professional archaeologist must be alerted immediately.
- Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, the developer must ensure that a professional Palaeontological Desk Top study is undertaken to assess whether or not the development will impact upon palaeontological resources. If this is deemed unnecessary, a letter of recommendation for exemption from a professional Palaeontologist is needed. 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**.**

6.2.1.b Issues & Impact Identification – Cultural and Historical

Table 32: Issues and Impacts – Cultural and Historical

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not**

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			Necessary To Mitigate ☼
22)	Structures of cultural and historical significance may be destroyed.	-	☻

6.2.1.c Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

22) Structures of cultural and historical significance may be destroyed.

If any archaeological sites or graves are exposed during construction work, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

Table 33: Significance of Issue 22 (Structures of cultural and historical significance may be destroyed) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Positive ☼ Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/ C / O -** 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	☼ **-** To be included in the EMP

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	disturb any archaeological or palaeontological site or material **P/ C / O -** 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. **P/ C –** If any new evidence of archeological sites or artifacts, palaentological fossils, graves or other heritage resources are found during the planning or construction phases, SAHRA or an archaeologist must be alerted immediately.	

Result:

The issue can be mitigated and turned into a positive impact, the significance of this positive impact still need to be determined/confirmed and assessed in the Significance Rating Table.

6.2.2 Agricultural Potential

According to GAPA 3 the agricultural potential of the study area ranges from **very low to high *(refer to Figure 4)*.** The study area is located within the Nokeng Agricultural Hub ***(Refer to Figure 5)***

According to GAPA 3 the eastern section of the study area and the ridge area in the northern section of the study area are underlain by high agricultural potential soils. More than 80% of the high agricultural potential areas will form part of areas zoned as agricultural holdings used from small scale agricultural activities.

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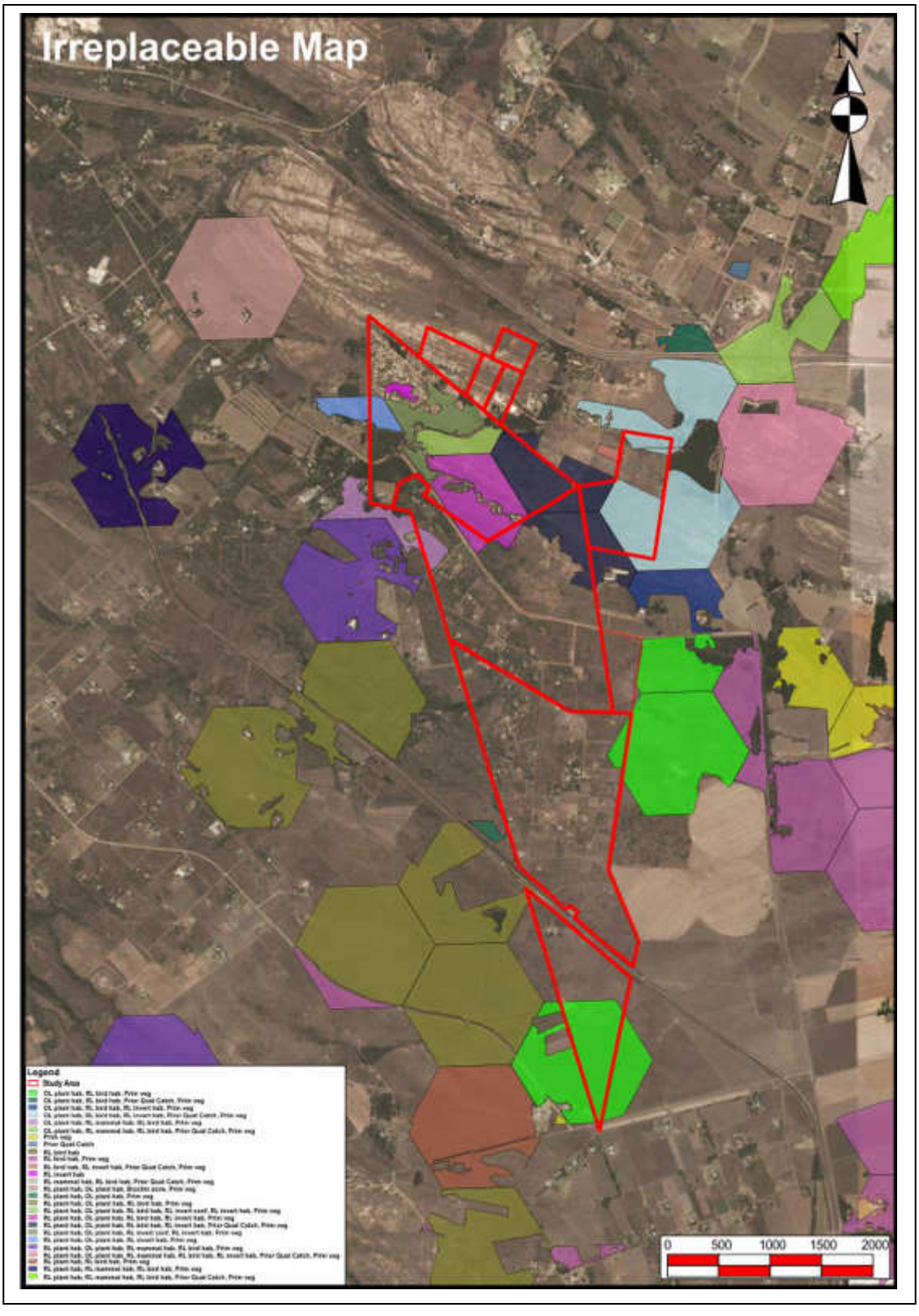

Figure 8: Irreplaceable sites

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6.2.2.a Issues & Impact Identification – Agricultural Potential

Table 34: Issues and Impacts – Agricultural Potential

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
23)	Some agricultural land will be lost.	-	◙

6.2.2.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

23) Loss of agricultural land

Table 35: Significance of Issue 23 (Loss of Agricultural Land) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during **P**lanning phase, **C**onstruction and/ or **O**perational phase **P/ C / O** Mitigation	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Low ◙	Due to the low agricultural potential of most of the soils and security and agricultural	**L** – in terms of economical environment.

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	factors of the high potential area, agricultural use would not be economically viable on the study area.	

Result:

Although the impact is low, the significance of this impact still needs to be determined/confirmed and assessed in the Significance Rating Tables.

6.2.3 Existing Land Use

(Refer to Annexure F, for the Town Planning Memo)

The proposed Kleinfontein development is divided into different areas known as Block A-H. Several erven are provided in each area, and these areas are mostly undeveloped.

Table 36: Proposed erven for the Kleinfontein Settlement

BLOCK	ERVEN SURVEYED	NON RESIDENTIAL ERVEN	AS BUILT ERVEN	AS BUILT (RESIDENTIAL)	AS BUILT (NON RESIDENTIAL)
A	55	36	7	2	5
B	162	12	75	71 (3 erven shared)	4
C	219	4	124	124 (1 erf is shared)	0
D	16	4	8	6	2
E	51	1(cemetery)	23	22	1
F	91	13	27	27	0
G	101	0	47	47	0
TOTAL	**695**	**70**	**311**	**299**	**12**

Block H: Consists of 8 erven that form part of the existing development, - none are developed.

Block H: The only building in Block H is a home for less privileged people.

Block A, B, C and E (existing northern section):

- Undeveloped erven: 487 (406 residential)

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- Developed erven: 229 (10 non- residential)

Blocks D, E, F and part of H (existing agricultural sector):

- Undeveloped erven: 216 (18 non-residential)
- Developed erven: 82 (2 non-residential)

6.2.3.1 The Study Area

6.2.3.2 Surrounding Development and Land Uses

Many of the developments which have occurred along the corridor associated with the extension of the Lynnwood Road spine (M6/R25) in parallel to the N4 national road are described as either "*rural estates or eco-estates*" or tourism related facilities which derive some benefit from the natural features in the area (hill ranges, waterbodies, natural bushland areas, etc.).

Ultimately, the majority of such developments are essentially residential estates, providing an array of residential development opportunities at fairly low densities of occupation (i.e. large land areas interspersed by natural vegetation and natural features).

6.2.4 The Proposed Land Use

The proposed land use for Kleinfontein is a mixed use development. When fully developed (all possible phases) Kleinfontein will provide a mixed use development for approximately:

- 1040 dwelling units (all typologies)
- 50 retirement units
- 69950m^2 of business floor area (shops/offices/banks/places of refreshment)
- A school for ± 200 learners
- 104400m^2 of floor area for light industrial/ manufacturing
- 294 ha agricultural land (small holdings)

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- 14560m^2 for places of amusement, social halls and public offices.

Refer to ***Section 8.2*** for detail on proposed zonings and town planning controls.

6.2.5 Need and Desirability

Information supplied by Plan practice Town planners

Given that the proposed Kleinfontein Settlement already accommodates a number of fully developed dwelling units and associated facilities, it follows that the application partly seeks to regularize an existing situation which does not currently enjoy official approval by any recognised decision making authority. In this context, the spatial planning considerations which must inform the decision with regard to the establishment of the development area are somewhat different when compared to a greenfield scenario. In the latter instance no development has yet occurred and a larger measure of flexibility and latitude exists with regard to the manner in which the layout plan of the development area may be amended to respond to extraneous impacts and considerations.

From an access and accessibility perspective, the situational context of the Kleinfontein Settlement is positive. The subject property is conveniently situated within easy reach of two main urban centres namely:

- Pretoria in the west; and
- Bronkhorstspruit in the east

Apart from the geographical situation as aforesaid, the proximity of the N4 National Road to the north of the subject property (and within easy reach) provides excellent accessibility both at local and regional levels. This also applies with regard to secondary roads linking other urban centres such as the Cullinan/Rayton areas to the north and the Bapsfontein/Benoni centres to the south. The secondary roads such as the R483 and R631

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serve to enhance the accessibility enjoyed by the subject property. The siting of a settlement in such circumstances, from a spatial planning perspective, is therefore sound.

With regard to the intended longer term development of the settlement as a fully integrated mixed use facility, and considering the substantial agricultural component thereof, it is evident that few, if any, other existing or planned land development areas within the larger Tshwane area are entirely comparable with the Kleinfontein example. The nature of the mixing of land use typologies within the confines of Kleinfontein will, of necessity, demand the availability of a large expanse of land incorporating a component of agricultural potential to support the notion of small-scale farming in support of the larger settlement. The availability of large expanses of land of this nature (in the order of 796 ha) within the confines of typically demarcated urban areas is virtually non-existent and effectively precludes any prospect of establishing such an integrated settlement which is assembled of the various components available in Kleinfontein.

Whilst the development principles enshrined in the former Development Facilitation Act fully support the notion of mixed land use typologies and the Act specifically includes chapters dedicated to small-scale farming projects, this model has not yet found its way into well defined land use zones in planning instruments such as town planning and land use management schemes and spatial development frameworks. The combination of typical suburban residential enclaves, incorporated into an area with a large component of small-scale farming, the provision of locally required retail and business facilities and a component of manufacturing/industrial facilities, all supported by a full array of social facilities, is generally unheard of within the context of the greater Tshwane area.

The current and planned components of the larger Kleinfontein settlement cannot be described as being typically urban in nature and, as a result, cannot be expected to be situated within the confines of any demarcated urban area associated with the various urban nodes of the larger Tshwane jurisdiction. It follows that, from a spatial planning perspective, the evaluation of the land development application (partly to regularize and

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partly to establish new development rights) must be dealt with in a circumspect manner and, of necessity, must acknowledge these peculiar circumstances and realities.

Many of the developments which have occurred along the corridor associated with the extension of the Lynnwood Road spine (M6/R25) in parallel to the N4 National Road are described as either "*rural estates or eco-estates*" or tourism related facilities which derive some benefit from the natural features in the area (hill ranges, waterbodies, natural bushland areas, etc.). Ultimately, the majority of such developments are essentially residential estates, providing an array of residential development opportunities at fairly low densities of occupation (i.e. large land areas interspersed by natural vegetation and natural features). Contrary to this popular trend, the Kleinfontein example relies on an assembly of land use components of greater variety and which are, to an extent interdependent and supportive of each other, based on an integrated development model where parts of the resident community can live, work, relax and later retire without being dependent on having to travel large distances to places of employment, to purchase farm produce, to have access to educational facilities, etc. It is in this respect that the Kleinfontein Settlement is markedly different to any of the examples mentioned above and must be evaluated against these realities.

Implications for Development

The need and desirability of the Kleinfontein Settlement are illustrated.

6.2.5.a Issues & Impact Identification – Proposed Land-Use

Table 37: Issues and Impacts – Proposed Land-Use

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺**

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			Low ◙ **Positive Impact - Not Necessary To Mitigate** ☼
24)	Possibility of additional illegal settlements and increased security problems.	-	☺
25)	Increase in adjacent land-values.	+	☼
26)	Rates and taxes payable to the local authority.	+	☼
27)	The supply of a much needed mixed use development, which includes industrial and residential uses.	+	☼
28)	Traffic increase in the area, will have an impact on the traffic flow of the area.	-	☺
29)	Damage to existing roads.	-	☻
30)	Damage to the existing services and infrastructure during the construction phase and disruptions in services (i.e. electricity, water, damage to Telkom cables) during the construction phase.	-	☻
31)	Dangerous excavations.	-	☻
32)	Creation of temporary and permanent jobs.	+	☼

6.2.5.b Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

24) Possibility of additional illegal settlements and increased security problems in the area mainly associated with the construction phase. This increases the security risk to residents on the surrounding properties in the form of possible theft and other crime related activities.

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Table 38: Significance of Issue 24 (Possibility of additional illegal settlements and increased security problems) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**C** - With the exception of the appointed security personnel, no other workers, friends or relatives from outside the community will be allowed to sleep on the construction site (weekends included)	**L –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

28) Traffic increase during the construction and operational phases of the development will have an impact on traffic flow of the area. The impact of additional traffic during the construction phase, especially heavy construction vehicles that can slow traffic down, can be mitigated to a certain extent by not allowing construction vehicles to use public roads during peak traffic times, as well as to avoid construction activities on public roads during peak traffic times.

Refer to ***section 6.2.8.f*** for the proposed road upgrades recommended by the traffic engineers in order to mitigate increased traffic flow caused by the development. This together with the provision of public transport facilities will help mitigate increased traffic flow and lower the impact to acceptable levels.

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Table 39: Significance of Issue 28 (Traffic increase in the area, will have an impact on the traffic flow and the tranquility of the area) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**P/ C** Construction vehicles and activities to avoid peak hour traffic times. **P/C/O** The road upgradings recommended by the traffic engineers to be implemented.	**M –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

29) As a result of the new development there will be more heavy vehicles on the sub-standard local roads during the construction and operational phases and they will cause damage to these roads. The heavy vehicles will also add to the danger of driving on these local roads and will increase dangerous driving conditions on dirt roads by creating dust pollution.

Table 40: Significance of Issue 29 (Damage to roads) After Mitigation/ Addressing of the Issue

Mitigation Possibilities	Mitigation	Significance of Issue after mitigation

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High ☻ Medium ☺ Low ◙ **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/ C/O** Construction vehicles and activities as well as other heavy vehicles to avoid peak hour traffic times.	**M –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

30) Construction of the new development may cause damage to the existing services and infrastructure and will disrupt service provision (i.e. electricity, water, Telkom cables) to local residents on surrounding properties during the construction phase.

Table 41: Significance of Issue 30 (Damage to existing services) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/ C** – 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	**M –** To be included in the EMP

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	advance of dates that service disruptions will take place	

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

31) Dangerous excavations on and outside the study area to implement the services and infrastructure and dangerous excavations of buildings to be constructed. These areas are a danger to the public. The issue can be mitigated to a certain extent by putting up proper signs indicating the danger of excavations and putting temporary fencing around the excavations where this is possible.

Table 42: Significance of Issue 31 (Dangerous excavations) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/ C -** 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. Temporary fencing should be erected around excavations where possible.	**M –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

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32) Creation of temporary and permanent jobs

The development will create temporary job opportunities during the construction phase and temporary and permanent job opportunities during the operational phase within the community. Only employing people from the local community could mitigate the potential adverse impact.

Table 43: Significance of Issue 32 (Creation of temporary and permanent jobs) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Positive Impact - Not Necessary To Mitigate ☼	**C / O** – Only people from the local community should be employed.	**L –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table.

6.2.6 Institutional Environment

The Kleinfontein Settlement is a community/town on its own. All revenue generated from the existing development are used for maintenance, security and services upgrading's. Kleinfontein Settlement is in the process of seeking assistance from the Local Authority and Government Organisations to assist with general services provision as a section of the development consists of informal settlements.

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6.2.6.1 On an International Level

Relevant International Conventions to which South Africa is party:

- **Convention relative to the Preservation of Fauna and Flora** in their natural state, 8 November 1993 (London);
- **Convention on Biological Diversity**, 1995
  (provided and added stimulus for a re-examining and harmonization of its activities relating to biodiversity conservation. This convention also allows for the in-situ and ex-situ propagation of gene material); and
- **Agenda 21** adopted at the United Nations Conference on Environment and Development (UNCED) in 1992. (An action plan and blueprint for sustainable development).

6.2.6.2 On a National Level

National Environmental Management Act (NEMA), 1998 (Act No 107 of 1998)

In terms of Government Notices no. R544, no. R545 and no. R546 published in the Government Gazette no. 33306 of 18 June 2010 of the National Environment Management Act, 1998 (Act No. 107 of 1998) an Environmental Impact Assessment Process is required for the proposed development.

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

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NEMA provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

This Act formulates a set of general principles to serve as guidelines for land development and it is desirable that:

- The law develops a framework for integrating good environmental management into all development activities;
- The law should promote certainty with regard to decision-making by organs of state on matters affecting the environment;
- The law should establish principles guiding the exercise of functions affecting the environment;
- The law should ensure that organs of state maintain the principles guiding the exercise of functions affecting the environment;
- The law should establish procedures and institutions to facilitate and promote co-operative government and intergovernmental relations;
- The law should establish procedures and institutions to facilitate and promote public participation in environmental governance; and
- The law should be enforced by the State and that the law should facilitate the enforcement of environmental laws by civil society.

If the involved authorities do not take the principles of NEMA into consideration when evaluating an environmental report/document, the involved authority can be held responsible for any damage to the environment (social, ecological and economical).

The proposed development is listed under the activities as regulated under NEMA.

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The Development Facilitation Act (DFA) 1995 (Act 67 of 1995)

As mentioned previously the DFA has been declared unconstitutional and will be replaced by SPLUMA. It is still uncertain when this act will came into effect. Therefore the DFA is syill discussed below. This Act formulates a set of general principles to serve as guidelines for land development inter alia revolving around:

- The promotion of integration of the social, economic, institutional and physical aspects of land development;
- The promotion of integrated land development in rural and urban areas in support of each other;
- The promotions of the availability of residential l7nd and employment opportunities in close proximity to or integrated with each other;
- The promotion of a combination of diverse land-uses, with each proposed land development area to be judged on its own merit and no specific use, whether residential, commercial, conservation etc., to be regarded as less important;
- Discouraging urban sprawl to promote more compact towns/ cities;
- Encouraging environmentally sound land development practices; and
- Promoting sustained protection of the environment.

The National Water Act, 1998 (Act No 36 of 1998)

The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that take into account, amongst other factors, the following:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Reducing and preventing pollution and degradation of water resources;
- Facilitating social and economic development; and

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- Providing for the growing demand for water use.

In terms of the Section 21 of the National Water Act, the developer must obtain water use licenses if the following activities are taking place:

a) Taking water from a water resource;
b) Storing water;
c) Impeding or diverting the flow of water in a watercourse;
d) Engaging in a stream flow reduction activity contemplated in section 36;
e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
g) Disposing of waste in a manner which may detrimentally impact on a water resource;
h) Disposing in any manner of water which contains waste from or which has been heated in any industrial or power generation process;
i) Altering the bed, banks, course or characteristics of a water course;
j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) Using water for recreational purposes.

The study area is affected by 1:50 and 1:100 year flood lines and wetlands in the riparian zone. These areas will be left intact and mitigation measures will be implemented to protect these areas. Section 21 Water Use Licences will be required for any development which may take place within and/or impact any water resource and or floodlines. The National Water Act also required that the 1:50 and 1:100 year flood line be indicated on all the development drawings that are being submitted for approval.

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

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This act replaced the Atmospheric Pollution Prevention Act (Act No.45 of 1965); however Part 2 of the act is still applicable. Part 2 deals with the control of noxious or offensive gases and has no relevance to the proposed development.

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".

Water Services Act, 1997 (Act No 108 of 1997)

The purpose of this Act is to ensure the regulation of national standards and measures to conserve water taking into account, amongst other factors, the following:

- Basic sanitation;
- Basic Water supply;
- Interruption in provision of water services;
- Quality of potable water;
- Control of objectionable substances;
- Disposal of grey water;
- Use of effluent; and
- Quantity and quality of industrial effluent discharged into a sewerage system.

Water supply and interruption in provision of water services during the construction phase of the development must be according to national standards.

National Heritage Resource Act, 1999 (Act No 25 of 1999)

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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 to 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 50 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 Act 28 of 1969.

National Environmental Management: Biodiversity Act, 2004 (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.

National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003)

The purpose of this Act is to provide the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

National Veld and Forest Fire Act, 1998 (Act No. 101, 1998)

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The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. Furthermore the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

Mitigation measures for the prevention of fires must be implemented.

National Road Traffic Act, 1996 (Act No. 93 of 1996)

This Act provides for all road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith.

The access roads for the proposed development must comply with the National Road Traffic Act.

6.2.6.3 On a Provincial Level

Gauteng Spatial Development Framework (GSDF)

The **Gauteng Spatial Development Framework (GSDF)** creates the canvas for regional and local development frameworks and provides a guide for Gauteng's spatial development that strives to improve economic growth, social development and competitiveness of the province.

Within the **GSDF**, a Framework Plan is presented and deliberated upon. The plan comprises certain proposals for future development and a spatial representation of such proposals is provided.

It is stated that a provincial economic core has been identified in order to spatially indicate where the primary economic growth focus for Gauteng presently is and is likely to be in future, based on the current trends and the forces of globalization.

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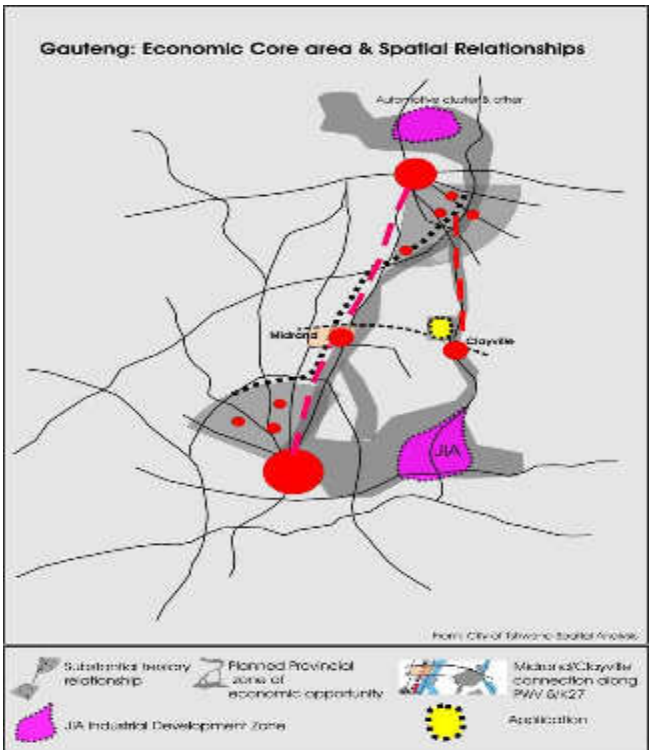
Given the advances in communication technology, the desire for security, shrinking markets and increased global competitiveness, markets need to capiltalise on all aspects that improve their advantage. Hence, meeting spatial requirements is becoming increasingly important in investment decisions. These decisions rely on locational aspects such as outlined in for forgoing section.

Globalization of economies as well as interrelatedness of local economies are leading to shifts being experienced in respect of economic activities. In order to remain competitive and take advantage of the benefits related to the modern economy these shifts must be accommodated and embraced. However the needs of advancing economic sectors have specific implications on the spatial form of the province and the multiplier effect of these implications affect development patterns.

The core economic area of Gauteng is indicated on the attached plan and clearly reflects a triangular shape, with Pretoria/Roslyn forming the top point, while Johannesburg CBD and Johannesburg International Airport/Boksburg/Benoni form the two bottom points. The three legs of the triangle are the N1/M1 highway, N1/R21 highway and the M2/N3/R24 highway. It is further stated that the N3 and the R21 are not fully developed economic corridors, but areas of proposed economic concentration given that development there is highly likely.



According to the Gauteng Spatial Development Framework the main economic thrust of the province will materialise according to the above indicated graphic. The main reasons for this projection are various blue IQ projects like the Gautrain, O.R Tambo International

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Airport, the Automotive Cluster, etc. functioning together within a regional context and plugging into the global economic thrust.

The above graphic indicates the main aspects of the provincial policy as containing 2 corridors linking the southern and northern urban agglomerations. (Johannesburg / Ekurhuleni / Tshwane). The proposed development will serve this massive potential urban energy with good quality industrial space that is situated in the vicinity of existing residential settlements, this is a main ingredient of the policy to bring job opportunities and housing closer to each other and to increase diversity and mixed land use.

Also indicated on the graphic is the Clayville node (on the R21 corridor) and Midrand node (on the N1 corridor) already strengthening the corridor concepts and creating more job opportunities in close vicinity to the application site.
The strengthening of economic aspects is a real time strategy that is systematically implemented by the Gauteng Province through various projects and investments.

GDARD Draft Ridges Policy, 2001

According to the GDARD C-Plan 3, the eastern boundary of the study site is affected by a transformed ridge and the Draft Ridge Policy is therefore applicable. ***(Refer to Figure 8)***

Environment Conservation Act, 1989 (Act No. 73 of 1989): Gauteng Noise Control Regulations

The proposed development must comply with the Provincial Noise Control requirements as outlined in the Provincial Notice, 5479 of 1999: Gauteng Noise Control Regulations.

Conservation of Agricultural Resources Act (Act No. 43 of 1983)

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This Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

According to GAPA 3 the agricultural potential of the study area ranges from very low to high. However, the study area does not fall within an agricultural hub. In addition, the results of the agricultural potential study revealed that only a small portion of the study area is covered with high agricultural potential soils. The agricultural potential survey is discussed in detail in ***section 6.2.2***.

6.2.6.4 On a Local Level

Municipal Systems Act - 2000

This Act clearly establishes the Integrated Development Plan and Integrated Spatial Development Framework as guidelines to inform development and processes in this regard.

The Metropolitan Spatial Development Framework 2012 (MSDF)

The **Metropolitan Spatial Development Framework 2012 (MSDF)** states that the vision of the City of Tshwane is to become *The African Capital City of Excellence.*

Seven strategic objectives have been identified in order to respond to the vision:

1. Provide basic services, roads and stormwater
2. Growth, Development and Job Creation
3. Sustainable communities with clean, healthy and safe environment and integrated social services

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4. Foster participatory democracy and Batho Pele
5. Promote Sound Governance
6. Ensure financial sustainability
7. Organisational Development and Transformation

The City's performance in these seven areas must improve and will be reflected in the input and outcome indicators of the 2011-2016 IDP's.

The MSDF and RSDF respond primarily to:

- Strategic Objective 2 (economic growth and development):
  - Provide strategic direction around infrastructure provision
  - Guide developers and investors as to appropriate investment localities
  - Rural management programmes to improve livelihoods and stimulate employment
- Strategic Objective 3 (sustainable communities with clean healthy and safe environment and integrated social services)
  - Restructure the spatially inefficient City through compaction, densification and Transit Oriented Development
  - Promote sustainable use of land resources

6.2.6.5 Issues & Impact Identification – Institutional

Table 44: Issues and Impacts – Institutional

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To**

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			Mitigate ☼
34)	The proposed development will be in line with the international, national, provincial and local legislation, planning frameworks, guidelines, policies etc.	+	☼

6.2.7 Qualitative Environment

6.2.7.1 Visual Analysis

The following visual assessment criteria (see Table 45) has been used to determine the impact of the proposed development on the state of the environment – the significance is indicated by the respective colour coding for each of the impacts, being either high, medium or low:

Table 45: Visual Impact Criteria

	IMPACT		
CRITERIA	**HIGH**	**MEDIUM**	**LOW**
Visibility	A prominent place with an almost tangible theme or ambience	A place with a loosely defined theme or ambience	A place having little or no ambience with which it can be associated
Visual quality	A very attractive setting with great variation and interest – no clutter	A setting with some visual and aesthetic merit	A setting with no or little aesthetic value
Compatibility with the surrounding landscape	Cannot accommodate proposed development without the development appearing totally out of place – not compatible with the existing theme	Can accommodate the proposed development without it looking completely out of place	The surrounding environment will ideally suit or match the proposed development
Character	The site or surrounding	The site or surrounding	The site or surrounding

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	area has a definite character / sense of place	environment has some character	environment exhibits little or no character/ sense of place
Visual Absorption Capacity	The ability of the landscape not to accept a proposed development because of a uniform texture, flat slope and limited vegetation cover	The ability of the landscape to less easily accept visually a particular type of development because of less diverse landform, vegetation and texture	The ability of the landscape to easily accept visually a particular type of development because of its diverse landform, vegetation and texture
View distance	If uninterrupted view distances to the site are > 5 km	If uninterrupted view distances to the site are < 5 km but > 1 km	If uninterrupted view distances to the site are > 500 m and < 1000 m
Critical Views	Views of the site seen by people from sensitive view sheds i.e. farms, nature areas, hiking trails etc.	Some views of the site from sensitive view sheds	Limited or partial views of the site from sensitive view sheds
Scale	A landscape with horizontal and vertical elements in high contrast to human scale	A landscape with some horizontal and vertical elements in some contrast to human scale	Where vertical variation is limited and most elements are related to the human and horizontal scale

As indicated on ***Figure 11, 3D Visual Analysis***, the development will be completely visible from the north and east side of the study area, with only limited views from the west and south of the study area.

Sensitive view sheds include the N4 Highway to the north and north-east and the R515 to the east side.

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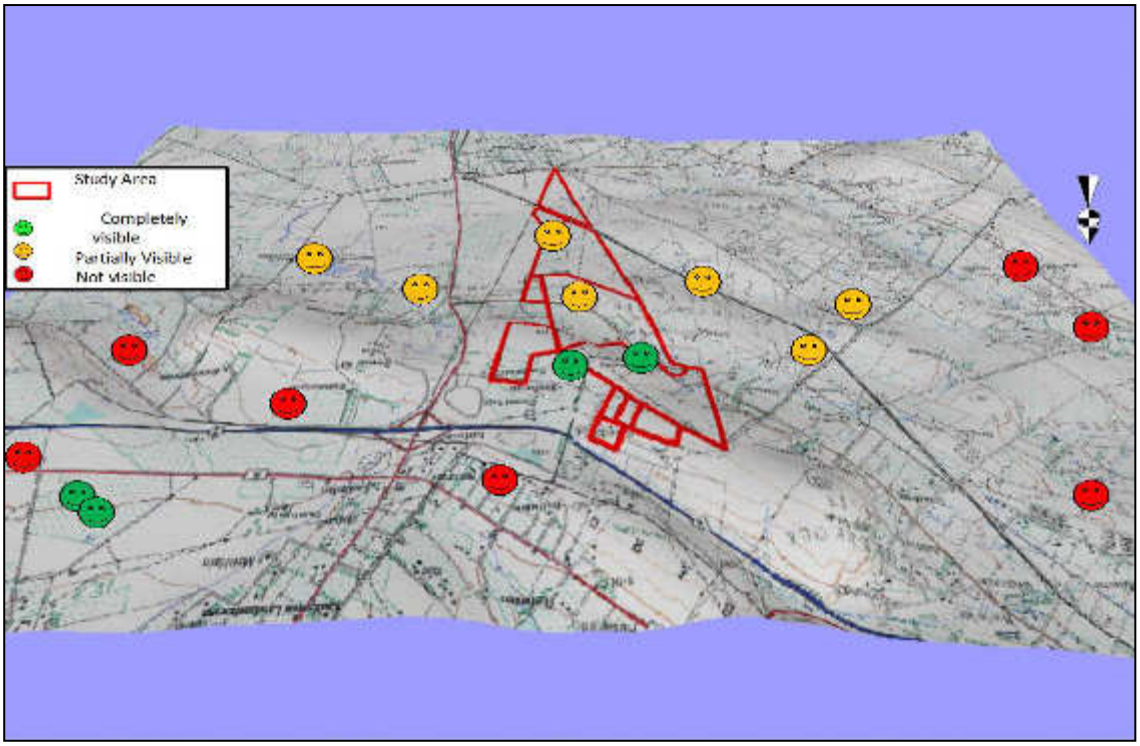

Figure 9: Preliminary Visual Assessment

6.2.7.2 Sense of Place and Place Structure

The concept of a "Sense of Place" does not equate simply to the creation of picturesque landscapes or pretty buildings, but to recognise the importance of a sense of belonging. The quality of place is attained by embracing uniqueness as opposed to standardisation.

In terms of the natural environment it requires the identification, a response to and the emphasis of the distinguishing features and characteristics of landscapes. Different natural landscapes suggest different responses. Accordingly, settlement design should respond to nature.

In terms of the human made environment, quality of place recognises that there are points where elements of settlement structure, particularly the movement system, come together to create places of high accessibility and special significance. These are the meeting

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places of townships e.g. parks. In the best cases, the importance of these places is recognised in that they become the focus of public investment, aimed at making them attractive, user-friendly and comfortable to experience.

The landscape is usually experienced in a sensory, psychological and sequential sense, in order to provide a feel and image of place ("genius loci"). A landscape is thus an integrated set of elements, which responds to different influences and is experienced as the unique spirit of place, or "genius loci". Each landscape has a distinct character, which makes an impression in the mind, an image that endures long after the eye has moved to other settings.

"**Sense of Place" is the subjective feeling a person gets about a place by experiencing the place visually, physically, socially and emotionally. The "Sense of Place" of an area is one of the major contributors to the "Image of the area".**

The image of an area consists of two main components, namely **Place Structure** and "**Sense of Place".** These could be defined as the following:

- **Place Structure** refers to the arrangement of physical place making elements within a unique structure that can be easily legible and remembered; and
- The "**Sense of Place"** is the subjective meaning attached to a certain area by individuals or groups and is linked to its history, culture, activities, ambience and the emotions the place creates.

The Sense of Place creators are the historical sites, cemetery and drainage line that traverses the site.

6.2.7.3 Noise Impact

A relative certain amount of noise will be generated during the construction phase, that definitely may become a nuisance to the surrounding land owners, residents and

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businesses. It is therefore anticipated that a considerable amount of noise will be generated, during the construction/development faze of the project.

Noise will be generated during the operational phase of the proposed development due to increased traffic on the surrounding roads.

The following represent a summary of the mitigation measures to be implemented during the construction and operational phase to reduce the anticipated impact of noise pollution. ***Refer to Annexure M, EMP.***

- **Mitigation measures for the anticipated noise impact during the construction phase:**

    - The construction site yard, workshop, concrete batching plant and other noisy fixed facilities should be located well away from noise sensitive areas;
    - All construction vehicles, plant and equipment are to be kept in good repair;
    - Truck traffic should be routed away from noise sensitive areas where possible;
    - Blasting Operations (if required) are to be strictly controlled with regard to the size of explosive charge in order to minimise noise and air blast, and timing of explosions;
    - Construction activities are to be contained to reasonable hours during the day and early evenings. Night-time activities near noise sensitive areas should not be allowed. No construction should be allowed on weekends form 14h00 on Saturday afternoons to 06h00 the following Monday morning;
    - With regard to unavoidable very noisy construction activities in the vicinity of noise sensitive areas, the contractor should liaise with local residents on how best to minimise impact, and the local population should be kept informed of the nature and duration of intended activities;
    - As construction workers operated in a very noisy environment, it must be ensured that their working conditions comply with the requirements of the Occupational Health and Safety Act (Act No 85 of 1993). Where necessary ear protection gear should be worn.

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6.2.7.4 Light Pollution

Street and security lighting must be designed in order not to spread light into the eyes of oncoming traffic on the N4 National Road. Internal streets and security lighting should also be designed not to disturb residents at night. Light beams must face downwards and not higher than a 45 degree angle from the ground. ***Refer to Annexure M, EMP.***

6.2.7.5 Air Quality / Dust

It is not foreseen that the proposed development would contribute significantly in terms of pollution by smoke, as it is a residential development and not industrial. It can however be expected that a certain amount of dust, will be generated due to earthmoving activities. One should note that the impact of dust pollution is short term, lasting for the duration of construction only. ***Refer to Annexure M, EMP.***

6.2.7.6 Demography

(Refer to Annexure G9, for the Market Study)

Demacon Market Studies were commissioned by Plan Practice, to perform in-depth market research to assess the development potential and optimum mix ("Highest and Best Use") of ancillary facilities for a mixed use development in **Kleinfontein**, east of Pretoria.

Demographic Overview

Understanding demographics is imperative to product development and segmentation, especially with regard to understanding trends in the market place. Demography (the study of age, sex, education, family status, life cycle etc.) is an excellent tool for product developers and marketers. The subject therefore plays a key-role in decision-making regarding demand for commercial and residential products.

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An estimated **980 people or 380 households reside within the Kleinfontein area** in 2011. The average household size amounts to approximately 2.6 members per household.

The population is characterised by an anomalous relationship between skill levels and income: extremely high skill levels, coupled with a lower-middle income profile – a typical sign of the socio-economic effects in the aftermath of a change in political regime.

Political reform led to a decline in white participation in the public sector labour market. These reforms resulted in the loss of skilled white workers.

Older white employees (those 50 and over) were offered "voluntary retrenchment" Packages that usually included pension earned to date with some "sweetener" included to expedite the process.

Residential Market Recommendations

Table 46 : Kleinfontein Residential Market Activity, Type, Minimum and Maximum Asking Price, Average and Standard Deviation Frequency, November 2011

Frequency	Min	Max	Average		Std Deviation
2 Bedrooms	R500,0 000	R1,330,000	R784,286	R297 7,257	7
3 Bedrooms	R700,0 000	R1,300,000	R967,778	R156 6,746	9
4 Bedrooms	R1,000,0 000	R1,000,000	R1,000,000	R0	1
Total					**17**

Source: Irene Groenwalt Properties Ex Ext, Demacon, 2011

The dominant type of properties present within Kleinfontein **includes two, three and four bedroom houses**.

Mean property values vary between ***R780k for the two bedroom houses, R960k for a three bedroom house and R1m for a four bedroom house.***

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Given the asking price profile of the market area it is anticipated that Kleinfontein is focused more towards the lower- middle spectrum of the market.

Minimum Priced Packages

- The majority of entry level affordable developments commences with building packages priced between R500 000 and R800 000.
- The majority of the building packages commences with residential units sized of 2, 3 or 4 bedrooms.

Maximum Priced Packages

- The majority of entry level affordable developments ends off with building packages priced between R600 000 and R1.0 million.

Project-specific Residential Composition

- Between 2011 and 2016 an estimated 285 new households will seek accommodation in the target geographic market area, resulting in an annual growth in demand of approximately 48 units per annum (across the full housing spectrum).
- Under present market conditions, the credit-linked and bonded segment (51.7%) will yield a take-up rate of 25 units per annum.
- Given a take-up rate of 10 years, it is estimated that 744 credit-linked and bonded units could be absorbed within Kleinfontein settlement – emphasis on long-term take-up prospects.

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Retirement Market Recommendations

- Demand will remain extremely **price sensitive** and should thus focus on the mid-priced ranges – given existing supply is already present in the market, as well as forecast project market share.
- **Kleinfontein Retirement Centre** Kleinfontein Retirement Village is divided into three care units, namely Kleinfontein Sorgsentrum, Karee Park and Wag-'n-Bietjie.
- The provision of **adequate security** will be imperative to the success of the development.

Retail Market Recommendations

Retail market - The location factors influencing the establishment of retail in a specific area are the following:

- The most important point of retail is that there should be sufficient buying power referring to disposable income per household in the catchment area of a retail facility;
- Competition plays an important role as to sustainability and viability of a facility is higher with no competition in area;
- Accessibility of the site is a very important factor – with reference to the local labour force and consumer market.
- Land availability referring to land value and the lease value of structures. Lower values provide better development opportunities.
- Retail facilities in a given geographical area are ranked in a hierarchy that services a given portion of the consumer population.
- Risk mitigation and land control also represent critical location factors – investors want to manage what happens around investments – especially in areas where demand thresholds are thin.

Retail development can have a positive economical influence on Kleinfontein.

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It is recommended that the proposed retail development should represent a convenience type centre of approximately 1 723m² GLA.

The centre could have the necessary economic power to create ±57 permanent on-site jobs and be sustainable. It will represent a small convenience type retail centre consisting of 5 to 25 shops.

Office Market Recommendations

The location factors influencing the establishment of offices in a specific area are the following:

- The accessibility to the higher LSM labour force as well as clients is very important.
- Office developments cannot be located in isolated areas far away from existing and potential clients like Kleinfontein Mixed Use Development.
- Proximity to a labour force with the necessary professional qualification is an important aspect in the location of office developments.
- The image of the specific area is important. An area with a prestigious office image is a popular destination for new office developments.
- Office developments in general have linkages with other economic activities in various commodities such as services, information and goods.

Evidently, the **best-located land** will be offered to the land use with the **greatest potential site rent**, and Kleinfontein is not best located for office developments. Land that is most accessible and visible will be offered for office uses.

Kleinfontein should represent a low-key office development (low rise office development) focusing on accommodating small office functions predominantly servicing the community itself.

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Industrial Market Recommendation

Industrial and warehouse market - The decision to locate an industry in a specific geographic area is influenced by the following location factors:

- Needs to be in proximity to sufficient labour force with necessary skills and training.
- It must be accessible, referring to the forward and backward transportation of products and the accessibility of the labour force as well as the visibility of the site.
- Production factors relate to the availability and locality of input suppliers as well as the availability and location of the market for the final product
- Land availability referring to land market value and the lease value of the buildings
- Sufficient infrastructure services and communication systems form the basis of successful location of industrial uses.

Kleinfontein is not the best located site for big industrial developments. The necessary infrastructure and open space should be available to accommodate industrial developments.

6.2.7.7 Issues & Impact Identification – Qualitative Environment

Table 47: Issues and Impacts – Qualitative Environment

	Issue/ Impact	**Positive/ Negative/ Neutral ±**	**Mitigation Possibilities** **High ☻ Medium ☺ Low ◙** **Positive Impact - Not Necessary To Mitigate ☼**
34)	**Visual** Due to the topography only parts of the development will be visible from view sheds in	-/+ Depending	☺

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	the flatter areas such as the N4 Road, however it will be completely visible from the north - ***Please refer to Section* 6.1.1.3.b**	on the architectural style and finishes	
35)	If not planned correctly, roofs and parking areas could reflect the sun into the eyes of oncoming traffic and surrounding landowners - ***Please refer to Section* 6.1.1.3.**	-	☺
36)	**Sense of Place** If not planned and managed correctly, the proposed development could have a negative impact on the "Sense of Place" of the study area and its surroundings.	-	☻
37)	**Air Quality / Dust** If dry and windy conditions occur during the construction phase, dust pollution could become a problem - ***Please refer to Section* 6.1.1.5**	-	☻

6.2.7.6.a Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

34) Although the study area does have a unique "Sense of Place", it is surrounded by a many of the developments which have occurred along the corridor associated with the extension of the Lynnwood Road spine (M6/R25)

Table 48: Significance of Issue 34 (If not planned and managed correctly, the proposed development could have a negative impact on the "Sense of Place" of the study area and its surroundings) After Mitigation / Addressing of the Issue

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Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P** - 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; The colour scheme should be taken from the palette of colours in the natural surroundings; Existing trees should be retained as far as possible. The trees will soften the impact of the proposed permanent structures and they will bring the scale of the structures within the urban context down to a more human scale. **P/C/O** - If planned and managed correctly, the proposed development will enhance the "Sense of Place" and value of the study area and its surroundings.	**L/E –** To be included in the EMP

Result: *The issue is eliminated by implementing the mitigation measures and can also be turned into a positive impact however the significance of this positive impact still needs to be determined confirmed/assessed in the significance rating table*

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6.2.8 Services

The existing Kleinfontein Settlement has limited services and infrastructure available. One of the main goals of the application is to obtain approval for the installation of proper services that comply with the requirements of the applicable legislation and authorities. The services will be upgraded to accommodate the existing development and proposed future expansions.

6.2.8.a Storm water

Erosion and siltation will also become a problem. Due to the "cluster and space" nature of the development layout it will be possible to implement on-site attenuation of storm water throughout the entire development. Obliviously storm water management becomes more important in the development clusters with higher densities. Such areas have more hard surfaces that are less permeable. In these areas it will be important to put measures in place that will attenuate the storm water, break the speed of the storm water, distribute the storm water and prevent erosion and siltation. Surface water drainage will be acceptable in the areas with lower densities, on the condition that vegetation coverage in such areas is implemented and maintained to ensure a coverage of at least 75% throughout the year.

6.2.8.b Sewer

French drains are currently being used for sewer. The usage of French drains is however not regarded as an environmental friendly option, because is creates high ground water pollution risks. The ground water resources on and around the study are limited and sensitive and therefore it was regarded as necessary to consider alternative sewer solutions.

At this stage, a proper on-site treatment plant is regarded as the preferred option for the development, because no municipal sewer connection will possible. The layout plan

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therefore provides for a sewer treatment plant in the north-western corner of the study area.

A sewer treatment facility, which treats more than 15 000m^2 of water per annum will require a waste license in terms of the National Environmental Management: Waste Act. (NEMWA)[1] and a Section 21 Water-Used License in terms of the National Water Act. Bokamoso has also been appointed to assist with these applications and the comprehensive application and licensing processes involved will ensure that the proposed sewer solution, which complies with all the relevant environmental standards, is implemented. The proposed sewer treatment works will prevent water pollution and it will promote the re-use and recycling of water (i.e. through the irrigation of purified water that comply with DWA Special Standards water will be recycle and less water will be used).

The Waste License application requires that a full EIA process be followed and the waste license will only be issued once the EIA authorization has been issued by the National Department of Environmental Affairs (DEA). Due to the fact that the NEMWA classified sewage as a hazardous waste, such applications must be reviewed by the National department and not by the Provincial Department (GDARD).

6.2.8.c Domestic Water

Domestic water is currently being from the fountain and existing boreholes on the study area. the existing water abstraction is well monitored by the engineer responsible for the water quality and quantity management. There are detailed records (collected over several years) on the wetland quality supplied and the usage by residents.

The records indicated that the water is suitable for human consumption and only limited chlorine and calcium applications are applied as part of the treatment process. According to the appointed engineer and the preliminary results of the geo-hydrologist, the available yields might not be regarded as enough if the Tshwane water requirements

[1] The sewer treatment facility for Kleinfontein Development will treat more than 15 000m^2 of effluent per annum.

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standards are applied (i.e. approximately 1.5kl/day for a larger residential stands and approximately 0.8kl/day per unit for higher density residential units.)

6.2.8.d Electricity

Refer to AnnexureG7 for the Electrical Report

The development is situated within the electricity supply jurisdiction of City of Tshwane. An application was submitted to the City of Tshwane for electricity supply to the new proposed mixed-use development. Due to a lack of infrastructure, it is expected that Tshwane will not be in a position to cater for any existing or future development. A formal application was lodged to Eskom North-West region for the supply of future development of the area.

Findings and observations

- Site visit - 19 Oct 2011
  During inspection various 11kV Eskom supply points were visited.
- Meeting with the developers/professional team – 21 Oct 2011
  Information was obtained regarding the Zoned Usage, electricity supply area and any existing infrastructure e.g. boreholes.
- Site Visit – 06 Des 2011
  Obtain information regarding the existing Eskom connections from Mr Steyn van Schalkwyk
- Site Visit with Mr Piet Jansen – 18 Jan 2012
  Sample inspection was done on a typical Low Voltage Metering Kiosk and Miniature Substation.
- Zoning plans and usage schedules from PlanPractice Townplanners dated 17 November 2011 with supplementary information on 29 November 2011.

Current status quo of electricity provision

- The area currently falls within the jurisdiction of the City of Tshwane.

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- Eskom – Official supply authority to the area.
- No City of Tshwane supply networks could be identified
- Formal letter was requested from Coty of Tshwane to give approval for Eskom to provide electricity to existing and future development.

Load Estimate

Table 49: Load Estimate

The total load estimate of the mixed-use development is as follows**:**		
Calculation were done as follows:		
Residential 01		5.0 kVA (ADMD)
Residential 04		3.5 kVA (ADMD)
Business 01	(Shops, Offices, Prof. Rooms)	90 VA/m²
Industrial Uses		100 VA/m²
Institutional	(Institution, Place of Worship/Instruction)	80 VA/m²
Agricultural		7.0 kVA (ADMD)
Educational	(Place of Instruction, Place of Worship)	80 VA/m²
Various Special	(Workshops, Telecomms, Security, etc.)	Dependent of Allocated Usage

One the of basis of eliminating the large heating loads, the following alternative sources of energy is presented:

- **Heat Pump Water Heating Systems**

Uses a third of the energy, when compared with Standard Hot Water Cylinders, and this type of technology is ideally suited for developments of this nature, where a large number

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of residential units are clustered together. Users diversity also results in the Cumulative Installed Heating Capacity needed to produce enough hot water to service the units, to be significantly less, when compared with numerous dedicated hot water systems, in one per unit configuration.

- **Solar Panel Water Heating Systems**

The usage of solar panels for the heating of water for geysers will also be considered for the development. It is one of the most feasible methods to save electricity with a system that is environmental friendly with very low carbon foot print.

- **Electricity Generation and Gas**

The panels cannot be implemented cost effectively in South Africa because of the extremely high initial capital layout and associated maintenance problems with batteries etc. The usage of electricity can possibly be complimented by gas for heating purposes such as for stoves and geysers.

Energy Efficiency

- The developers will ensure that energy efficient measures will be installed in facilities.
- Heat Pump Water Heating Systems are a good method for the heating of water, in particular for residential units.
- The usage of solar panels for the heating of the water for geysers will also be considered for the development, although the process is usually very expensive to set up.
- Solar panels for the generation of electricity were considered for the dwellings on the proposed development. However, the panels cannot yet be implemented cost effectively in South Africa because of the extremely high initial capital layout and associated maintenance problems with batteries etc.

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6.2.8.e Solid Waste Management

All waste is stored at a designated area on the site. This is currently an illegal activity and is part of the S24G rectification application.

One of the Kleinfontein Settlement members is contracted to remove the waste to a registered landfill site on a weekly basis.

6.2.8.f Traffic

Refer to Annexure G8 for the Traffic Study Report

Techworld Consulting Engineers was appointed to undertake a traffic study for the proposed Kleinfontien Development.

Access

The regional accessibility of the application site is excellent, given the major road network in the area. The application site is surrounded by planned provincial roads and freeways, namely Routes K169, K40 and K54/ K205(N) in the immediate vicinity of the site and PWV17 further to the west.

None of the planned K-Routes (provincial routes) will traverse the application site. The southern part of the application site may border the road reserve of the planned K40 Road.
Access to the freeway network is obtained via the D483/ N4 interchange. Initial indications are that the existing road network will be sufficient to accommodate the proposed traffic demand.

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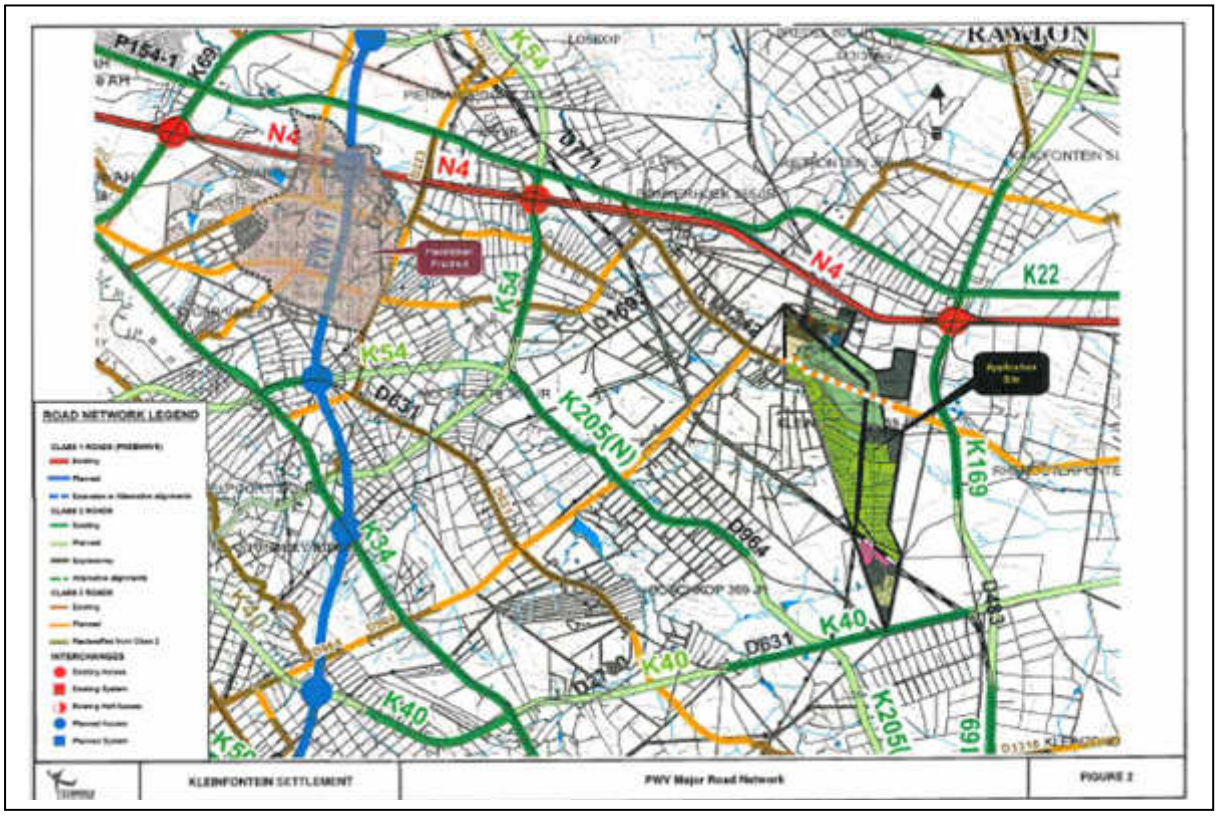

Figure 10: Surrounding Road Network Map

The traffic report does not identify any major flaws that may militate against the approval of the land development area.

Public Transportation:

The role of public transportation must be investigated for this application and the required public transportation service and facilities will be provided.

Road Network:

The upgrading of Road D1342 (Renosterfontein Road) as well as the following intersections:

- Northern Access Road (existing) with Road D483
- Road D1342 (existing Renosterfontein Road) with Road D483
- Southern Access Road (new road) with Road D631

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6.2.8.g Issues & Impact Identification – Services

Table 50: Issues and Impacts – Services

	Issue/ Impact	Positive/ Negative/ Neutral ±	Mitigation Possibilities High ☻ Medium ☺ Low ◙ Positive Impact - Not Necessary To Mitigate ☼
38)	Construction works (especially near drainage lines) could cause water pollution, siltation, soil compaction and impacts on sensitive wetlands and eco-systems lower down in the catchment area	-	☻
39)	Surface water flows will be altered during the construction phase	-	☻
40)	Erosion and siltation during construction as a result of bad management	-	☻
41)	The use of insufficient drainage systems during the construction phase (i.e. sub-surface drainage systems & no mechanisms to break the speed of the surface water)	-	☻
42)	Temporary disruption of services due to relocation and installation of services.	-	☻
43)	**Water supply**	+	☼
44)	**Sewer**	+	☼

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45)	**Electricity** The availability of electricity for the development has been confirmed	+	☼
46)	**Traffic** The proposed development will lead to the increase in traffic on local and provincial roads – ***Please refer to Section – 6.2.9***	-	☺
47)	The increased traffic could cause damage to the surrounding sub- standard roads in the surrounding rural areas ***- Please refer to Section – 6.2.9***	-	☺
48)	**Waste Management** The construction and operational phases of the proposed development will create large quantities of builder's and domestic waste to be accommodated by local legal landfill sites	-	☺
49)	The involved local authority will be responsible for the removal of the domestic waste – increased rates and taxes – ***Please refer to Section 6.2.8.f***	+	☼

6.2.8.h Discussion of issues identified, possible mitigation measures and significance of issue after mitigation

38) If not planned and managed correctly, construction works (especially near drainage lines) could cause water pollution, siltation, soil compaction and detrimental impacts on sensitive wetlands and eco-systems lower down in the catchment area.

Table 51: Significance of Issue 38 (Construction works (especially near drainage lines) could cause water pollution, siltation, soil compaction and impacts on sensitive wetlands and eco-systems lower down in the catchment area) After Mitigation/ Addressing of the Issue

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Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P** - A comprehensive storm water management plan indicating the management of all surface runoff generated as a result of the development (during both the construction and operational phases) prior to entering any natural drainage system must be submitted and approved by the local authority and DWA and submitted to GDARD prior to construction activities commencing. **P** - Construction guidelines shall be provided for the prevention and restriction of erosion and siltation during both the construction and operational phases. **P/ C -** Attenuation ponds and energy dissipaters must be installed on the study area to break the speed of the water and to act as siltation ponds. **P/ C -** Surface storm water generated as a result of the development must not be channeled directly into any natural drainage system or wetland. **P** - The storm water management plan must	**L –** To be included in the EMP

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	indicate how surface runoff will be retained outside of the demarcated buffer/flood zone and how the natural release of retained surface runoff will be simulated. **P** - 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. **P/ C** - Bio-swale and bio-filters could be installed to minimize the risk of pollutants entering the natural drainage system of the area.	

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

39) Due to the excavations that will take place (there will be trenches and topsoil as well as subsoil mounds in and around the study area), the topography of the study area will temporarily be altered. This will however only be a short-term impact if the levels are restored to normal (the surface drainage patterns from the new levels should not differ too much from the surface water drainage of the original levels) once the construction phase is completed.

Table 52: Significance of Issue 39 (Surface water flows will be altered during the construction phase) After Mitigation/ Addressing of the Issue

Mitigation Possibilities	Mitigation	Significance of Issue after

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High ☻ Medium ☺ Low ◙ **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/C –** Construction activities should preferably take place during the winter months **P/C** - If it is not possible for construction activities to take place during the winter months, construction activities should take place in phases in order to prevent large exposed areas that will cause an increase in the speed of surface water. **P** - When storm water planning is done, every attempt possible should be made to keep the post construction and pre-construction flows similar.	**M –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

40) Unnecessary loss of soil, erosion as well as the compaction of soils due to traffic and equipment must be prevented.

Table 53: Significance of Issue 40 (Erosion and siltation) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H**

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	P/ C / O	Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/ C -** Excavate only where necessary and mark out the areas to be excavated. **P/ C -** The top layer of all areas to be excavated for the purpose of construction must be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. This stockpiled material shall be used for the rehabilitation of the site and for landscaping purposes. **C** - When the stripping of topsoil takes place, the grass component shall be included in the stripped topsoil. The soil will contain a natural grass seed mixture that may assist in the re-growth of grass once the soil is used for back filling and landscaping.	**L –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed and assessed in the Significance Rating Table

41) The use of insufficient drainage systems including sub-surface drainage systems and no mechanisms to break the speed of surface water during the construction phase.

Table 54: Significance of Issue 41 (The use of insufficient drainage systems during the construction phase (i.e. sub-surface drainage systems & no mechanisms to break the speed of the surface water) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High** ☻ **Medium** ☺ **Low** ◙ **Positive Impact/ Neutral - Not**	Mitigation Already achieved √ Must be implemented during	Significance of Issue after mitigation Low/ eliminated **L / E**

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Necessary To Mitigate ☼	planning phase, construction and/ or operational phase **P/ C / O**	Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
High ☻	**P/C/O** - Attenuation ponds and energy dissipaters must be installed on the study area to break the speed of the water and to act as siltation ponds **C** – Implement temporary storm water management measures that will help to reduce the speed of surface water. These measures will also assist with the prevention of water pollution, erosion and siltation. **P/C** - In order to prevent large exposed areas, it is recommended that the construction of the development be done in phases. 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 75% has been achieved. **C** - No excavated materials should be dumped in or near drainage channels.	**L –** To be included in the EMP

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

48) During the construction and operational phases waste will be generated on site. The waste may consist of the following waste streams, namely:

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- Liquid waste from vehicles;
- Solid domestic waste; and
- Solid construction waste.

Disposal of some of the above waste streams may lead to soil, water and aesthetic pollution of the site. The soil and water pollution should be localised with little impact on the surrounding environment. Waste disposal on site may stimulate the surrounding population to also dispose domestic waste on the site. This may lead to an uncontrolled situation that would be aesthetically unacceptable to future occupants and costly to rehabilitate.

The disposal of large quantities of waste during both the construction and operational phases would place a burden on landfill sites in the area to accommodate the additional volumes. Although this waste is inert in most cases, it may be of significant proportions and will contribute to the saturation of the formal landfill sites in the area.

Table 55: Significance of Issue 48 (The construction and operational phases of the proposed development will create large quantities of builder's and domestic waste and liquids) After Mitigation/ Addressing of the Issue

Mitigation Possibilities **High ☻ Medium ☺ Low ◙** **Positive Impact/ Neutral - Not Necessary To Mitigate ☼**	Mitigation Already achieved √ Must be implemented during planning phase, construction and/ or operational phase **P/ C / O**	Significance of Issue after mitigation Low/ eliminated **L / E** Medium **M** High **H** Not possible to mitigate, but not regarded as a fatal flaw **NP**
Medium ☺	**C** – Prevent unhygienic usage on site and pollution of the natural assets. Develop a central waste temporary holding site to be used during	**L** – To be included in the EMP

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	construction. (Near the access entrance). 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. - THESE AREAS SHALL BE PREDETERMINED AND LOCATED IN AREAS THAT IS ALREADY DISTURBED. THESE AREAS SHALL NOT BE IN CLOSE PROXIMITY OF DRAINAGE CHANNELS. **C** - Workers will only be allowed to use temporary chemical toilets on the site. CHEMICAL TOILETS SHALL NOT BE IN CLOSE PROXIMITY OF DRAINAGE CHANNELS. **C** - No French drain systems may be installed. **C** - 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; All waste must be removed to a recognized waste disposal site on a weekly basis. No waste materials may be disposed of on or adjacent to the site. The storage of solid waste on site, until such time that it may be	

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	disposed of, must be in the manner acceptable to the Local Authority. **C** - Keep records of waste reuse, recycling and disposal for future reference. Provide information to ECO (Environmental Control Officer)	

Result:

Although issue can be mitigated, the significance of the impact should still be determined / confirmed assessed in the Significance Rating Table

6.2.9 Public Participation

Refer to Annexure L

Public participation is an important aspect of the EIA Process. The principles of the National Environmental Management Act govern many aspects of environmental impact assessments, including public participation. These include provision of sufficient and transparent information on an on-going basis to stakeholders to allow them to comment and ensuring the participation of previously disadvantaged people, women and youth.

Effective public involvement is an essential component of many decision-making structures, and effective community involvement is the only way in which the power given to communities can be used efficiently. The public participation process is designed to provide sufficient and accessible information to interested and affected parties (I&AP's) in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits.
- Verify that their issues have been captured.
- Verify that their issues have been considered by the technical investigations.
- Comment on the findings of the EIA.

Stakeholders (I&AP's) were notified of the Environmental Evaluation Process through:

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1) A site notice that was erected (at a prominent point on the study area) on 21 November 2011 ***(Refer to Annexure Li for proof of notice).***
2) Notices were distributed to the surrounding land-owners and interested and affected parties by means of faxes, hand delivery and e-mail ***(Refer to Lii for proof of public notice)***; and
3) An advertisement was placed in the Beeld newspaper on 21 November 2011 ***(Refer to Annexure L iii for proof of advertisement).***
4) Public meeting was held on 8 March 2012.

One hundred and twenty-five people registered as Interested and Affected parties for the project during the EIA phase ***(refer to Annexure L (iv) for a list of Interested & Affected Parties).*** Bokamoso has recieved comments from the stakeholders and the I&AP's. ***Refer to Annexure vi, for comments and issues register.***

The Interested and Affected parties (including City of Tshwane, DWA, SAHRA, SANRAL, Gautrans, Rand Water etc.) were notified that the draft EIA Report was available for review for a period of 30 days. The report was also available on Bokamoso's website.

Comments on the draft EIA Report were received from Rand Water and City of Tshwane:

- **Comments received from Rand Water: *(refer to Annexure J)***

- Rand Water would like to be sure that the development as per the BID have planned adequately for their sewerage removal off site.

Please provide Rand Water with:

1. The detail about the facility that will receive the sewerage.
2. An agreement that the identified sewerage facility is aware of the development and that they have the capacity to accept the sewerage from the site without overloading the facility.
3. Will there be any discharges other than the sewerage system that will increase storm water entering the environment. If so, has the development considered retention and stilling ponds to slow

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down high peak flows. If the sewerage facility cannot accept the additional load into their facility then this will have a negative impact on the environment and the pollution load into the river systems.

Response:

Refer to Annexure L (vi) for comments and issues register

- More detail on the sewerage treatment and stormwater systems will become available during the Final EIA phase of the proposed developments. These details will be forwarded to you as soon as it becomes available. ***Refer to Section 6.2.8***

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

The Environmental Policy and Planning Directorate recommended that the following concerns must be taken into consideration:

a) A revised Layout Plan showing proposed development outside sensitive areas as determined by the Irreplaceable map informed by CPLAN3 (GDARD, 2012) must be compiled and included in the EIA report.

Response:

Refer to Annexure L (viii) for comments and issues register

- There will be a detailed layout plan, overlaying all sensitivities shall be included with in the plan. The layout plan will be made available to all interested and affected parties.

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

b) A detailed Fauna and Flora study should be conducted and included in the EIA report. The report should aim to conserve the sensitive grassland areas, possible red data flora and floral species and their associated habitats.

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Response:

Refer to Annexure L (vi) for comments and issues register

- Fauna and flora study was conducted and are include in the EIA Report. (***Refer to Annexure G4)***

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

c) A detailed Traffic Impact Assessment report should be conducted and included in the EIA report. The report should aim to determine the impacts related to the traffic flow, traffic pressure handling capacity and associated mitigation measures on the existing road infrastructure.

Response:

Refer to Annexure L (vi) for comments and issues register

- A detailed traffic report was conducted and is included in the EIA Report. ***(Refer to Annexure G8)***

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

d) A Stormwater Management Plan for the proposed development should be conducted and included in the EIA report. The plan should aim to prevent groundwater contamination as well as sedimentation and siltation thereof. It must also aim to prevent further deterioration of the nearby stream and its associated wetlands.

Response:

Refer to Annexure L (vi) for comments and issues register

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- Refer to Annexure G10 for the Stormwater Layout Plan

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

e) A Service Report (water, electricity, storm water and sewage) from relevant service providers must be included in the EIA report.

Response:
Refer to Annexure L (vi) for comments and issues register

- An Electrical report was conducted and is included in the EIA Report. ***(Refer to Annexure G6)***

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

f) A detailed Stability and Geotechnical Investigation report should be conducted and included in the EIA report. The report should aim to prevent erosion where storm water enters the drainage channel as well as secondary geomorphological processes. Moreover, the report should confirm the stability of the geology and soil profile as well as groundwater levels on the proposed development site.

Response:
Refer to Annexure L (vi) for comments and issues register

- A detailed Stability and Geotechnical Investigation was conducted and is part of the EIA Report. (***Refer to Annexure G1)***

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- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

g) A detailed Heritage Impact Study should be conducted to ascertain the presence of any features of cultural and historical significance found on the proposed development area. The study should aim to protect any such features discovered onsite as guided by the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

Response:

Refer to Annexure L (vii) for comments and issues register

- A detailed Heritage study was conducted and is included in the EIA Report. ***(Refer to Annexure G5)***

- **Comments received from City of Tshwane *(refer to Annexure L (vi))***

h) Comments from the public including interested and affected parties must be sought and included in the EIA report.

Response:

Refer to Annexure L (vi) for comments and issues register

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7. SIGNIFICANCE ASSESSMENT

7.1 Description of Significance Assessment Methodology

The significance of Environmental Impacts was assessed in accordance with the following method:

Significance is the product of probability and severity. Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- Improbable - Low possibility of impact to occur either because of design or historic experience.
  Rating = 2
- Probable - Distinct possibility that impact will occur.
  Rating = 3
- Highly probable - Most likely that impact will occur.
  Rating = 4
- Definite - Impact will occur, in the case of adverse impacts regardless of any prevention measures.
  Rating = 5

The ***severity factor*** is calculated from the factors given to "intensity" and "duration". Intensity and duration factors are awarded to each impact, as described below.

The ***Intensity factor*** is awarded to each impact according to the following method:

- Low intensity - natural and man made functions not affected – Factor 1

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- ❑ Medium intensity - environment affected but natural and man made functions and processes continue - Factor 2

- ❑ High intensity - environment affected to the extent that natural or man made functions are altered to the extent that it will temporarily or permanently cease or become disfunctional - Factor 4

Duration is assessed and a factor awarded in accordance with the following:

- ❑ Short term - <1 to 5 years - Factor 2

- ❑ Medium term - 5 to 15 years - Factor 3

- ❑ Long term - impact will only cease after the operational life of the activity, either because of natural process or by human intervention - factor 4.

- ❑ Permanent - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient - Factor 4.

The ***severity rating*** is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below. For example:

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The Severity factor = Intensity factor X Duration factor

= 2 x 3

= 6

A ***Severity factor*** of six (6) equals a Severity Rating of Medium severity (Rating 3) as per table below:

Table 56: Severity Ratings

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no impact	

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating.

The ***significance rating*** should influence the development project as described below:

- Low significance (calculated Significance Rating 4 to 6)
  - Positive impact and negative impacts of low significance should have no influence on the proposed development project.

- Medium significance (calculated Significance Rating >6 to 15)
  - Positive impact:
    Should weigh towards a decision to continue
  - Negative impact:
    Should be mitigated to a level where the impact would be of medium significance before project can be approved.

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- ❑ High significance (calculated Significance Rating 16 and more)
  - Positive impact:
    Should weigh towards a decision to continue, should be enhanced in final design.
  - Negative impact:
    Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least medium significance rating.

In correspondence received from GDARD some officials were of the opinion that the significance methodology used by Bokamoso applies a simple mathematical formula to environmental aspects with significantly different sensitivity values, which might or might not give an inaccurate final significance value.

The significance methodology used by Bokamoso was prescribed to environmental consultants in courses in impact assessments. No methodology can be accurate to a numerical value where the environment is concerned, because it can not be measured. Numerical values are only an indication of the significance or severity of impacts. If we do not agree with the outcome of the assessment, we will adjust the numerical value to reflect a more realistic significance. The methodology only acts as an aid to the environmental consultant and the consultant needs to use his/her experience in the field together with the methods in order to reach a realistic significance assessments of impacts. Bokamoso, in particular Ms. Lizelle Gregory, has extensive experience in the field of impact assessments. Bokamoso, attended a presentation by Dr. Pieter Aucamp on "Tools that Environmental Practitioners (EAPs) can use in an Environmental Impact Assessment (EIA)" at an IAIA meeting. Dr. Aucamp is the author of a book "Environmental Impact Assessment – A practical Guide for the Discerning Practitioner". Dr. Aucamp agrees that impact assessment methods are not 100% accurate; however it is accurate in identifying significant impacts.

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7.2 Significance Assessment of Anticipated Impacts

Impacts indicated under each section of the environment were each assessed according to the above methodology. ***Table 60*** below contains the results of the significance assessment.

Table 57: Results of significance assessment of impacts identified to be associated with the proposed development (after mitigation)

Impact	Probability Rating	Severity Rating		Severity Factor	Severity Rating	Significance Rating
		Intensity	Duration			
CONSTRUCTION PHASE						
Beneficial Impacts						
17. The eradication of weeds and exotic invaders.	5	4	3	12	4	**20 High**
9. Due to the topography the development will be visible from view sheds in the flatter areas around the study area such as the R21 Road. .	4	2	4	8	3	12 Medium
32. Creation of temporary Job opportunities.	5	4	2	8	3	15 Medium
Adverse Impacts						
1. Stability of structures if foundation requirements from geotechnical engineer and precautionary measures for construction on dolomite are not followed.	3	4	4	16	5	15 Medium
2. Erosion may be caused by the construction activities on site.	3	4	2	8	3	9 Medium
3. Incorrect topsoil stockpiling may cause a loss of topsoil or pollution and stockpile areas for construction materials may cause soil and visual pollution.	4	2	4	8	3	12 Medium
4 & 5. Siltation, erosion and ground water	4	2	4	8	3	12 Medium

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pollution could occur if a stormwater management plan is not implemented.						
7. Erosion, surface water pollution and siltation problems due to removal of vegetation coverage and increased hard surfaces.	4	2	4	8	3	12 Medium
8. Impact on wetlands in the riparian zone.	3	4	4	16	5	15 Medium
9. Due to the topography only parts of the development will be visible from view sheds in the flatter areas around the study area. It will be very visible from the north.	4	2	4	8	3	12 Medium
12. Construction during the wet season could cause very wet conditions, which makes it extremely difficult to build in and to do rehabilitation works of disturbed areas.	3	2	2	4	2	6 Low
13. Construction during the dry and windy season may cause dust pollution. The south-eastern winds will most probably carry some dust over the M57. Although this impact will only be a short term impact, mitigation will be necessary during the construction phase.	3	2	2	4	2	6 Low
14. Loss of natural grassland areas.	5	4	4	16	5	**25 High**
15. Loss of medicinal plant species.	3	4	3	12	4	12 Medium
16. Possible loss of sensitive drainage line and seasonal stream vegetation.	2	4	3	12	4	8 Medium
18. If the entire area to be developed is cleared at once, smaller birds, mammals and reptiles will not be afforded the chance to weather the disturbance in an undisturbed zone close to their natural territories.	3	4	3	12	4	12 Medium

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19. Noise impact of construction machinery could have a negative impact on the fauna species during this phase.	3	2	2	4	2	6 Low
20. During the construction and operational phase (if not managed correctly) fauna species could be disturbed, trapped, hunted or killed.	3	4	3	12	4	12 Medium
21. Loss of habitat can lead to the decrease of fauna numbers and species.	5	4	4	16	5	**25 High**
22. Structures of cultural significance may be destroyed.	3	2	2	4	2	6 Low
23. Some agricultural land will be lost.	4	2	4	8	3	12 Medium
24. Possibility of additional illegal settlements and increased security problems.	3	2	2	4	2	6 Low
28. Traffic increase in the area, will have an impact on the traffic flow and the tranquility of the area	5	2	4	8	3	15 Medium
29. Damage to existing local roads	4	2	4	8	3	12 Medium
30. Damage to the existing services and infrastructure during the construction phase and disruptions in services (i.e. electricity, water, damage to Telkom cables) during the construction phase.	3	4	4	16	5	15 Medium
31. Dangerous excavations	3	4	4	16	5	15 Medium
34. If not planned and managed correctly, the proposed development could have a negative impact on the "Sense of Place" of the study area and its surroundings)	3	2	2	4	2	6 Low
38. Construction works (especially in the	3	2	2	4	2	6 Low

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drainage lines could cause water pollution, siltation, soil compaction and impacts on sensitive wetlands and eco-systems lower down in the catchment area						
39. Surface water flows will be altered during the construction phase	3	2	2	4	2	6 Low
40. Erosion (gully formation) and siltation	3	2	2	4	2	6 Low
41. The use of insufficient drainage systems during the construction phase (i.e. sub-surface drainage systems & no mechanisms to break the speed of the surface water)	3	2	2	4	2	6 Low
48. The creation of large quantities of builder's and domestic waste to be accommodated by local legal landfill sites.	4	4	2	8	3	12 Medium
OPERATION PHASE						
Beneficial Impacts						
9. Due to the topography only parts of the development will be visible from view sheds in the flatter areas around the study area such as the M57 (Goedehoop Road). The development will be very visible from the north and the proposed roads K220 and K105 when constructed.	4	2	4	8	3	12 Medium
25. Increase in adjacent land-values	3	4	4	16	5	15 Medium
26. Rates and taxes payable to the local authority of the new residents will increase the income of the local authority.	5	4	4	16	5	**25 High**
27. The supply of a mixed use development which includes industrial, business and residential uses.	5	4	4	16	5	**25 High**

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32. Creation of temporary and permanent Job opportunities.	5	4	4	16	5	**25 High**
34. The proposed development will be in line with the international, national, provincial and local legislation, planning frameworks, guidelines, policies etc.	5	4	4	16	5	**25 High**
41. The availability of electricity for the development has been confirmed.	5	4	4	16	5	**25 High**
40. Erwat Olifantsfontein Sewer Treatment Works will be able to accommodate the sewer effluent from the proposed development.	5	4	4	16	5	**25 High**
39. Rand Water can supply the proposed development with potable water.	5	4	4	16	5	**25 High**
Adverse Impacts						
5. Risk of the lowering of groundwater	3	4	4	16	5	15 Medium
6. Possible ground water pollution.	3	4	4	16	5	15 Medium
8. Impact on wetlands in the riparian zone.	3	4	4	16	5	15 Medium
9. Due to the topography only parts of the development will be visible from view sheds in the flatter areas around the study area. The development will be very visible from the north.	4	2	4	8	3	12 Medium
10. If not planned correctly, roofs and parking areas could reflect the sun into the eyes of oncoming traffic on the M57 Goedehoop Road and proposed K220 and K105 when constructed.	2	2	4	8	3	6 Low
11. If not planned and managed correctly the lights (interior and exterior) and the signage of the	2	2	4	8	3	6 Low

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development could cause visual pollution.						
14. Loss of natural grassland areas.	5	4	4	16	5	**25 High**
15. Loss of medicinal plant species.	3	4	4	16	5	15 Medium
16. Possible loss of sensitive drainage line and seasonal stream vegetation.	2	4	3	12	4	8 Medium
20. Snaring and hunting of fauna species.	2	4	2	8	3	6 Low
21. Loss of habitat can lead to the decrease of fauna numbers and species.	3	2	2	4	2	6 Low
23. Some agricultural land will be lost.	4	2	4	8	3	12 Medium
28. Traffic increase in the area, will have an impact on the traffic flow of the area	5	2	4	8	3	15 Medium
34. If not planned and managed correctly, the proposed development could have a negative impact on the "Sense of Place" of the study area and its surroundings)	3	2	2	4	2	6 Low
40. Increased surface water run-off to storm water management system from hard surfaces such as roofs and paved areas may impact on surface and ground water.	2	2	4	8	3	6 Low
48. The creation of large quantities of industrial and domestic waste to be accommodated by local legal landfill sites.	4	4	2	8	3	12 Medium

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7.3 Discussion of Significance Assessment

Eleven beneficial impacts associated with the proposed development are anticipated, of which seven have a high significance rating. The Environmental Management Plan ***(Refer to Annexure M)*** contains measures to achieve maximum gain from the above beneficial impacts. Eleven of the anticipated beneficial impacts are Socio-economic related, and one relate to the physical environment. This indicates that the proposed development should contribute to an improvement in the quality of life of the people residing in the broader area and the quality of the physical environment.

Of the fourth six anticipated adverse impacts associated with the construction and occupation phases of the proposed development three of the anticipated impacts have a high significance rating, twenty-six impacts have a medium significance rating and sixteen have a low significance rating.

Measures that are recommended in this report and the Environmental Management Plan could mitigate the medium and high-anticipated adverse impacts to an acceptable level. No "fatal flaw" adverse impacts, or adverse impacts that cannot be adequately mitigated, are anticipated to be associated with the proposed development of Strawberry Farm Phase 1.

8. CONCLUSION

The purpose of the EIA (Environmental Impact Assessment) process was to investigate the Biophysical and Socio-economic environments by means of specialist studies to identify further issues/impacts of the proposed Kleinfontein development on these environments. Further, it was aimed to provide mitigation measures for adverse impacts and to assess the significance of these impacts over the short and long term.

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The results of the specialist studies that were done and the layout workshops that were held (the various specialists attended the layout workshops) made it possible to produce a final layout for the proposed mixed use development that takes all the environmental issues identified into consideration.

As environmental consultants we are satisfied that all the site sensitivities were taken into consideration with the finalisation of the layout. It is recommended that the proposed final layout ***(Included as Annexure D)*** be accepted as the layout for the development.

Biophysical Environment:

Five wetland areas were identified during the current assessment**.** The **rocky ridge** is sensitive in terms of **red listed flora and invertebrates** as well as sensitivity for **avifaunal species**. The southern portion of the site, south of the railway line, is also sensitive in terms of **flora** and **bullfrogs.**

Social and Economical Environment:

The proposed development will supply a large number of employment opportunities both in the construction and operational phases. Two cemetery sites occur on the study area. a number of historical sites were identified on the study area.

Infrastructure and Services upgrades will be required to accommodate the proposed development.

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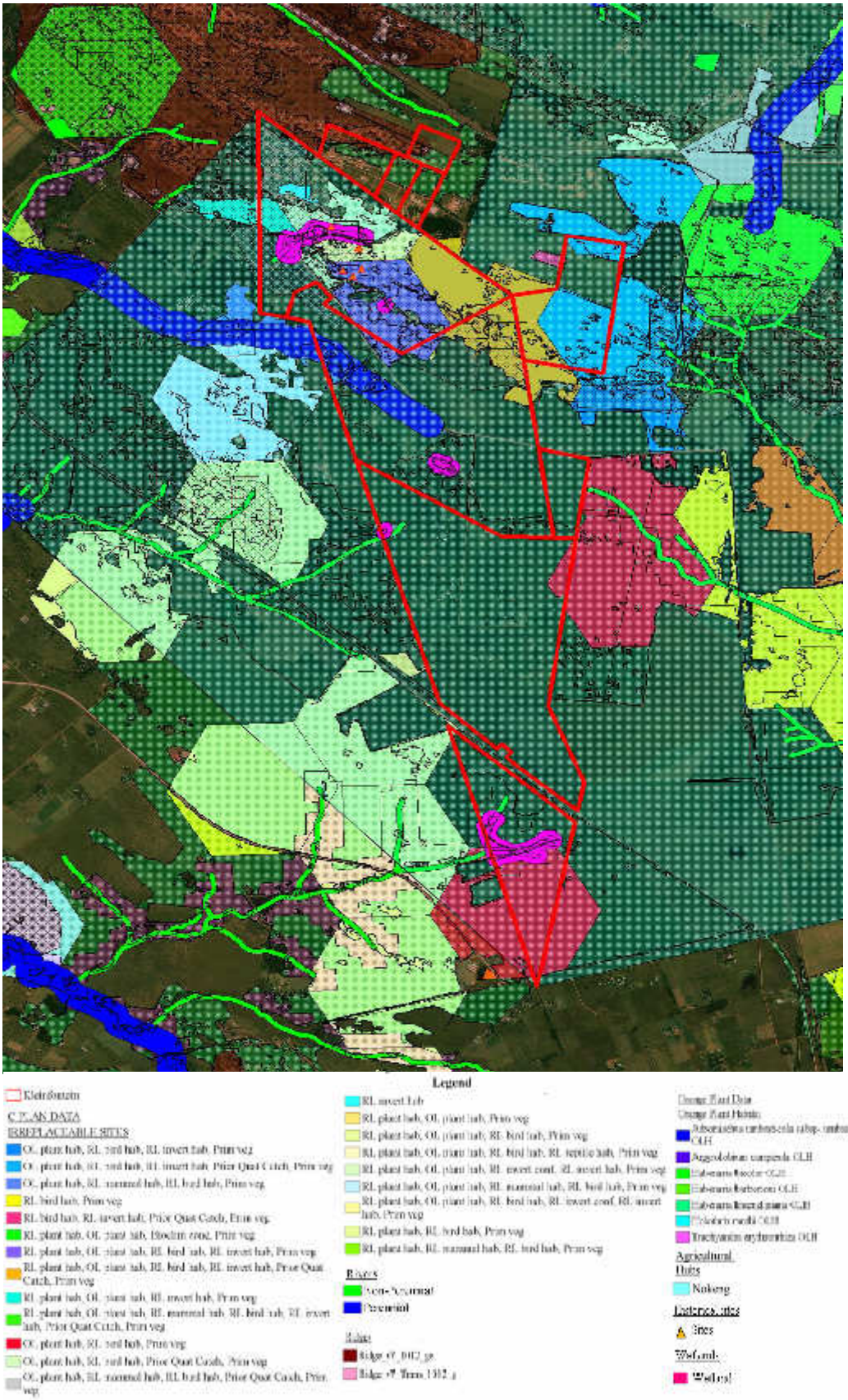

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From the findings of this Environmental Reports the following can be concluded:

- The proposed development falls within the new City of Tshwane Metropolitan Municipality (previously Kungwini Local Municipality), and will be in line with the land uses that have been earmarked for this area in various planning documents listed in the institutional section of this report;
- The proposed development will contribute to the upgrading of infrastructure and services;
- The mitigations and adaptive monitoring, with respect to potential adverse impacts, should result in limited adverse impacts on local and regional, natural and socio-economic resources. Balanced with the overall beneficial positive economic and environmental impacts identified, the potential net adverse effects attributable to the proposed project do not constitute a threat to local and regional ecological resources and social systems;
- The proposed development will improve the security of the area;
- The possible upgrading of the roads, of which the costs will be carried by the developer, will be beneficial to the community. By developing rural areas roads will be upgraded in phases seeing that easy accessibility is a prerequisite for a future development;
- The proposed development creates the opportunity to protect the wetland and sensitive areas;
- The "Sense of Place" can be to some extend enhanced if the proposed development is planned correctly; and
- According to the specialists and engineers, there are no reasons why the proposed development cannot proceed if adhered to the proposed mitigation measures and recommendations.

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9. RECOMMENDATIONS

It is believed that the impacts identified have not been of such a nature that short and long term mitigation cannot occur and therefore it is recommended that the proposed development be approved subject to:

1) The implementation of the mitigation measures contained in the Environmental Management Plan ***(Annexure M)*** to achieve maximum advantage from beneficial impacts, and sufficient mitigation of adverse impacts;
2) The implementation of the mitigation measures will help to achieve maximum advantage from beneficial impacts, and sufficient mitigation of adverse impacts;
3) The implementation of a stormwater management plan to mitigate the impact of the development on the wetland;
4) The provision of open space links, if possible, that will mitigate the fragmentation of fauna and flora habits;
5) The ecological management plan for the open space areas must be implemented throughout the lifespan of the project to ensure continuous fauna and flora biodiversity;
6) Letters regarding confirmation of services to be supplied by involved local authority; and
7) Detailed plans of the following to be supplied to GDARD, DWA and the Local Authority for approval:
   - Stormwater management plan and discharge ponds;
   - Proposed water network;
   - Proposed upgrading of services required; and
   - Confirmation of electricity and waste removal provider.

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Annexure A

ENLARGEMENTS OF FIGURES

Figure 1: Locality Map

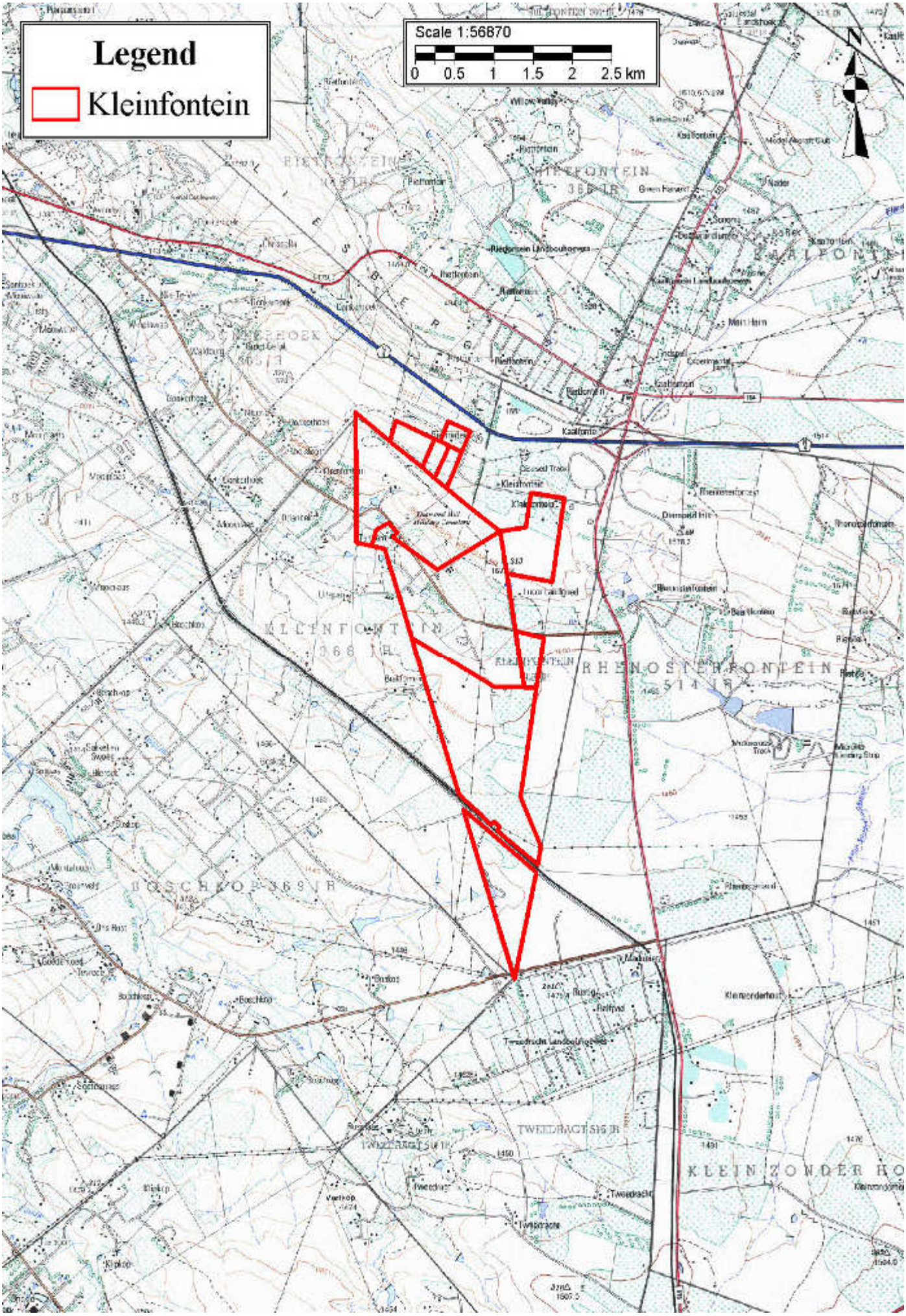

Legend
Kleinfontein
Scale 1:56870
0 0.5 1 1.5 2 2.5 km
N

Figure 2: Aerial

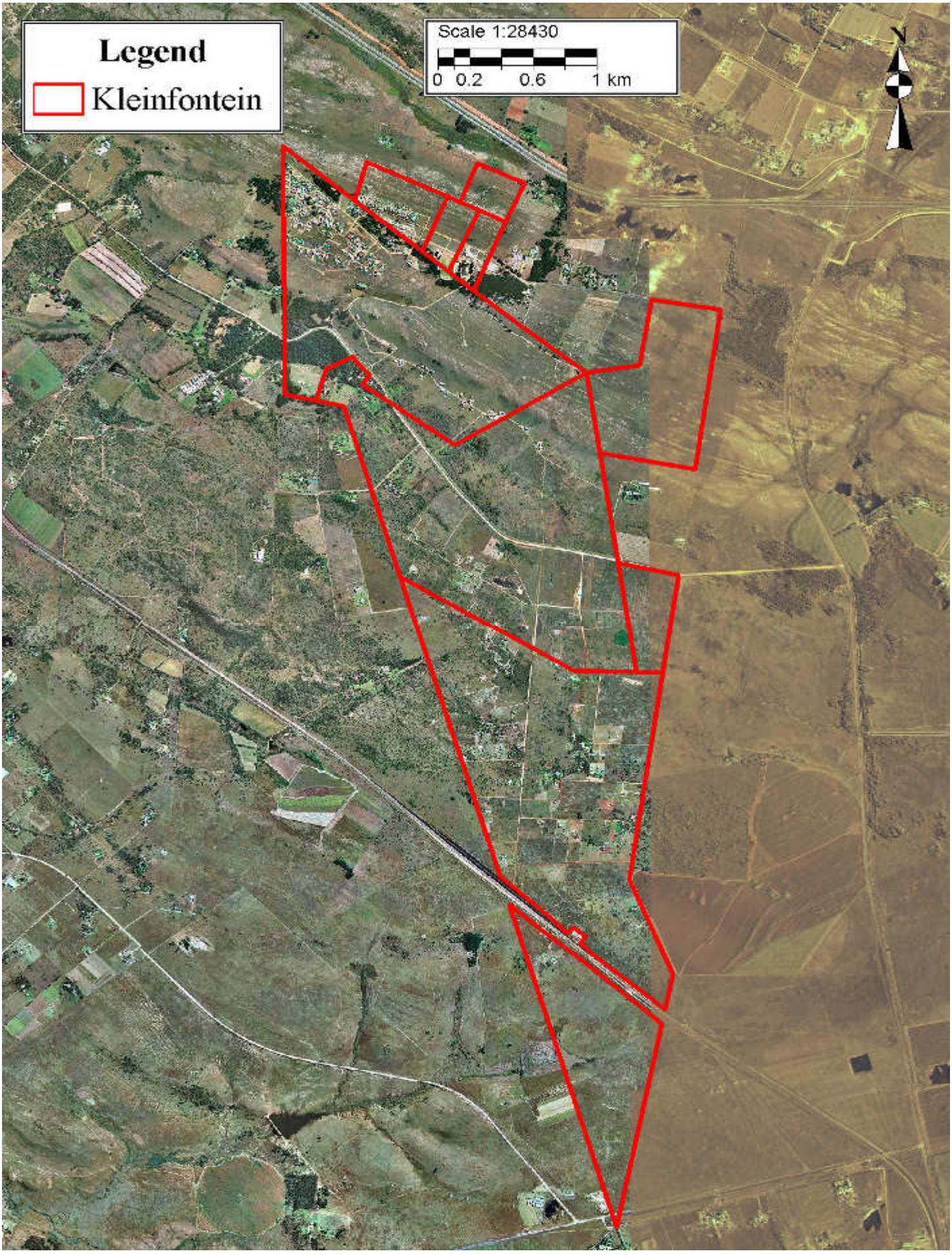

Legend
Kleinfontein
Scale 1:28430
0 0.2 0.6 1 km

Figure 3: Layout Plan

LAYOUT PLAN
OF
LAND DEVELOPMENT AREA

KLEINFONTEIN NEDERSETTING

SITUATED ON
REMAINDER, PORTION 38, PORTION 90 AND PORTION 96
OF THE FARM
KLEINFONTEIN 368 JR
AND
REMAINDER OF PORTION 14, PORTION 63, PORTION 67
AND PORTION 68
OF THE FARM
DONKERHOEK 365 JR

DEMARCATION FACILITATION ACT , 1995

LOCALITY PLAN 0 0.5 1.0 1.5 2.0 2.5km 1 : 50 000

NOTES :

1. Figure A B G H J K L M N P Q R S T U V W X Y Z A1 A2 A3 A and Figure B1 B3 B4 B1 on the site assembly of farm portions denote the Remainder, Portion 38, Portion 90 and Portion 96 of the farm Kleinfontein 368 JR vide SG Diagrams A10276/1880, A5569/1968, 8988/2007 and 3887/2008, covering an area approximately 750,81ha in extent.
2. Figure B C D E F G B on the site assembly of farm portions denotes the Remainder of Portion 14, Portions 63, 67 and 68 of the farm Donderhoek 365 JR vide SG Diagrams A2013/1921, A4262/1952, A4266/1952 and A4267/1952, covering an area approximately 42,70 ha in extent.
3. Figure ABCHJKLORSTUVWXYZ A1, A2, A3, A1 and Figure B1, B2, B3, B4, B1 denote the proposed land development area to be established on the aforesaid farm portions to be known as Kleinfontein Nedersetting covering a collective area of approximately 793,51ha in extent.
4. Registered Owner: Kleinfontein Boerebelange Koöperatief Limited
5. Area of jurisdiction: City of Tshwane Metropolitan Municipality
6. All areas and dimensions are approximate and subject to final survey
7. Contours at 5m intervals: Source: Orthophoto database dated 2001 and 2003
8. Lines of no access denoted by ....

SERVITUDE NOTES:

REVISIONS

NO :	DESCRIPTION	DATE

AUTHORITY
REFERENCE NO :

© COPYRIGHT RESERVED : PLANPRACTICE cc
KOPIEREG VOORBEHOU : PLANPRAKTYK bk

ERVEN		STREETS	
MINIMUM SIZE OF RES.1 ERVEN	: 207 m²	MINIMUM GRADIENT	:
RULING SIZE OF RES. 1 ERVEN	: 459 m²	MAXIMUM GRADIENT	:

LAND USE TABLE PHASE 01

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
RESIDENTIAL 1	368	27.43	10.20	1 - 367, 1217	
RESIDENTIAL 2	80	5.7	2.12	783 - 862	
BUSINESS 1	3	1.58	0.59	863 - 865	
INDUSTRIAL 1	18	1.7	0.63	910 - 927	
INSTITUTIONAL	1	0.35	0.13	928	
EDUCATIONAL	1	3.41	1.27	1127	
SPECIAL FOR CEMETARY & FUNERAL PARLOUR	1	1.47	0.55	1128	
SPECIAL FOR PRIVATE OPEN SPACE	8	184.76	68.69	1133 - 1139 1215	
SPECIAL FOR WORKSHOP, MAINTENANCE ETC.	1	1.09	0.41	1144	
SPECIAL FOR PUBLIC GARAGE SHOP, INDUSTRIAL	1	0.18	0.07	1145	
SPECIAL FOR ENGINEERING SERVICES ETC.	6	0.74	0.28	1146 -1147 1218 - 1221	
SPECIAL FOR SEWER WORKS ETC.	1	16.1	5.99	1149	
SPECIAL FOR PLACE OF AMUSEMENT ETC.	6	1.82	0.68	1150 - 1155	
SPECIAL FOR PRIVATE OPEN SPACE AND SOCIAL HALL	2	4.78	1.78	1157 - 1158	
SPECIAL FOR GARDEN OF REMEMBRANCE	1	0.02	0.01	1224	
SPECIAL FOR ACCESS CONTROL	2	0.37	0.14	1159 - 1160	
SPECIAL FOR INTERNAL ACCESS	21	17.47	6.50	1225 - 1245	
TOTAL	521	268.97 ha			

LAND USE TABLE PHASE 02

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR RURAL RESIDENTIAL	194	294.61	85.69	929 - 1102 1108 - 1126	
SPECIAL FOR CEMETARY & FUNERAL PARLOUR	1	0.02	0.01	1129	
SPECIAL FOR PRIVATE OPEN SPACE	4	21.94	6.38	1130, 1131, 1140, 1214	
SPECIAL FOR ENGINEERING SERVICES ETC.	1	0.03	0.01	1148	
SPECIAL FOR INTERNAL ACCESS	21	26.26	7.64	1103 - 1107 1161 - 1176	
PUBLIC ROAD	-	0.96	0.28	-	
TOTAL	221	343.82 ha			

LAND USE TABLE PHASE 03

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
BUSINESS 1	7	5.76	18.36	866 - 872	
SPECIAL FOR INTERNAL ACCESS	3	4.36	13.90	1177 - 1179	
UNDETERMINED	4	21.25	67.74	1203 - 1206	
TOTAL	14	31.37 ha			

LAND USE TABLE PHASE 04

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
RESIDENTIAL 1	415	17.13	23.52	368 - 782	
BUSINESS 1	3	5.3	7.28	873 - 875	
INDUSTRIAL 1	33	8.62	11.83	876 - 909	
SPECIAL FOR PRIVATE OPEN SPACE	2	7.28	9.99	1142, 1143	
SPECIAL FOR ENGINEERING SERVICES ETC.	2	0.18	0.25	1222, 1223	
SPECIAL FOR OFFICES WORKSHOP & ABLUTIONS	2	2.48	3.40	908	
SPECIAL FOR INTERNAL ACCESS	20	14.11	19.37	1180 - 1199	
UNDETERMINED	1	17.59	24.15	1201, 1202	
PUBLIC ROAD	-	0.15	0.21	-	
TOTAL	478	72.84 ha			

LAND USE TABLE PHASE 05

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR TELECOMMUNICATION ETC.	1	1.86	3	1156	
UNDETERMINED	1	59.03	97	1207	
TOTAL	2	60.89 ha			

LAND USE TABLE PHASE 06

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR INTERNAL ACCESS	1	0.92	11	1200	
UNDETERMINED	6	7.64	89	1208 - 1213	
TOTAL	7	8,56 ha			

REGISTERED PROFESSIONAL PLANNER

PJ DACOMB TRP(SA)	521	
	REG. NO.	DATE

IT IS HEREBY CERTIFIED THAT, IN TERMS OF THE PROVISIONS OF SECTION 144 OF THE NATIONAL WATER ACT (ACT 36 OF 1998) AND THE REGULATIONS OF THE DEVELOPMENT FACILITATION ACT, 1995. THE SITE IS AFFECTED BY A 1:50 AND 1:100 YEAR FLOOD AREA. ALL DIMENSIONS ARE APPROXIMATE SUBJECT TO FINAL SURVEY.

(PR. ENG REG No ------) DATE

PlanPractice
townplanners
35895 MENLO PARK 0102 TEL 012 - 362 1741

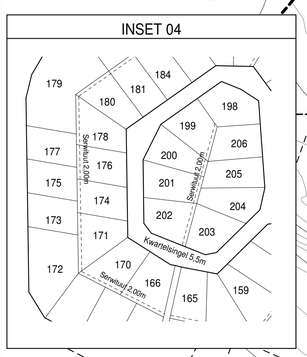
COMPILED BY :
MapPractice
electronic mapping and draughting

CAD REF. NO:Z:\KILIAN\PP\600\588\MEESTER 07.GEN PLOTTED :19/06/2012

DATE COMPILED : 06 JUN 2012	DRAWN : K.D.T	CHECKED : P.J.

SCALE	PLAN NUMBER	REVISION
1 : 7 000	600 / 588 / 03	

INSET 04

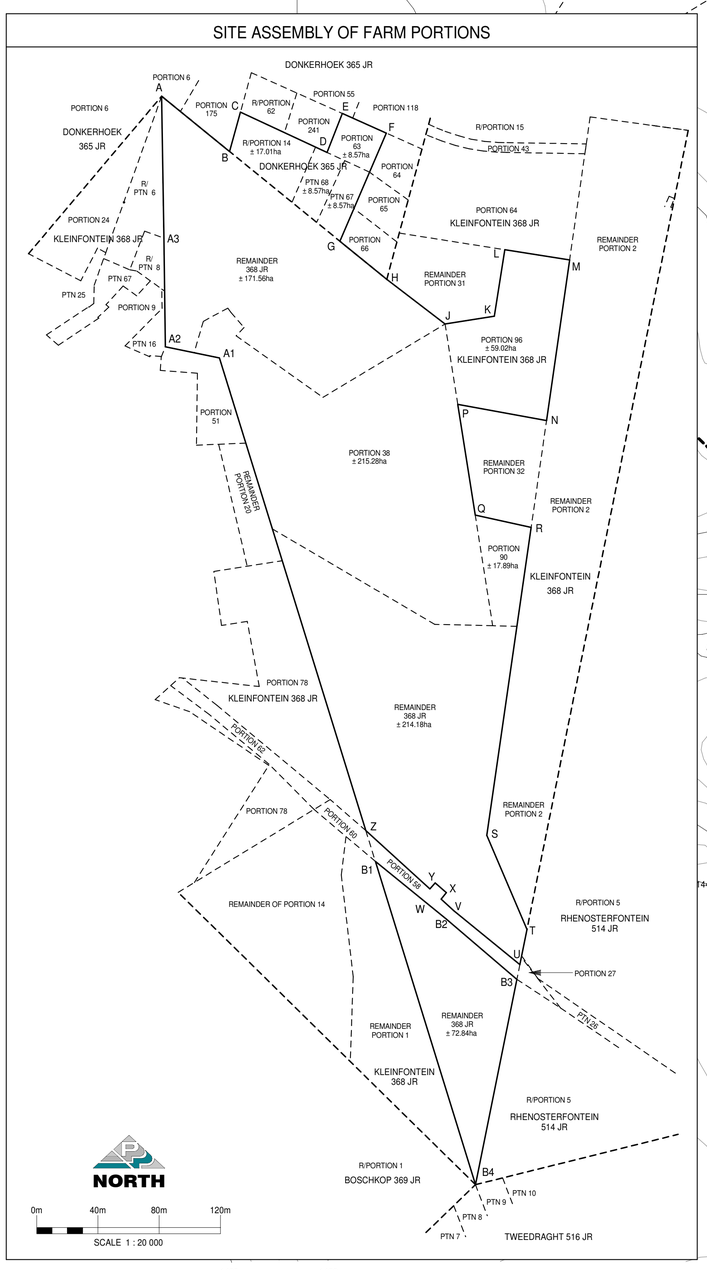


INSET 02

INSET 03

INSET 01

SITE ASSEMBLY OF FARM PORTIONS



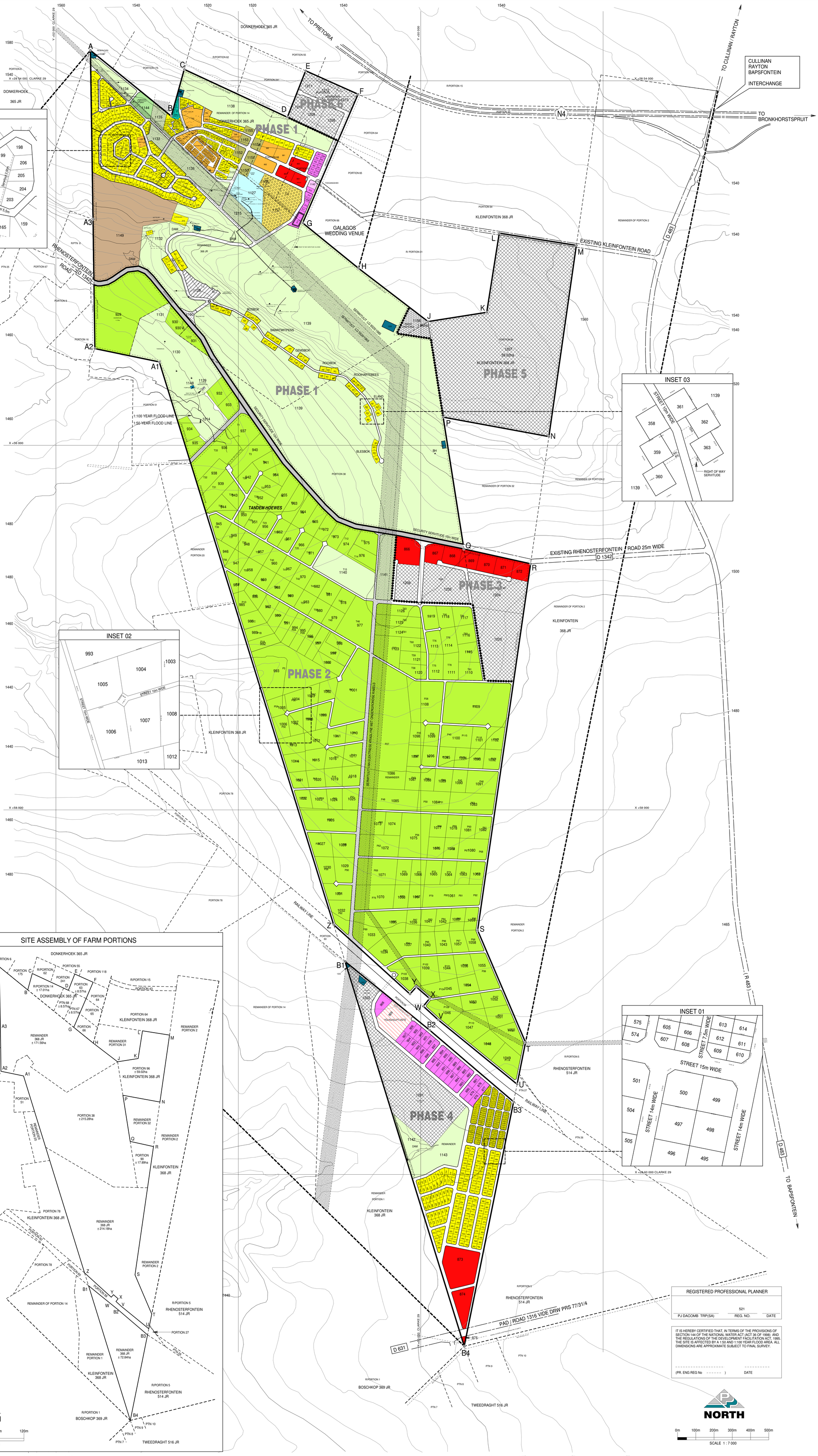


Figure 4: Agricultural Potential

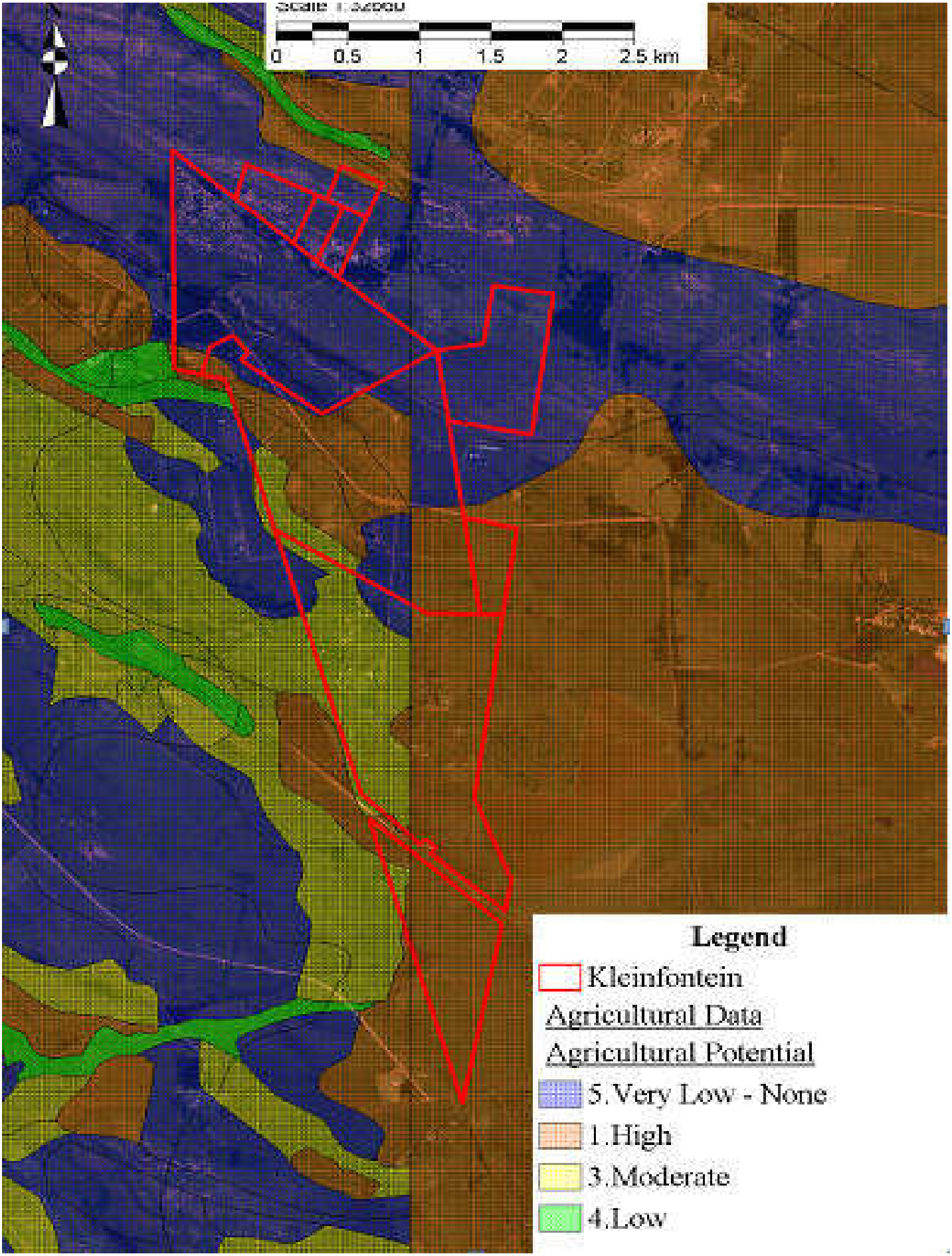

0
0.5
1
1.5
2
2.5 km
Legend
Kleinfontein
Agricultural Data
Agricultural Potential
5.Very Low - None
1.High
3.Moderate
4.Low

Figure 5: Agricultural Hub

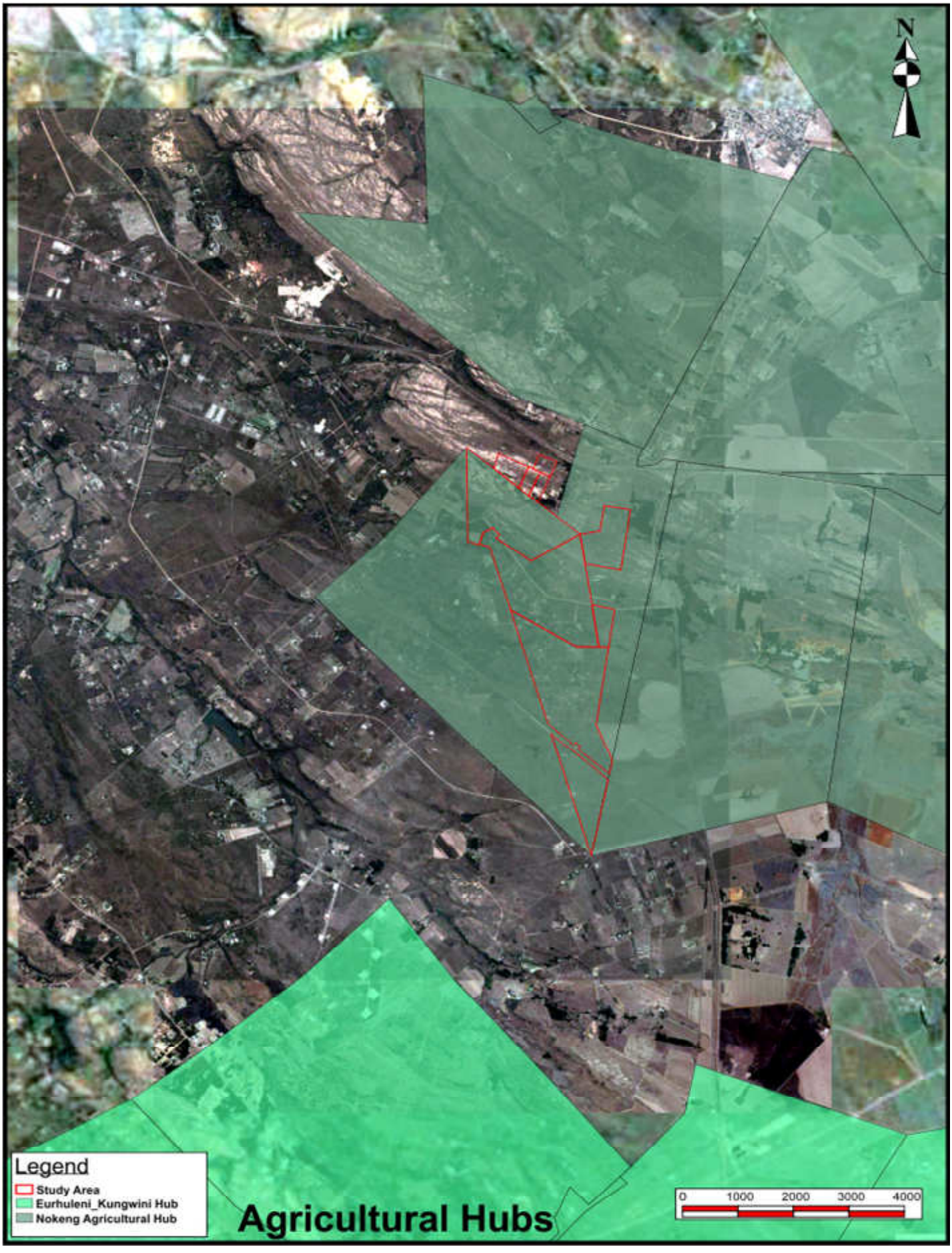

N
Legend
Study Area
Eurhuleni_Kungwini Hub
Nokeng Agricultural Hub
Agricultural Hubs
0
1000
2000
3000
4000

Figure 6: Hydrology Map

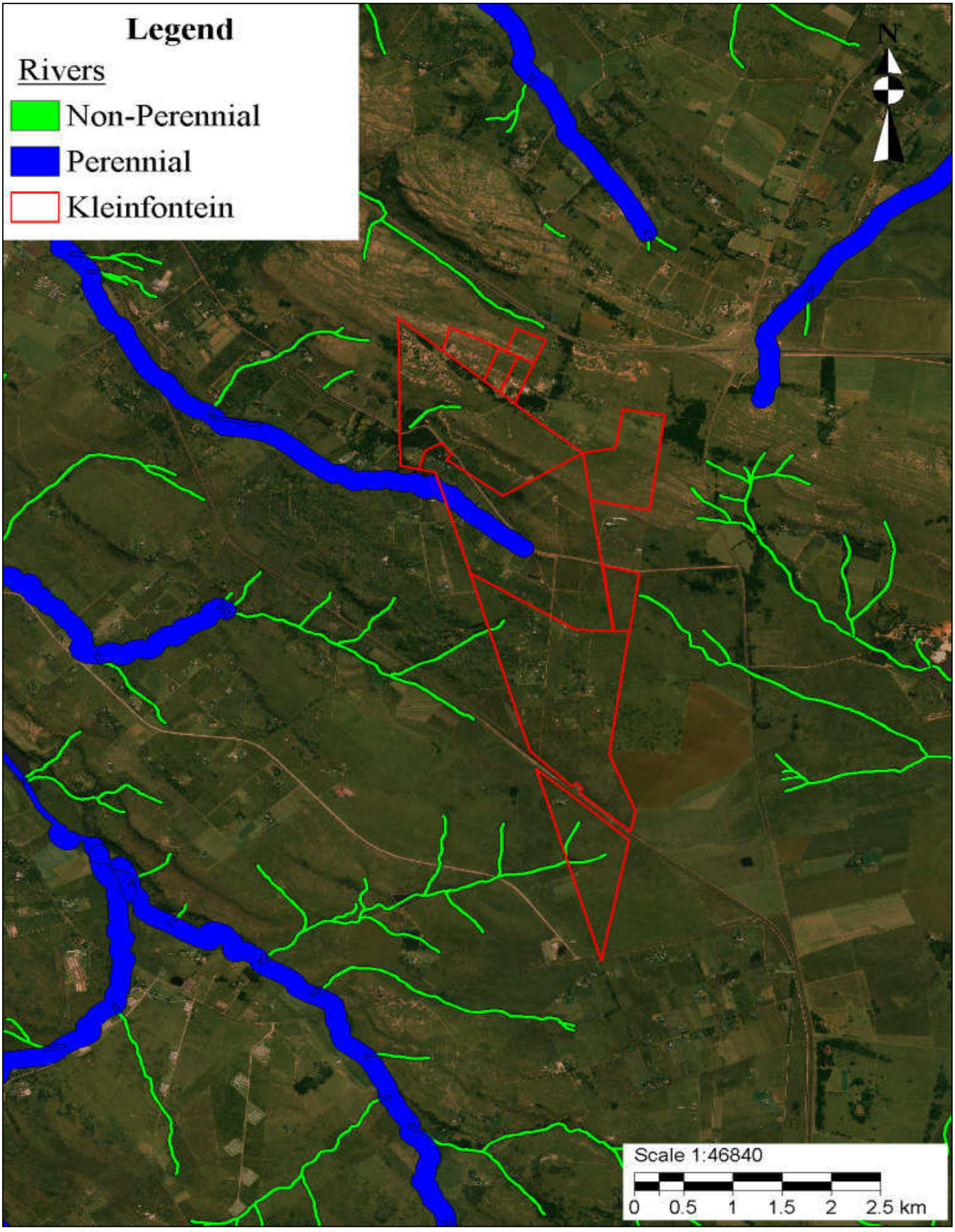
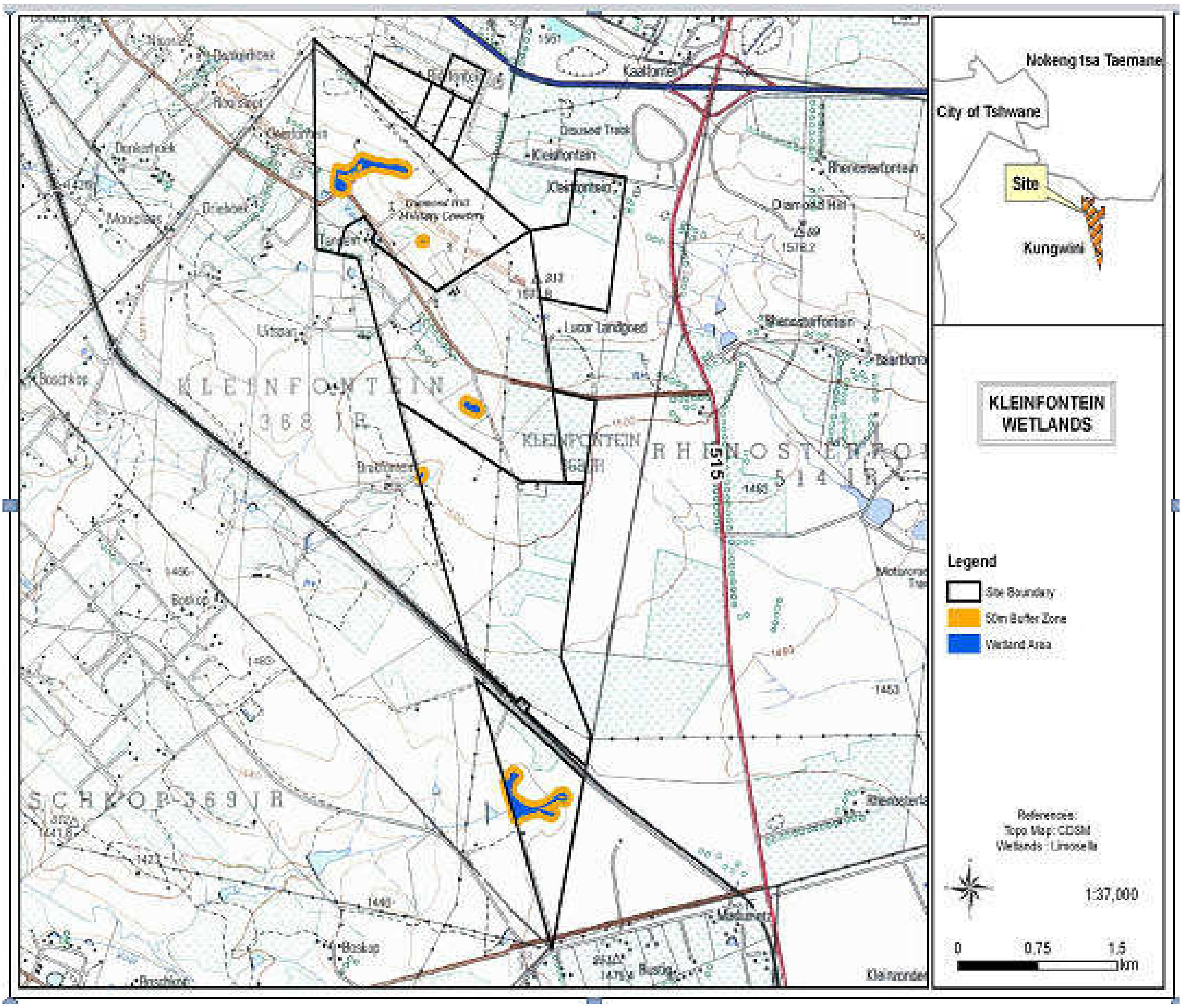

Legend
Rivers
Non-Perennial
Perennial
Kleinfontein
N
Scale 1:46840
0 0.5 1 1.5 2 2.5 km

Figure 7: Wetland Delination



Nokeng tsa Taemane
City of Tshwane
Site
Kungwini
KLEINFONTEIN
WETLANDS
Legend
Site Boundary
50m Buffer Zone
Wetland Area
References:
Topo Map: CDSM
Wetlands : Limosella
1:37,000
0
0.75
1.5
km
Kaalfontein
Disused Track
Kleinfontein
Diamond Hill
Rhenosterfontein
Luxor Landgoed
Donkerhoek
Mooiplaas
Driehoek
Uitspan
Boschkop
Boskop
K L E I N F O N T E I N
3 6 8 J R
515

Figure 8: Irreplaceable Sites

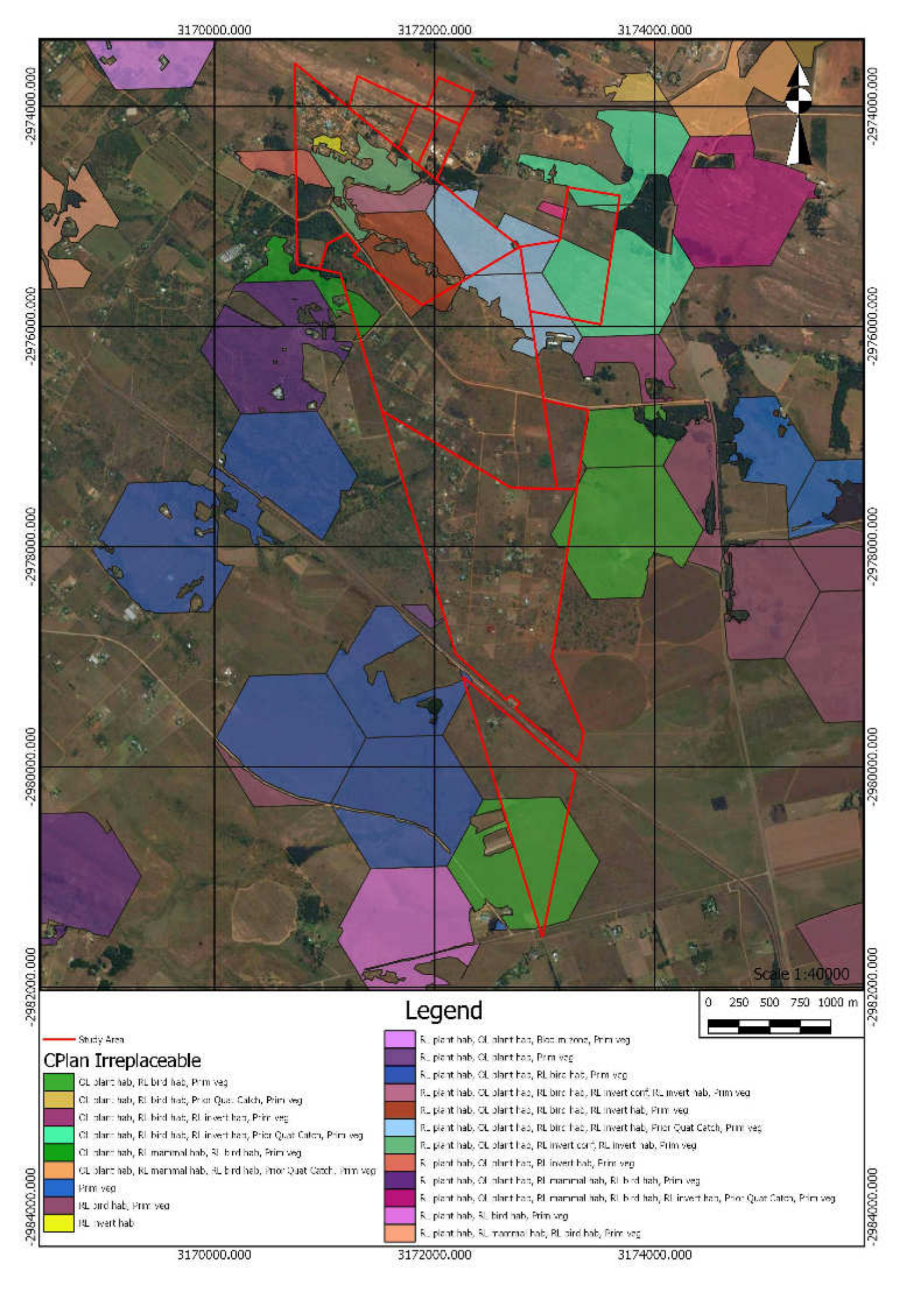

3170000.000
3172000.000
3174000.000
-2974000.000
-2976000.000
-2978000.000
-2980000.000
-2982000.000
-2984000.000
Scale 1:40000
0 250 500 750 1000 m
Legend
Study Area
CPlan Irreplaceable
GL plant hab, RL bird hab, Prim veg
GL plant hab, RL bird hab, Prior Quat Catch, Prim veg
GL plant hab, RL bird hab, RL invert hab, Prim veg
GL plant hab, RL bird hab, RL invert hab, Prior Quat Catch, Prim veg
GL plant hab, RL mammal hab, RL bird hab, Prim veg
GL plant hab, RL mammal hab, RL bird hab, Prior Quat Catch, Prim veg
Prim veg
RL bird hab, Prim veg
RL invert hab
RL plant hab, GL plant hab, Biosm zone, Prim veg
RL plant hab, GL plant hab, Prim veg
RL plant hab, GL plant hab, RL bird hab, Prim veg
RL plant hab, GL plant hab, RL bird hab, RL invert conf, RL invert hab, Prim veg
RL plant hab, GL plant hab, RL bird hab, RL invert hab, Prim veg
RL plant hab, GL plant hab, RL bird hab, RL invert hab, Prior Quat Catch, Prim veg
RL plant hab, GL plant hab, RL invert conf, RL invert hab, Prim veg
RL plant hab, GL plant hab, RL invert hab, Prim veg
RL plant hab, GL plant hab, RL mammal hab, RL bird hab, Prim veg
RL plant hab, GL plant hab, RL mammal hab, RL bird hab, RL invert hab, Prior Quat Catch, Prim veg
RL plant hab, RL bird hab, Prim veg
RL plant hab, RL mammal hab, RL bird hab, Prim veg

Figure 9: Visual Impact Assessment

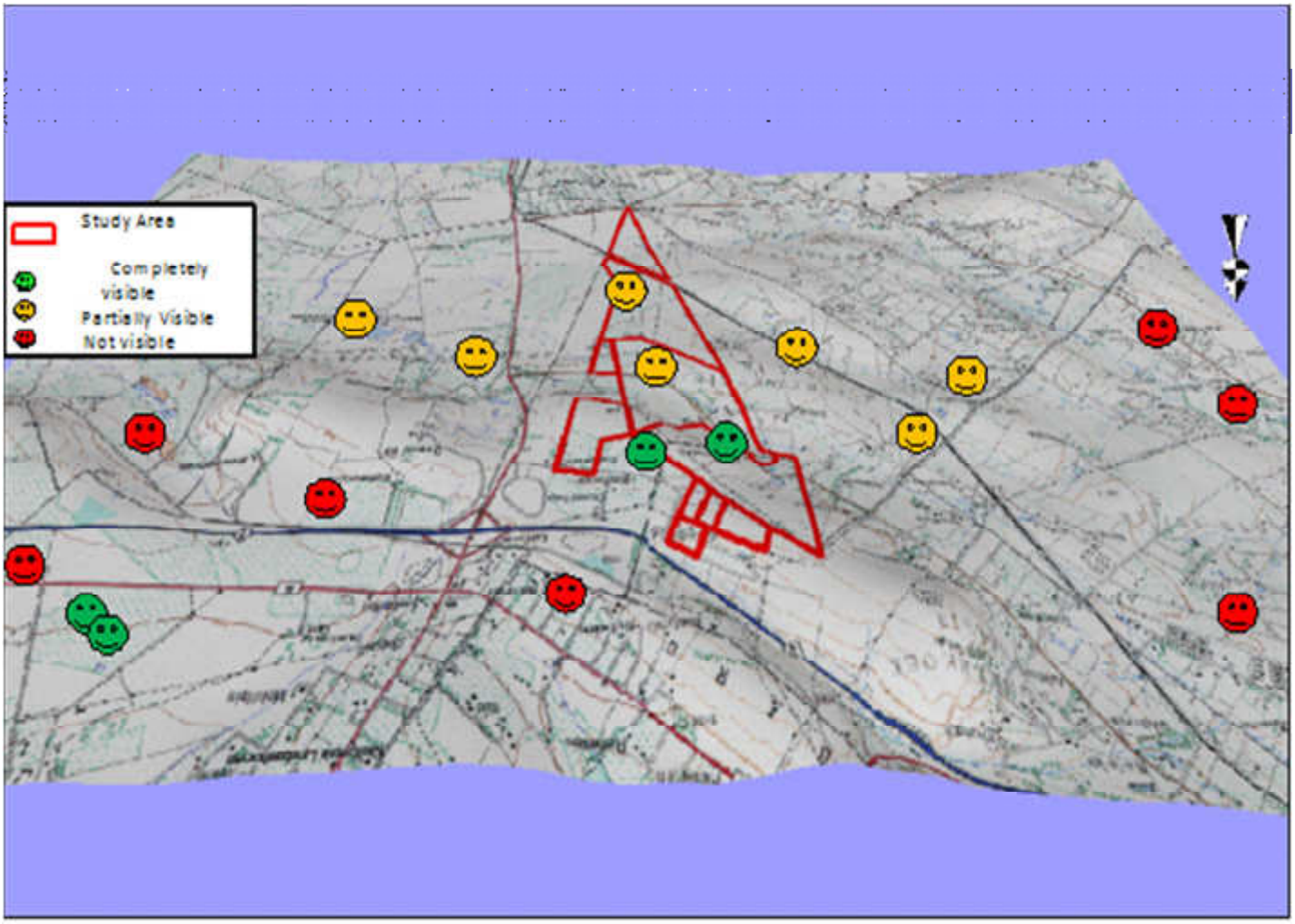
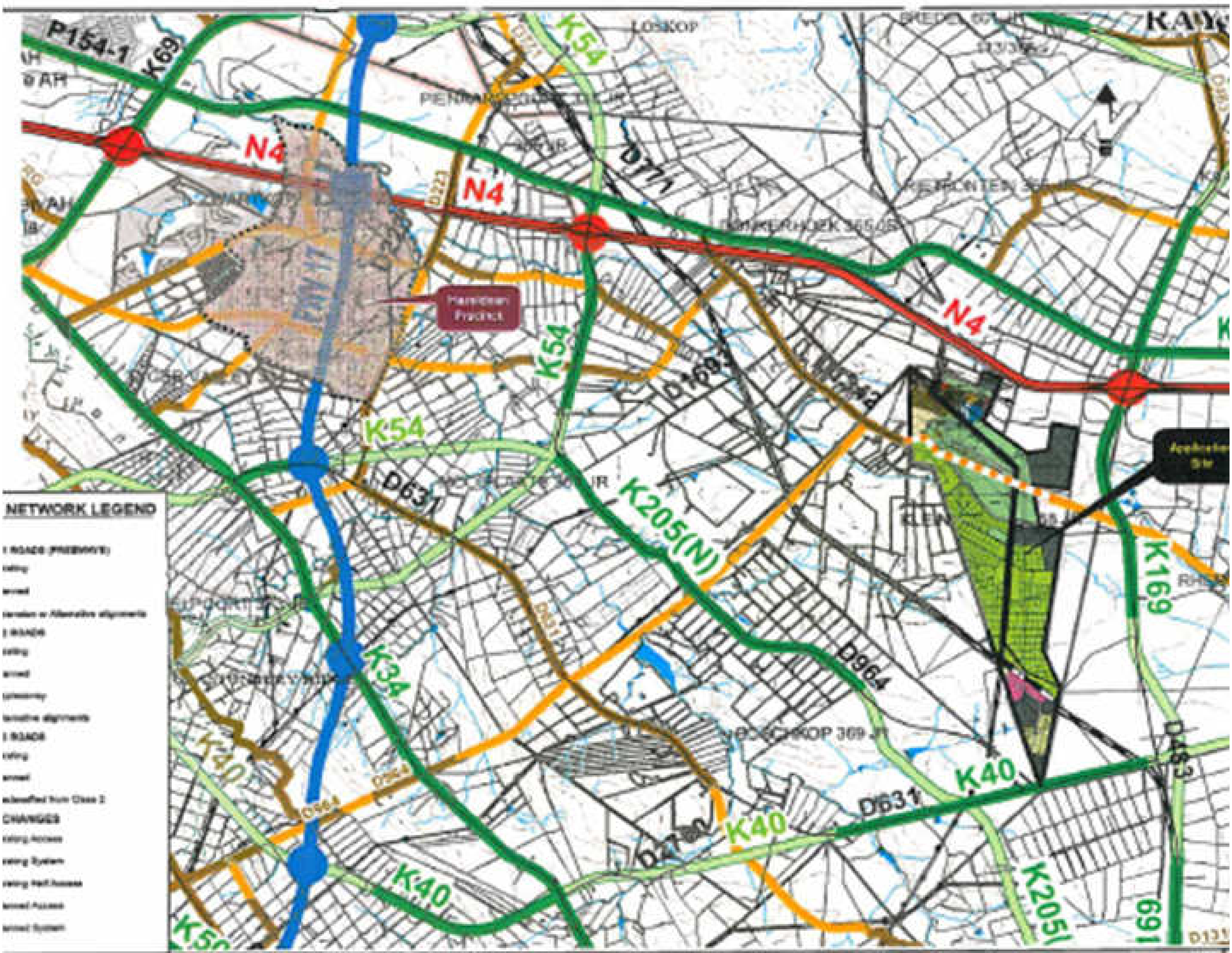

Study Area
Completely visible
Partially Visible
Not visible

Figure 10: Surrounding Road Network



KLEINFONTEIN SETTLEMENT

PWV Major Road Network

Figure 11: Sensitivity Map

Annexure B

EIA application form

Gauteng Department of Agriculture and Rural Development

Application for authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010 (Version1)

Kindly note that:

1. This application form is to be completed for both the Basic Assessment process and the Scoping & EIA process.
2. This application form is current as of 2 August 2010. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that can extend itself as each space is filled with typing.
4. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
5. Incomplete applications may be returned to the applicant for revision.
6. The use of "**not applicable**" in the report must be done with **circumspection** because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. Three copies of this form and the attachments must be handed in at the offices of the relevant competent authority as detailed below.
8. No faxed or e-mailed applications shall be accepted. Only hand delivered or posted applications will be accepted.
9. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/Environmental Assessment Practitioner (EAP) must provide any Interested and Affected Party (I&AP's) with the information contained in this application on request, during any stage of the application process.
10. Attachments, where applicable, to this document are to be ordered in the following prescribed manner

Annexure - A	Locality map
Annexure - B	a) Proof of notification to the Land owner b) Proof of receipt of such notice by the owner
Annexure - C	List of all organs of state and State Departments of where the draft report will be submitted, their full contact details and contact person

Annexure -D	Property description list
Annexure -E	Current land use zonings list
Addendum-A	Declaration of Independence by EAP to be submitted with the report if the application form was submitted by applicant -

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
18th floor Glen Cairn Building
73 Market Street, Johannesburg

Administrative Unit telephone number: (011) 355 1345
Department central telephone number: (011) 355 1900

APPLICATION FORM [REGULATION 12 (1) & (2)(A)(B)(I)(II)]

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

1. NATURE OF THE ACTIVITY

The Kleinfontein Boerebelange Koöperasie Beperk is planning the establishment of a Mixed-use Township on Portions 38, 90, 96 and the Remaining Extent of the Farm Kleinfontein 368 JR and on Portions 63, 67, 68 and the Remaining Extent of Portion 14 of the Farm Donkerhoek 365 JR to be known as Kleinfontein Settlement. The study area is approximately 796 ha in extent.

Select the appropriate box with regards to the application form submission

An application for conducting a basic assessment (as defined in the regulations)?		**A resubmission of an application for conducting a basic assessment (as defined in the regulations)?**	
An application for conducting a Scoping & EIA process (as defined in the regulations)	X	**A resubmission of an application for conducting a SR & EIA process (as defined in the regulations)**	

If this is a class application, has a copy of approval letter to undertake such an application been attached as such application may/shall not be undertaken without an approval from this Department

Has this project or a substantial similar project which has been previously submitted by the applicant been denied authorisation by the relevant authority in the last three (3) years	YES	NO X
If yes will the application contain new or additional material not submitted previously	YES	NO

To be noted that Regulation 68 of EIA Regulations, 2010 states that no applicant may resubmit an application which is substantially similar to an application previously denied authorisation by the relevant authority unless 3 years has lapsed since the refusal or new material is to be presented

1. PROJECT DETAILS

Project title: Kleinfontein Settlement

To be noted that the project will be registered under this title and this title must be duplicated through the application life of the project

Local authority(ies) in whose jurisdiction the proposed application will fall City of Tshwane Metropolitan Municipality

2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:	**Latitude (S):**	**Longitude (E):**
	25°48'54.52" S	28°29'43.97" E

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
• Starting point of the activity	°	°
• Middle point of the activity	°	°
• End point of the activity	°	°

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached **N/A**

Property description: Portions 38, 90, 96 and the Remaining Extent of the farm Kleinfontein 368 JR and Portions 63, 67, 68 and the Remainder of Portion 14 of the Farm Donkerhoek 365 JR.

(Farm name, portion etc.) Where a large number of properties (including alternatives) are involved (e.g. linear activities), please attach a list of the property descriptions to this application.

3. ACTIVITIES APPLIED FOR

Describe the activity and associated infrastructure, which is being applied for, in detail

The proposed establishment of a township to be known as **Kleinfontein Settlement**. The proposed development will consist of the following zonings and land-use:

- Residential 1,
- Residential 2,
- Residential 3,
- Residential 6,
- Institutional,
- Business,
- Light Industrial,
- Special,
- Public Open Space,
- Nature Reserve,
- Educational,
- Sport and Recreation,
- Sewer Works and
- Public Roads

The larger Kleinfontein site assembly covers approximately 796 ha in extent and it is proposed to provide for the following:

- Approximately 862 residential erven providing dwelling units/ dwelling houses made up of various typologies;
- 69 950m² of business floor area to provide for retail relaxed activities and

associated business activities;

- Approximately 104 400m² of manufacturing related floor area (light industries and associated facilities);
- Approximately 198 agricultural small holdings at an average size of approximately 1.4 ha per unit;
- 1 School site to accommodate educational facilities (both pre-primary and primary facilities);
- 1 Sites for religious activities and associated community facilities;
- Sites for a local cemetery;
- 4 Sites for communal engineering infrastructure (reservoirs, sewage treatment facilities, maintenance facilities and the like);
- 1 Site for an Institution (old age home and care centre) and related community facilities;
- 14 Sites for private open spaces;
- 1 Site for workshop, maintenance and storage facilities;
- 6 Sites for Places of Amusement, Public Offices, Places of Instruction and associated facilities;
- 1 Site for Public Garage and associated shop facilities;
- 1 Site for Telecommunication Centre; and
- Sites for Access Control

Which Listing Notice is the activity (ies) listed under?

Listing Notice 1	X	Listing Notice 2	X	Listing Notice 3	X

If "or also" listed under Listing Notice 3, describe the Geographical Area triggering the activity and its regional, provincial, national & international significance

An application may be made for more than one listed or specified activity that, together, make up one development proposal. All the listed activities that make up this application must be listed.

Indicate the number and date of the relevant Government Notice:	**Activity No (s) (in terms of the relevant notice): e.g. Listing notices 1, 2 or 3**	**Describe each listed activity as per the wording in the relevant listing notice:**
Listing Notice 1, R544, 18 June 2010	Activity 1	The construction of facilities or infrastructure for the generation of electricity where: (i) The electricity output is more than 10 megawatts but less than 20 megawatts; or (ii) The output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.

Listing Notice 1, R544, 18 June 2010	Activity 3	The construction of facilities or infrastructure for the slaughter of animals with a product throughout of: (i) Poultry exceeding 50 poultry per day; or (ii) Game and red meat exceeding 6 units per day.
Listing Notice 1, R544, 18 June 2010	Activity 4	The construction of facilities or infrastructure for the concentration of animals for the purpose of commercial production in densities that exceed- • 20 square meters per large stock unit and more than 500 units, per facility; • 8 square meters per small stock unit and; a. More than 1000 units per facility excluding pigs where (b) will apply; b. More than 250 pigs per facility excluding piglets that are not yet weaned; • 30 square meters per crocodile at any level of production, excluding crocodiles; • 3 square meter per rabbit and more than 500 rabbits per facility; or • 250 square meters per ostrich or emu and more than 50 ostriches or emus per facility; or 2500 square meters per breeding pair.
Listing Notice 1, R544, 18 June 2010	Activity 5	The construction of facilities or infrastructure for the concentration of: (i) More than 1000 poultry per facility situated within an urban area, excluding chicks younger than 20 days (ii) More than 5000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days.
Listing Notice 1, R544, 18 June 2010	Activity 8	The construction of a hatchery or agri-industrial infrastructure outside industrial complexes where the development footprint covers an area of 2000 square meters or more.
Listing Notice 1, R544, 18 June 2010	Activity 9	The construction of facilities or infrastructure exceeding 1000 meters in length for the bulk transportation of water, sewage or storm water – (i) With an internal diameter of 0,36 meters or more; or (ii) With a peak throughput of 120 liters per second or more; excluding where: a. Such facilities or infrastructure are for bulk transportation of water, sewage or storm water drainage inside a road reserve; or b. Where such construction will occur within urban areas but further than 32 meters from a watercourse, measured from the edge of the watercourse.
Listing Notice 1, R544, 18 June 2010	Activity 10	The construction of facilities or infrastructure for the transmission and distribution of electricity- (i) Outside urban area or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) Inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.
Listing Notice 1, R544, 18 June 2010	Activity 11	The construction of: (i) Canals; (ii) Channels; (iii) Bridges; (iv) Dams; (v) Weirs; (vi) Bulk storm water outlet structures; (vii) Marinas; (viii) Jetties exceeding 50 square meters in size; (ix) Slipways exceeding 50 square meters in size; (x) Buildings exceeding 50 square meters in size; or (xi) Infrastructure or structures covering 50 square meters or more where such construction occurs within watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development

		setback line.
Listing Notice 1, R544, 18 June 2010	Activity 13	The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic meters.
Listing Notice 1, R544, 18 June 2010	Activity 18	The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) A watercourse; (ii) The sea; (iii) The seashore; (iv) The littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is the greater- But excluding where such infilling, depositing, dredging, excavation, removal or moving (i) Is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (ii) Occurs behind the development setback line.
Listing Notice 1, R544, 18 June 2010	Activity 21	The establishment of cemeteries of 2500 square meters or more in size.
Listing Notice 1, R544, 18 June 2010	Activity 22	The construction of a road, outside urban areas, (i) With a reserve wider than 13,5 meters or; (ii) Where no reserve exists where the road is wider than 8 meters; or (iii) For which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.
Listing Notice 1, R544, 18 June 2010	Activity 29	The expansion of facilities for the generation of electricity where: (i) The electricity output will be increased by 10 megawatts or more, excluding where such expansion takes place on the original development footprint; or (ii) Regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more.
Listing Notice 1, R544, 18 June 2010	Activity 37	The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water where: (a) The facility or infrastructure is expanded by more than 1 000 meters in length; or (b) Where the throughput capacity of the facility or infrastructure will be increased by 10% or more- Excluding where such expansion: (i) Relates to transportation of water, sewage or storm water within a road reserve; or (ii) Where such expansion will occur within urban areas but further than 32 meters from a watercourse, measured form the edge of the watercourse.
Listing Notice 1, R544, 18 June 2010	Activity 47	The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometer- (1) Where the existing reserve is wider than 13,5 meters; or (2) Where no reserve exists, where the existing road is wider than 6 meters- Excluding widening or lengthening occurring inside urban areas.
Listing Notice 2, R545 18 June 2010	Activity 5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act

		No. 59 of 2008) in which case that Act will apply.	
Listing Notice 2 R545 18 June 2010	Activity 15	Physical alteration of undeveloped vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; Except where such physical alteration takes place for: (i) Linear development activities; or (ii) Agriculture or afforestation where activity 16 in this Schedule will apply;	
Listing Notice 2 R545 18 June 2010	Activity 18	The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before 03 July 2006 and which have not been authorized by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 or 2009, made under section 24(5) of the Act and published in Government Notice No. R 385 of 2006, - (i) It is a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998); (ii) It is a road administered by a provincial authority; (iii) The road reserve is wider than 30 meters; or (iv) The road will cater for more than one lane of traffic in both directions.	
Listing Notice 3, R546, 18 June 2010	Activity 2	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic meters; **(b) In Gauteng:** i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Areas Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; iv. Sites or areas identified in terms of an International Convention; v. Sites identified as irreplaceable or Important sites in the Gauteng Conservation Plan vi. Areas larger than 2 hectares zoned for use as public open space; vii. Areas zoned for a conservation purposes.	
Listing Notice 3, R546, 18 June 2010	Activity 4	The construction of a road wider than 4 meters with a reserve less than 13, 5 meters.	In Gauteng: i. A protected area identified in terms of NEMPAA excluding conservancies; ii. National Protected Area Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; iv. Sites identified in terms of the Ramsar Convention; v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vi. Areas larger than 2 hectares zoned for use as public open space; vii. Areas zoned for a conservation purpose; viii. Any declared protected area including Municipal or Provincial Nature Reserves as

			contemplated by the Environmental Conservation Act, 1989 (Act No. 73 of 1989) and the Nature Conservation Ordinance (Ordinance 12 of 1983); ix. Any site identified as land with high agricultural potential located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the Gauteng Agricultural Potential Atlas, 2008.
Listing Notice 3, R546, 18 June 2010	Activity 10	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 50 cubic meters. **(c) Gauteng:** i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus areas; iii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; iv. Sites or areas identified in terms of an International Convention; v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vi. Within 100 meters of a watercourse or within 100 meters of wetland that is not linked to a watercourse; vii. Any declared protected areas including Municipal or Provincial Nature Reserves as contemplated by the Environment Conservation Act, 1989 (Act No. 73 of 1989), the Nature Conservation Ordinance (Ordinance 12 of 1983) and the NEMPAA.	

Please note that any authorisation that may result from this application will only cover activities specifically applied for.

5. OTHER AUTHORISATIONS REQUIRED

5.1 DO YOU NEED ANY AUTHORISATIONS IN TERMS OF ANY OF THE FOLLOWING LAWS?

4.1.1 National Environmental Management: Waste Act	**Yes/No**
4.1.2 National Environmental Management: Air Quality Act	**Yes/No**
4.1.3 National Environmental Management: Protected Areas Act	**Yes/No**
4.1.4 National Environmental Management: Biodiversity Act	**Yes/No**
4.1.5 Mineral Petroleum Development Resources Act	**Yes/No**
4.1.6 National Water Act	**Yes/No**
4.1.7 National Heritage Resources Act	**Yes/No**
4.1.8 Other (please specify)	**Yes/No**
4.2 Have such applications been lodged already?	**Yes/No**

6. BACKGROUND INFORMATION

Project applicant:	Kleinfontein Boerebelange Koöperasie Beperk
Trading name (if any):	Kleinfontein Boerebelange Koöperasie Beperk
Contact person:	Jan Groenewald
Physical address:	Remainder of the Farm Kleinfontein 368 JR

APPLICATION FORM [REGULATION 12 (1) & (2)(A)(B)(I)(II)]

Postal address:	P.O. Box 925, Rayton		
Postal code:	1001	Cell:	082 892 3930
Telephone:	012-802 1583	Fax:	012-802 1584
E-mail:	niel@kleinfontein.net		

Project Environmental Assessment Practitioner:	Bokamoso Landscape CC trading as Bokamoso Landscape Architects & Environmental Consultants		
Contact person:	Lizelle Gregory		
Postal address:	P.O. Box 11375, Maroelana		
Postal code:	0161	Cell:	083 255 8384
Telephone:	(012) 346 3810	Fax:	086 570 5659
E-mail:	lizelleg@mweb.co.za		
EAP qualifications & relevant experience	Registered Landscape Architect & Environmental Consultant (degree obtained from the University of Pretoria) , with more than 18 years experience in: • The compilation of Environmental Evaluation Reports, • Environmental Management Plans, • Strategic Environmental Assessments; • All stages of Environmental Input; • EIA under the ECA and the new and amended NEMA Regulations; and • Various other Environmental Reports and documents.		
Professional affiliation(s) (if any)	The South African Council of the Landscape Architects Profession (SACLAP);Institute for Landscape Architects in South Africa (ILASA); and Institute for Environmental Management and Assessment (IEMAS)		

Landowner:	Kleinfontein Boerebelange Koöperasie Beperk		
Contact person:	Jan Groenewald		
Postal address:	P.O. Box 925, Rayton		
Postal code:	1001	Cell:	082 892 3930
Telephone:	012-802 1583	Fax:	012-802 1584
E-mail:	niel@kleinfontein.net		

In instances where there is more than one landowner (including for alternative sites), please attach a list of landowners with their contact details to this application.

In instances where the landowner is not the applicant –attach proof of notification of the landowner and a proof of receipt of such notice by the owner, manager or person in control of the land.

List of the land owner is attached	**N/A**
Landowner notification proof is attached	**N/A**
Landowner proof of receipt of such notification is attached	**N/A**

Local authority in whose jurisdiction the proposed activity will fall:	City of Tshwane Metropolitan Municipality		
Contact person:	Livhuwani Siphuma		
Postal address:	Private Bag x 1454, Pretoria		
Postal code:	0001	Cell:	-
Telephone:	(012) 358 8871	Fax:	012-358 4684
E-mail:	livhuwanis@tshwane.gov.za		

In instances where there is more than one local authority involved (including for alternative sites), please attach a list of local authorities with their contact details to this application.

List of local authorities is attached: **YES**

List of properties is attached: **YES**

Town(s) or district(s): City of Tshwane Metropolitan Municipality

Street/Physical address: 4th Floor/11 Schoeman Street, Pretoria

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

List of towns or districts is attached: **N/A**

State Departments administering a law affecting the environment: **Department of Water Affairs**

Contact person:	Mr. Justice Maluleke		
Postal address:	Private Bag X313, Pretoria		
Postal code:	0001	**Cell:**	-
Telephone:	012 336 6507	**Fax:**	012 336 8311
E-mail:	MaluleKeJ@dwa.gov.za		

In instances where there is more than one State Department involved, please attach a list of all State Departments with their contact details.

Current land-use zoning: **Agricultural Holdings**

In instances where there is more than one current land-use zoning (including alternatives), please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.

List of current land-use zonings is attached: **N/A**

Locality map:

A locality map(s) (including alternatives) must be attached to the back of this document, as Annexure A. The scale of the locality map must be between 1:10 000 and 1:50 000. The scale must be indicated on the map. The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites;
- all rivers within a 1km radius of the site or alternative sites; and
- a north arrow.

7. COMPLIANCE WITH CONDITIONS

Have you ever been in non-compliance with a condition of an authorization or exemption issued by this Department or any other provincial or national environmental department in terms of the Environment Conservation Act (No 73 of 1989) or the National Environmental Management Act (No 107 of 1998) as amended?

YES	NO
	x

If yes, indicate details of non-compliance together with reasons for non-compliance:

Attach all relevant documentation e.g. compliance audit reports, pre-directives, directives, compliance notices

8. ACTIVITY INFORMATION

Socio-economic value of the activity

What is the expected capital value of the activity on completion?	**R415 million**
What is the expected yearly income that will be generated by or as a result of the activity?	**Community driven- nonprofit cooperative**
Will the activity contribute to service infrastructure?	**YES X** / No
Will the activity contribute to a public amenity	YES / **No x**
Total number of new employment opportunities to be created in the development phase of this activity.	**140**
Of these opportunities how many are:	
Women	**38**
People with disabilities	
Female	**5**
Male	**9**
Youth	
Female	**21**
Male	**53**
What is the expected value of the employment opportunities during the development phase?	**R262 million**
What percentage of this will accrue to previously disadvantaged Individuals?	**40% (Purchasing equipment materials, goods)**
Total number of new employment opportunities to be created in the operational phase of this activity.	**188**
Of these opportunities how many are:	
Women	**85**
People with disabilities	**33**
Female	**15**
Male	**18**
Youth	**104**
Female	**59**
Male	**45**
What is the expected current value of the employment opportunities during the first 10 years?	**R34 million**
What percentage of this will accrue to previously disadvantaged individuals?	**30%**

Need and Desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

Kleinfontein Settlement already exists and the existing land uses include Residential, Community facilities, Businesses, a Shopping Centre (nearly completed), internal access roads, various communal facilities and open spaces. These facilities are taking place on an assembly of farm portions and are not approved yet.

Given that the Kleinfontein settlement already accommodates a number of fully developed

dwelling units/ houses and associated facilities, it follows that the application partly seeks to regularize an existing situation which does not currently enjoy official approval by any recognized decision making authority.

From a social and economic point of view, some development already took place on the study area and many people already resided on the study area. The situation with regards to this development is therefore different than with a "greenfields" development where the bio—physical environmental sensitivities are in most cases regarded as the form giving elements, because in this case, the given social aspects (associated with the land already sold to potential residents and houses, structures and infrastructure already constructed by the community) were also regarded as form giving elements to take into consideration.

As mentioned above this application will include a S24G rectification application process, as prior discussions with GDARD it was agreed that a S24G application will be submitted for the "so-called" "illegal activities". The S24G application will accommodate and address the development that already took place on the ridge area. Due to the fact that development already took place on the sensitive ridge area, it will be almost impossible to impose the proposed 400m buffer around the ridge. At this stage the intention is to rather supply development guidelines for developments within and around the ridge area (i.e. with regards to the types of plants to establish after construction and the maintenance of the area etc. can cause bullfrog deaths.

The Battle of Donkerhoek/ Diamond Hill that occurred during the Anglo-Boer War (1899-1902) was the largest military battle in the history of Pretoria and occurred partially on the farm Donkerhoek, therefore sometimes referred to as the Battle of Donkerhoek. This makes it clear that the specific area has a great cultural historical background and has a lot of value for its residents. The sense of place in this area is high.

South Africa is a democratic land and with this being said it is the desire of the residents to live in isolation.

Indicate any benefits that the activity will have for society in general:

This holds the benefit to the neighboring property owners that the site area which will become part of the area will be managed as an additional positive feature. The proposed expansion will contribute to the upgrading of the security in and around the facility. Residents will most definitely benefit from the improved security in the area.

The expansion of the development will contribute to economic growth of the area in terms of the infrastructure, business and amenities.

Certain wetland and sensitive areas will be protected through proper management and zonings and the sense of place associated with the area will be based on proper urban management and the enforcement of municipal bylaws and associated regulatory mechanisms.

This development will take place in an orderly manner and mitigation measures for the development will be in place to ensure that the natural resources will not be depleted. The development will be binding to the Environmental Management Plan, Environmental Authorization and the relevant licenses according to the regulations and applicable legislation. The relevant authorities will regulate the development to ensure all the measures are in place and carried out in the correct manner.

As the services and natural resources for the application site will be protected and regulated on a regular basis the neighbouring property owners can feel safe in knowing that their ground water will be pollution free. The services and infrastructure will be upgraded and the security will be improved which will be beneficiary not only for the residents but also to the adjacent surrounding property owners.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The advantages that the proposed mixed-use development will have for the local community include job creation, lower fuel costs; less trips on already damaged roads; optimum utilization of services; community will have the luxury of enjoying various community facilities in close proximity of their homes; higher rates and taxes payable to the involved local authority; and higher levies payable to the estate management, which will assist with the establishment and management of high quality services and infrastructure.

The proposed development will offer an economic turnover as it will provide various employment opportunities to a number of skilled, semi-skilled and unskilled employees during the construction and operational phase.

It is also important to legalize the development through the correct procedures as the future of the residents is not secured as is. Many pensioners reside there and a lot of money was invested into the development. These people are really concerned about their future because if this development is denied they will have nowhere else to go.

The social wellbeing of the people plays a significant role as they want assurance and clarity on their future. When this development is legalized and formulated in the correct manner and the correct procedures are followed the development will have certain restrictions and regulations whereby the residents should abide by. This will ensure that the residents will manage and maintain the natural resources in the correct manner and insure that the groundwater will not be depleted.

9. DECLARATIONS

The Applicant

I, **Jan Groenewald on behalf of Kleinfontein Boerebelange Koöperasie Beperk,** declare that I -

- am[1], the applicant in this application for **Kleinfontein Settlement;**
- have appointed an environmental assessment practitioner to act as the independent environmental assessment practitioner for this application;
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Environmental Impact Assessment Regulations, 2010, including but not limited to –
  - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
  - costs incurred in respect of the undertaking of any process required in terms of the Regulations;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the Regulations;
  - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
  - the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of these Regulations and will take reasonable steps to verify whether the EAP complies with the Regulations;
- will inform all registered interested and affected parties of any suspension of the application as well as of any decisions taken by the competent authority in this regard;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify the Government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action which the applicant or environmental assessment practitioner is responsible for in terms of these Regulations;
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to obtaining an environmental authorisation or prior to an appeal being decided in terms of these Regulations;
- will perform all other obligations as expected from an applicant in terms of the Regulations;
- all the particulars furnished by me in this form are true and correct; and
- I am aware that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Signature of the applicant[2]/ Signature on behalf of the applicant:

Kleinfontein Boerebelange Koöperasie Beperk
Name of company (if applicable):

16 OCTOBER 2012.
Date:

Signature of the Commissioner of Oaths:

16 OCTOBER 2012
Date:

Accountant
Designation:

Commissioner of Oaths Official stamp (below)

I certify that the DEPONENT has acknowledged that he/she knows and understands the contents of this affidavit, that he/she does not have any objection to taking the oath, and that he/she considers it to be binding on his/her conscience, and which was sworn to and signed before me at Kleinfontein this the 16 day of Oct 2012 and that the administering oath complied with the regulation contained in Government Gazette No: 1258 of 21 July 1972, as amended.

COMMISSIONER OF OATHS
Linda Mouton
Professional Accountant (SA) - SAIPA 22894
23 B Spoorweg St. Raylon, 1001

[1] If this is signed on behalf of the applicant, proof of such authority from the applicant must be attached.
[2] If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority.

The Environmental Assessment Practitioner

I, **Lizelle Gregory**, declare under oath that I –

- I act as the independent environmental practitioner for this application **Kleinfontein Settlement**;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

For Basic Assessment applications I further declare under oath that:

- I will fix the site notice(s) in a conspicuous place, on the property(ies) where it is intended to undertake the activity(ies);
- I will place a notice in the required newspaper(s);
- I will provide the following with all the project information and give I&AP's an opportunity to register as an I&AP
    - landowners and occupiers of adjacent land
    - landowners and occupiers of land within 100 metres of the boundary of the property
    - the ward councillor
    - any organisation that represents the community in the area of the application
    - the municipality which has jurisdiction over the area in which the proposed activity will be undertaken
    - any organ of state that may have jurisdiction over any aspect of the activity of the applicant's intention to submit an application to the competent authority; and
- I will include on the register all persons as required per Regulation 55 (1) (c);
- The Reports as submitted will contain the same information (including layout, project design and mitigation) as provided to the registered I&APs for comment; and
- All issues raised by the I&APs during the public participation process will be included in the Comments and Response Report as attached.

Signature of the Environmental Assessment Practitioner:

Bokamoso Landscape Architects and Environmental Consultants CC

Name of Company:

24/10/2012

Date:

Signature of the Commissioner of Oaths:

24/10/2012

Date:

WILLEM JACOBUS MARX
COMMISSIONER OF OATHS
36 LEBOMBO ROAD
ASHLEA GARDENS
PRETORIA 0081
CHARTERED ACCOUNTANT OF SOUTH AFRICA

Designation:

Commissioner of Oaths Official stamp (below)

11. CHECKLIST

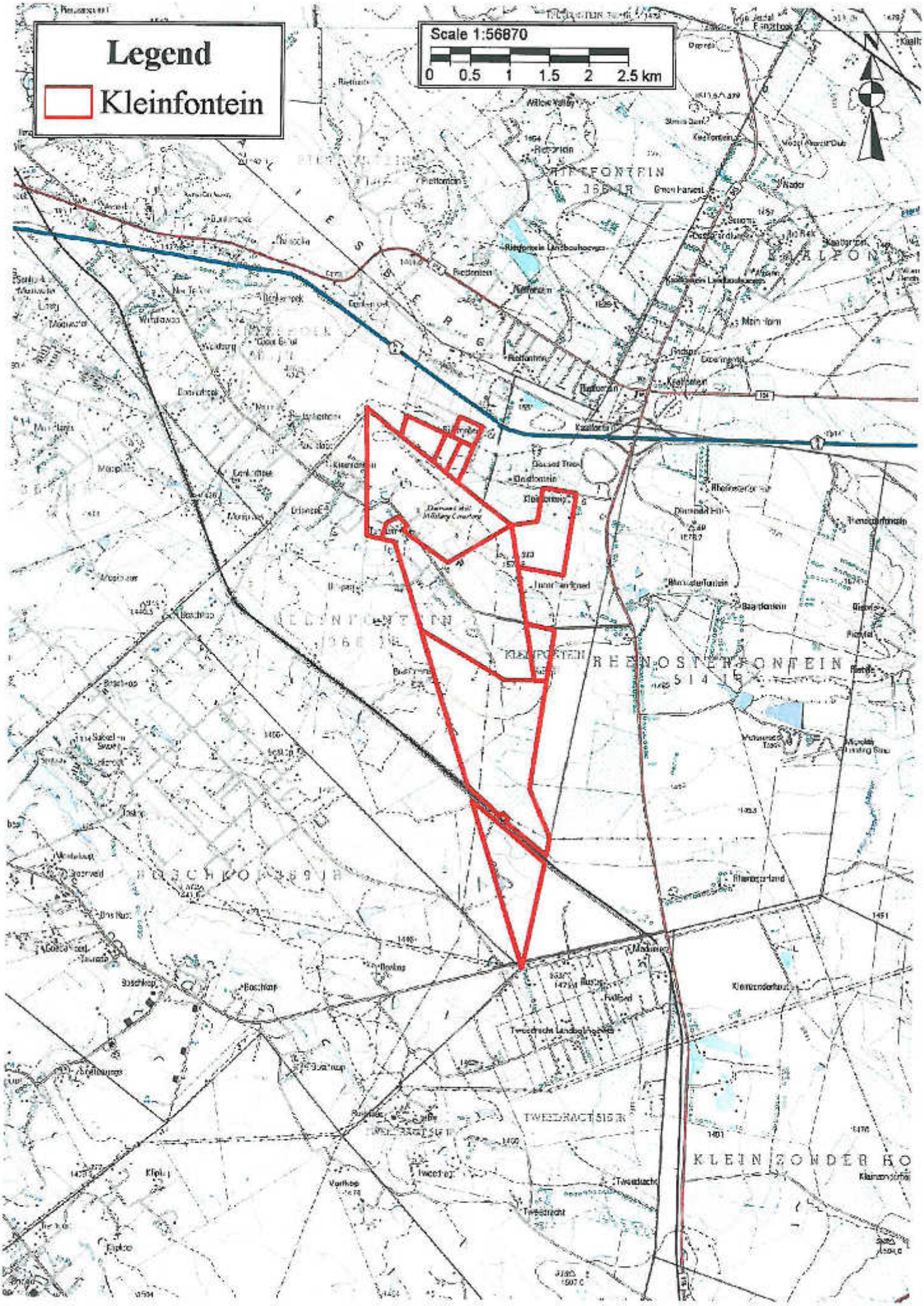
To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed; and
- The form has been signed by the applicant, by the EAP or both.

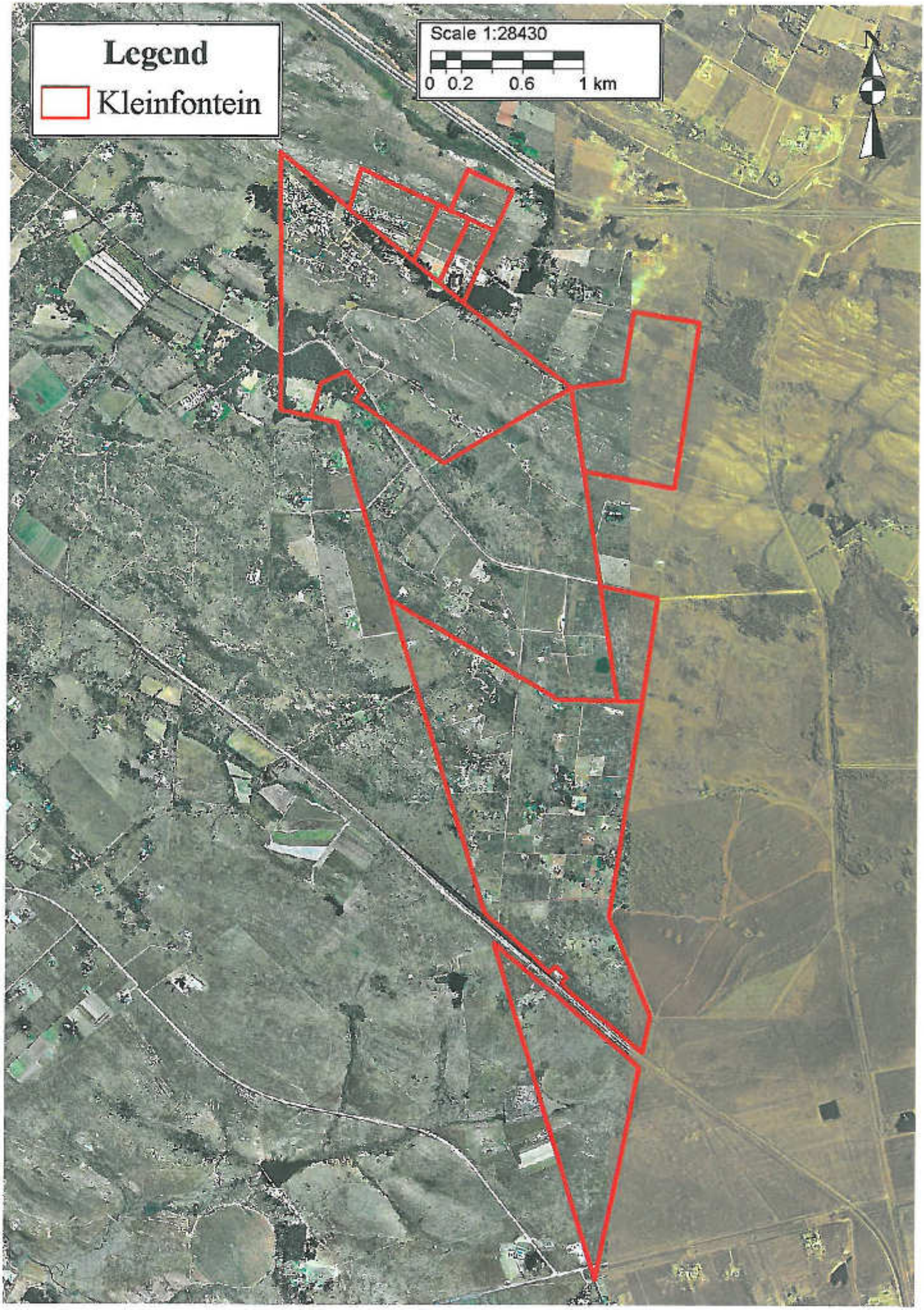
12. ANNEXURES

ANNEXURE A:

Locality Map



19 A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Kleinfontein
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ANNEXURE B:

a. Proof of notification to the Land owner;

b. Proof of receipt of such notice by the owner.

Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Wednesday, September 5, 2012 at 8:50

Co-operatives Certificate of Confirmation

Companies and Intellectual Property Commission
a member of the dti group

Registration Number: 1996 / 000006 / 24
Enterprise Name: KLEINFONTEIN BOEREBELANGE KOÖPERATIEF BEPERK

CO-OPERATIVE INFORMATION

Registration Number	1996 / 000006 / 24
Enterprise Name	KLEINFONTEIN BOEREBELANGE KOÖPERATIEF BEPERK
Registration Date	24/05/1996
Business Start Date	24/05/1996
Enterprise Type	Primary Co-Operative
Enterprise Status	In Business
Financial Year End	February
Tax Number	
Description of Principal Business	HOUSING ACTIVITES

Addresses	POSTAL ADDRESS	ADDRESS OF REGISTERED OFFICE
	P.O. BOX 925 RAYTON 1001	ADMIN KANTOOR UIT EN TUIS SENTRUM KLEINFONTEINWEG KLEINFONTEIN 1001
Tax Number		
Telephone Number (and code)	012 8021583	
Fax Number (and code)	012 8021584	
Email Address	KLEINADMIN@KLEINFONTEIN.NET	

DETAILS OF AUDITOR / ACCOUNTING OFFICER

Name	
Membership/Practice No	
Profession	
Postal Address	
Telephone Number	
Fax Number	
Email Address	
Cell Number	
Appointment Date	

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Co-operatives
Private Bag x237
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
Contact Centre (International): +27 12 394 9500

21A

Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Wednesday, September 5, 2012 at 8:50

Companies and Intellectual Property Commission
a member of the dti group

Co-operatives Certificate of Confirmation

Registration Number: 1998 / 000005 / 24
Enterprise Name: KLEINFONTEIN BOEREBELANGE KOÖPERATIEF BEPERK

ACTIVE DIRECTORS & FOUNDING MEMBERS

Surname and First Names	Type	ID Number	Appointment Date	Address
GROENEWALD, JAN JURGENS	Director	4512255024085	24/05/1998	Postal: P.O. BOX 900, RAYTON, 1001 Residential: 1 KLEINFONTEINWEG, PLAAS KLEINFONTEIN, 365 JR, DISTICT CULLINAN, 1001
PRETORIUS, JOHANNES LOUIS MAY	Director	4009135023080	24/05/1998	Postal: P.O. BOX 1135, RAYTON, 1001 Residential: ROOIBOK 5, WILDPARK, KLEINFONTEIN 368 JR, DIST CULLINAN, 1001
BARRINGTON, THEUNIS LOUIS	Director	7010165250087	24/05/1998	Postal: P.O. BOX 1633, RAYTON, 1001 Residential: BLESBOK 7, WILDPARK, KLEINFONTEIN, DIST CULLINAN, 1001
DU PREEZ, PIETER HENDRIK	Director	3203145011083	24/05/1998	Postal: P.O. BOX 1286, RAYTON, 1001 Residential: TROUPANT 12, KLEINFONTEIN 368 JR, DIST KULLINAN, 1001
HAASBROEK, ANDRIES CORNELIUS	Director	5608295004084	24/05/1998	Postal: P.O. BOX 1235, RAYTON, 1001 Residential: ROOIHARTBEES 5, KLEINFONTEIN 368 JR, DIST. CULLINAN, 1001
MEDLEN, CONSTANCE ELIZABETH	Director	4312020014085	24/05/1998	Postal: P.O. BOX 722, RAYTON, 1001 Residential: BOSBOK 3, WILDPARK, KLEINFONTEIN 368 JR, DIST CULLINAN, 1001
ELS, CHRISTIAN ANDRIES	Director	4007255009087	24/05/1998	Postal: P.O. BOX 845, RAYTON, 1001 Residential: BERGWAGTER 2, KLEINFONTEIN 365 JR, DIST CULLINAN, 1001
KOEKEMOER, DANIËL MARTHINUS	Director	4307065069055	24/05/1998	Postal: P.O. BOX 1327, RAYTON, 1001 Residential: KAREEPARK 46, KLEINFONTEIN 365 JR, DIST CULLINAN, 1001

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Co-operatives
Private Bag x237
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
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Certificate issued by the Commissioner of Companies & Intellectual Property Commission on Wednesday, September 5, 2012 at 8:50

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a member of the dti group

Co-operatives Certificate of Confirmation

Registration Number: 1996 / 000006 / 24
Enterprise Name: KLEINFONTEIN BOEREBELANGE KOÖPERATIEF BEPERK

SKARADIS, STEFAN	Director	6410285032080	24/05/1996	Postal: P.O. BOX 595, PRETORIA, 0001 Residential: BERGWAGTER 2, KLEINFONTEIN 368 JR, DIST CULLINAN, 1001
DE BEER, DANIËL FERDINAND BOSMAN	Director	6807245139086	24/05/1996	Postal: 96 - 12DE STRAAT OOS, MENLOPARK, 0081 Residential: 96 - 12DE STRAAT OOS, MENLOPARK, 0081
FREYER, BONO	Director	5804275046084	24/05/1996	Postal: P.O. BOX 1832, RAYTON, 1001 Residential: KWAKSINGEL 33, KLEINFONTEIN 368 JR, DIST. CULLINAN, 1001
PRINS, CATHERINE PATRICIA	Director	6105040005085	24/05/1996	Postal: P.O. BOX 134, RAYTON, 1001 Residential: RIBBOK STRAAT 2, KLEINFONTEIN 368 JR, DIST. CULLINAN, 1001
GROENEWALD, JAN JURGENS	Founding Member	4512255024085	24/05/1996	Postal: 1 KLEINFONTEINWEG, PLAAS KLEINFONTEIN, 368 JR DISTICT CULLINAN, 1001 Residential: PO BOX 900, RAYTON, 1001
PRETORIUS, JOHANNES LOUIS MAY	Founding Member	4009135023080	24/05/1996	Postal: ROOIBOK 5, WILDPARK, KLEINFONTEIN 368 JR, DIST CULLINAN, 1001 Residential: P.O. BOX 1135, RAYTON, 1001

Physical Address
the dti Campus - Block F
77 Meintjies Street
Sunnyside 0001

Postal Address: Co-operatives
Private Bag x237
Pretoria
0001

Docex: 256
Web: www.cipc.co.za
Contact Centre: 086 100 2472 (CIPC)
Contact Centre (International): +27 12 394 9500

21C

ANNEXURE C:

List of all organs of state and State Departments of where the draft report will be submitted, their full contact details and contact person.

List of all Organs of State and State Departments of where the Draft Report will be submitted:

Local authority in whose jurisdiction the proposed activity will fall:	**City of Tshwane Metropolitan Municipality**		
Contact person:	Livhuwani Siphuma		
Postal address:	Private Bag X1454, Pretoria		
Postal code:	0001	**Cell:**	-
Telephone:	(012) 358 8871	**Fax:**	
E-mail:	livhuwanis@tshwane.gov.za		

Local authority in whose jurisdiction the proposed activity will fall:	**Department of Water Affairs**		
Contact person:	Mr. Justice Maluleke		
Postal address:	Private Bag X 313, Pretoria		
Postal code:	0001	**Cell:**	-
Telephone:	(012) 336 6507	**Fax:**	(012) 336 8311
E-mail:	MalulekeJ@dwa.gov.za		

Local authority in whose jurisdiction the proposed activity will fall:	**PHRAG**		
Contact person:	Maphata Ramphele		
Postal address:	38 Rissik Street, Johannesburg		
Postal code:	2000	**Cell:**	-
Telephone:	011-355 2572	**Fax:**	011-355 2513
E-mail:	Maphata.ramphele@gauteng.gov.za		

Local authority in whose jurisdiction the proposed activity will fall:	**Eskom Northern Region**		
Contact person:	Annelien Potgieter		
Postal address:	P.O. Box 36099, Menlopark, Pretoria		
Postal code:	0102	**Cell:**	-
Telephone:	012-421 3170	**Fax:**	012-421 3757
E-mail:	central@eskom.co.za		

Local authority in whose jurisdiction the proposed activity will fall:	**SANRAL**
Contact person:	

Postal address:	Private Bag x 17, Lynnwood Ridge		
Postal code:	0040	**Cell:**	-
Telephone:	012-426 6200	**Fax:**	012-348 1512
E-mail:	schmidk@nrd.co.za		

Local authority in whose jurisdiction the proposed activity will fall:	**Spoornet**		
Contact person:	Daniel Ramokone		
Postal address:	Private Bag x 47, Johannesburg		
Postal code:	2000	**Cell:**	083 276 3763
Telephone:	011-774 4996	**Fax:**	011-570 7490
E-mail:	Daniel.ramokone@transnet.net		

ANNEXURE D:

Property description list.

Portions 38, 90, 96 and the Remaining Extent of the Farm Kleinfontein 368 JR and on Portions 63, 67, 68 and the Remaining Extent of Portion 14 of the Farm Donkerhoek 365 JR.

ANNEXURE E:

Current land use zonings list.

Current land use zonings list:

Agricultural Holdings

Annexure C

COPY OF CV OF LIZELLE GREGORY FROM BOKAMOSO LANDSCAPE ARCHITECTS AND ENVIRONMENTAL CONSULTANTS

Qualifications And Experience In The Field Of Environmental Planning And Management (Lizelle Gregory (Member Bokamoso)):

Qualifications:

-Qualified as ***Landscape Architect*** *at UP 1991;*
-Qualified as ***Professional Landscape Architect in 1997****;*
-A Registered Member at The ***South African Council for the Landscape Architect Profession (SACLAP)*** *with Practise Number:* ***PrLArch97078****;*
- A Registered Member at the ***International Association for Impact Assessment Practitioners (IAIA)****;*
- Qualified as an ***Environmental Auditor in July 2008*** *and also became a Member of the International Environmental Management Association (IEMAS) in 2008.*

Working Experience:

-Worked part time at Eco-Consult – 1988-1990;
-Worked part time at ***Plan Associates as Landscape Architect in training*** *– 1990-1991;*
-Worked as Landscape Architect at ***Environmental Design Partnership (EDP)*** *from 1992 - 1994*
-Practised under ***Lizelle Gregory Landscape Architects*** *from 1994 until 1999;*
*-****Lectured*** *at Part-Time at* ***UP*** *(1999) – Landscape Architecture and* ***TUT*** *(1998- 1999)- Environmental Planning and Plant Material Studies;*
-Worked as ***part time Landscape Architect and Environmental Consultant at Plan Associates*** *and* ***managed their environmental division for more that 10 years*** *– 1993 – 2008 (assisted the* ***PWV Consortium*** *with various road planning matters which amongst others included environmental Scans, EIA's, Scoping reports etc.)*
-Renamed business as ***Bokamoso in 2000*** *and is the only member of Bokamoso Landscape Architects and Environmental Consultants CC;*
*-****More than 20 years experience in the compilation of Environmental Reports,*** *which amongst others included the compilation of various* ***DFA Regulation 31 Scoping Reports****, EIA's for EIA applications in terms of the applicable environmental legislation, Environmental Management Plans, Inputs for Spatial Development Frameworks, DP's, EMF's etc. Also included EIA Application on and adjacent to mining land and slimes dams (i.e. Brahm Fisherville, Doornkop)*

Qualifications And Experience In The Field Of Landscape Architecture (Lizelle Gregory (Member Bokamoso)):

Landscape Architecture:

-Compiled landscape and rehabilitation plans for more than 22 years.

The most significant landscaping projects are as follows:
-Designed the Gardens of the Witbank Technicon (a branch of TUT). Also supervised the implementation of the campus gardens (2004);
-Lizelle Gregory was the Landscape Architect responsible for the paving and landscape design at the UNISA Sunnyside Campus and received a Corobrick Golden Award for the paving design at the campus (1998-2004);
-Bokamoso assisted with the design and implementation of a park for the City of Johannesburg in Tembisa (2010);
-The design and implementation of the landscape gardens (indigenous garden) at the new Coca-Cola Valpre Plant (2012-2013);
-Responsible for the rehabilitation and landscaping of Juksei River area at the Norwood Shopping Mall (johannesburg) (2012-2013);
-Designed and implemented a garden of more than 3,5ha in Randburg (Mc Arthurpark). Bokamoso also seeded the lawn for the project (more than 2,5 ha of lawn successfully seeded) (1999);
-Bokamoso designed and implemented more than 800 townhouse complex gardens and submitted more than 500 Landscape Development Plans to CTMM for approval (1995 – 2013);
-Assisted with Landscape Designs and the Masterplan at Eco-Park (M&T Developments) (2005-2011);
-Bokamoso designed and implemented an indigenous garden at an office park adjacent to the Bronberg. In this garden it was also necessary to establish a special garden for the Juliana Golden Mole. During a recent site visit it was established that the moles are thriving in this garden. Special sandy soils had to be imported and special indigenous plants had to be established in the natural section of the garden.

-Lizelle Gregory also owns her own landscape contracting business**. For the past 20 years she trained more than 40 PDI jobless people (sourced from a church in Mamelodi)** to become landscape contracting workers. All the workers are (on a continuous basis) placed out to work at nurserys and other associated industries;
-Over the past 20 years the Bokamoso team compiled more than 800 landscape development plans and also implemented most of the gardens. Bokamoso also designed and implemented the irrigation for the gardens (in cases where irrigation was required). Lizelle regarded it as important to also obtain practical experience in the field of landscape implementation.

Landscape Architects &
Environmental consultants

P.O.BOX 11375
Maroelana
0161

Tel: (012) 346 3810
Fax: (086) 570 5559

E-mail: lizelleg@mweb.co.za
Website: www.bokamoso.net

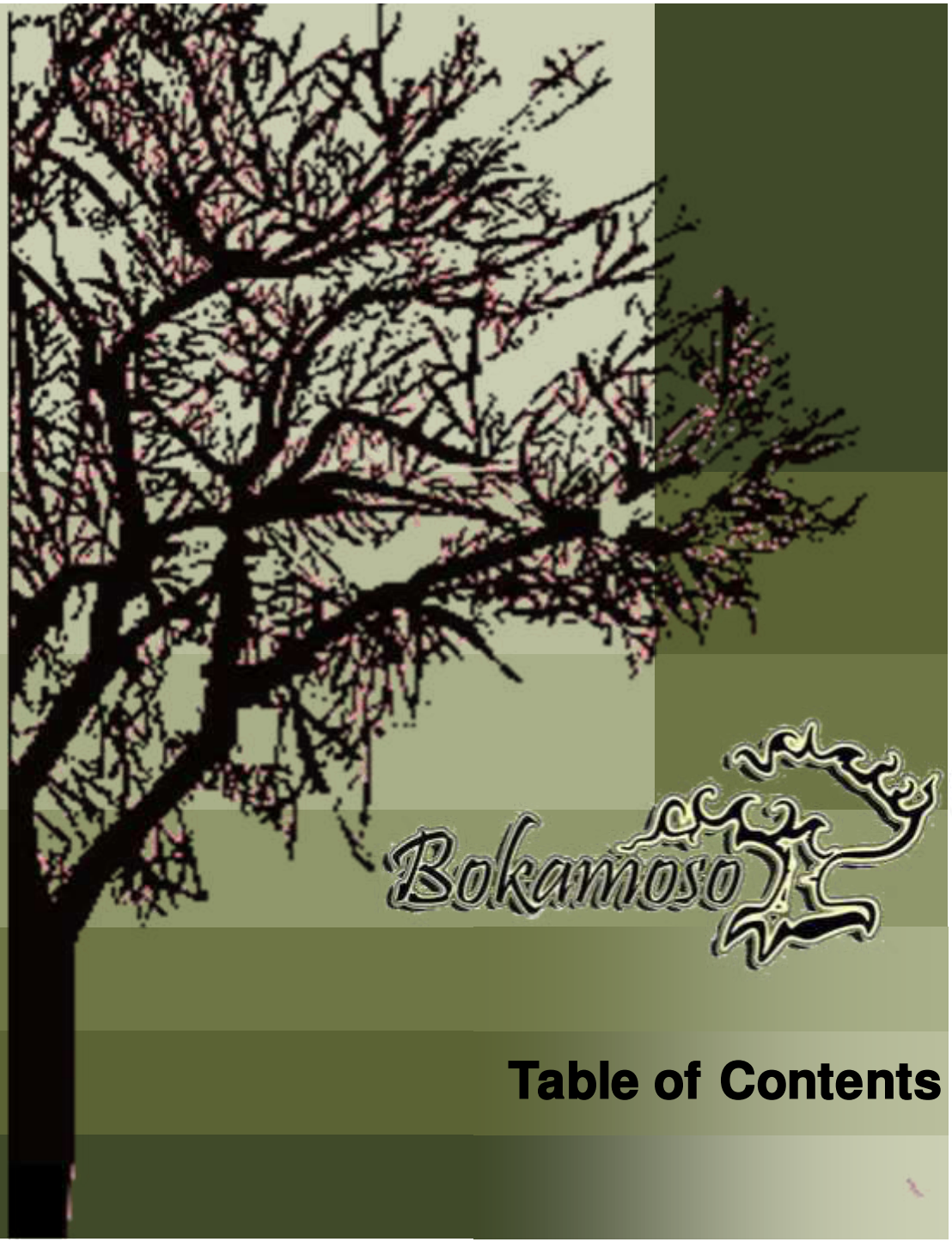
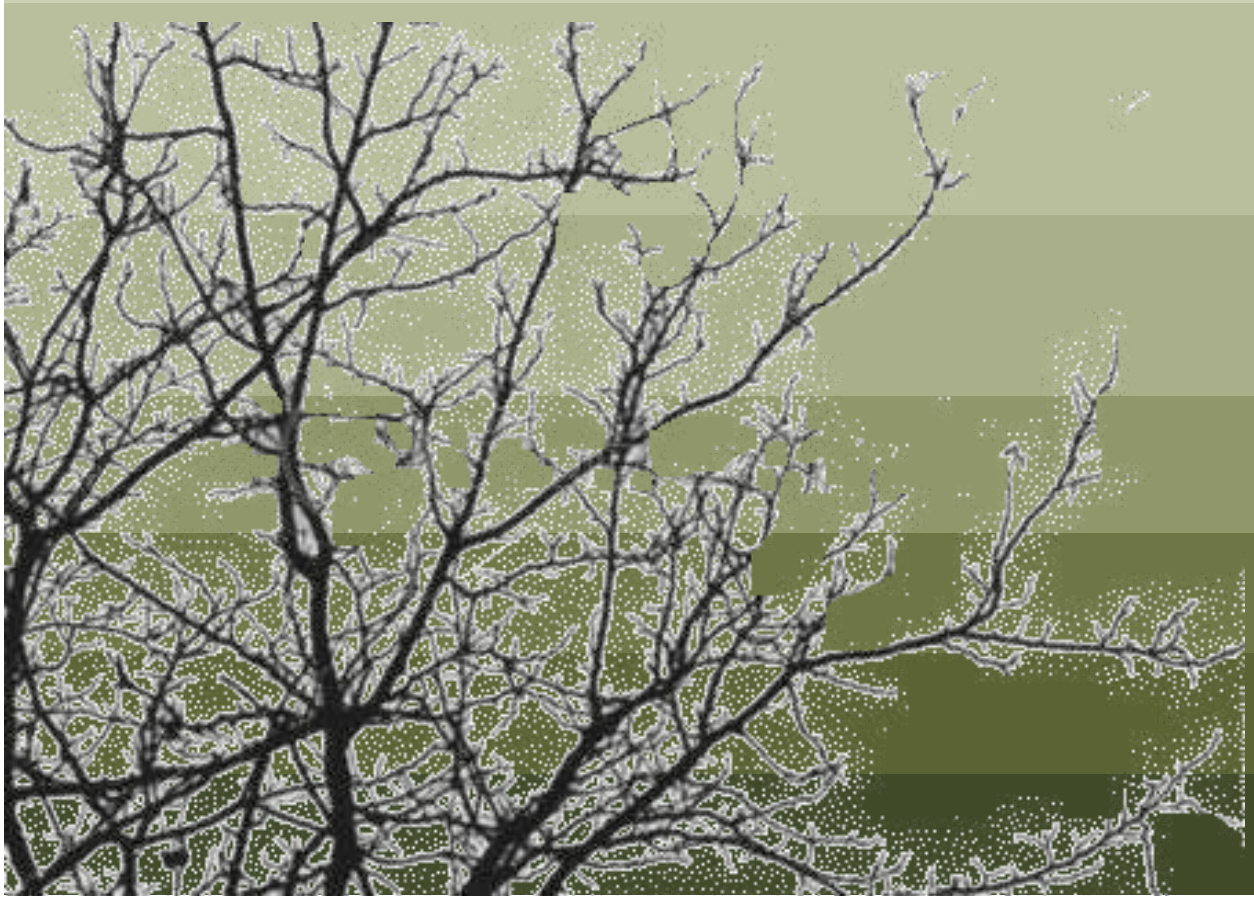


Table of Contents

Bokamoso specialises in the fields of Landscape Architecture and all aspects of Environmental Management and Planning. Bokamoso was founded in 1992 and has shown growth by continually meeting the needs of our clients. Our area of expertise stretches throughout the whole of South Africa. Our projects reflect the competence of our well compiled team. The diversity of our members enables us to tend to a variety of needs. Our integrated approach establishes a basis for outstanding quality. We are well known to clients in the private, commercial as well as governmental sector.

At Bokamoso we stand on a firm basis of environmental investigation in order to find unique solutions to the requirements of our clients and add value to their operations.



Bokamoso

01 Executive Summary

011 Company Overview

Vision:

At Bokamoso we strive to find the best planning solutions by taking into account the functions of a healthy ecosystem. Man and nature should be in balance with each other.

Mission:

We design according to our ethical responsibility, take responsibility for successful completion of projects and constitute a landscape that contributes to a sustainable environment. We add value to the operations of our clients and build long term relationships that are mutually beneficial.

Values:

Integrity

Respect

Bokamoso

Bokamoso stands on the basis of fairness. This include respect within our multicultural team and equal opportunities in terms of gender, nationality and race.

We have a wide variety of projects to tend to, from complicated reports to landscape installation. This wide range of projects enables us to combine a variety of professionals and skilled employees in our team.

Bokamoso further aids in the development of proficiency within the working environment. Each project, whether in need of skilled or unskilled tasks has its own variety of facets to bring to the table.

We are currently in the process of receiving our BEE scorecard. We support transformation in all areas of our company dynamics.

Bokamoso

03 Human Resources

031 Employment Equity

Lizelle Gregory (100% interest)

Lizelle Gregory obtained a degree in Landscape Architecture from the University of Pretoria in 1992 and passed her board exam in 1995.
Her professional practice number is PrLArch 97078.

Ms. Gregory has been a member of both the Institute for Landscape Architecture in South Africa (ILASA) and South African Council for the Landscape Architecture Profession (SACLAP), since 1995.

Although the existing Environmental Legislation doesn't yet stipulate the academic requirements of an Environmental Assessment Practitioner (EAP), it is recommended that the Environmental Consultant be registered at the International Association of Impact Assessments (IAIA). Ms. Gregory has been registered as a member of IAIA in 2007.

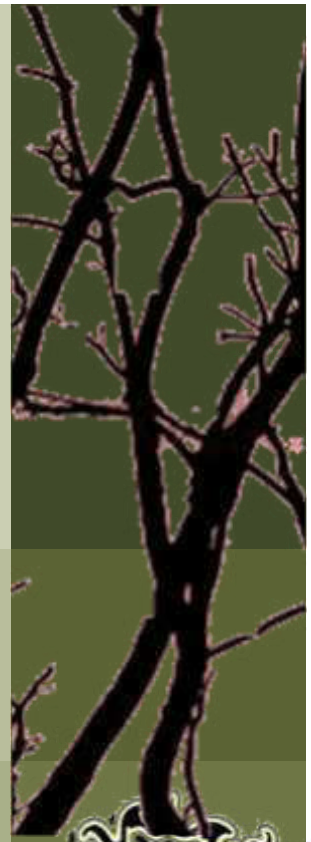
Ms. Gregory attended and passed an International Environmental Auditing course in 2008.
She is a registered member of the International Environmental Management and Assessment Council (IEMA).

She has lectured at the Tshwane University of Technology (TUT) and the University of Pretoria (UP). The lecturing included fields of Landscape Architecture and Environmental Management.

Ms. Gregory has more than 20 years experience in the compilation of Environmental Evaluation Reports:
Environmental Management Plans (EMP);
Strategic Environmental Assessments;
All stages of Environmental input ;
EIA under ECA and the new and amended NEMA regulations and various other Environmental reports and documents.

Ms. Gregory has compiled and submitted more than 600 Impact Assessments within the last 5-6 years. Furthermore, Ms. L. Gregory is also familiar with all the GDARD/Provincial Environmental policies and guidelines. She assisted and supplied GAUTRANS/former PWV Consortium with Environmental input and reports regarding road network plans, road determinations, preliminary and detailed designs for the past 12 years.

Consulting



Anè Agenbacht

Introduction to Sustainable Environmental Management—An overview of Principles, Tools,& Issues (Potch 2006)
Leadership Training School (Lewende Woord 2010)
BA Environmental Management (UNISA 2011)
PGCE Education (Unisa 2013) - CUM LAUDE
Project Manager
More than 10 years experience in the compilation of various environmental reports

Mary-Lee Van Zyl

Msc. Plant Science (UP)
BSc (Hons) Plant Science (UP)
BSc Ecology (UP)
2years 7months working experience in the Environmental field
Specialises in ECO works, Basic Assessments, EIA's, and Flora Reports
Compilation of various Environmental Reports

Dashentha Naidoo

BA Honours Degree in Environmental Management (UNISA) - CUM LAUDE
Bachelor Social Science in Geography & Environmental Management (UKZN)
More than 4 years experience in WUL Application& Integrated Environmental Management within water resource management.
Senior Environmental Practitioner & Water Use Licences Consultant
Specialises in Water Use License & Compilation of various Env. Reports

Ben Bhukwana

BSc Landscape Architecture (UP)
More than 5 years experience in the field of Landscape Architecture (Design, Construction, and Implementation).
Specialises in Landscape Design, ECO, Rehabilitation Plans and Compilation Basic Assessment Reports
Compilation of Tender documents

Anton Nel

B-Tech Landscape Technology (TUT)
N Dip Landscape Technology (TUT)
Hazardous Waste Management Short Course
2 years experience in ECO.
Specialises in Basic Assessment Reports.

Juanita de Beer

Diploma Events Management and Marketing (Damelin)
Specializes in Public relations and Public Participation Processes (3 years experience)

Alfred Thomas

CIW Foundation& Internet Marketing (IT Academy)
12 years experience in GIS and IT in general.
GIS Operator and Multimedia Specialist.

Bianca Reyneke

Applying SHE Principles and Procedures (NOSA)
Intro to SAMTRAC Course (NOSA)
SHEQ Coordinator and compilation of environmental reports
Specialises in compiling various environmental reports

Elsa Viviers

Interior Decorating (Centurion College)
(Accounting/ Receptionist) and Secretary to Lizelle Gregory

Loura du Toit

N. Dip. Professional Teacher (Heidelberg Teachers Training College)
Librarian and PA to Project Manager

Merriam Mogalaki

Administration Assistant with in-house training in bookkeeping

Landscape Contracting

Elias Maloka

Site manager overseeing landscape installations.
Irrigation design and implementation.
Landscape maintenance
18 years experience in landscape contracting works.

The contracting section compromises of six permanently employed black male workers. In many cases the team consists of up to 12 workers, depending on the quantity of work.

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01 Environmental Management Services

- Basic Assessment Reports
- EIA & Scoping Reports
- Environmental Management Plans
- Environmental Scans
- Strategic Environmental Assessments
- EMP for Mines
- Environmental Input and Evaluation of Spatial Development Frameworks
- State of Environmental Reports
- Compilation of Environmental Legislation and Policy Documents
- Environmental Auditing and Monitoring
- Environmental Control Officer (ECO)
- Visual Impact assessments
- Specialist Assistance with Environmental Legislation Issues and Appeals
- Development Process Management
- Water Use License applications to DWA
- Waste License Application

Bokamoso

04 Services

041 Consulting Services

02 Landscape Architecture

- Master Planning
- Sketch Plans
- Planting Plans
- Working Drawings
- Furniture Design
- Detail Design
- Landscape Development Frameworks
- Landscape Development Plans (LDP)
- Contract and Tender Documentation
- Landscape Rehabilitation Works

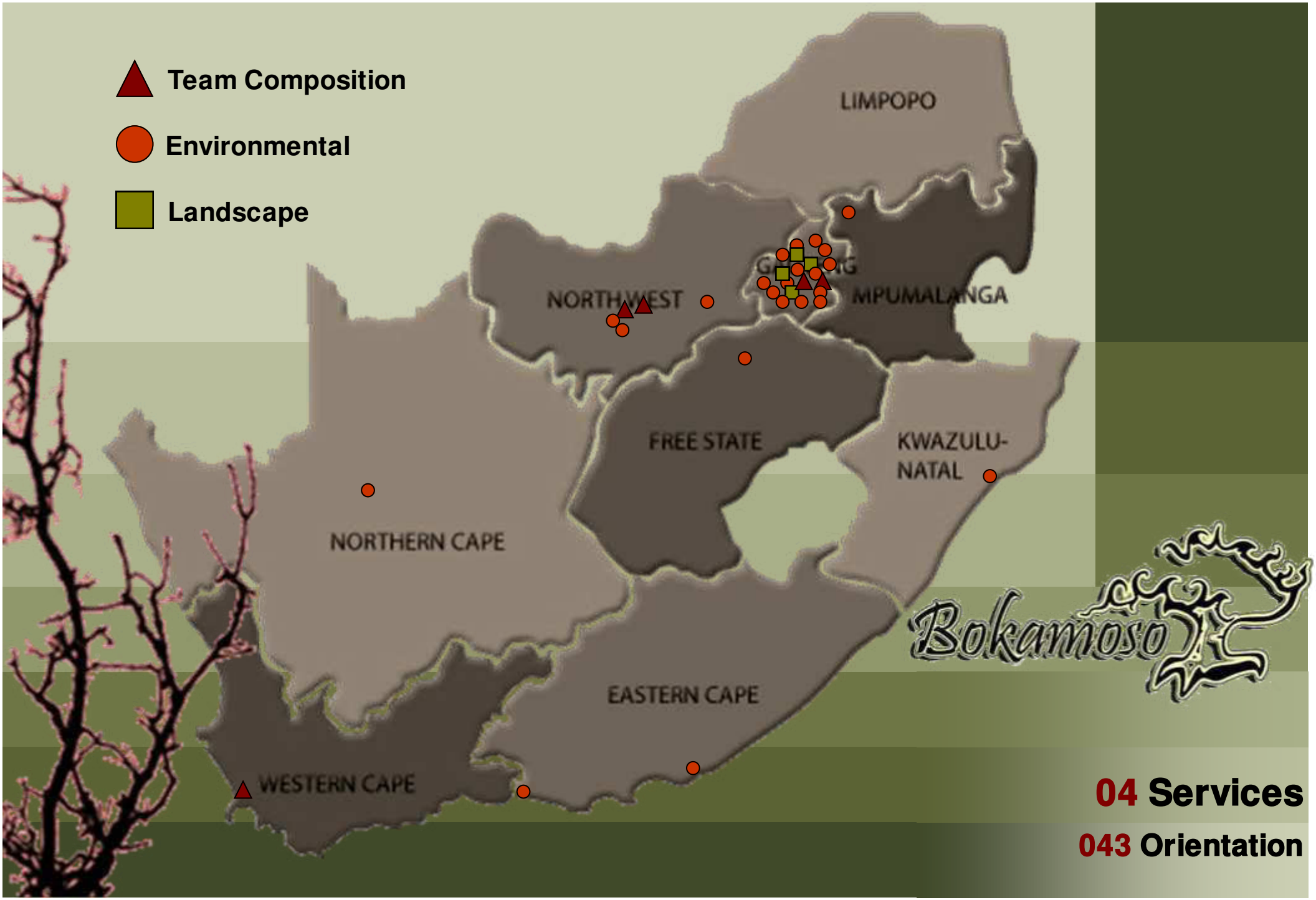
03 Landscape Contracting

Implementation of Plans for:

- Office Parks
- Commercial/ Retail / Recreational Development
- Residential Complexes
- Private Residential Gardens
- Implementation of irrigation systems

04 Services

042 Contracting Services


Team Composition
Environmental
Landscape
LIMPOPO
NORTHWEST
MPUMALANGA
FREE STATE
KWAZULU-
NATAL
NORTHERN CAPE
EASTERN CAPE
WESTERN CAPE
Bokamoso
04 Services
043 Orientation

01 Valpre Bottling Plant, Heidelberg

project

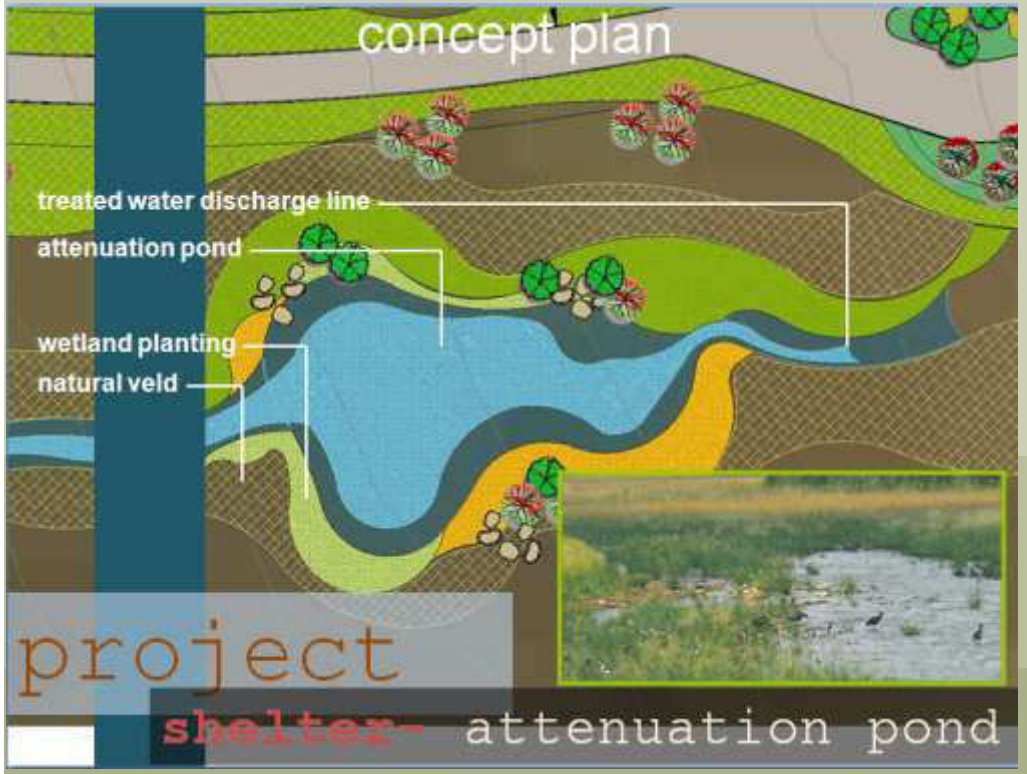
shelter- site plan

Bokamoso

05 Landscape Projects– Current

051 Commercial

01 Valpre Bottling Plant, Heidelberg



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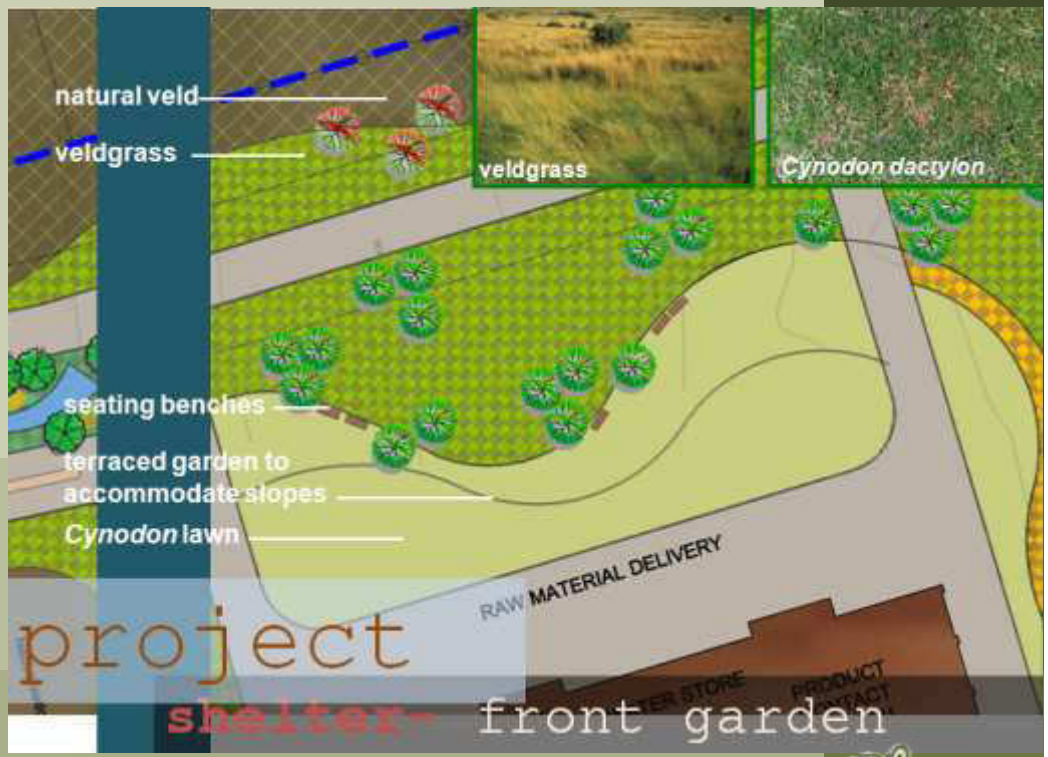
05 Landscape Projects– Current

051 Commercial

01 Valpre Bottling Plant, Heidelberg

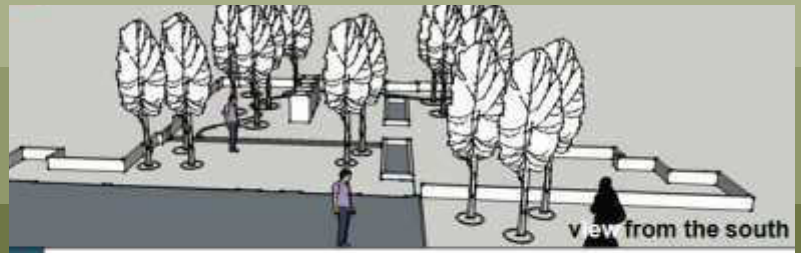


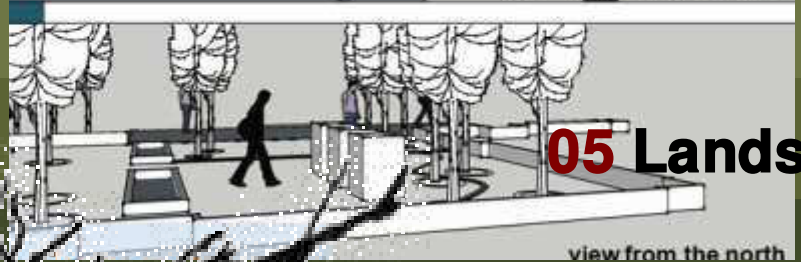
Bokamoso

05 Landscape Projects– Current

051 Commercial

01 Valpre Bottling Plant, Heidelberg





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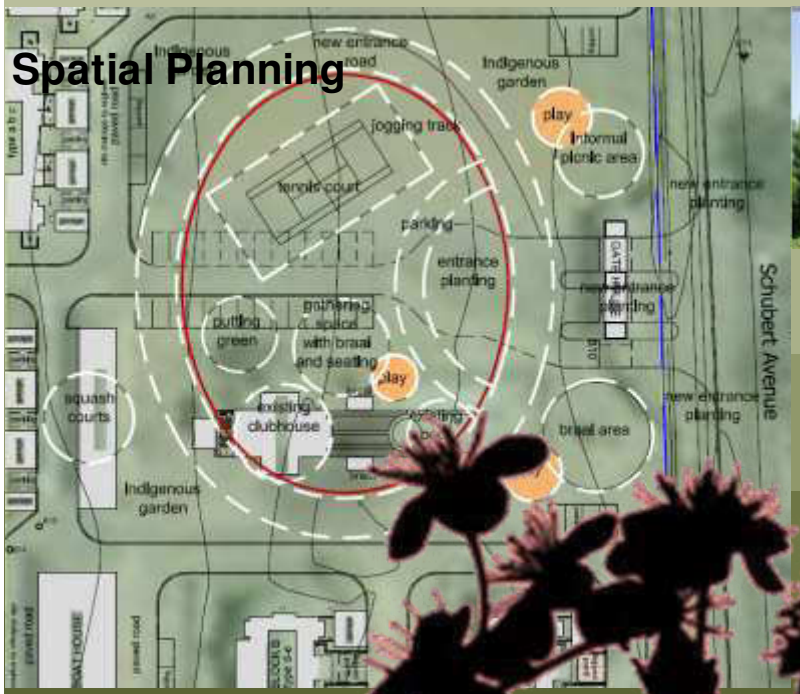
05 Landscape Projects– Current

051 Commercial

02 Melodie Waters, Hartebeespoortdam

Streetscape

Spatial Planning



Indigenous Planting

Bokamoso

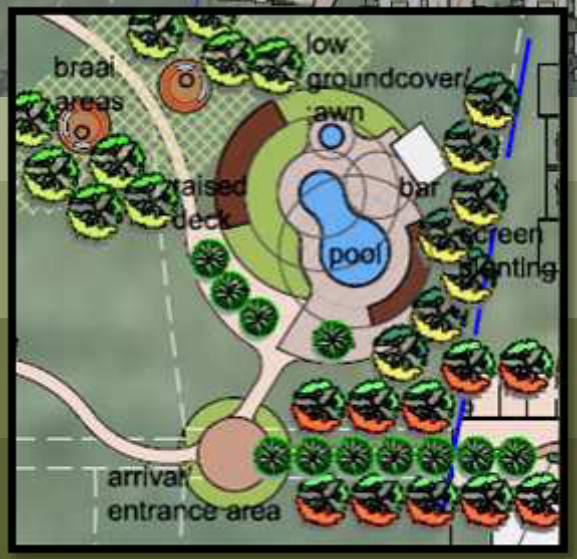
05 Landscape Projects – Current

052 Commercial/Recreational

02 Melodie waters, Hartebeestpoortdam

Development Framework

Rehabilitation



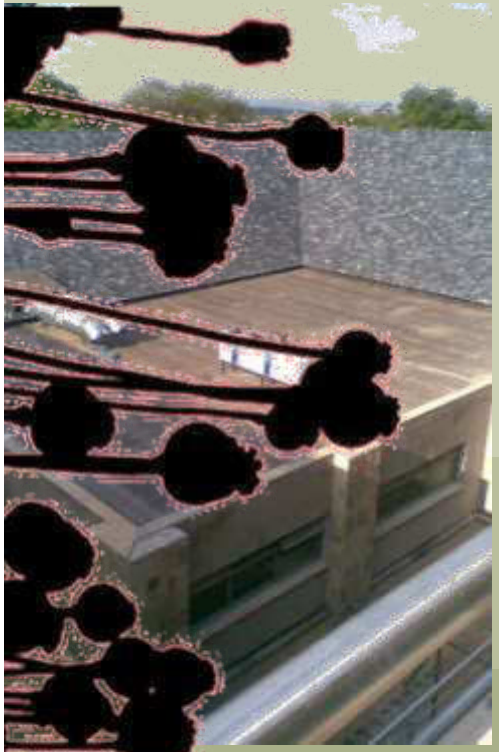
Area Layout

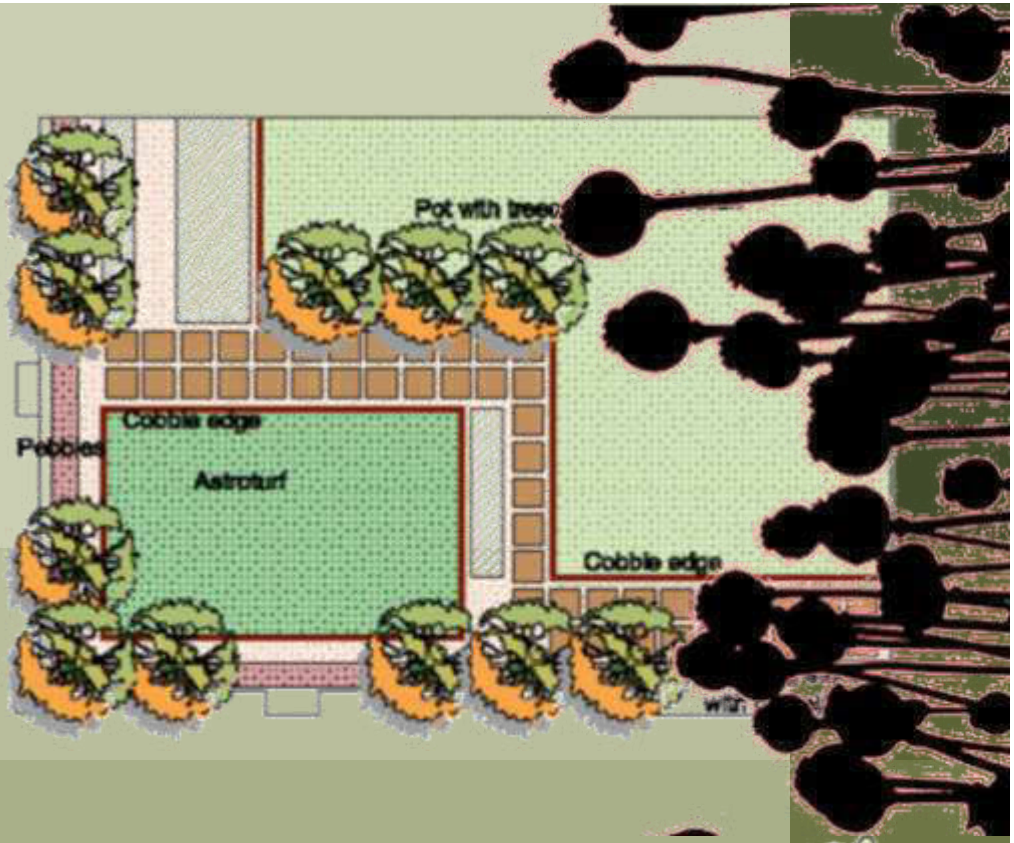
Bokamoso

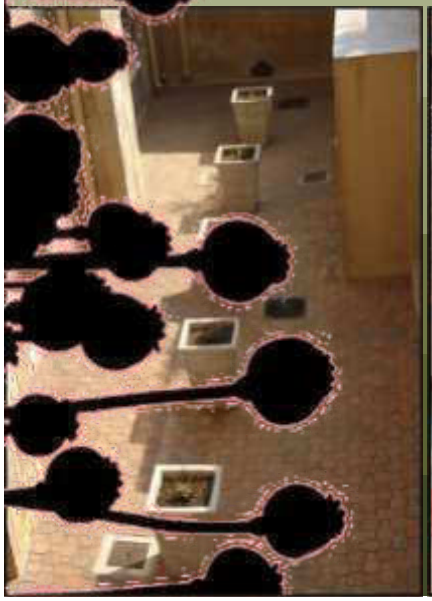
05 Landscape Projects– Current

052 Commercial/Recreational

03 Grain Building, Pretoria







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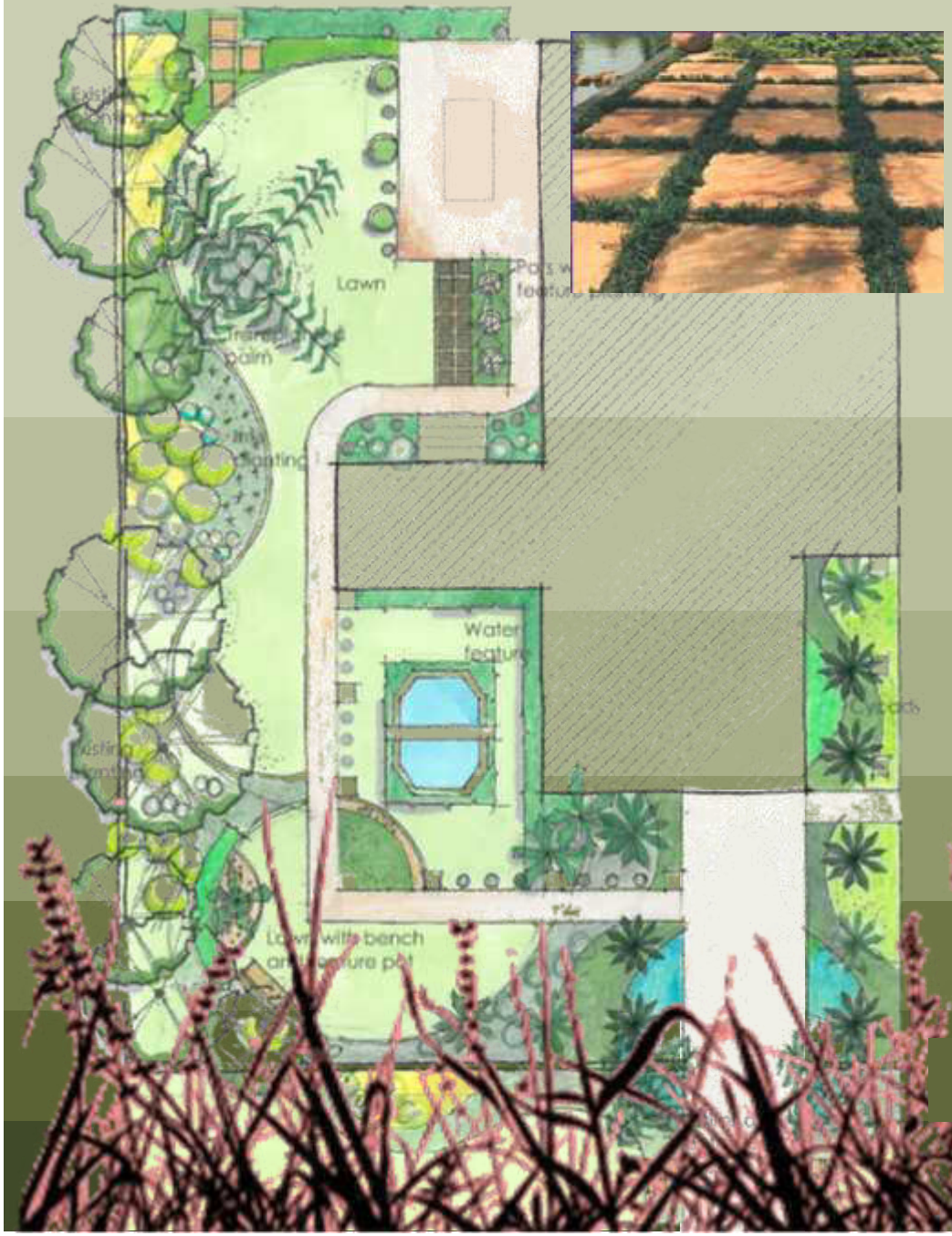
05 Landscape Projects– Completed

053 Offices

04 Ismail Dawson offices, Pretoria



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05 Landscape Projects – Conceptual

053 Offices

05 Celtic Manor, Pretoria







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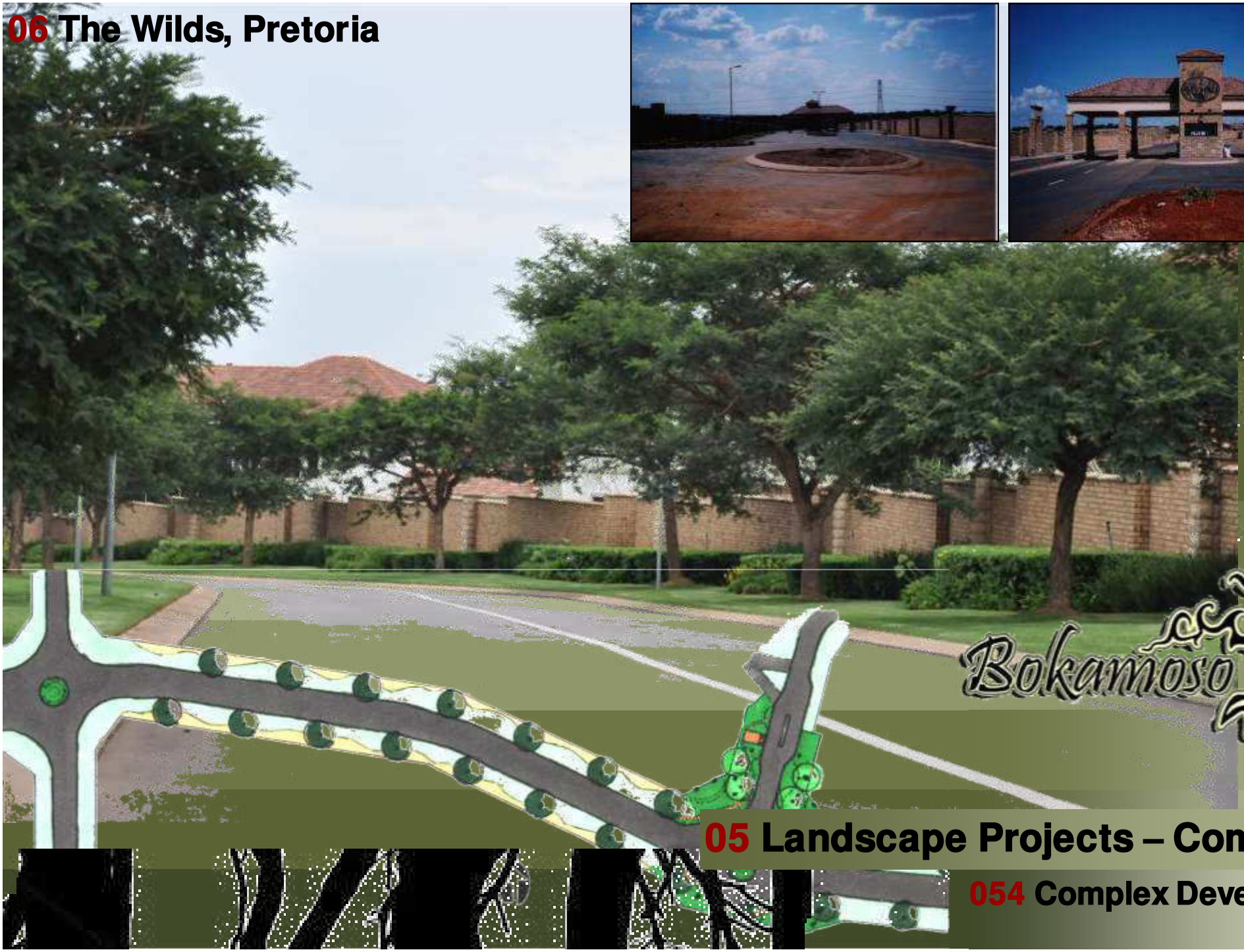
Natural Vegetation Boundary Brick Kerb Kikuyu

05 Landscape Projects - Completed

054 Complex Development

06 The Wilds, Pretoria



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05 Landscape Projects – Completed

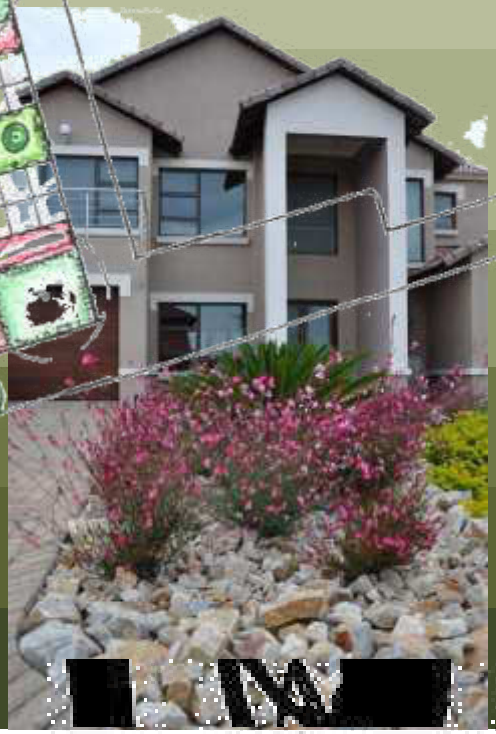
054 Complex Development

07 The Wilds, Pretoria

05 Landscape Projects – Completed

055 Residential

08 The Wilds, Pretoria

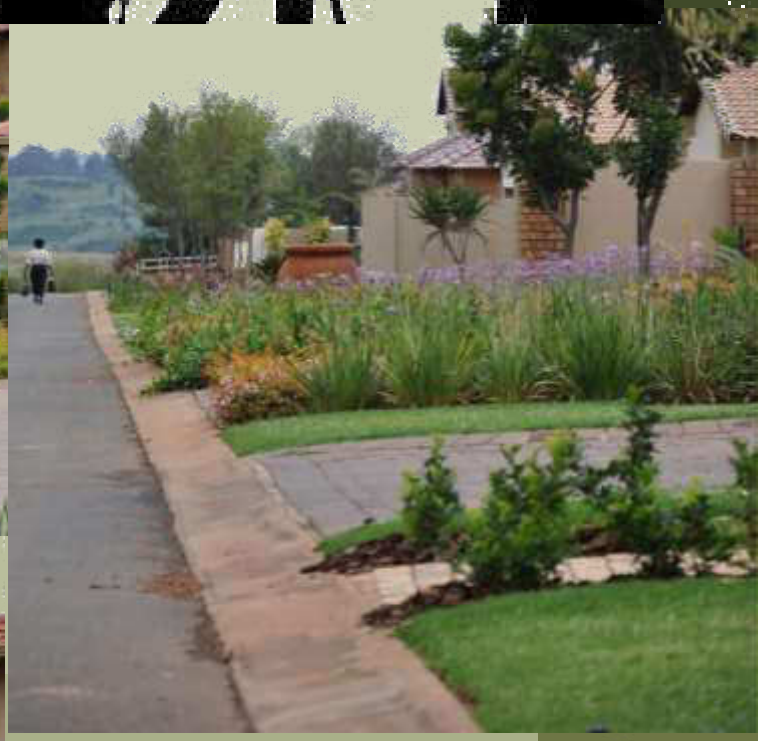


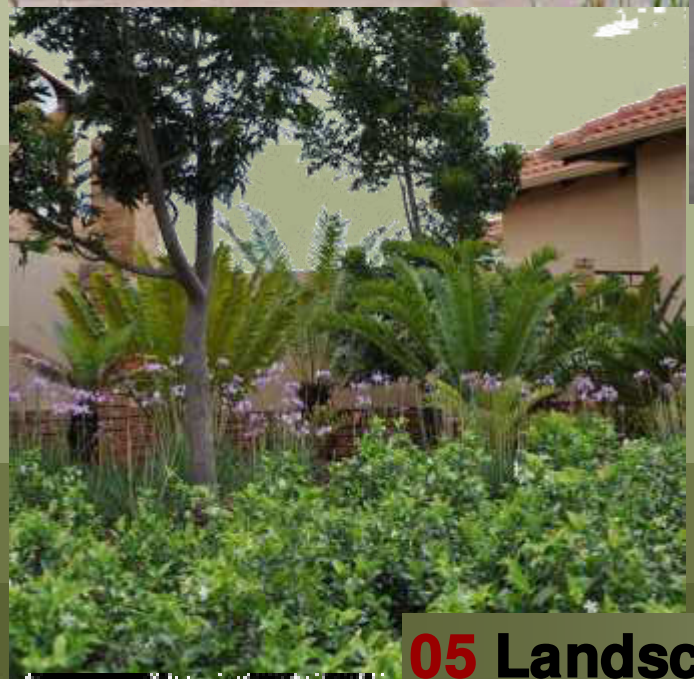
Bokamoso

05 Landscape Projects – Completed

055 Residential

09 The Wilds, Pretoria



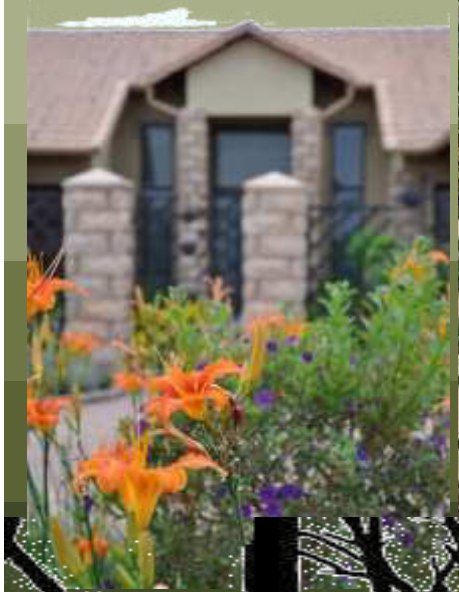


Bokamoso

05 Landscape Projects – Completed

055 Residential

010 The Wilds, Pretoria



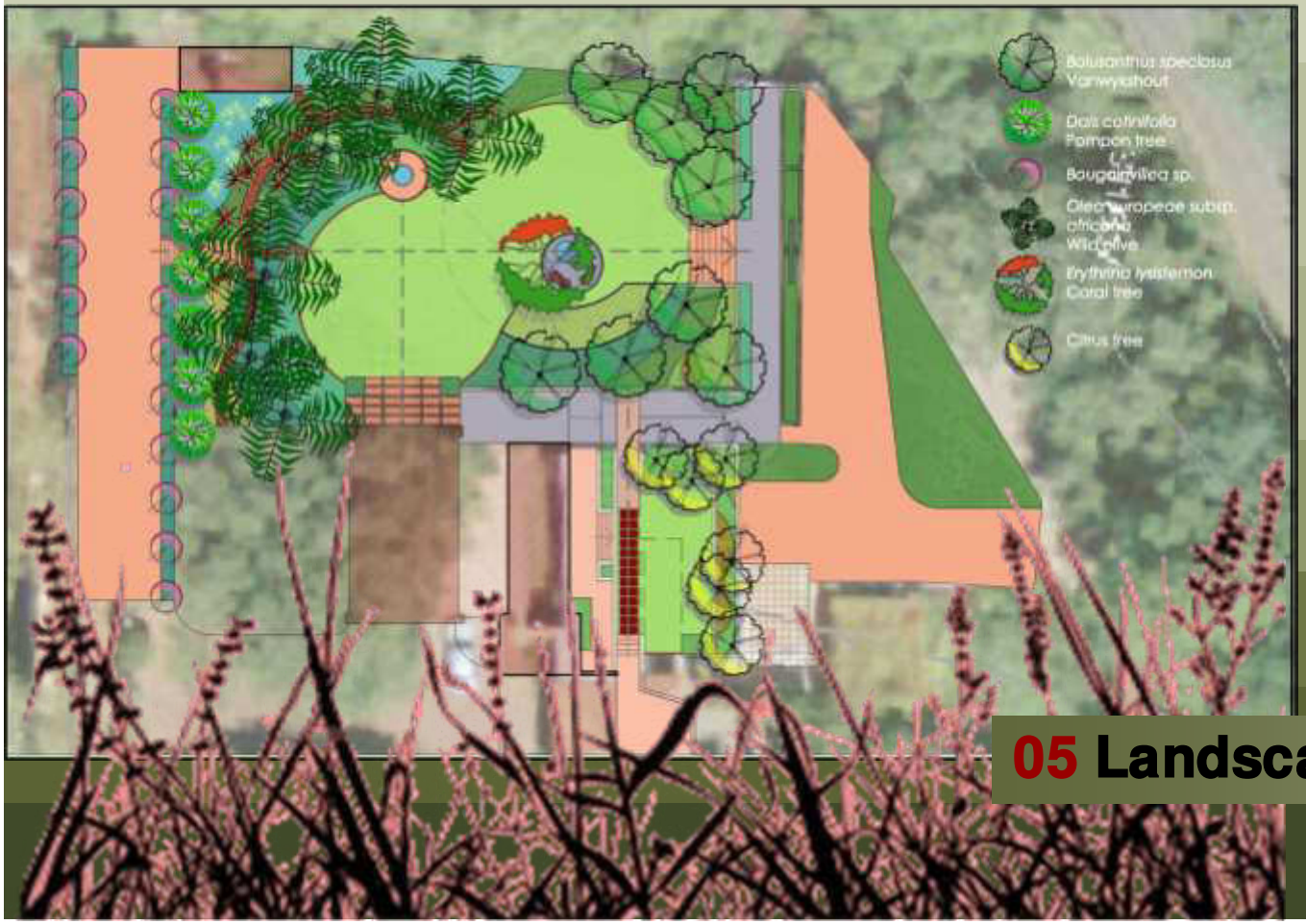
Bokamoso

05 Landscape Projects – Completed

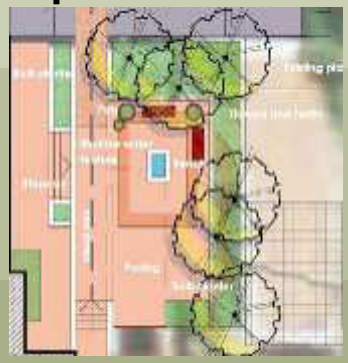
055 Residential

011 Governor of Reserve Bank's Residence, Pretoria

Plant Palette



Option 1



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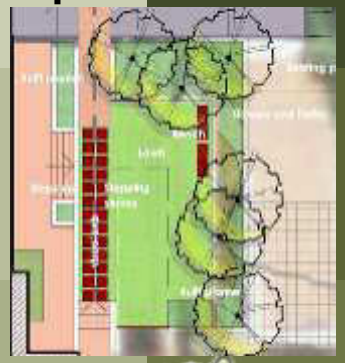


Bokamoso

05 Landscape Projects – Conceptual

055 Residential

012 House Ismail, Pretoria







Front Garden

Back Garden



Bokamoso

05 Landscape Projects - Conceptual

055 Residential

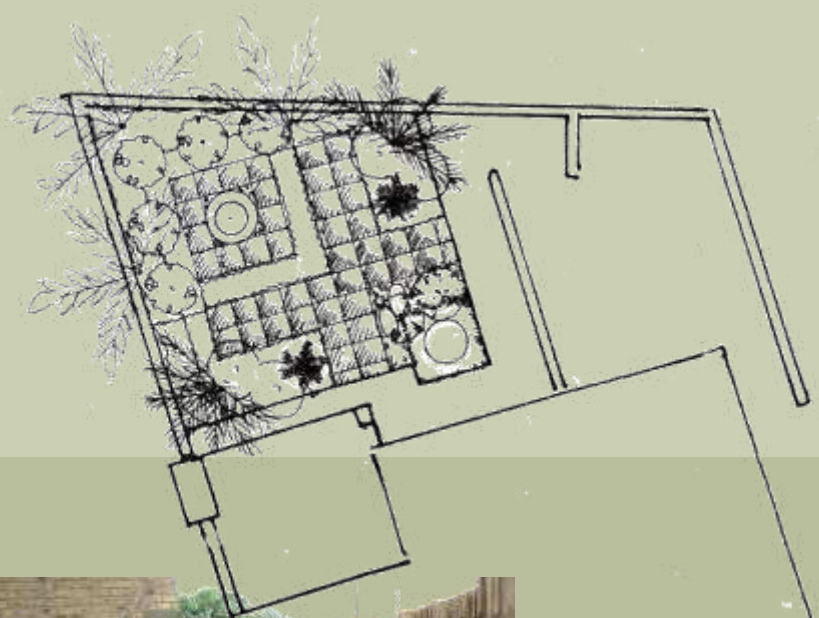
013 Forest Garden, Pretoria

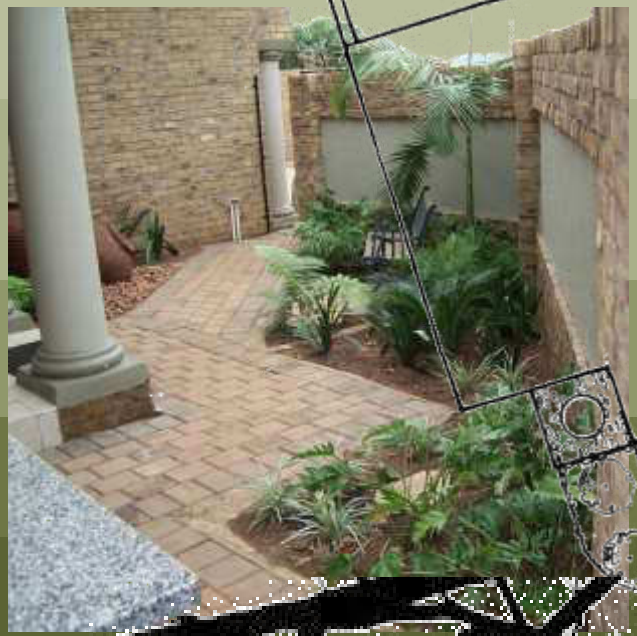
Bokamoso

05 Landscape Projects – Completed

055 Residential

015 Forest Garden, Pretoria





Bokamoso

05 Landscape Projects - Completed

055 Residential

01 Safari Garden Expo

Received a Silver Certificate at the Safari Garden Expo, 2010

Bokamoso

06 Corporate Highlights

061 Awards

02 UNISA Sunnyside Campus, Pretoria

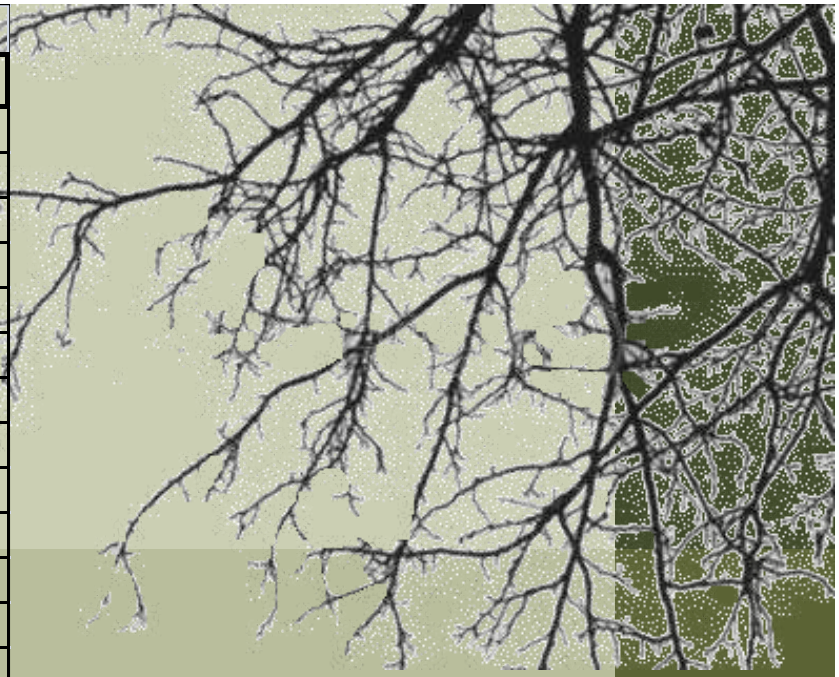
Best Commercial Paving Plan in Gauteng, 1997

Bokamoso

06 Corporate Highlights

061 Awards

Project Name	Status	Project
Environmental Impact Assessment(EIA) and Scoping Report		
Junction 21	ROD	EIA
5 O'clock site access	In Progress	EIA
Bokamoso X 1	In Progress	Scoping & EIA
Doornvallei Phase 6 & 7	In Progress	EIA
Engen Interchange	In Progress	Scoping & EIA
Erasmia X15	In Progress	EIA
Franschkloof	In Progress	EIA
K113	Amendment of ROD	EIA
K220 East	ROD	EIA
K220 West	ROD	EIA
K54 ROD conditions	In Progress	EIA
Knopjeslaagte 95/Peachtree	ROD	EIA
Knopjeslaagte portion 20 & 21	ROD	EIA
Lillieslief/Nooitgedacht	In Progress	EIA
Mooiplaats 70 (Sutherland)	In Progress	EIA
Naauwpoort 1 - 12/Valley View	In Progress	EIA
PeachTree X5	In Progress	EIA
Strydfontein 60	In Progress	EIA
Thabe Motswere	In Progress	Scoping & EIA
Vlakplaats	In Progress	EIA
Waterval Valley	In Progress	EIA
Environmental Opinion		
Doornkloof 68 (Ross)	In Progress	Opinion
Monavoni X 53	In Progress	BA & Opinion
Mooikloof (USN)	In Progress	Opinion
Norwood Mall/Sandspruit	In Progress	Opinion
Riversong X 9	In Progress	Opinion
Sud Chemie	In Progress	Opinion
USN Benjoh Fishing Resort	In Progress	Opinion



The adjacent list host the status of our current projects. Only a selected amount of projects are displayed.

Bokamoso

07 Current Environmental Projects

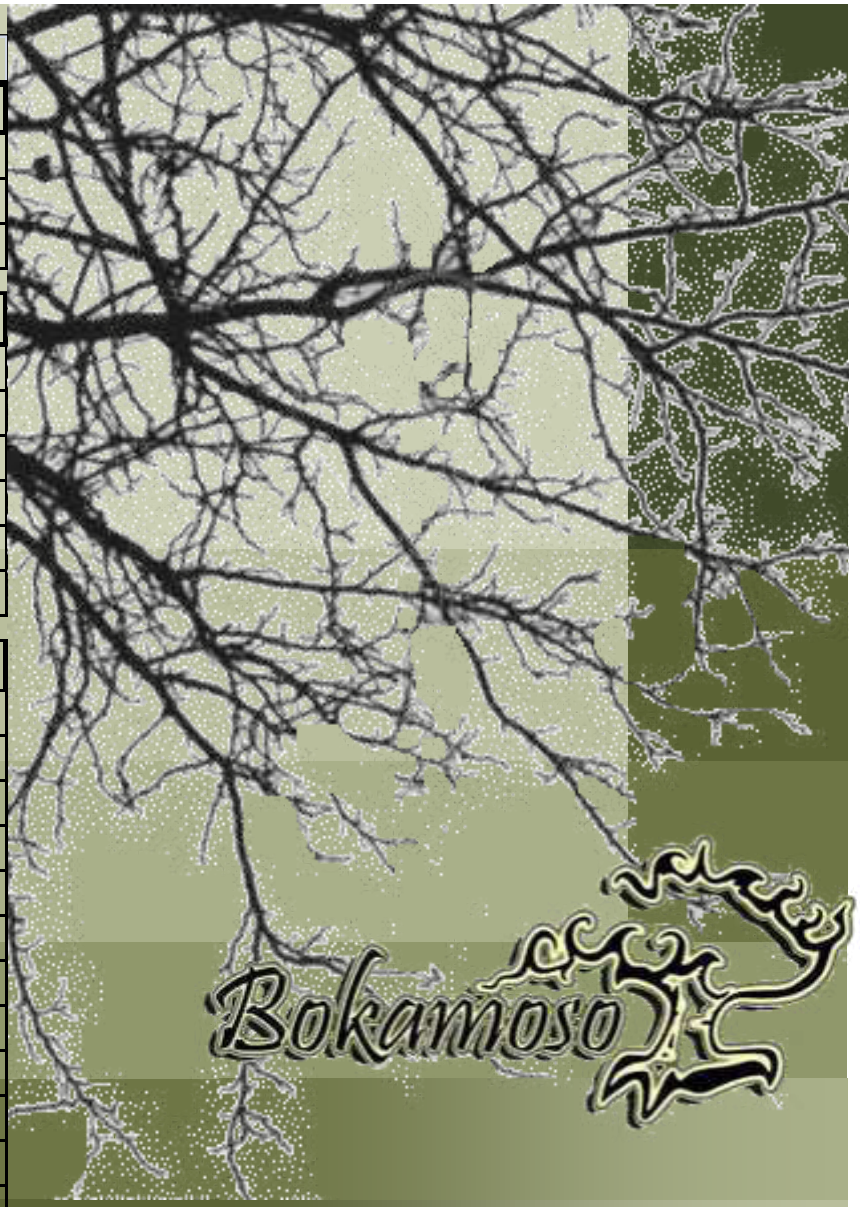
071 EIA, Scoping& Opinion

Project Name	Status	Project
Basic Assessment(BA)		
Annlin X 138	In Progress	BA
Clubview X 29	ROD	BA
Darrenwood Dam	In Progress	BA
Durley Holding 90 & 91	In Progress	BA
Elim	In Progress	BA
Fochville X 3	In Progress	BA
Hartebeeshoek 251	In Progress	BA
Klerksdorp (Matlosana Mall)	In Progress	BA
Monavoni External Services	ROD	BA
Monavoni X 45	Amendment of ROD	BA
Montana X 146	In Progress	BA
Rooihuiskraal X29	In Progress	BA
Thorntree Mall	In Progress	BA
Environmental control officer (ECO)		
Grace Point Church	In Progress	ECO
R 81	In Progress	ECO
Highveld X 61	In Progress	ECO
Mall of the North	In Progress	ECO
Olievenhoutbosch Road	In Progress	ECO
Orchards 39	In Progress	ECO
Pierre van Ryneveld Reservoir	In Progress	ECO
Project Shelter	In Progress	ECO
S24 G		
Wonderboom	In Progress	S24 G
Mogwasi Guest houses	Completed	S24 G

07 Current Environmental Projects

072 BA, ECO & S24 G

Project Name	Status	Project
Objection		
Colesberg WWTW	In Progress	Objection
Nigel Steelmill	Completed	Objection
Chantilly Waters	Completed	Objection
Development facilitation Act- Input (DFA)		
Burgersfort	In Progress	DFA & BA
Doornpoort Filling Station	In Progress	DFA & EIA & Scoping
Eastwood Junction	In Progress	DFA
Ingersol Road (Erf 78, 81 - 83)	In Progress	DFA
Roos Senekal	In Progress	DFA & EIA & Scoping
Thaba Meetse 1	In Progress	DFA & EIA & Scoping
Water Use License Act (WULA)		
Britstown Bulk Water Supply	In Progress	WULA
Celery Road / Green Channel	In Progress	WULA
Clayville X 46	In Progress	WULA
Dindingwe Lodge	In Progress	WULA
Doornpoort Filling Station	In Progress	WULA+DFA+EIA+SC
Eco Park Dam	In Progress	WULA
Groote Drift Potch	In Progress	WULA
Jozini Shopping Centre	In Progress	WULA+BA
K60	Completed	WULA
Maloto Roads	In Progress	WULA
Kwazele Sewage Works	In Progress	WULA
Monavoni External Services	In Progress	WULA+BA
Nyathi Eco Estate	In Progress	WULA
Prairie Giants X 3	In Progress	WULA
Waveside Water Bottling Plant	Completed	WULA



07 Current Environmental Projects

073 Objection, DFA & WULA

Project Name	Status	Project
Environmental Management Plan(EMP)		
Heidelberg X 12	ROD	EMP
Monavoni Shopping Centre	Completed	EMP
Forest Hill Development	Completed	EMP
Weltevreden Farm 105KQ	Completed	EMP+EIA
Raslouw Holding 93	Completed	EMP+BA
Durley Development	Completed	EMP+BA
Rooihuiskraal North X 28	Completed	EMP

Rehabilitation Plan		
Norwood Mall/Sandspruit	In Progress	Rehabilitation
Project Shelter Heidelberg	In Progress	Rehabilitation
Sagewood Attenuation Pond	ROD	Rehabilitation
Velmore Hotel	Completed	Rehabilitation
Grace Point Church	Completed	Rehabilitation
Mmamelodi Pipeline	Completed	Rehabilitation

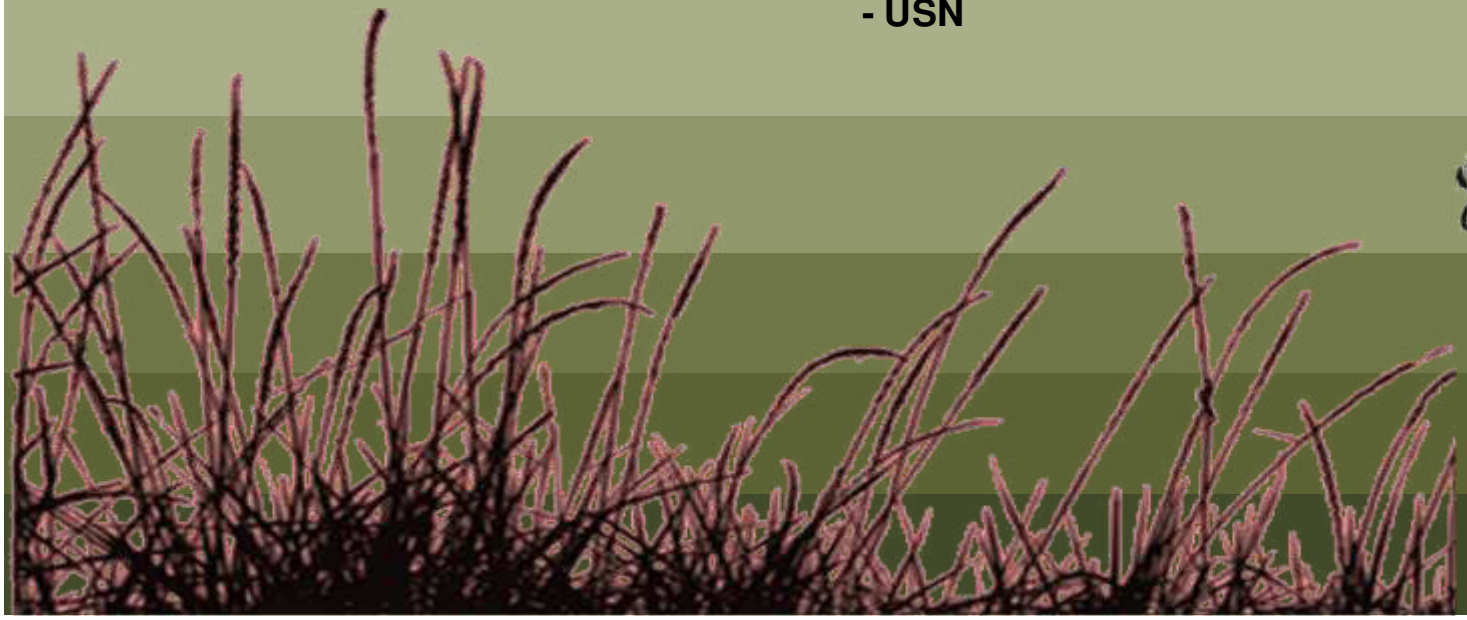
Visual Impact Assessment		
Swatzkop Industrial Developme	Completed	Assessment +DFA
Erasmia	Completed	Assessment

Signage Application		
Menlyn Advertising	Completed	Signage
The Villa Mall	Completed	Signage+EMP+BA

07 Current Environmental Projects

074 EMP, Rehabilitation , Waste Management & Signage Application

- Billion Property Group
- Cavaleros Developments
- Centro Developers
- Chaimberlains
- Chieftain
- Century Property Group
- Coca Cola
- Elmado Property Development
- Flanagan & Gerard
- Gautrans
- Hartland Property Group
- Moolman Group
- MTN
- M&T Development
- Old Mutual
- Property Investment Company
- Petroland Developments
- RSD Construction
- SAND
- Stephan Parsons
- Twin City Developments
- Urban Construction
- USN



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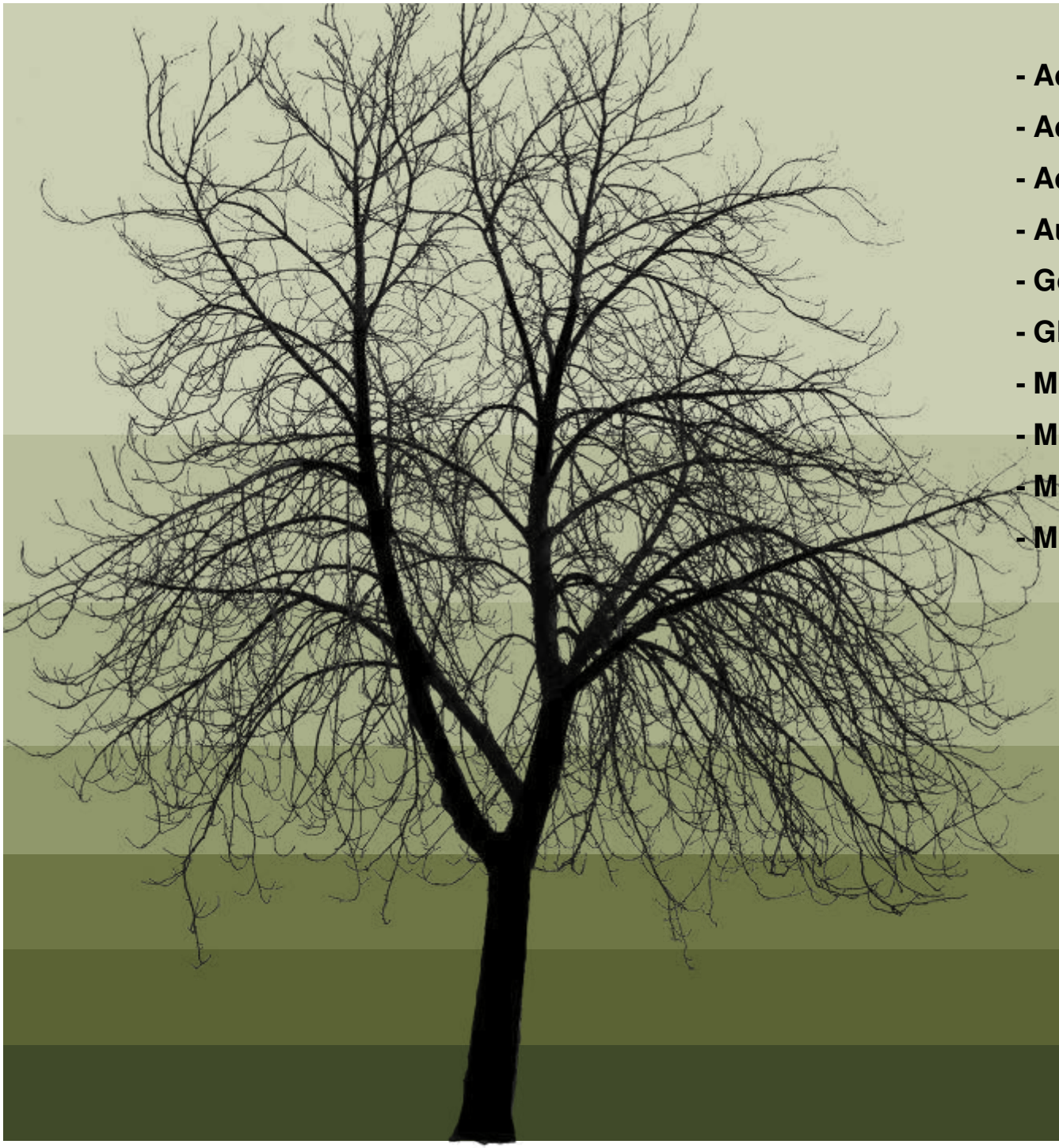
08 Indicative Clients



- Adobe Illustrator CS3
- Adobe Photoshop CS3
- Adobe InDesign CS3
- AutoCAD
- Google SketchUP
- GIS
- Microsoft Office Word
- Microsoft Office Excel
- Microsoft Office Publisher
- Microsoft Office Power Point

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09 Tools

Annexure D

Layout Plan

LAYOUT PLAN
OF
LAND DEVELOPMENT AREA

KLEINFONTEIN NEDERSETTING

SITUATED ON
REMAINDER, PORTION 38, PORTION 90 AND PORTION 96
OF THE FARM
KLEINFONTEIN 368 JR
AND
REMAINDER OF PORTION 14, PORTION 63, PORTION 67
AND PORTION 68
OF THE FARM
DONKERHOEK 365 JR

DEMARCATION FACILITATION ACT , 1995

LOCALITY PLAN 0 0.5 1.0 1.5 2.0 2.5km 1 : 50 000

NOTES :

1. Figure A B G H J K L M N P Q R S T U V W X Y Z A1 A2 A3 A and Figure B1 B3 B4 B1 on the site assembly of farm portions denote the Remainder, Portion 38, Portion 90 and Portion 96 of the farm Kleinfontein 368 JR vide SG Diagrams A10276/1880, A5569/1968, 8988/2007 and 3887/2008, covering an area approximately 750,81ha in extent.
2. Figure B C D E F G B on the site assembly of farm portions denotes the Remainder of Portion 14, Portions 63, 67 and 68 of the farm Donderhoek 365 JR vide SG Diagrams A2013/1921, A4262/1952, A4266/1952 and A4267/1952, covering an area approximately 42,70 ha in extent.
3. Figure ABCHJKLORSTUVWXYZ A1, A2, A3, A1 and Figure B1, B2, B3, B4, B1 denote the proposed land development area to be established on the aforesaid farm portions to be known as Kleinfontein Nedersetting covering a collective area of approximately 793,51ha in extent.
4. Registered Owner: Kleinfontein Boerebelange Koöperatief Limited
5. Area of jurisdiction: City of Tshwane Metropolitan Municipality
6. All areas and dimensions are approximate and subject to final survey
7. Contours at 5m intervals: Source: Orthophoto database dated 2001 and 2003
8. Lines of no access denoted by ....

SERVITUDE NOTES:

REVISIONS

NO :	DESCRIPTION	DATE

AUTHORITY
REFERENCE NO :

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KOPIEREG VOORBEHOU : PLANPRAKTYK bk

ERVEN		STREETS	
MINIMUM SIZE OF RES.1 ERVEN	: 207 m²	MINIMUM GRADIENT	:
RULING SIZE OF RES. 1 ERVEN	: 459 m²	MAXIMUM GRADIENT	:

LAND USE TABLE PHASE 01

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
RESIDENTIAL 1	368	27.43	10.20	1 - 367, 1217	
RESIDENTIAL 2	80	5.7	2.12	783 - 862	
BUSINESS 1	3	1.58	0.59	863 - 865	
INDUSTRIAL 1	18	1.7	0.63	910 - 927	
INSTITUTIONAL	1	0.35	0.13	928	
EDUCATIONAL	1	3.41	1.27	1127	
SPECIAL FOR CEMETARY & FUNERAL PARLOUR	1	1.47	0.55	1128	
SPECIAL FOR PRIVATE OPEN SPACE	8	184.76	68.69	1133 - 1139 1215	
SPECIAL FOR WORKSHOP, MAINTENANCE ETC.	1	1.09	0.41	1144	
SPECIAL FOR PUBLIC GARAGE SHOP, INDUSTRIAL	1	0.18	0.07	1145	
SPECIAL FOR ENGINEERING SERVICES ETC.	6	0.74	0.28	1146 -1147 1218 - 1221	
SPECIAL FOR SEWER WORKS ETC.	1	16.1	5.99	1149	
SPECIAL FOR PLACE OF AMUSEMENT ETC.	6	1.82	0.68	1150 - 1155	
SPECIAL FOR PRIVATE OPEN SPACE AND SOCIAL HALL	2	4.78	1.78	1157 - 1158	
SPECIAL FOR GARDEN OF REMEMBRANCE	1	0.02	0.01	1224	
SPECIAL FOR ACCESS CONTROL	2	0.37	0.14	1159 - 1160	
SPECIAL FOR INTERNAL ACCESS	21	17.47	6.50	1225 - 1245	
TOTAL	521	268.97 ha			

LAND USE TABLE PHASE 02

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR RURAL RESIDENTIAL	194	294.61	85.69	929 - 1102 1108 - 1126	
SPECIAL FOR CEMETARY & FUNERAL PARLOUR	1	0.02	0.01	1129	
SPECIAL FOR PRIVATE OPEN SPACE	4	21.94	6.38	1130, 1131, 1140, 1214	
SPECIAL FOR ENGINEERING SERVICES ETC.	1	0.03	0.01	1148	
SPECIAL FOR INTERNAL ACCESS	21	26.26	7.64	1103 - 1107 1161 - 1176	
PUBLIC ROAD	-	0.96	0.28	-	
TOTAL	221	343.82 ha			

LAND USE TABLE PHASE 03

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
BUSINESS 1	7	5.76	18.36	866 - 872	
SPECIAL FOR INTERNAL ACCESS	3	4.36	13.90	1177 - 1179	
UNDETERMINED	4	21.25	67.74	1203 - 1206	
TOTAL	14	31.37 ha			

LAND USE TABLE PHASE 04

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
RESIDENTIAL 1	415	17.13	23.52	368 - 782	
BUSINESS 1	3	5.3	7.28	873 - 875	
INDUSTRIAL 1	33	8.62	11.83	876 - 909	
SPECIAL FOR PRIVATE OPEN SPACE	2	7.28	9.99	1142, 1143	
SPECIAL FOR ENGINEERING SERVICES ETC.	2	0.18	0.25	1222, 1223	
SPECIAL FOR OFFICES WORKSHOP & ABLUTIONS	2	2.48	3.40	908	
SPECIAL FOR INTERNAL ACCESS	20	14.11	19.37	1180 - 1199	
UNDETERMINED	1	17.59	24.15	1201, 1202	
PUBLIC ROAD	-	0.15	0.21	-	
TOTAL	478	72.84 ha			

LAND USE TABLE PHASE 05

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR TELECOMMUNICATION ETC.	1	1.86	3	1156	
UNDETERMINED	1	59.03	97	1207	
TOTAL	2	60.89 ha			

LAND USE TABLE PHASE 06

USE ZONE	NUMBER OF ERVEN	AREA (ha)	% OF TOWNSHIP	ERF NUMBERS	REFERENCE
SPECIAL FOR INTERNAL ACCESS	1	0.92	11	1200	
UNDETERMINED	6	7.64	89	1208 - 1213	
TOTAL	7	8,56 ha			

REGISTERED PROFESSIONAL PLANNER

PJ DACOMB TRP(SA)	521 REG. NO.	DATE

IT IS HEREBY CERTIFIED THAT, IN TERMS OF THE PROVISIONS OF SECTION 144 OF THE NATIONAL WATER ACT (ACT 36 OF 1998) AND THE REGULATIONS OF THE DEVELOPMENT FACILITATION ACT, 1995. THE SITE IS AFFECTED BY A 1:50 AND 1:100 YEAR FLOOD AREA. ALL DIMENSIONS ARE APPROXIMATE SUBJECT TO FINAL SURVEY.

(PR. ENG REG No -------) DATE

PlanPractice
townplanners
35895 MENLO PARK 0102 TEL 012 - 362 1741

COMPILED BY :
MapPractice
electronic mapping and draughting

CAD REF. NO:Z:\KILIAN\PP\600\588\MEESTER 07.GEN PLOTTED :19/06/2012

DATE COMPILED : 06 JUN 2012	DRAWN : K.D.T	CHECKED : P.J.

SCALE	PLAN NUMBER	REVISION
1 : 7 000	600 / 588 / 03	

INSET 04

INSET 03

INSET 02

INSET 01

SITE ASSEMBLY OF FARM PORTIONS

NORTH
0m 40m 80m 120m
SCALE 1 : 20 000

NORTH
0m 100m 200m 300m 400m 500m
SCALE 1 : 7 000

Annexure E

Correspondence from GDARD

agriculture and rural development
Department: Agriculture and Rural Development
GAUTENG PROVINCE

Diamond Corner Building, 68 Eloff & Market Street, Johannesburg
P O Box 8769, Johannesburg, 2000

Telephone: (011) 355-1900
Fax: (011) 355-1000
Website: http://www.gdard.gpg.gov.za

Reference:	Gaut: 002/12-13/E0177
Enquiries:	Faith Mlambo
Telephone:	(011) 355-1974
Email:	Faith.mlambo@gauteng.gov.za

Bokamoso Landscape CC

Fax no. 086 570 5659

PER FACSIMILE

Dear Sir / Madam

Application for Environmental Authorisation: Kleinfontein Settlement

The Department acknowledges having received the application form for environmental authorisation of the above-mentioned project on 29/10/2012.

The application has been assigned the reference number Gaut: 002/12-13/E0177. Kindly quote this reference number in any future correspondence in respect of the application.

Please circulate the draft report to any state department that administers a law relating to a matter affecting the environment to comment.

You are required to submit two (2) copies (full colour CDs-PDF) of the Draft Scoping Report as well as proof of submission to state departments referred to above.

In order to determine whether a biodiversity assessment is required and, if so, which specialist studies are required, please send a shapefile (WGS84 datum; geographic co-ordinate system) of the application site to our biodiversity information service (GDACE_BiodiversityInfo@gauteng.gov.za), the e-mail clearly indicating the project reference number. Where biodiversity assessment is required; please ensure that it is

conducted consistent with the *GDACE Requirements for Biodiversity Assessments*. A copy of this document can be obtained by e-mailing GDACE_BiodiversityInfo@gauteng.gov.za

In terms of Regulation 67(1) (2) of the NEMA EIA Regulations 2010, this application will lapse should you fail to submit the requested information within 6 months of the date of signature of this letter, except in the case where the Department has received and accepted written explanation for failure to submit such information.

Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Boniswa Belot
Deputy Director: Strategic Administration Support
Date: 30/10/2012

CC: Kleinfontein Boerebelange Koöperasie Beperk

Att: Jan Groenewald
Tel: 012 802 1583
Fax: 012 802 1584

agriculture and rural development
Department: Agriculture and Rural Development
GAUTENG PROVINCE

11 Diagonal Street, Diamond Building, Newtown, Johannesburg
P O Box 8769, Johannesburg, 2000

Telephone: (011) 240-2500
Fax: (011) 240-2700
Website: http://www.gdard.gpg.gov.za

Reference:	Gaut: 002/12-13/E0177
Enquiries:	Faith Mlambo
Telephone:	(011) 240-3053
Email:	Faith.mlambo@gauteng.gov.za

Bokamoso Landscape CC

Email/Fax. lizelleg@mweb.co.za

Dear Sir / Madam

Draft Scoping Report: Kleinfontein Settlement

The Department acknowledges having received of the Draft Scoping Report/ for environmental authorisation of the above-mentioned project on 10/12/2013.

You are required to submit five (5) copies (3 full colour hard copies and 2 CDs-PDF) of the Final Scoping Report.

Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Boniswa Belot
Deputy Director: Strategic Administration Support
Date: 27/01/2014

CC: Kleinfontein Boerebelange Koöperasie Beperk Att: Jan Groenewald
Email/Fax: 012 802 1584

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

Diamond Building, 11 Diagonal Street, Newtown, Johannesburg
P O Box 8769, Johannesburg, 2000

Telephone: (011) 240-2500
Fax: (011) 240-2700
Website: http://www.gdard.gpg.gov.za

FAX COVER SHEET

Receiver's Details		Sender's Details	
To:	Lizelle Gregory	**From:**	Phuti Matlamela
Company:	Bokamoso Architects & Environmental Consultants CC	**Section:**	EPIA
Fax no.	(086) 570 - 5659	**Floor:**	3rd Floor, 11 Diagonal.
Tel no.	(012) 346 - 3810	**Tel:**	(011) 240 - 3420
Date:		**Pages:**	03 including fax cover sheet
SUBJECT:	**GAUT :002/12-13/E0177** **APPROVAL OF SCOPING REPORT AND PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED ESTABLISHMENT OF A MIXED-USE TOWNSHIP (KLEINFONTEIN SETTLEMENT) ON PORTIONS 38, 90, 96 AND THE REMAINING EXTENT OF THE FARM KLEINFONTEIN 368-JR AND ON PORTIONS 63, 67, 68 AND THE REMAINING EXTENT OF PORTION 14 OF THE FARM DONKERHOEK 365-JR, CITY OF TSHWANE METROPOLITAN MUNICIPALITY.**		

CC	CTMM	Attn. Tel: Fax:	Rudzani Mukheli (012) 358-8731 (012) 358-8934
	Kleinfontein Boerebelange Koöperasie Beperk	Attn: Tel: Fax:	Jan Groenewald (012) 802 - 1583 (012) 802 - 1584
	EPIA-NWR	Attn: Tel: Fax:	Hlobisile Mhlongo (011) 240-2572 086 765 7212

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

Reference: Gaut 002/12-13/E0177
Enquiries: Phuti Matlamela
Telephone: (011) 240 - 3420
Email: Phuti.Mtlamela@gauteng.gov.za

Bokamoso Landscape Architects & Environmental Consultants CC.
P.O. Box 11375
Maroelana
0161

Attn: Lizelle Gregory
Tel: (012) 346 - 3810
Fax: (086) 570 - 5659

PER FACSIMILE / REGISTERED MAIL

Dear Madam,

ACCEPTANCE OF SCOPING REPORT AND PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED ESTABLISHMENT OF A MIXED-USE TOWNSHIP (KLEINFONTEIN SETTLEMENT) ON PORTIONS 38, 90, 96 AND THE REMAINING EXTENT OF THE FARM KLEINFONTEIN 368 JR AND ON PORTIONS 63, 67, 68 AND THE REMAINING EXTENT OF PORTION 14 OF THE FARM DONKERHOEK 365 JR, CITY TSHWANE METROPOLITAN MUNICIPALITY

Scoping Report and Plan of Study for Environmental Impact Assessment (EIA) which was submitted in respect of the above-mentioned application and received by the Department on 18 June 2014 has been accepted. You may accordingly proceed with undertaking the EIA in accordance with the tasks that are outlined in the plan of study.

The Department also requires that the following be considered during the undertaking of the EIA process:

1. The Biodiversity assessment studies for both fauna and flora in-accordance with the Department's requirements for biodiversity assessments.
2. According to the Conservation Plan Version 3.3, sections of the proposed site are designated as "Important" and "Ecological Support Areas" with patches of suitable habitat for Red Listed Plant, Orange Listed Plant, Priority Red Listed Bird, Red Listed Mammal, Red Listed Invertebrate and Primary Vegetation. As a result of this, all eminent impacts of the proposed activity on the above sensitivities must be contained in the EIAR.
3. The layout plan that shows interconnection with the existing township(s). This must be overlaid with the sensitivity map and reflect flood lines, calculated by a suitable qualified specialist and appropriate buffers around the perennial river system(s) and the Ridge. The layout map must be clear, legible and printed on a readable scale map A1 paper sheet with distinctive legend in solid colours.
4. Storm water management plan must indicate all points of inlet and outlet as well as connections with the existing municipal systems (if there are any) and must comply with the standard and requirements of the City of Tshwane Roads and Stormwater Division.
5. The proposed area of development also falls within the Agricultural Hub according to GAPA Version 3. Further investigation as indicated on the scoping report must be undertaken and reported in the EIA Report.

6. The development proposal must be discussed in relation to the areas planning frameworks such as the Local Authority's Spatial Planning Frameworks to determine the suitability of the proposed development relative to services and roads infrastructure in the area.
7. The EIA Report must also be forwarded to SAHRA in Gauteng for comments and their response must be attached in the EIA Report.
8. Geotechnical study must be forwarded to council for geosciences for comments and this must also be attached on the EIA Report.
9. A detailed project and site specific Environmental Management Programme (EMPr) must be compiled and included in the EIA Report.

If you have any queries, contact the official at the number indicated above.

Yours faithfully,

Mr. D. Motaung
Acting Director: Environmental Impact Management (NER)
Date: 29/07/2014

Annexure F

Town Planning Memo

MEMORANDUM

IN SUPPORT OF AN APPLICATION FOR THE ESTABLISHMENT OF A LAND DEVELOPMENT AREA ON

- **THE FARM KLEINFONTEIN 368 JR: PORTIONS 38, 90, 96 AND**
- **THE REMAINING EXTENT AND THE FARM DONKERHOEK 365 JR: PORTIONS 63, 67, 68 AND THE REMAINING EXTENT OF PORTION 14**

TO BE KNOWN AS

KLEINFONTEIN NEDERSETTING ("SETTLEMENT")

PREPARED FOR

KLEINFONTEIN BOEREBELANGE KOöPERATIEF BEPERK ("LIMITED")

BY

PLANPRACTICE TOWN PLANNERS

P O BOX 35895
MENLO PARK
0102

Tel: 012 – 362 1741
Fax: 012 – 362 0983
E-mail: peter@planpractice.co.za

Our Ref: 600/588

MARCH 2012

PlanPractice
townplanners

1. INTRODUCTION

1.1 The Kleinfontein Settlement ("*Kleinfontein*") is situated mid-way between the urban area associated with City of Tshwane (Pretoria) in the west and the urban area associated with Bronkhorstspruit in the east. Kleinfontein previously formed part of the municipal jurisdiction of Kungwini Local Municipality but, as a result of recent changes to municipal demarcations, the area in question now resorts under the City of Tshwane Metropolitan Municipality. (See **Map 1**).

1.2 Kleinfontein takes the form of an informal settlement, given that it comprises a component of existing residential units/houses, interspersed by internal access roads, various communal facilities, open spaces and business activities. These facilities exist on an assembly of farm portions and are not accommodated in a formally registered township.

1.3 Kleinfontein, as it exists, requires to be regularized and properly registered in the offices of the Surveyor General and Registrar of Deeds which, in turn, will make possible the proper management and regulation thereof by the responsible authorities such as the City of Tshwane Metropolitan Municipality.

1.4 In addition, the applicant has procured certain tracts of land which form part of a larger site assembly on which it is proposed to provide further expansion possibilities with a longer term view to developing a fully integrated Settlement which provides for the full array of settlement components to mutually support of each other including:

- a residential settlement, providing a wide range of housing typologies to suit varying income levels;
- supporting social facilities in the form of educational, religious and related infrastructure;
- supporting economic activities including local retail/business outlets and a manufacturing component;
- appropriate engineering infrastructure (roads, water, sewage and related systems) to serve the larger settlement in compliance with the minimum requirements of the controlling authorities; and
- a supportive rural enclave, providing for small-scale agricultural activities

1.5 The larger Kleinfontein site assembly covers approximately 796ha in extent and it is proposed to provide for the following in the development area:

- A total of 873 x residential erven of varying sizes, to accommodate dwelling units/dwelling houses of various typologies;
- A business component, to provide for retail related activities and associated business activities in support of the larger settlement (approximately 69950m² of floor area);
- A manufacturing component (light industries and associated facilities) to provide local employment (approximately 104400m² of floor area);
- A total of 198 x agricultural small holdings at an average size of approximately 1.4 ha per unit, to provide for small-scale farming and local food production;
- A school site to accommodate educational facilities (both pre-primary and primary facilities);
- A site for religious activities and associated community facilities;
- Sites for local cemeteries (both historic and for ongoing use);

- Four sites for communal engineering infrastructure (reservoirs, sewage treatment facilities, maintenance facilities and the like);
- A site for a retirement facility and frail care centre and related community facilities;
- Sites for private open spaces (14 in total);
- A site for workshop, maintenance and storage facilities (communal maintenance of the settlement);
- Sites for concert halls/community halls, public offices, places of instruction and associated facilities (6 in total);
- A site for Public Garage and associated convenience shop facilities;
- A site for a Telecommunication Centre; and
- Sites for Access Control/Security management.

1.6 In the above context, this application seeks relief in terms of the Development Facilitation Act, 1995 for the following:

(i) the approval of a layout plan for the larger Kleinfontein, indicating the subdivisional configuration of the sites/erven described above and providing for the consolidation of the assembly of the component farm portions which collectively form to subject of this land development application (it is proposed to divide the larger settlement into smaller phases);

(ii) the amendment of the Peri-Urban Areas Town Planning Scheme 1975 by the allocation of appropriate land use rights and development restrictions to each of the subdivided erven within the larger settlement, to provide for the regularisation of the existing and for the future development of the larger settlement;

(iii) the suspension of certain conditions of title and servitudes and related legal encumbrances to free the title deeds from such restrictions and to enable the proper registration of the settlement by the Surveyor General and Registrar of Deeds;

(iv) the approval of the terms of a services agreement (or agreements) to be concluded between the Municipality, the applicant and other service providers, as called for in the provisions of the Act; and

(v) condonation for non-compliance with the provisions of the Act and the local town planning scheme relating to the current and ongoing use of parts of the site assembly for settlement purposes.

2. PROPERTY PARTICULARS

2.1 DESCRIPTION, OWNERSHIP AND SIZE

The larger Kleinfontein is situated on a site assembly made up of 8 separately registered farm portions, more fully described in ***Table 1*** below. This will be referred to as the "*subject property*".

TABLE 1: PROPERTY PARTICULARS

ITEM NR	FARM DESCRIPTION	PORTION NUMBER	REGISTERED LAND OWNER	TITLE DEED NUMBER	SG DIAGRAM NUMBER	LAND AREA (ha)
1	The Farm Kleinfontein 368 JR	Remainder	Kleinfontein Boerebelange Kooperatief Limited	T38786/1990	A1822/1942	460.988
2	The Farm Kleinfontein 368 JR	38	Kleinfontein Boerebelange Kooperatief Limited	T2651/1971	A5569/1968	215.317
3	The Farm Kleinfontein 368 JR	90	Kleinfontein Boerebelange Kooperatief Limited	T6652/2008	8988/2007	17.8866
4	The Farm Kleinfontein 368 JR	96	Kleinfontein Boerebelange Kooperatief Limited	T96645/2008	3687/2008	59.0226
5	The Farm Donkerhoek 365 JR	67	Kleinfontein Boerebelange Kooperatief Limited	T16982/1973	A4266/1952	8.5653
6	The Farm Donkerhoek 365 JR	68	Kleinfontein Boerebelange Kooperatief Limited	T16982/1973	A4267/1952	8.5653
7	The Farm Donkerhoek 365 JR	63	Kleinfontein Boerebelange Kooperatief Limited	T16982/1973	A4262/1952	8.5653
8	The Farm Donkerhoek 365 JR	R/14	Kleinfontein Boerebelange Kooperatief Limited	T4650/1924	A2013/1921	17.1308
					TOTAL	796.0403

*Also refer to ***Map 3***

Collectively, the 8 component farm portions of the site assembly cover approximately 796ha in extent. Copies of the respective title deeds and SG Diagrams are enclosed under ***Appendix B*** to the application bundle.

According to the records of the Registrar of Deeds, the land in question is encumbered by certain bonds in of ABSA Bank and Mr. DFB de Beer and for which purpose the consent of the bondholders has been procured and is enclosed under ***Appendix J*** to the application bundle.

Planpractice Pretoria CC has been authorized to act for the land owner in the above matter and for such purpose a resolution of the relevant co-operative and an accompanying power of attorney have been provided, copies of which are enclosed under ***Appendix K*** to the application bundle.

2.2 SITUATIONAL CONTEXT

Maps 1, 2 and 3 hereto illustrate the situational context of the subject property, both from a regional and local perspective. The subject property is situated roughly midway between the urban areas of Tshwane and Bronkhorstspruit (along the N4 National Road). The subject property gains access off the R483 Provincial Road which intersects with the N4 National Road, linking the towns of Rayton and Cullinan in the north to urban areas such as Bapsfontein and Germiston in the south.

From the R483 intersection off the N4 National Road as aforesaid, the subject property is situated a short distance (±680m) south of the national road reserve, taking access off a secondary access road generally known as Kleinfontein Road, positioned parallel and to the south of the N4. The locational context illustrated by ***Maps 1, 2 and 3*** indicates the good accessibility enjoyed by the subject property, within convenient reach of the most prominent urban areas in the vicinity.

Drive time to the central business district of Tshwane from the subject property is an average of approximately 25 minutes, whilst the estimated drive time to the central business district of the town of Bronkhorstspruit is approximately 15 minutes. The urban nodes associated with Rayton and Cullinan are also within convenient reach from the subject property (say 6 to 10 minutes driving time).

The subject property presents as a skewed, inverted triangle, with its sharp point in the south and the widest part of its base in the north. The site assembly is traversed by 4 form giving infrastructural items namely:

- the Kleinfontein access road (east-west aligned), passing through the northern component;
- the Renosterfontein Road (D1342) (north-west-south-east aligned, passing through the centre of the site assembly;
- the Boschkop Road D631 (K40), (east-west aligned), passing through the extreme southern tip of the site assembly; and
- the Railway line (north-west, south-east aligned), severing the southern most undeveloped portion from the balance of the site assembly.

A large powerline servitude also traverses the site assembly (south to north).

3.3 PREVAILING LAND USE AND ZONING REGIMES

3.3.1 From a land use perspective, attention is drawn to **Map 4** being an extract of the aerial photobase of the area and indicating the built form associated with the settlement. On the date of submission of the land development application, the following *de facto* land use activities were being conducted on the larger Kleinfontein site assembly namely:

- Approximately 380 x existing dwelling houses (households)
- Retirement Centre: 3 x care units (Kleinfontein 26), Kareepark and Wag-'n-bietjie
- 2 x schools (on one site): Pre-primary and Primary
- Approximately 1000m² of business/retail related floor space
- 1 church buildings

As at end 2011, the non-residential facilities (businesses, etc.) were summarized as follows:

- 2 x hardware/building related outlets
- Guesthouse
- Estate Agent
- Printing Service
- Funeral Parlour
- General Dealer
- Laundry/Laundrette
- Greer Grocer
- Financial/Administrative Services

3.3.2 In the immediate vicinity of Kleinfontein, the prevailing land use regime presents as a mix of rural and non-rural activities including:

- The Galagos Wedding/Events venue on the neighbouring property to the east;
- Various farming activities to the north and west
- Other wedding venues and guest houses further east (i.e. Diamond Hill)

3.3.3 Please refer to ***Map 5*** hereto illustrating the results of a land use survey conducted prior to the submission of the land development area in mid-2011.

3.3.4 As far as zoning is concerned, the area in question forms part of the Peri-Urban Areas Town Planning Scheme, 1975 in terms of which the majority of properties associated with Kleinfontein and the immediately surrounding environs are zoned *"Undetermined"* (refer to ***Appendix M***). With regard to ongoing activities external to the Kleinfontein facility, it is notable that various wedding venues and resort type developments have occurred over time, some of which enjoy statutory land use rights and others appear to have been developed in the absence of any consent from any regulating authority.

3.3.5 Various places of refreshment, guesthouses, overnight accommodation, wedding venues and the like are in evidence within striking distance from the Kleinfontein site assembly. Further to the west (towards Tshwane) the areas situated between the extension of Lynnwood Road (K34) and the N4 National Road are home to a host of residential and other developments, including an array of so-called rural estates, resorts, wedding venues and the like. A few of the prominent developments which have been approved in the vicinity to the west of the subject property include:

- Waterlake Farm, a mixed use rural estate
- Klipkop Reserve, a rural estate
- Silverlakes Golf Estate
- Hazeldean Mixed Use Estate

3.3.6 ***Map 6*** hereto illustrates the approximate siting of these facilities in relation to the situational context of the subject property. These maps and aerial photos indicate that the area in which the subject property is situated displays a distinct mixed use character. It is home to an array of non-agricultural land uses, typical of the urban fringe areas surrounding larger urban/metropolitan areas. This is no different to, for instance, the fringe areas:

- to the east of Johannesburg (Muldersdrift/Lanseria/Cradle of Humankind);
- to the north-east of Tshwane (Dinokeng/Roodeplaat);
- to the south-east of Tshwane (Rietvlei);
- to the north-east of Kempton Park (Serengeti).

3.4 GEOGRAPHICAL COMPOSITION

3.4.1 ***Map 7*** provides an overview of the geographic composition of the site assembly. The Electric Powerline Servitude effectively divides the site into a western and eastern component. The Renosterfontein Road (D1342) further divides the site into a northern/southern component whilst the Railway Line divorces a triangular portion of land in the extreme south. The geographical components which presents as a result of the aforesaid form giving elements are:

- North-Eastern Component: ±156.91ha
- South Eastern Component: ± 178.60 ha
- North-Western Component: ± 153.29ha
- Western Component: ±174.67ha
- Southern Component: ±72.23ha

  TOTAL: **±735.7**

When excluding the servitudes, roads and railway reserve, the remnant land components total approximately 735.7 ha.

3.4.2 The middle components, wedged in between the Renosterfontein Road in the north and the Railway Reserve in the south is primarily home to agricultural small holdings (small scale farming units). The northern components, north of the Renosterfontein Road are primarily set aside for typical residential development, including a business and industrial area. The extreme southern component south of the railway line is earmarked for a future mix of residential, industrial and business activities.

4. DEVELOPMENT PROPOSAL

4.1 The development proposal consists of two components namely:

- a regularisation of the existing development which has already occurred on parts of the Kleinfontein site assembly; and
- the provision for a component of expansion of future development on other, yet to be developed parts of the Kleinfontein site assembly.

4.2 As far as the *de facto* (as built) development is concerned, attention is drawn to **Map 4** hereto, illustrating the as built form of Kleinfontein as on date of the aerial photography relevant thereto. Although the *de facto* development has occurred in the absence of formal approvals from regulating authorities, it is evident from the aerial photobase (**Map 4**) that the development has occurred in a planned and formalistic manner, comprising sufficiently wide internal road reserves and a configuration of erven/sites of varying sizes to accommodate an array of dwelling unit typologies in a structural setting.

4.3 The standard of construction of the top structures (houses and dwelling units) and the standard of internal servicing (stormwater drainage, water reticulation, etc.) has been maintained according to acceptable standards of, inter alia, South African Bureau of Standards and relevant SANS Codes. Although the majority of internal roads are not surfaced they have been constructed to a standard commensurate with the frequency of use of Kleinfontein.

4.4 The photographs in **Appendix O** to the application bundle are proof of these statements. The partially completed shopping centre, close to the entrance to the settlement, also illustrates the standard and quality of construction which has been maintained in Kleinfontein.

4.5 Although Kleinfontein has not been formally registered as a "township" as contemplated in the ruling legislation, describing it as an "informal settlement" belies the fact that, in physical terms, the settlement is anything but informal. It presents as a planned settlement, served by well developed roads and supporting amenities. To this extent, Kleinfontein compares favourably with many recently developed "rural or eco-estates" that have been approved by, inter alia, the Gauteng Development Tribunal, in fringe areas of the City of Tshwane and further afield.

4.6 In summary, Layout Plan 600/588/02 illustrates that, the larger Kleinfontein Settlement will comprise:

- A residential settlement, providing a wide range of housing typologies to suit varying income levels;
- Supporting social facilities in the form of educational, religious and related infrastructure;
- Supporting economic activities including local retail/business outlets and a manufacturing component
- Appropriate engineering infrastructure (roads, water, sewage and related systems) to serve the larger settlement in compliance with the Minimum Requirements of the controlling authorities;
- A supportive rural enclave, providing for small-scale agricultural activities

4.7 When fully developed (all the phases) Kleinfontein will provide for:

- 1040 dwelling units (of all typologies) each accommodating a single facility of say 2.5 persons (a total resident community of say 2598 persons).
- 50 unit retirement facility, accommodating 100 persons.
- 69950m² of business floor area (shops/offices/banks/places of refreshment).
- A school for 200 learners.
- Approximately 104400m² of floor area of a light industrial nature (manufacturing).
- Approximately 294 ha of agricultural land (small holdings).
- Approximately 14560 m² of floor area for places of amusement, social halls and public offices.

5. APPLICATION DETAILS

5.1 Application is made in terms of the Development Facilitation Act, 1995 for permission to establish the Kleinfontein Settlement as a land development area on the collective site assembly described herein. This application seeks the following relief in terms of the Act:

(i) the approval of the layout plan 600/588/02 for the larger Kleinfontein Settlement, indicating the subdivisional configuration of the sites/erven described above and providing for the consolidation of the assembly of the component farm portions which collectively form to subject of this land development application;

(ii) the amendment of the Peri-Urban Areas Town Planning Scheme 1975 by the allocation of appropriate land use rights and development restrictions to each of the subdivided erven within the phased settlement, to provide for the regularisation of the existing and for the future development of the larger settlement as set out in the zoning documents hereto (**Appendix L**);

(iii) the suspension of the conditions of title and servitudes and related legal encumbrances stipulated below, to free the title deeds from such restrictions and to enable the proper registration of the settlement by the Surveyor General and Registrar of Deeds:

(a) With regard to Deed of Transfer T3296/2001 pertaining to Portion 38 (Tondem) Kleinfontein 368 JR the following conditions are to be suspended:
- Condition B on page 3
- Conditions D(1) to D(3) on pages 4 and 5

- Condition E(1) on page 5; and
- Condition E(2) on pages 5 and 6 of the Deed

(b) With regard to Deed of Transfer T6652/08 pertaining to Portion 90 Kleinfontein 368 JR, the following conditions are to be suspended:

- Conditions A(1) to A(4) on pages 2 and 3; and
- Condition C on page 3 of the Deed

(c) With regard to Deed of Transfer T96645/08 pertaining to Portion 96 Kleinfontein 368 JR, the following conditions are to be suspended:

- Conditions A(1) to A(4) on pages 2 and 3; and
- Condition C on page 3 of the Deed

(d) With regard to Deed of Transfer T38786/90 pertaining to Remaining Portion Kleinfontein 368 JR, the following conditions are to be suspended:

- Conditions A(a), A(b) and A(c) on page 3;
- Condition B(a) on page 4;
- Condition C on page 4; and
- Conditions E and F on page 5 of the Deed

(e) With regard to Deed of Transfer T69905/2005 pertaining to Portion 63 Donkerhoek 365 JR, the following conditions are to be suspended:

- Conditions A.A and A.B on page 2;
- Conditions A.C on page 2; and
- Condition A.E on page 3 of the Deed.

(f) With regard to Deed of Transfer T57746/92 pertaining to Portion 67 Donkerhoek 365 JR, the following conditions are to be suspended:

- Conditions A and B on page 4;
- Condition C on page 5; and
- Condition D on page 5 of the Deed

(g) With regard to Deed of Transfer T57746/92 pertaining to Portion 68 Donkerhoek 365 JR, the following conditions are to be suspended:

- Condition A; and
- Condition B on page 6 of the Deed

(h) With regard to Deed of Transfer T57746/92 pertaining to Remaining Portion 14 Donkerhoek 365, the following conditions are to be suspended:

- Conditions A and B on page 3;
- Condition C on page 4; and
- Condition D on page 3 of the Deed.

(iv) the approval of the terms of a services agreement (or agreements) to be concluded between the Municipality, the applicant and other service providers, as called for in the provisions of the Act.

5.2 In summary the application seeks to entrench the following land use rights, read with Layout Plan 600/588/02.

TABLE 2: KLEINFONTEIN SETTLEMENT: LAND USE ZONING TABLE

ERF/PTN	ZONING/LAND US CATEGORY	PRIMARY USES	CONSENT USES	DENSITY	COVERAGE	HEIGHT	FSR	DEVELOPABLE FLOOR AREA (m)	DEVELOPABLE UNITS
1-783, 1216	Residential 1	Dwelling houses	As per Scheme including a Second Dwelling House	1 dwelling house/erf	50%	2	N/A	N/A	784
783-859	Residential 2	Dwelling houses and block of flats	As per Scheme	60 units/ha	As per site development plan	2	As per site development plan	N/A	228
860-862	Residential 2 (Erven 860, 861 and 862)	Dwelling houses and block of flats	As per Scheme	15 units/ha	As per site development plan	2	As per site development plan		28
929-1126	Agricultural	Dwelling houses	As per Scheme	3 units/erf	30%	2	As per site development plan	N/A	198 (HOLDINGS)
876-927	Industrial 1	Industrial uses	As per Scheme	N/A	60%	2	0.9	104400	N/A
1203-1213	Undetermined	Dwelling Houses and Agricultural buildings	As per Scheme	N/A	10%	2	As per site development plan	-	-
1201-1202	Undetermined	Dwelling Houses and Agricultural buildings	As per Scheme	N/A	20%	2	As per site development plan	-	-
863-875	Business 1	Shops, offices and Professional rooms	As per Scheme	N/A	As per site development plan	2	0.5	69950	N/A
1130-1142,1214-1215	Special	Private Open Space		N/A	As per site development plan	1	As per Site Development Plan	-	-
1128-1129	Special	Cemetery and Funeral Parlour		N/A	As per site development plan	As per site development plan	As per site development plan	-	-
926	Institutional	Institutions, Place of Public Worship and Place of Instruction	As per Scheme	N/A	70%	2	0.6	2100	N/A
1127	Educational	Place of Instruction and Place of Public Worship	As per Scheme	N/A	50%	2	0.5	17050	N/A
1157-1158	Special	Private Open Space and Social Halls		N/A	As per site development plan	As per site development plan	As per site development plan	-	-
1144	Special	Workshop, Maintenance and Storage		N/A	50%	1	As per Site development Plan		
1150-1155	Special	Place of Amusement, Social Hall, Place of Public worship, Place of Instruction and Public Office		N/A	60%	2	0.8	14560	N/A
1145	Special	Industrial Use , Public Garage and Shop		N/A	50%	2	As per site development plan	-	-
1146-1148	Special	Engineering Services, including reservoir, pump station, electrical substation and associated maintenance facilities		N/A	As per site development plan	As per site development plan	As per site development plan	-	-
1149	Special	Engineering Services,		N/A	As per site	As per site	As per site		-

		including reservoir, pump station, electrical substation and associated maintenance facilities and sewerage treatment plant			development plan	development plan	development plan		
1156	Special	Telecommunication Centre	Telecommunication Mast	N/A	As per site development plan	As per site development plan	As per site development plan	-	-
1159-1160	Special	Access Structure and Gatehouse		N/A	As per site development plan	As per site development plan	As per site development plan	-	-

6. MOTIVATION

6.1 SPATIAL PLANNING CONSIDERATIONS

6.1.1 Given that the Kleinfontein Settlement already accommodates a number of fully developed dwelling units/houses and associated facilities, it follows that the application partly seeks to regularize an existing situation which does not currently enjoy official approval by any recognized decision making authority. In this context, the spatial planning considerations which must inform the decision with regard to the establishment of the proposed development area are somewhat different when compared to a greenfield scenario where the land is yet to be settled upon. In the latter instance no development has yet occurred and a larger measure of flexibility and latitude exists with regard to the manner in which the layout plan of the development area may be adapted to respond to extraneous impacts and planning considerations. This cannot be relevant to the "as built" reality in Kleinfontein.

6.1.2 From an access and accessibility perspective, the situational context of the Kleinfontein Settlement is positive. The subject property is conveniently situated within easy reach of two main urban centres namely:

- Tshwane/Pretoria in the west; and
- Bronkhorstspruit in the east

Apart from the convenient geographical situation as aforesaid, the proximity of the N4 National Road to the north of the subject property (and within easy reach) provides excellent accessibility both at local and regional levels. This also applies with regard to secondary roads linking other urban centres such as the Cullinan/Rayton areas to the north and the Bapsfontein/Benoni centres to the south. The secondary roads such as the R483 and R631 serve to enhance the accessibility enjoyed by the subject property. The siting of a settlement in such circumstances, from a spatial planning perspective, is therefore sound.

6.1.3 With regard to the intended longer term development of the settlement as a fully integrated mixed use facility, and considering the substantial agricultural component thereof, it is evident that few, if any, other existing or planned land development areas within the larger Tshwane area are entirely comparable with the Kleinfontein example. The nature of the mixing of land use typologies within the confines of Kleinfontein will, of necessity, demand the availability of a large expanse of land, incorporating a component with agricultural potential, to support the notion of small-scale farming in support of the larger settlement. The availability of large expanses of land of this nature (in the order of 790 ha) within the confines of typically demarcated urban areas, is virtually non-existent and effectively precludes any practical prospect of establishing a fully integrated settlement which resembles the various land use components available in Kleinfontein.

6.1.4 Whilst the development principles enshrined in the Development Facilitation Act fully support the notion of mixed land use typologies and the Act specifically includes chapters dedicated to small-scale farming projects, this model has not yet found its way into well defined land use zones in planning instruments such as town planning and land use management schemes and spatial development frameworks. The unique combination of typical suburban residential enclaves, incorporated into an area with a large component of small-scale farming, the provision of locally required retail and business facilities and a component of

manufacturing/industrial facilities, all supported by a full array of social facilities, is generally unheard of within the context of the greater Tshwane area. This applies equally to other municipal areas in Gauteng.

6.1.5 The current and planned components of the larger Kleinfontein Settlement cannot be described as being predominantly urban in nature and, as a result, cannot be expected to be situated within the confines of any demarcated urban area associated with the various urban nodes of the larger Tshwane jurisdiction. It follows that, from a spatial planning perspective, the evaluation of the land development application (partly to regularize and partly to establish new development rights) must be dealt with in a circumspect manner and, of necessity, must acknowledge these peculiar circumstances and realities.

6.1.6 Many of the developments which have occurred along the corridor associated with the extension of the Lynnwood Road spine (M6/R25) in parallel to the N4 national road are described as either *"rural estates or eco-estates or tourism related facilities"* which derive some benefit from the natural features in the area (hill ranges, water bodies, natural bushland areas, etc.). Ultimately, the majority of such developments are essentially residential estates, providing an array of residential development opportunities at fairly low densities of occupation (i.e. large land areas interspersed by natural vegetation and natural features). Examples such as Waterlake Farm and Klipkop Estate, a short distance west of the subject property are relevant to this comparison. Both the latter examples are development areas approved by the Tribunal.

6.1.7 Contrary to this popular trend, the Kleinfontein example relies on an assembly of land use components of greater variety and which are, to an extent interdependent and supportive of each other, based on an integrated development model where parts of the resident community can live, work, relax and later retire, without being dependent on having to travel large distances to places of employment, to purchase farm produce, to have access to educational, frail care facilities, etc. It is in this respect that the Kleinfontein Settlement is markedly different to any of the examples mentioned above and must be evaluated against these realities.

6.2 DEVELOPMENT BEYOND THE URBAN EDGE

6.2.1 The Kleinfontein Settlement is situated beyond the defined urban edge in what used to be the Kungwini area of jurisdiction, prior to it being incorporated into Tshwane.

6.2.2 The Spatial Development Framework for the Kungwini Local Municipality (dd November 2010) indicates a number of areas contained within "urban edges" primarily associated with the urban areas of Bronkhorstspruit and the urban areas associated with the Silver Lakes node. The Kleinfontein Settlement is excluded in both instances and, with reference to the Kungwini Spatial Development Framework Map on page 30 of the Composite Report to the Kungwini Spatial Development Framework dd November 2010, it appears that Kleinfontein is partly situated within an area earmarked for "Restrictive Development", whilst parts are situated within what is described as "Agriculture". In this regard please refer to ***Map 8*** hereto being an extract from the Kungwini Spatial Development Framework.

6.2.3 It appears from the Composite Report that the terms referred to above (i.e. Restricted Development and Agriculture) are described on pages 34 and 35 of the report, copies of which are enclosed under ***Appendix P*** hereto. Suffice it to

confirm that, as far as "Agriculture" concerned, the core land use is restricted to agricultural use and agricultural product processing, whilst the land use mix makes reference to farming and related activities, bed and breakfast facilities, small conference facilities and other non-agricultural uses. With reference to "Restrictive Development" this appears to incorporate low intensity agricultural and related uses, low intensity residential developments and limitation on certain subdivisions.

6.2.4 Whilst the choice of wording in the Composite Report (development controls) appears to be somewhat restrictive with regard to the various land use categories denoted in the Spatial Development Framework, it is important to consider the phraseology chosen by the authors of the Composite Report in the introductory paragraphs thereof. The following excerpt is of particular importance:

> ***"Following the direction of the White Paper on Wise Land Use: Spatial Planning and Land Use Management (Department of Land Affairs, 2001), the Spatial Development Framework is intended to:***
>
> - ***Function as a <u>strategic, indicative and flexible</u> forward planning tool, to guide decisions on land development;***
> - ***Develop a set of <u>policies and principles, and an approach</u> to the management of spatial development in the area which is clear enough to guide decision makers in dealing with land development applications (i.e. it will serve to inform the formulation of a new land use management system);***
> - ***Provide a <u>clear and logical framework</u> for spatial development by providing an <u>indication</u> of where the public sector would, in the first instance, <u>support certain forms of development</u> and where State investment is likely to be targeted in the short-medium term;***
> - ***Based on this, to provide a <u>clear spatial logic</u> that would facilitate private sector decisions on investment in the built environment;***
> - ***Facilitate the <u>social, economic and environmental sustainability</u> of the area; and***
> - ***In the rural context, provide a framework for dealing with key issues such as natural resource management, land reform, <u>subdivision of rural land</u> and the <u>conservation of prime</u> and unique agricultural land".***

6.2.5 Considering the underlined parts of the aforesaid quotation, it is evident that a Spatial Development Framework, as pertains to the area in which the subject property is situated, is neither cast in stone nor may it ever serve as a blue print for evaluating future development. It appears from the status quo report which informed the Spatial Development Framework for Kungwini that the *de facto* use of the Kleinfontein Settlement is not specifically identified during the investigations which preceded the finalization of the composite report for the SDF. Kleinfontein is not recognized on any map or plan but is identified as an "illegal use" that requires to be addressed, given that its ongoing use detrimentally affects the Municipalities tax revenue. More about this in later paragraphs hereof.

6.2.6 Of further importance are the principles and objectives and strategies of the Kungwini SDF contained in the Composite Report, an extract of which is enclosed under ***Appendix ...*** hereto. From page 15 of the Composite Report, the following excerpts are quoted:

> - ***"Planned, isolated or <u>dispersed informal settlements</u> .. <u>with services</u> and support programmes that <u>discourage monofunctional/single use</u> townships and <u>encourage the integration of a mix of compatible uses</u> where possible.***
>
> - ***Plan areas in an <u>integrated manner</u>, based on the functionality of the area;***