

**Heritage impact assessment for the  
PROPOSED MOUNTAIN VIEW ESTATE DEVELOPMENT ON PORTIONS OF THE  
FARMS SIMONSVIEW, KALKHEUWEL, RHENOSTERSPRUIT AND RIVERSIDE,  
NORTH WEST AND GAUTENG PROVINCES**



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**Declaration:**

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



J A van Schalkwyk (D Litt et Phil)  
Heritage Consultant  
May 2010

## EXECUTIVE SUMMARY

### **HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED MOUNTAIN VIEW ESTATE DEVELOPMENT ON PORTIONS OF THE FARMS SIMONSVIEW, KALKHEUWEL, RHENOSTERSPRUIT AND RIVERSIDE, NORTH WEST AND GAUTENG PROVINCES**

It is proposed to develop a housing estate, called Mountain View Estate, located on the provincial boundary between Gauteng and North West Province, near Lanseria International Airport.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by **Triviron Environmental Consultants** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where the proposed development is to take place.

- Two informal cemeteries were identified in the study area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with high significance on a local level. These sites are protected by the Heritage Act and therefore, if it is to be impacted on by the proposed development, a permit for its destruction should be obtained from SAHRA, as well as the Department of Health and the Police. Fortunately the developer plans to retain this site. It will be fenced off with a gate to make it accessible to descendants that still visit some of the graves on a regular interval.
- Some lime quarrying took place in the study area. This is one of probably hundreds of similar sites occurring in the larger region. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA's database of heritage sites.
- Some stone walling occurring in a very overgrown area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA's database of heritage sites.

Therefore, from a heritage point of view we recommend that the proposed development can continue, on condition of acceptance of the above mitigation measures. Furthermore, we request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk  
Heritage Consultant  
May 2010

**TECHNICAL SUMMARY**

<b>Property details</b>	
Province	Gauteng & North West
Magisterial district	Pretoria/Brits
Topo-cadastral map	2527DD
Closest town	Pretoria
Farm name	Simonsview 490JQ, Kalkheuwel 493JQ, Rhenosterspruit 495JQ and Riverside 497JQ
Portions/Holdings	Portion9; Portions 28, 29, 30, 31, 33, 36 & 38; Portion 5

<b>Development criteria in terms of Section 38(1) of the NHR Act</b>	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	Yes
Rezoning of site exceeding 10 000 sq m	No
Any other development category, public open space, squares, parks, recreation grounds	No

<b>Development</b>	
Description	Housing estate
Project name	Mountain View Estate

<b>Land use</b>	
Previous land use	Farming
Current land use	Vacant

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## **GLOSSARY OF TERMS AND ABBREVIATIONS**

### **TERMS**

**Study area:** Refers to the entire study area as indicated by the client in the accompanying Fig. 1 - 2.

**Stone Age:** The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

**Iron Age:** Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. These people, according to archaeological evidence, spoke early variations of the Bantu Language. Because they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

**Historical Period:** Since the arrival of the white settlers - c. AD 1840 - in this part of the country

### **ABBREVIATIONS**

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
BP	Before Present
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

# HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED MOUNTAIN VIEW ESTATE DEVELOPMENT ON PORTIONS OF THE FARMS SIMONSVIEW, KALKHEUWEL, RHENOSTERSPRUIT AND RIVERSIDE, NORTH WEST AND GAUTENG PROVINCES

## 1. INTRODUCTION

It is proposed to develop a housing estate, called Mountain View Estate, located on the provincial boundary between Gauteng and North West Province, near Lanseria International Airport.

The major components of the proposed project entail the following:

- 86 Residential stands with a building footprint of 2000m<sup>2</sup> for development or improvement per stand.
- Waste water treatment will be onsite by means of an appropriate treatment packaging plant.
- A light aircraft landing strip will be used on the property.
- Associated infrastructure and services.

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. However, according to Section 27(18) of the National Heritage Resources Act (NHRA), No. 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by **Triviron Environmental Consultants** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where the proposed development is to take place.

## 2. TERMS OF REFERENCE

The scope of work for this study consisted of:

- Conducting of a desk-top investigation of the area, in which all available literature, reports, databases and maps were studied;
- A visit to the proposed development area.

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development area;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

### 3. HERITAGE RESOURCES

#### 3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
  - ancestral graves;
  - royal graves and graves of traditional leaders;
  - graves of victims of conflict;
  - graves of individuals designated by the Minister by notice in the Gazette;
  - historical graves and cemeteries; and
  - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
  - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - objects to which oral traditions are attached or which are associated with living heritage;
  - ethnographic art and objects;
  - military objects;
  - objects of decorative or fine art;
  - objects of scientific or technological interest; and
  - books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

#### 3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;



- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- sites of significance relating to the history of slavery in South Africa.

## 4. STUDY APPROACH AND METHODOLOGY

### 4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figures 1 - 2.

### 4.2 Methodology

#### 4.2.1 Preliminary investigation

##### 4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted.

- Some information was obtained from publications dealing with events and places in the larger region (Voigt 1973; Van Vollenhoven & Van den Bos 1997).
- Some information was obtained from previous heritage impact assessment studies done in the region (Van Schalkwyk 1998, 2004, 2005).

##### 4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor-General* and the *National Archives of South Africa* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development.
- No information was found in the National Archives of South Africa or with the Chief Surveyor-General.

##### 4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature were obtained from these sources

#### 4.2.2 Field survey

The area that had to be investigated was identified by **Triviron Environmental Consultants** by means of maps. The survey was done by travelling along existing tracks.

During the survey the archaeologist was accompanied by Mr B Richter, the farm manager who has been working here for more than ten years.

As the area is in the proximity of the Cradle of Humankind, all outcrops were inspected for possible caves and sinkholes.

### 4.3 Limitations

During the survey the vegetation was very high and dense, seriously limiting the archaeological visibility.

## 5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 5.1 Site location and description

The study area is an irregular piece of land, consisting of Simonsview 490JQ, Portion 9 of Kalkheuwel 493JQ; Portions 28, 29, 30, 31, 33, 36 & 38 of Rhenosterspruit 495JQ; Portion 5 of Riverside 497JQ, located in two magisterial districts, Pretoria and Brits (Fig. 1). For more information, please see the Technical Summary presented above.

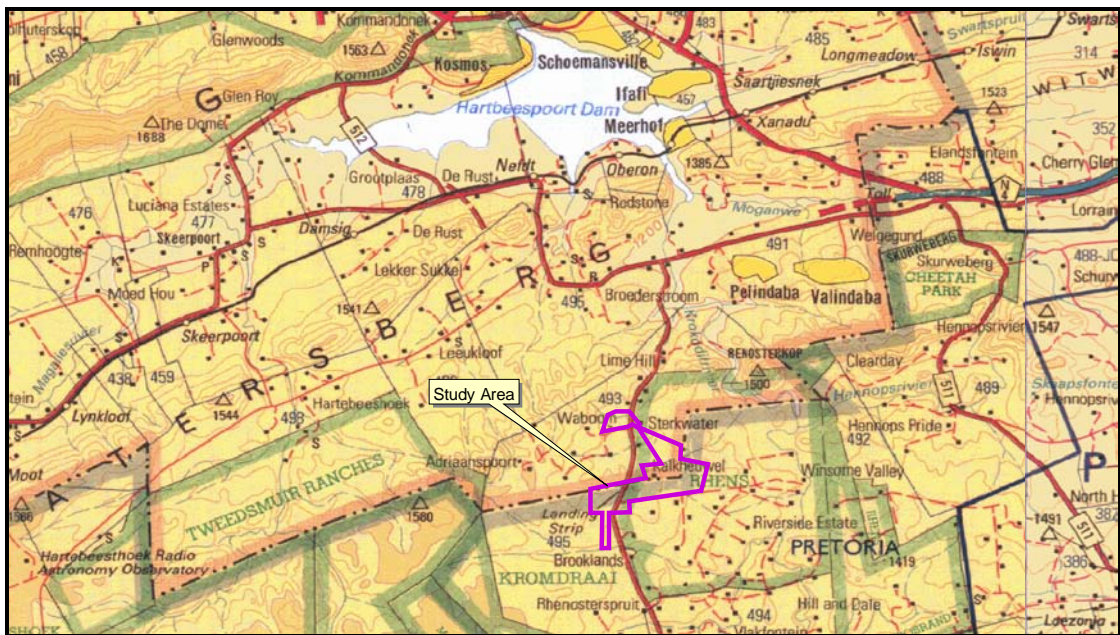


Fig. 1. Location of the study area (green outline) in regional context. (Map 2528: Chief Surveyor-General)

The study area is located on the eastern edge of the area classified as the Cradle of Humankind and north of Lanseria International airport. The original vegetation is classified as Rocky Highveld Grassland. The topography is described as undulating hills and the geology is made up of dolomite. A number of outcrops occur in the study area and some of them have been mined for limestone.

## 5.2 Regional overview

### 5.2.1 Stone Age

A large number of well-known sites containing hominid fossils are known to occur in the Cradle of Humankind area. These sites occur some distance to the west of the study area.

Stone Age tools associated with the Early and Middle Stone Age are common, especially along the spruits and rivers where they cut through ridges and at the lower parts of the ridges and larger outcrops. These are viewed as find spots rather than sites per sé. That means that as most of these are surface finds, they are viewed to be out of context and do not have any significance.

Only a few stratified sites are known in the Magaliesberg range, but even these have little significance as the deposits have either eroded away, or have been impacted upon by later occupants of the shelters.

### 5.2.2 Iron Age

Although the Early Iron Age dates back to c. AD 200, such sites are not known from the larger region. The closest one is the famous Broederstroom site located to the south of Hartbeestpoort dam in North West Province.

Sites dating to the Late Iron Age are found all over the larger region. These can be related to the Tswana-speakers that occupied the region since the early 1600.

### 5.2.3 Historical period

Early white farmers selected farms and then provided a description of the farm to the local landdrost, who noted the detail in a registration book and gave the claimant a copy. Claimed land was then inspected before a title and deed were issued. Since the registration of land entailed registration costs and annual land taxes, it was often delayed as long as possible. As a result, the registration of land claimed on the basis of burgher rights continued well into the 1890s.

This was also the area over which the British troops advanced during the 2<sup>nd</sup> Anglo-Boer War, and some skirmishes took place in the larger region. In order to prevent Boer forces freedom of movement, a system of block houses were built, some of which are located on the farm Kalkheuvel (Van Vollenhoven & Van den Bos 1997).

Since its founding in 1855, urban development of Pretoria remained concentrated in the central area around Church Square. Elsewhere, settlement was mainly agricultural, characterized by the subdivision of the original farms to accommodate children. During the 1940-1950 era there was a large increase in the urban population and many new suburbs were developed on the periphery of the urban area.

## 5.3 Identified sites

The following cultural heritage resources were identified in the study area:

### 5.3.1 Stone Age

- No sites, features or objects dating to the Stone Age were identified in the study area.

### 5.3.2 Iron Age

- No sites, features or object dating to the Iron Age were identified in the study area.

### 5.3.3 Historic period

- Two small informal cemeteries dating to the last 50 to 60 years were identified in the study area.
- Some lime quarrying took place in the study area. It was probably used to supply the lime furnace that used to exist a few kilometres to the northeast of the study area.
- Some stone walling occurring in a very overgrown area. It seems to be a large circular structure. The remains of an old wagon occur on the site, as well as some pieces of glass and metal.

## 6. SITE SIGNIFICANCE AND ASSESSMENT

### 6.1 Heritage assessment criteria and grading

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable of mitigation measures would allow the development activities to continue.

### 6.2 Statement of significance

In terms of Section 7 of the NHRA, all the sites currently known or which are expected to occur in the study area are evaluated to have Grade III significance.

- Two informal cemeteries were identified in the study area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with high significance on a local level. These sites are protected by the Heritage Act and therefore, if it is to be impacted on by the proposed development, a permit for its destruction should be obtained from SAHRA, as well as the Department of Health and the Police.
- Some lime quarrying took place in the study area. This is one of probably hundreds of similar sites occurring in the larger region. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level
- Some stone walling occurring in a very overgrown area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level.

### 6.3 Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, are based on the present understanding of the development.

- One of the cemeteries is located inside the area where the development is to take place. Fortunately the developer plans to retain this site. It will be fenced off, with a gate to make it accessible to descendants that still visit some of the graves on a regular interval.
- Some lime quarrying took place in the study area. This is one of probably hundreds of similar sites occurring in the larger region. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA's database of heritage sites.
- Some stone walling occur inside the area where the development is to take place. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA's database of heritage sites.

## 7. RECOMMENDED MANAGEMENT MEASURES

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 by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted, can be written into the management plan, whence they can be avoided or cared for in the future.

### 7.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

#### 7.2.1 Construction phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance; and
- To avoid disturbing burial sites.

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and

- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

#### 7.2.2 Operation phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance.

The following shall apply:

- Continued care should be taken to observe discovery of any sites of heritage significance during operation. Should any archaeological artifacts and palaeontological remains be exposed during operations, work on the area where the artefacts were found, shall cease immediately and the appropriate person shall be notified as soon as possible;
- Upon receipt of such notification, an Archaeologist or Palaeontologist shall investigate the site as soon as practicable. Acting upon advice from these specialists, the necessary actions shall be taken;
- Under no circumstances shall archaeological or palaeontological artefacts be removed, destroyed or interfered with by anyone on the site during operations; and
- The operator shall advise its workers of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51(1).

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Body Corporate, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All residents and their visitors should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Body Corporate as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

## 8. CONCLUSIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop a housing estate.

- Two informal cemeteries were identified in the study area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with high significance on a local level. These sites are protected by the Heritage Act and therefore, if it is to be impacted on by the proposed development, a permit for its destruction should be obtained from SAHRA, as well as the Department of Health and the Police. Fortunately the developer plans to retain this site. It will be fenced off with a gate to make it accessible to descendants that still visit some of the graves on a regular interval.
- Some lime quarrying took place in the study area. This is one of probably hundreds of similar sites occurring in the larger region. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA's database of heritage sites.

- Some stone walling occurring in a very overgrown area. In terms of Section 7 of the NHR Act, No. 25 of 1999, it is evaluated to be a Grade III site, with low significance on a regional level. As it is judged to have a low significance, it is seen as fully documented after listing it in this document – which will ensure its inclusion in SAHRA’s database of heritage sites.

Therefore, from a heritage point of view we recommend that the proposed development can continue, on condition of acceptance of the above mitigation measures. Furthermore, we request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

## 9. REFERENCES

### 9.1 Data bases

Chief Surveyor General

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

Heritage Atlas Database, Pretoria.

National Archives of South Africa

### 9.2 Literature

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Van Vollenhoven, A. & Van den Bos, J. 1997. *'n Kultuurhulpbronstudie van die Britse blokhuisstelsel van die Tweede Anglo-Boer oorlog (1899-1902) in die voormalige Transvaal (ZAR)*. Pretoria: Raad vir Geesteswetenskaplike Navorsing.

Voigt, E. 1973. Preliminary report on Welgegund: an Iron Age burial site. *South African Archaeological Bulletin* 27:155-163.

### 9.3 Maps and aerial photographs

1: 50 000 Topocadastral maps: 2527DD

Google Earth



## APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

### Significance

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical 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.

Matrix used for assessing the significance of each identified site/feature

<b>1. Historic value</b>			
Is it important in the community, or pattern of history			
Does it have strong or special association with the life or work of a person, group or organisation of importance in history			
Does it have significance relating to the history of slavery			
<b>2. Aesthetic value</b>			
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group			
<b>3. Scientific value</b>			
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage			
Is it important in demonstrating a high degree of creative or technical achievement at a particular period			
<b>4. Social value</b>			
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons			
<b>5. Rarity</b>			
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage			
<b>6. Representivity</b>			
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects			
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class			
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.			
<b>7. Sphere of Significance</b>			
	High	Medium	Low
International			
National			
Provincial			
Regional			
Local			
Specific community			
<b>8. Significance rating of feature</b>			
1.	Low		
2.	Medium		
3.	High		

**Significance of impact:**

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

**Certainty of prediction:**

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

**Recommended management action:**

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs
- 5 = retain/relocate graves

**Legal requirements:**

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

## APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

### APPENDIX 3: SURVEY RESULTS

See Appendix 1 for an explanation of the conventions used in assessing the significance of the cultural remains.

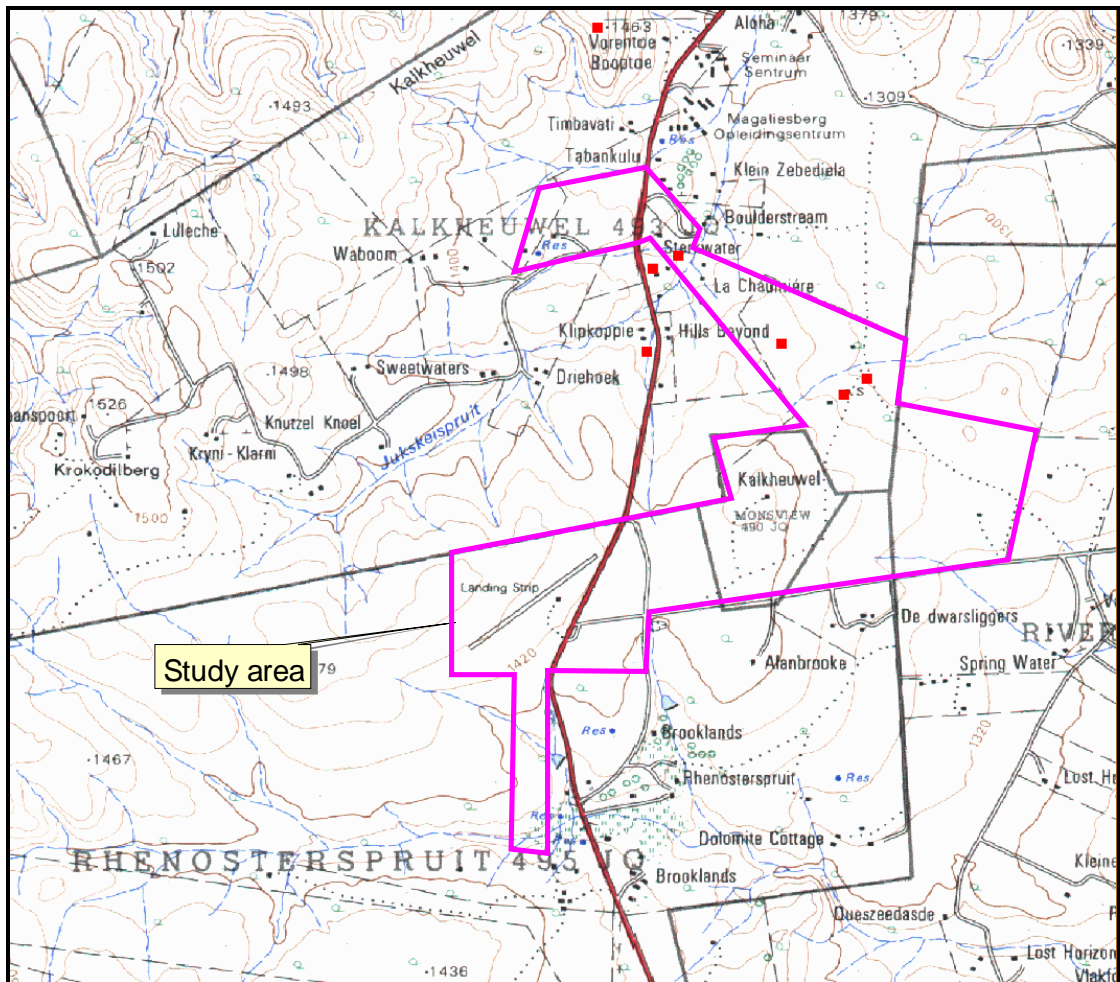


Fig. 2. The study area (purple outline) in relation to the identified heritage sites. The red dots represent the centre point of each identified sites. (Map 2528CD: Chief Surveyor-General).

**Sites identified in the study area:**

1. Location: Kalkheuvel 493JQ – S 25.85365, E 27.89696

Description: A very overgrown informal cemetery with approximately five graves marked with stone. Only one has a marker which indicates that the person has died in 1950.

Discussion: It would probably be very difficult to trace the descendants of the people buried here. It is therefore recommended that the site is retained.

Evaluation of significance: High on a local level

Recommended management action: 5 = retain/relocate graves

Legal requirements: SAHRA permit; SAPS; Dept of Health



Fig. 3. Some of the graves.

2. Location: Kalkheuvel 493JQ – S 25.85462, E 27.89564

Description: Some stone walling occurring in a very overgrown area. It seems to be a large circular structure, approximately 15 metres in diameter. In no place is the wall higher than 0,5 metres. The remains of an old wagon occur on the site, as well as some pieces of glass and metal.

Discussion: As the site is very overgrown, it is difficult to determine the exact function of the site.

Evaluation of significance: Low on a regional level

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None



Fig. 4. A section of the stone walling.

3. Location: Kalkheuvel 493JQ – S 25.85156, E 27.89195

Description: Old limestone quarry in an outcrop. The lime was probably burned in an old kiln that occurred approximately 2 km to the north-east. The position of this latter feature was determined from the 1943 version of the 1:50 000 topocadastral map (see Fig. 10).

Discussion: This is one of probably hundreds of similar sites occurring in the larger region.

Evaluation of significance: Low on a regional level

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None



Fig. 5. One of the trenches in the quarry.

4. Location: Kalkheuwel 493JQ – S 25.84641, E 27.88586

Description: A very overgrown informal cemetery with approximately three graves. The graves are only marked with stone. Adjacent to the graves there are a number of stone walls indicating some kind of homestead. Unfortunately the vegetation cover is very dense, making it difficult to determine its layout.

Discussion: It would probably be very difficult to trace the descendants of the people buried here. As the site falls outside the area of development it is recommended that it is retained.

Evaluation of significance: High on a local level

Recommended management action: 5 = retain/relocate graves

Legal requirements: SAHRA permit; SAPS; Dept of Health



Fig. 6. One of the graves.



Fig. 7. Some of the stone walling.



APPENDIX 4: ILLUSTRATIONS

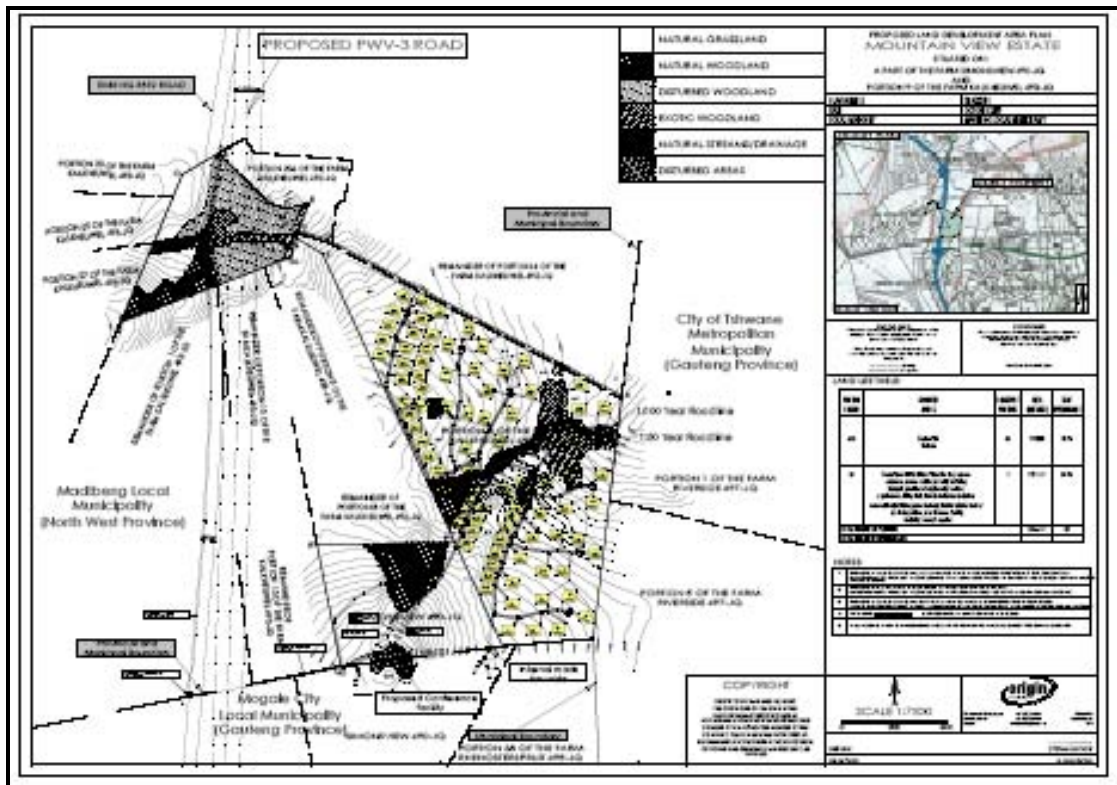


Fig. 8. The layout of the proposed development.



Fig. 9. The study area seen from the air.  
(Photo: Google Earth)

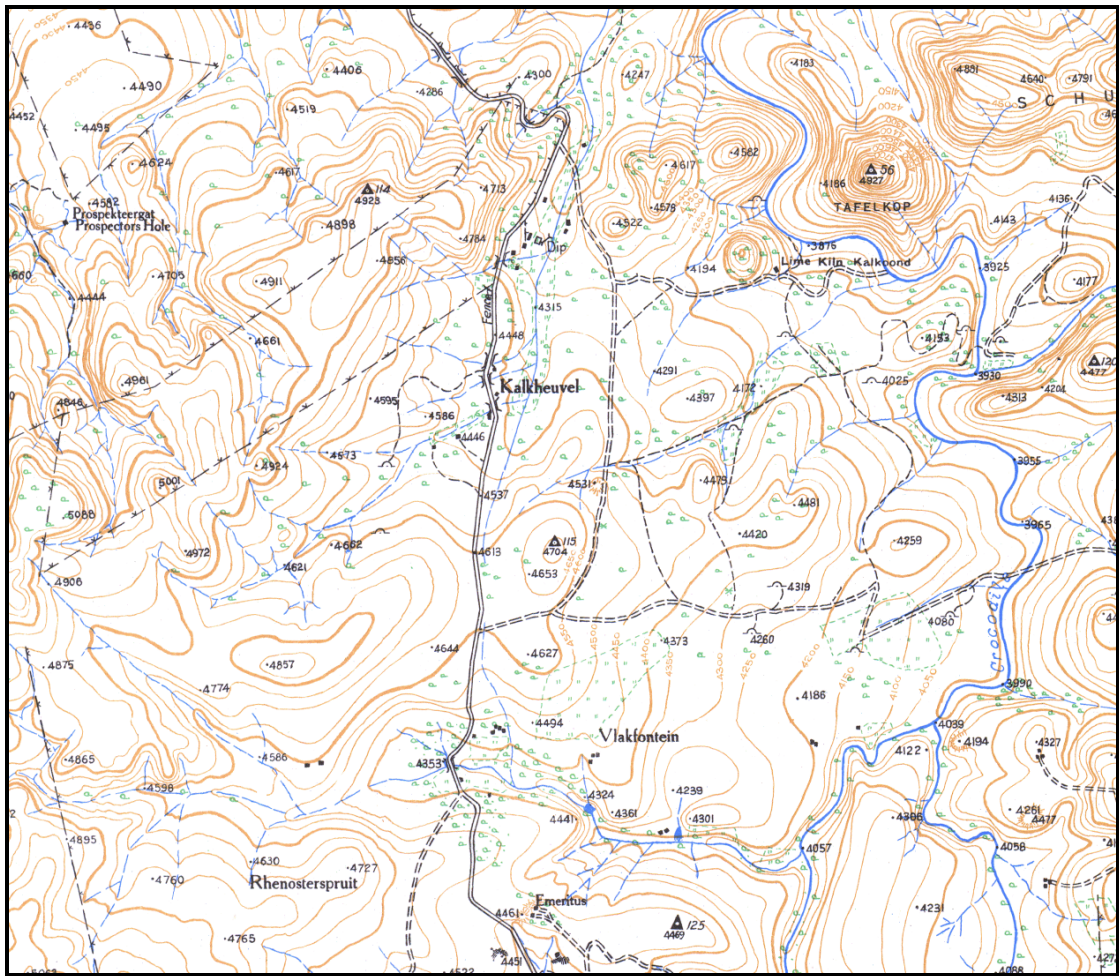


Fig. 10. The 1943 version of the 1:50 000 topocadastral map, showing the lack of development in the region.  
(Map 2527DD: Chief Surveyor-General)



Fig. 11. View across the area where the development is to take place.



Fig. 12. View across the southern section of the study area.



Fig. 13. The landing strip in the southern section of the study area.