

Comprehensive and Professional Solutions for all Heritage Related Matters
CK 2006/014630/23 **VAT NO.: 4360226270**

**A PHASE 1 HERITAGE IMPACT ASSESSMENT & REPORT FOR
PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 136
OF THE FARMS ZANDFONTEIN 317JR
NEAR KIRKNEY, GREATER TSHWANE MUNICIPALITY
GAUTENG PROVINCE**

For:

***Mokone Consulting
Town Planners & Property Consultants***

REPORT: **APAC023/09**

by:

***A.J. Pelsers
Accredited member of ASAPA
Member No. 106***

January 2023

**P.O.BOX 73703
LYNNWOOD RIDGE
0040
Tel: 083 459 3091
Fax: 086 695 7247
Email: apac.heritage@gmail.com**

Member: AJ Pelsers BA (UNISA), BA (Hons) (Archaeology), MA (Archaeology) [WITS]

©Copyright

APELSEER ARCHAEOLOGICAL CONSULTING

The information contained in this report is the sole intellectual property of APELSEER Archaeological Consulting. It may only be used for the purposes it was commissioned for by the client.

DISCLAIMER:

Although all efforts are made to identify all sites of cultural heritage (archaeological and historical) significance during an assessment of study areas, the nature of archaeological and historical sites are as such that it is always possible that hidden or subterranean sites, features or objects could be overlooked during the study. APELSEER Archaeological Consulting can't be held liable for such oversights or for costs incurred as a result thereof.

Clients & Developers should not continue with any development actions until SAHRA or one of its subsidiary bodies has provided final comments on this report. Submitting the report to SAHRA is the responsibility of the Client unless required of the Heritage Specialist as part of their appointment and Terms of Reference

A handwritten signature in black ink, appearing to be 'A. El' or similar, located below the disclaimer text.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Mokone Consulting to conduct a Phase 1 Heritage Impact Assessment for proposed Township Development on Portion 136 of the farm Zandfontein 317JR. The study & proposed development area is located near Kirkney (in the north of Pretoria) in the Greater Tshwane Municipality of Gauteng.

The literature review indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls. Some sites & features of recent cultural heritage origin were identified and recorded in the study and proposed development area during the January 2023 field assessment. These are however deemed of low significance. This report discusses the results of both the background literature research and physical assessment and provides recommendations on the way forward.

From a Cultural Heritage point of view, it was determined that the proposed Portion 136 Zandfontein 317JR Township Development should be allowed to continue provided that the recommendations made in the report are implemented.

CONTENTS

1. INTRODUCTION	5
2. TERMS OF REFERENCE	5
3. LEGISLATIVE REQUIREMENTS.....	5
4. METHODOLOGY	8
5. DESCRIPTION OF THE AREA	9
6. DISCUSSION.....	14
7. CONCLUSIONS AND RECOMMENDATIONS	28
8. REFERENCES	28
APPENDIX A: DEFINITION OF TERMS:.....	30
APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE.....	31
APPENDIX C: SIGNIFICANCE AND FIELD RATING:	32
APPENDIX D: PROTECTION OF HERITAGE RESOURCES:.....	33
APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES.....	34

1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by Mokone Consulting to conduct a Phase 1 Heritage Impact Assessment for proposed Township Development on Portion 136 of the farm Zandfontein 317JR. The study & proposed development area is located near Kirkney (in the north of Pretoria) in the Greater Tshwane Municipality of Gauteng.

The literature review indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls. Some sites & features of recent cultural heritage origin were identified and recorded in the study and proposed development area during the January 2023 field assessment. These are however of deemed of low significance.

The focus of the Heritage Impact Assessment was within the location and boundaries of the study & development area as indicated by the client.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

3. LEGISLATIVE REQUIREMENTS

Aspects are dealt with mainly in. The National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) are the two main legislations concerning the conservation of cultural resources, used as guidelines when conducting the Heritage Impact Assessment.

3.1. The National Heritage Resources Act (Act 25 of 1999)

According to the National Heritage Resources Act (Act 25 of 1999) (NHRA), the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures, and sites older than 100 years
- b. Ethnographic art objects (e.g., prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures, and sites older than 75 years
- e. Historical objects, structures, and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures, and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g., archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

The Heritage Impact Assessment (HIA) process is done to determine whether there are any heritage resources located within the area to be developed as well as to determine the possible impacts of the proposed development. An Archaeological Impact Assessment (AIA) only looks at archaeological resources, such as material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest. A HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34(1) of the Act state that no person may demolish any structure or part thereof that is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure refers to any building, works, device or other facility made by people, and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

To alter means any action taken that affects the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology, and Meteorites

Section 35(4) of the Act deals with archaeology, palaeontology, and meteorites. The Act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- i. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

- ii. destroy, damage, alter, exhume, or 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
- iii. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province, and local police. Furthermore, permission must also be gained from the various landowners (i.e., where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker, or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2. The National Environmental Management Act (No. 107 of 1998)

This Act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

The specific requirements that specialist studies and reports must adhere to are contained in Appendix 6 of the EIA Regulations.

4. METHODOLOGY

4.1. Review of literature

A review of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography. These include Bergh (1999), Huffman (2007) & Lombard et.al (2012).

4.2. Field survey

The field assessment component of the study was conducted on the 26th of January 2023 according to generally accepted HIA practices and aimed at locating all possible objects, sites, and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3. Documentation

All sites, objects, features, and structures identified are documented according to a general Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The study & proposed development area is located on Portion 136 of the farm Zandfontein 317JR. This is situated close to Kirkney to the north of Pretoria (Greater Tshwane Municipality) in Gauteng.

The topography of the main development area is relatively flat, with some rocky outcrops and tree cover (bluegum/other). Parts of the study area is located on a ridge that forms part of the Magaliesberg Mountain range. Dense vegetation growth (mostly grass cover) limited visibility on the ground. Parts of the larger surrounding area would have been impacted in the past by agricultural activities, while residential and related developments border the development site as well. To some extent the original and natural landscape of the study & development area have been extensively altered by these activities, and if any significant cultural heritage sites and features did exist here in the past it would have been heavily impacted or even destroyed as a result.

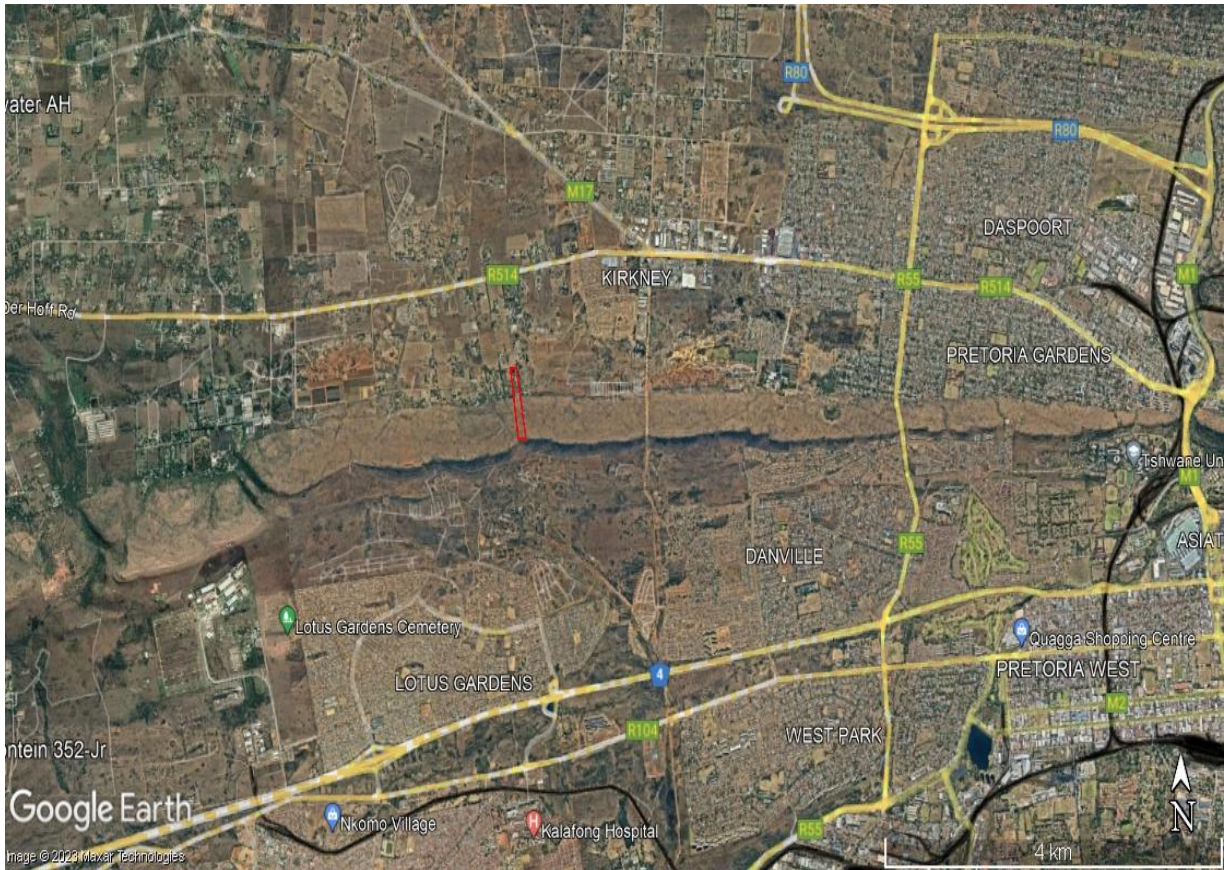


Figure 1: General location of the study & proposed development area indicated by the red polygon (Google Earth 2023).

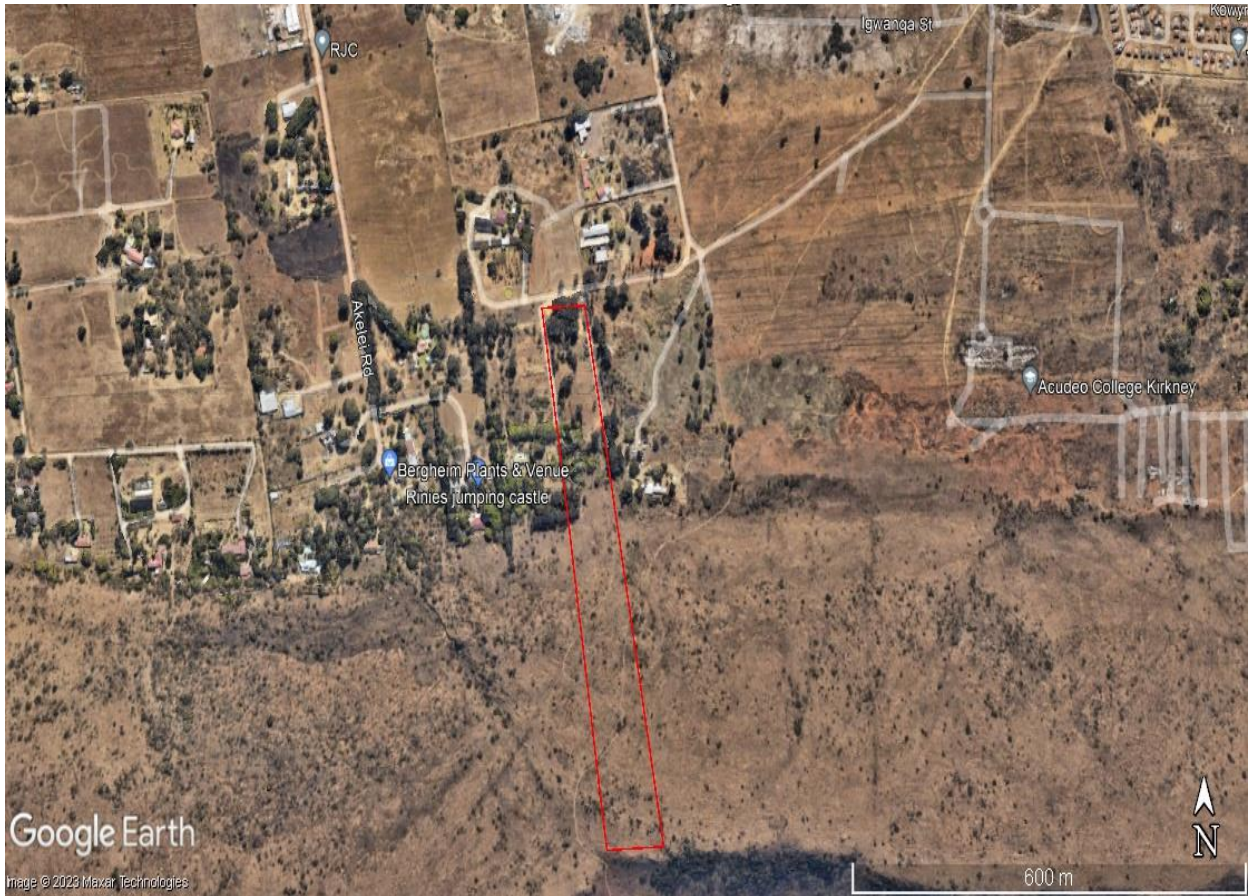


Figure 2: Closer view of the study & development area footprint (Google Earth 2023).

Ptn 136 of the Farm Zandfontein 317-JR

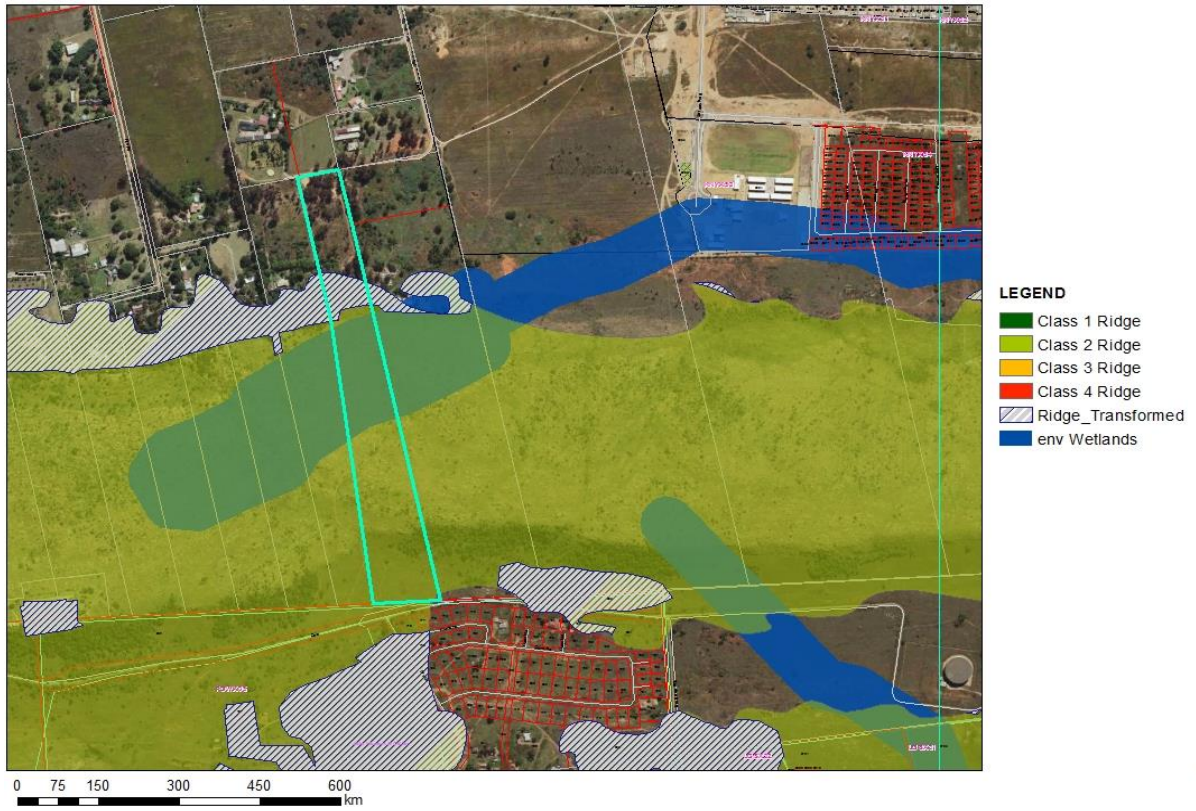


Figure 3: Location of the study and development area showing the ridges and position of wetland sections (courtesy Mokone Consulting).

Ptn 136 of the Farm Zandfontein 317-JR

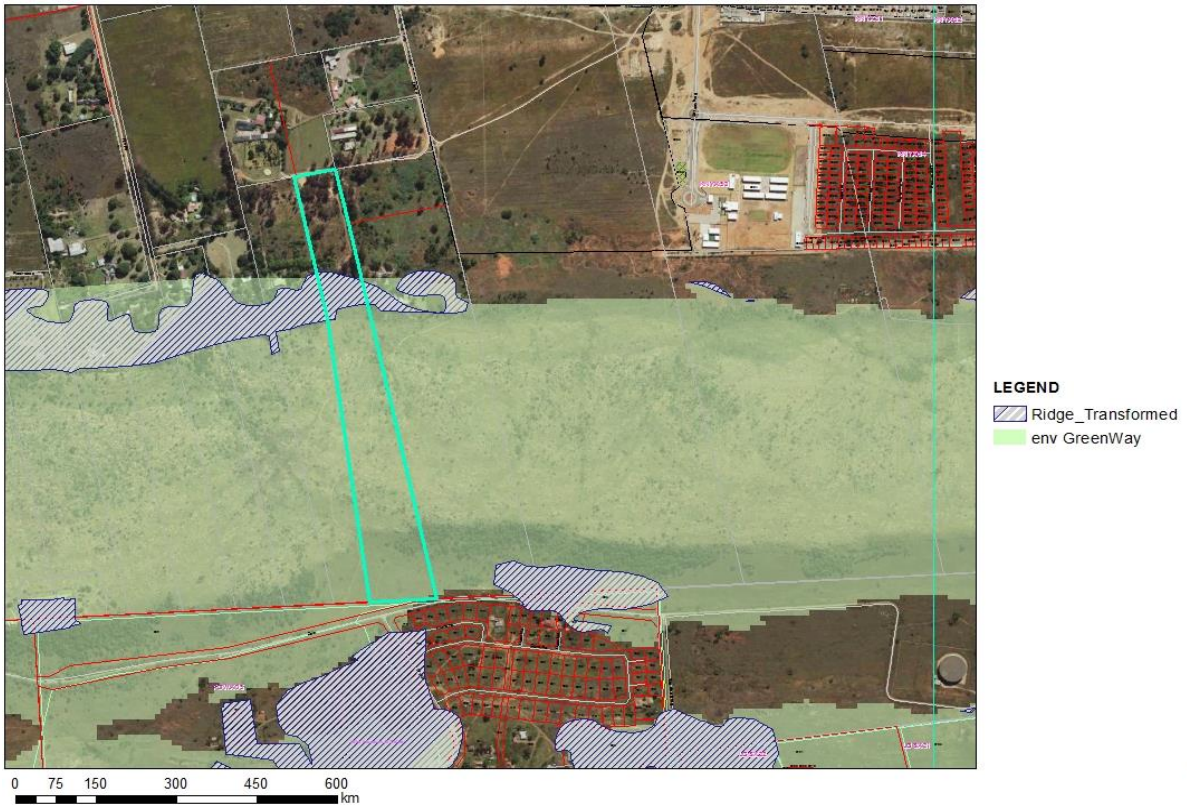


Figure 4: Another map showing the study and development area. Most of the ridge is indicated as an Environmental Greenway (courtesy Mokone Consulting).

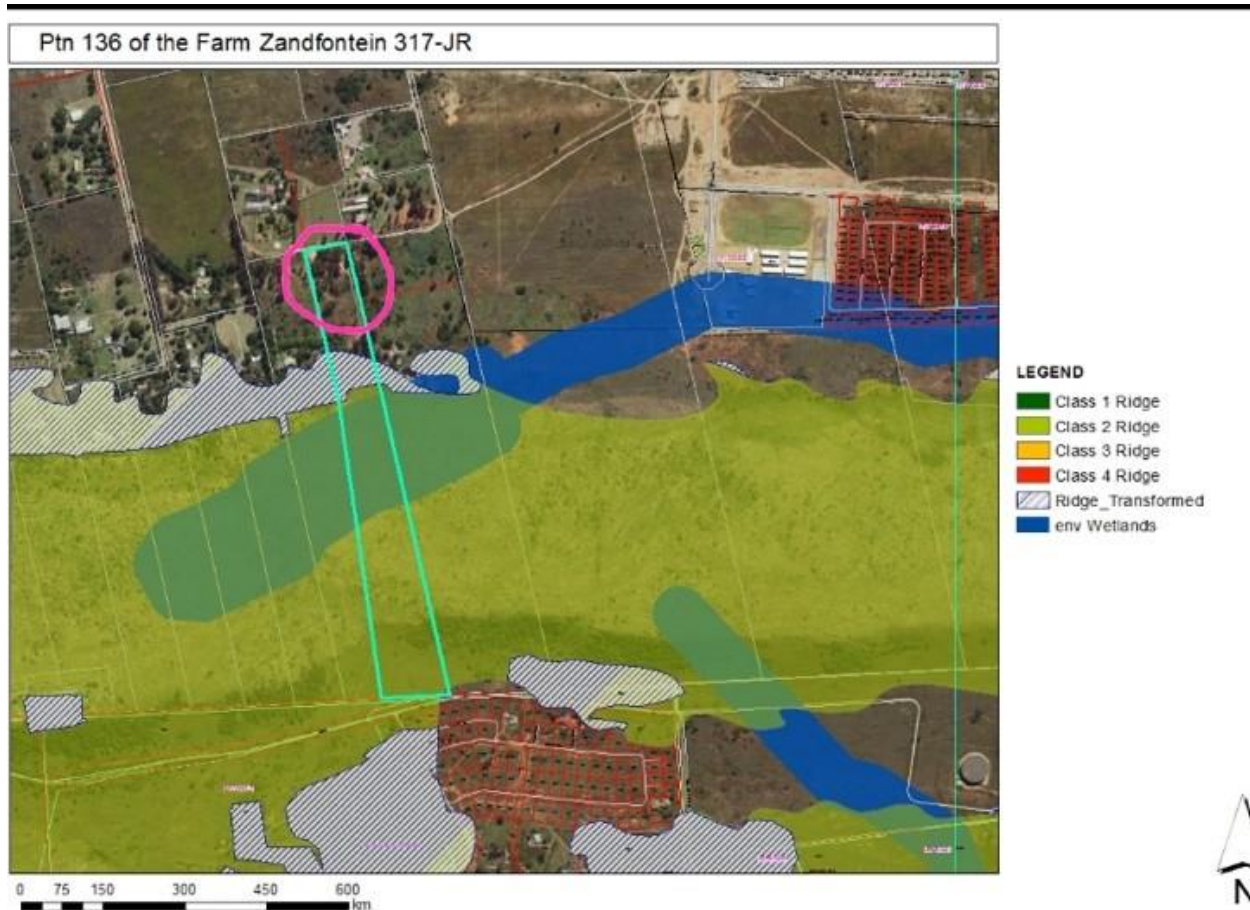


Figure 5: Map of the study & development area. The area encircled is where the development will focus (courtesy Mokone Consulting).

6. DISCUSSION

6.1 Stone age

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided into three periods as listed below. It is important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

- Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
- Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
- Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

There are no known Stone Age sites in the study area, and no artifacts from that period were identified during the site assessment. The closest known Stone Age sites are those of the well-known Early Stone Age site at Wonderboompoort and a number of sites in the

Magaliesberg area (Bergh 1999: 4). Middle Stone Age material has been identified at Erasmusrand and the Groenkloof Nature Reserve (Van Vollenhoven 2006: 183). At the Erasmusrand cave some Late Stone Age tools were also identified as well as at Groenkloof (Van Vollenhoven 2006: 184). LSA material has also been found at Zwartkops and Hennops River (Bergh 1999: 4). This last phase of the Stone Age is associated with the San people.

If any Stone Age artifacts are to be found in the area, then it would more than likely be single, out of context, stone tools. Urbanization over the last 150 years or so would have destroyed any evidence if indeed it did exist.

No Stone Age sites or material were identified in the study area during the January 2023 field assessment.

6.2 Iron age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh1999: 96-98), namely:

- Early Iron Age (EIA) 200 – 1000 A.D
- Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

- Early Iron Age (EIA) 250 – 900 A.D.
- Middle Iron Age (MIA) 900 – 1300 A.D.
- Late Iron Age (LIA) 1300 – 1840 A.D.

Iron Age people started to settle in southern Africa from around AD 300, with one of the oldest known sites at Broederstroom, dating to AD 470, located south of Hartebeespoort Dam. Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior Highveld area. The occupation of the region by Iron Age communities did not start much before the 1500s. Due to climatic fluctuations, bringing about colder and drier conditions, people were forced to avoid this area. Following a dry spell that ended just before the turn of the millennium, the climate became better again until about AD 1300. This coincided with the arrival of the ancestors of the present-day Sotho-, Tswana- and Nguni speakers in southern Africa, forcing them to avoid large sections of the interior.

During the early decades of the 19th century, the Tswana- and Ndebele-speakers were dislodged by the Matabele of Mzilikazi. Internal strife caused Mzilikazi, a general of King Shaka, and his followers to move away from the area between the Thukela and Mfolozi River (KwaZulu-Natal). Eventually, after spending some time in the Sekhukhuneland area, followed by a short stay in the middle reaches of the Vaal River, they settled north of the Magaliesberg. One of three main settlements established by them, eKungwini, was on the

banks of the Apies River, just north of Wonderboompoort. However, no remains of this settlement have ever been identified (Van Schalkwyk 2012: 6-7).

APAC cc was contracted in 2013 to conduct a Phase 2 Archaeological Investigation of stonewalled Late Iron Age (LIA) sites located close to the area proposed for the Fort West Extension 4 Township Development. These sites were identified and recorded by Dr. Johnny van Schalkwyk as part of a 2012 HIA. Seven areas containing stone walled settlements dating to the Late Iron Age were identified (Pelser 2013: 19). Although stone-walled LIA sites are not known for the Portion 136 Zandfontein study & development area, it is therefore evident that these types of sites occur in the larger geographical area.

Although no Iron Age sites, features or material were physically identified in the area during the January 2023 assessment, a possible LIA feature (stone-walled enclosure) was noted on an aerial image of the area.

6.3 Historic age

It was during the Matabele's stay along the Apies River that the first white people entered the area: travelers and hunters such as Cornwallis Harris and Andrew Smith, traders Robert Schoon and Andrew McLuckie, and missionaries James Archbell and Robert Moffat. It is known from oral history that Robert Schoon sent Mzilikazi huge quantities of glass trade beads, rather than the guns that the latter coveted so much (Van Schalkwyk 2012: 6-7).

White settlers started to occupy huge tracts of land, claiming it as farms from the late 1840's onwards. Of these, some of the earliest were Lucas Bronkhorst (Groenkloof), David Botha (Hartebeestpoort – Silverton) and Doors Erasmus (Wonderboom). With the establishment of Pretoria (1850's) services such as roads started to develop. An increase in population also demanded more food, which stimulated development of farming on the alluvial soils on the banks of the Apies River, close to the water. With the increased fear of British domination, the government of the ZAR had four forts built in the vicinity of Pretoria to protect the capital city in case of war. One of them, known as Fort Daspoortrand or Wes Fort, occurs to the north of the study area (Van Vollenhoven 1999).

The oldest map for Portion 136 of the farm Zandfontein 317JR obtained from the database of the Chief Surveyor General (www.csg.dla.gov.za – CSG Document: 10BRY01) dates to 1951 & indicates that the farm was then located in the District of Pretoria and in the Province of Transvaal. This portion of the farm (a portion of portion 110) was surveyed in November 1951. No historical sites or features are shown on this specific map.

L.G. KANTON 1008

L.G. No. A 8049/51

DEURSKAART
1:5000, 1951

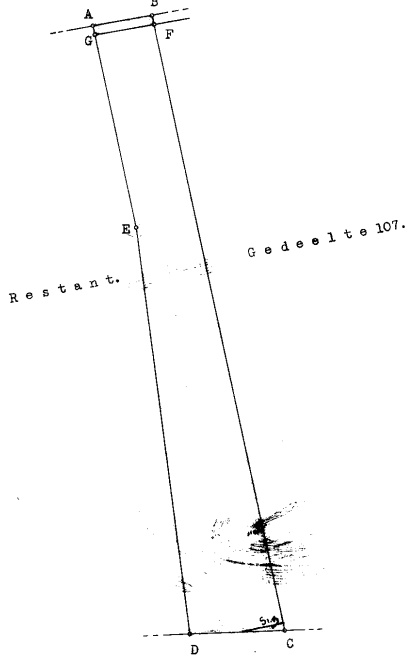
Goedgekeur

[Signature]

Landmeter-Generaal 19 3 1951

SYE Kaapse Voet	RIGTINGS- HOEKE.	KO-ORDINATE.	
		Steersel	Lo ^x 27°
		Konstanti:-	
		- 320 000.0	+9000 000.0
A B 250.0	259 59 50	A - 27 012.7	+ 40 653.6
B C 2 696.6	347 58 30	B - 27 258.9	+ 40 610.2
C D 327.9	87 56 25	C - 27 820.6	+ 43 247.6
D E 1 754.9	172 37 10	D - 27 423.0	+ 43 281.9
E A 887.4	167 58 30	E - 27 197.6	+ 41 521.5
Servituutdata:-			
B F 40.02	347 58 30	F - 27 267.24	+ 40 649.34
F G 250.0	79 59 50	G - 27 021.04	+ 40 692.76
G A 40.02	167 58 30		

Gedeelte 120.



Die figuur A B C is die voorwerp van 'n servituut. stel 'n Reg van oerpad 40.0 Kaapse voet wyd voor.

Bakenbeskrywing.

- A, D, E, F, G. - 18"x8" Ysterpen en klipstapel.
- B. - Houtdraadpaal.
- C. - 3/8" Ysterpen en klipstapel.

**Vir Servituut
Aftrekkings en
Endossemens
Sien Aankant**

Reeds geregistreer onder:
Nou registreer onder:
No. 317
REGISTRASIE AFDDELING
REGISTRATION DIVISION

Skaal 1: 5000.

Die figuur A B C D E
9.2042 Morge grond, synde Gedeelte ¹³⁶~~137~~ ('n Gedeelte van Gedeelte ¹¹⁷~~107~~)
ZANDFONTEIN Nr. 93
geleë in die DISTRIK Pretoria.
PROVINSIE TRANSVAAL

Gemeet in November 1951 deur my

[Signature]
Landmeter.

Hierdie kaart is geheg aan Akte van No. ^{18409/53} gedateer ten gunste van Registrateur van Aktes	Die oorspronklike kaart is No. A 8089/44 geheg aan Transportakte No. 9095/45 gedateer ten gunste van	L.G. Lêer No. ^{317/27} Meetstukke No. ^{18409/53} Kompilase No. ^{18409/53-22} Suiderbreedte ^{18 30 17} Oosterlengte T.P.S. (P.T.A. REGION)
---	---	---

Figure 6: The 1951 map for Portion 136 of Zandfontein 317JR (www.csg.dla.gov.za).

Some recent historical sites and features were identified and recorded in and close to the study & development area in January 2023.



Figure 7: General view of a section of the study & development area, with the ridge in the background.



Figure 8: Another view. Note the fairly dense vegetation.



Figure 9: Sections of the study area is relatively flat and open although the grass cover is dense on the ground.



Figure 10: Another section of the study area.



Figure 11: Residential developments border the study and proposed development area.

Results of the January 2023 Field Assessment

During the January 2023 field assessment some remains (foundations and rubble mostly) of recent homesteads and other unidentified related structures was found in the study and development area footprint. These are however most likely not older than 60 years of age, and have been demolished and vandalized to such an extent that they have no cultural heritage significance. The Phase 1 assessment and recording is therefore seen as sufficient and these remains can be removed as part of the proposed development actions.

GPS Location: S25 43 35.77 E28 05 21.04



Figure 12: One of the recent homestead ruins in the study area.



Figure 13: The foundations of another recent structure/homestead in the area.



Figure 14: All the recent structures identified have been reduced to foundations and rubble.



Figure 15: A view of the study & proposed development are showing the location of the recent structural remains identified (Google Earth 2023).

Although the ridge will not be developed as it is demarcated as an Environmental Greenway, and was therefore not extensively surveyed during the fieldwork, there is always a possibility of cultural heritage sites and features being located here. This is especially true for Late Iron Age stone-walled sites that are known to occur in the larger area on these ridges. One such site was identified from an aerial image (Google Earth) and could represent a typical livestock (cattle kraal) enclosure. If the proposed development moves onto the ridge these features will have to be properly investigated, mapped and drawn before demolition. It is however unlikely that the development will encroach onto the ridge area.

Approximate GPS Location: S25 43 43.67 E28 05 24.05



Figure 16: Possible Late Iron Age stone-walled remains on the ridge (Google Earth 2023).

Although it is possible that sites, features or material could have been missed as a result of many factors, it is more likely that if any are to be found in the proposed development area these would not be of any high significance. If any are to be found during the proposed development, care should be taken to avoid any possible negative impacts on these sites. A Heritage Specialist should then also be contacted to undertake a site visit to investigate the finds and to provide recommendations on the way forward.

It should also be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) in an area that there is always a possibility that some might have been missed as a result of grass cover and other factors.

Impact Assessment and Mitigation Measures

The significance of impacts is determined using the following criteria:

Probability: describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.

- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.
- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g. footprint
- **Site:** the impact could affect the whole or measurable portion of the abovementioned property.
- **Regional:** the impact could affect the area including the neighboring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
- **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
- **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.

- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

With no sites, features and material of cultural heritage origin and High significance found in the area during the assessment, the current site layout provided will not have an impact. The impact of the proposed development on recorded and known heritage sites is therefore deemed as Low.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short Term	1
	Medium Term	3
	Long Term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude)	x Probability
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: 1+1+2x1 = 4 i.e. ≤20

The impact of the proposed development on cultural heritage sites in the area is therefore deemed as Negligible based on the Impact Assessment criteria used. However, there is always a possibility of sites, features and material being missed as a result of various factors such as vegetation cover hampering visibility on the ground, as well as the often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves). These factors need to be taken into consideration and it is therefore recommended that a Chance Finds Protocol be drafted and implemented for the proposed Portion 136 of Zandfontein 317JR Development.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Mokone Consulting to conduct a Phase 1 Heritage Impact Assessment for proposed Township Development on Portion 136 of the farm Zandfontein 317JR. The study & proposed development area is located near Kirkney (in the north of Pretoria) in the Greater Tshwane Municipality of Gauteng.

The literature review indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls. During the January 2023 field assessment some remains of recent homesteads and other unidentified related structures was found in the study and development area footprint. These are however most likely younger than 60 years of age, and have been demolished and vandalized to such an extent that they have no cultural heritage significance. The Phase 1 assessment and recording can therefore be seen as sufficient and these remains can be removed as part of the proposed development actions.

Although the ridge will not be developed as it is demarcated as an Environmental Greenway there is always a possibility of cultural heritage sites and features being located here. A possible Late Iron Age feature was identified from an aerial image (Google Earth) and could represent a typical livestock (cattle kraal) enclosure. Should the proposed development move onto the ridge, the site will have to be properly investigated, mapped and drawn before demolition. It is however unlikely that the development will encroach onto the ridge area.

From a Cultural Heritage point of view, it can therefore be concluded that the proposed Portion 136 Zandfontein 317JR Township Development should be allowed to continue provided that the recommendations made above are implemented.

The often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or buried sites, features or material be uncovered during any development actions then an Archaeological expert should be contacted to investigate and provide recommendations on the way forward.

8. REFERENCES

General and Closer views of study & development area location and footprint: Google Earth

2023.

Location Maps: Provided by Mokone Consulting

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Huffman, T.N. 2007. Handbook to the Iron Age: **The Archaeology of Pre-Colonial Farming Societies in Southern Africa.** Scottsville: University of KwaZulu-Natal Press.

Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.

Pelser, A.J. 2013. **Final Report on the Archaeological Investigation of Late Iron Age Stone Walled sites to be impacted on by the Fort West Mixed Housing Development, near Pretoria Tshwane Municipal Area, Gauteng.** Unpublished Report APELSER ARCHAEOLOGICAL CONSULTING APAC013/25. For: Arengo 6. April 2013.

Republic of South Africa. 1999. **National Heritage Resources Act (No 25 of 1999).** Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act (no 107 of 1998).** Pretoria: The Government Printer.

Van Schalkwyk, J.A. 2012. **Heritage impact assessment for the Proposed Fort West Phase 1 Development, Pretoria Magisterial District, Gauteng Province.** Unpublished Report 2012/JvS/004. For: Seedcracker Environmental Consulting. January 2012.

Van Vollenhoven, A.C. 1999. Britse Blokuise in Pretoria gedurende die Anglo-Boereoorlog (1899-1902). In: **Pretoriana, No.112. October 1999. pp.20-37.**

Van Vollenhoven, A.C. 2006. Die prehistoriese en vroeë historiese tydvak in Pretoria. **Suid-Afrikaanse Tydskrif vir Kultuurgeskiedenis, 20 (2).**

Chief Surveyor General Database (www.csg.dla.gov.za): Document – 10BRYB01

APPENDIX A: DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or 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.

APPENDIX C: SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D: PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, paleontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, paleontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.