

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED ENNERDALE X6 RESIDENTIAL
DEVELOPMENT, GAUTENG PROVINCE

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LEAP

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Project Reference:

216134

Report date:

October 2016

DOCUMENT PROGRESS
Archaeological Impact Assessment

Document status

Document Version	v1.0
Report Purpose	Draft Report for review
Report Ref. No.	216134

Distribution List

Date	Report Reference number	Document Distribution	Number of Copies
2016/10/31	216134	Leap	Electronic copy

General

The possibility of unmarked or informal graves and subsurface finds cannot be excluded. If any possible finds are made during construction, the operations must be stopped and a qualified archaeologist contacted for an assessment of the find/s.

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CLIENT: Leap
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SIGNATURE: _____



EXECUTIVE SUMMARY

Site name and location:

The proposed Ennerdale X6 residential development and related infrastructure is located on Erven 4553 and 4554 Ennerdale Extension 6, Gauteng Province.

1: 50 000 Topographic Map: 2627 BD

EIA Consultant: Leap

Developer: City of Johannesburg – Department of Housing

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 31 October 2016

Findings of the Assessment:

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA as part of the basic assessment for the project. No archaeological sites (Iron Age or Stone Age) of significance were recorded. No further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

In terms of Section 34 of the Act two standing structures occur in the study area. From the topographic maps it is deduced that feature 2 could possibly be older than 60 years and if the structures will be impacted on, it is recommended that the age of the structures should be confirmed. If the structures are confirmed to be older than 60 years it is recommended that a conservation architect should be appointed to assess the structures and assist with the application of a demolition/ alteration permit.

In terms of Section 36 of the Act no burial sites were recorded in the study area. However if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP.

The study area is surrounded by residential developments (formal and informal) and no significant cultural landscapes or viewsapes were noted during the fieldwork. Other studies in the area recorded cemeteries and structures (e.g. Coetzee 2008). Huffman *et al* (1991) recorded both Iron Age sites and historical buildings. Pelser (2015) recorded Iron Age remains, Historical structures and graves.

Based on the results of the field survey of the proposed development there are no significant archaeological risks associated with the development and HCAC is of the opinion that from an archaeological point of view there is no reason why the development should not proceed if the recommendations as made in the report area adhered to and based on approval from SAHRA.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the proposed Ennerdale X6 development as part of the Environmental Impact Assessment process.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a desktop study that includes collection from various sources and consultations; Phase 2, the physical surveying of the study area on foot and by vehicle; Phase 3, reporting the outcome of the study.

General site conditions were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the SAHRA for review.

1.1. Terms of Reference

Desktop study

Conduct a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with Heritage legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2) (b) of the NEMA and section S. 39 (3) (b) (iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

1.3. Description of Study Area

1.3.1 Location Data

The proposed Ennerdale X6 residential development and related infrastructure is located on Erven 4553 and 4554 Ennerdale Extension 6, Gauteng Province. (Figure 1). The study areas' topography is relatively flat and open, with no major ridges or rocky outcrops present, although there are some rocky seams present, as well as some clumps of trees. The study area is surrounded by both formal and informal residential settlements, and has also been extensively disturbed in the recent past through possible small-scale subsistence farming/grazing, as well as the installation of services (water pipeline) and others. Illegal informal dumping of building rubble and other household refuse occur all over the area, while sewerage spills are also visible in sections. The area is also currently used as a walk-through by local residents, moving from one settlement/ urban ward to the other and to undertake the dumping of material and refuse.

1.3.2. Location Map

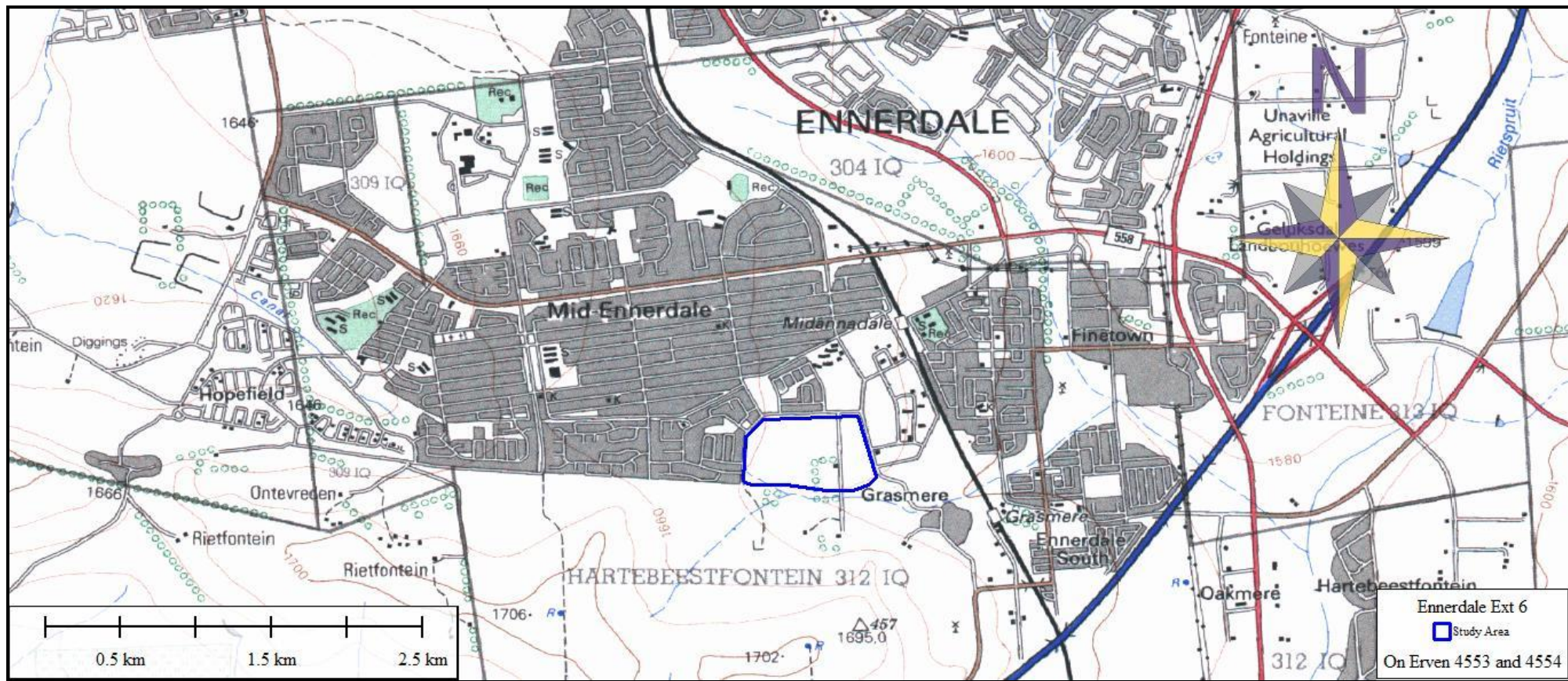


Figure 1. Location map

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

2.1 Phase 1 - Desktop Study

The first phase comprised desktop, scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area. The following approached was followed:

2.1.1 Literature Search

This was conducted by utilising data stored in the national archives and published reports relevant to the area. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

No public consultation was done by the author as this was done independently as part of the BA.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the proposed development was conducted. The study area was surveyed by means of vehicle and extensive pedestrian surveys during the week of 27 October 2016.

The survey was aimed at covering the proposed development footprint, focussing on specific areas on the landscape that would be more likely to contain archaeological and/or other heritage remains like drainage lines, rocky outcrops as well as slight elevations in the natural topography. These areas were searched more intensively, but many other areas were walked in order to confirm expectations in those areas. Track logs of the areas covered were taken (Figure 2).

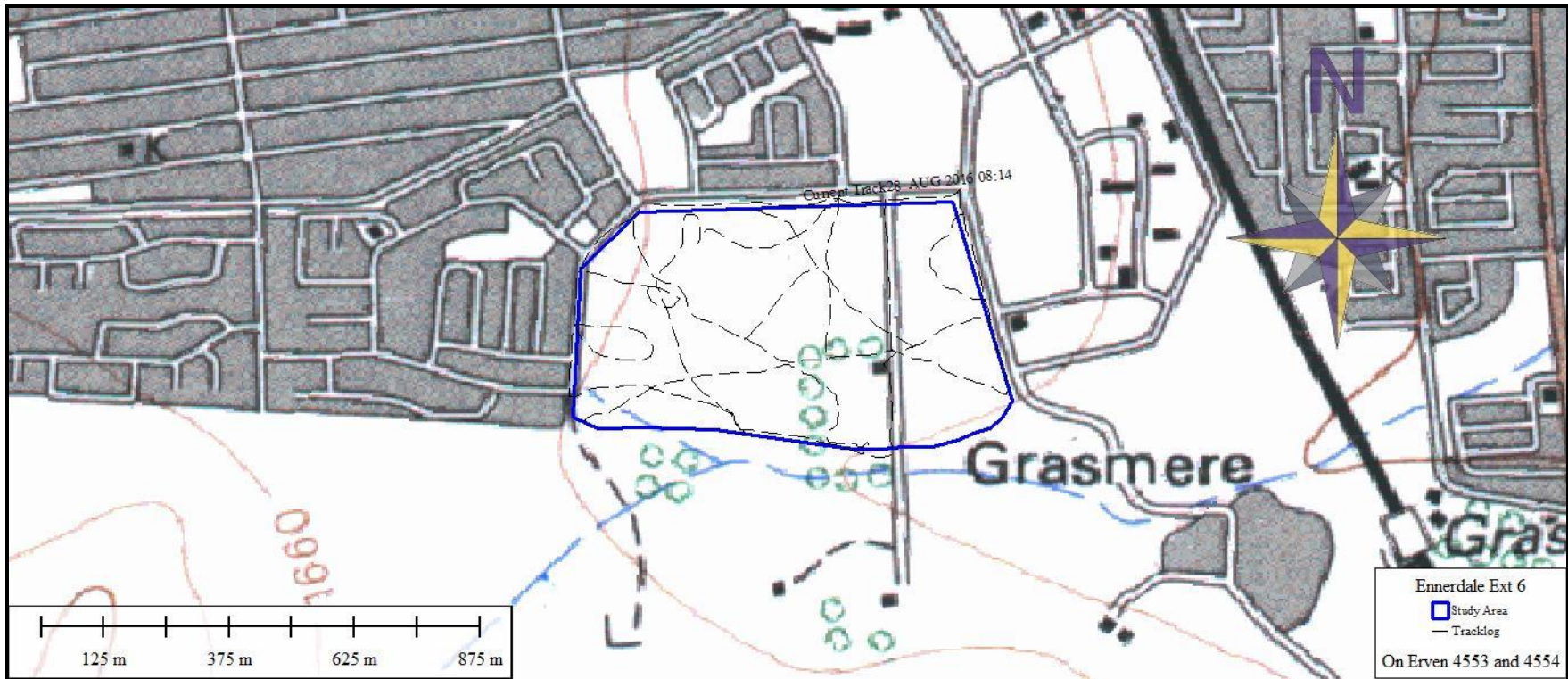


Figure 2. Track logs of the areas surveyed indicated in black with the development footprint indicated in blue.

2.3. Restrictions

Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. This report only deals with the footprint area of the proposed development as indicated in the location map. It should be noted that access in the study area was restricted due to safety concerns, presence of illegal squatters, dumping and sewerage spill areas.

Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development. It should be noted that access to the study area was restricted due to vagrants in the area and subsequent safety concerns. Taking of photographs was also restricted.

3. NATURE OF THE DEVELOPMENT

The Applicant intends to develop a residential development with related infrastructure on Erven 4553 and 4554 Ennerdale Extension 6, including electrical infrastructure and sanitation as well as internal roads. The development comprises approximately 33,9783 hectares.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Wits Database and SAHRA

Forty two sites are on record for the 2627 BD topographic map at the Wits database. These sites consist of Early, Middle and Late Stone Age, Late Iron Age and several historical structures including blockhouses. None of these sites are in close proximity of the study area and will not be affected by the proposed development.

Several previous CRM projects were conducted in the general vicinity of the study area. Studies consulted for this project include the following:

Author	Year	Project	Finds
Pelser, A. J.	2015	Phase 1 HIA Report For Proposed Development On The Remaining Extent Of Portion 4 Of Faraosfontein 372IQ, In Walkerville, Gauteng	Iron Age, Historical buildings and cemeteries/ graves.
Francois P Coetzee	2008	Cultural Heritage Survey of the Proposed Mixed/Residential Development on Doornkuil 369 IQ, and Associated Infrastructure Upgrades, Sedibeng District Municipality	Graves and Historical structures
Huffman, T. N	1991	Rietfontein Housing Development AIA	Stone Age, Iron Age Sites and Historical Buildings

Genealogical Society and Google Earth Monuments

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

4.2. Brief background to the study area

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional history. Interestingly closer to Johannesburg, the Melville Koppies is a Middle Stone-Age site. (Bergh 1999: 4) This area was also important to Iron Age communities, since these people had smelted and worked iron ore at the Melville Koppies site since the year 1060, by approximation. (Bergh 1999: 7, 87)

The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. (Bergh 1999: 10) It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. (Bergh 1999: 14; 116-119) It seems that, in 1827, Mzilikazi's Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence. (Bergh 1999: 11)

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's. One Bain travelled through, or close by the area in 1831. One Harris also travelled through this area in 1836. (Bergh 1999: 13)

It was however only by the late 1820's that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39). By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp. (Bergh 1999: 15).

An Anglo Boer War battle known as the Battle of Doornkop took place in the area on 29 May 1900. The British were advancing toward Johannesburg led by General John French. De La Rey and his men held the Klipriviersberg Ridge for the first two days but on the third day the Boers were outflanked by French's cavalry to the West, where General Sarel Oosthuizen's commando was forced to withdraw. This opened the road to Johannesburg and the British took the city peacefully on 30 May 1900. Huffman (2008) recorded several sangers dating to the Boer war close to the study area on a ridge.

4.2.1. Johannesburg

The city of Johannesburg was formally established in 1886 with the discovery of gold and the Witwatersrand reef on the farm Langlaagte. This gold discovery set off an influx of people from all over the world into the settlement to find gold. The new settlement was named after two officials of the Zuid-Afrikaansche Republiek (ZAR), Christiaan Johannes Joubert and Johannes Rissik, who both worked in land surveying and mapping.

4.2.2. Ennerdale

According to www.ennerdale.co.za the first home in the Ennerdale area was built by the Smith family in 1942. A school was established and numerous churches were established, initially from homes of people residing in the area. An asbestos school was erected in 1958 (www.ennerdale.co.za).

4.2.3. Archaeology of the area

Although there are no well-known Stone Age sites located on or around the study area there is evidence of the use of the larger area by Stone Age communities, especially along ridges to the south of the current study area (Huffman 2008a & b).

Regarding the Iron Age, the well-known Smelting Site at Melville Koppies requires further mention. The site was excavated by Professor Mason from the Department of Archaeology of WITS in the 1980's. Extensive Stone walled sites are also recorded at Klipriviers Berg Nature reserve belonging to the Late Iron Age period. A large body of research is available on this area. These sites (Taylor's Type N, Mason's Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007). These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites dates to the 18th and 19th centuries and was built by people in the Fokeng cluster.

In this area the Klipriviersberg walling would have ended at about AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi.

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to 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;
- » Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the development footprint. It should also be noted that due to safety concerns access in the study area was restricted as the locals were aggressive when photos of the area and of residential dwellings were taken.

The study area was assessed in terms of the archaeological component of Section 35 of the NHRA and no archaeological (Stone or Iron Age) sites of significance were identified in the study area. The site is extensively disturbed, due to both formal and informal residential settlements surrounding the study area, small-scale subsistence farming/grazing, as well as the installation of services (water pipeline) and others. Illegal informal dumping of building rubble and other household refuse occur all over the area, while sewerage spills are also visible in sections. The area is also currently used as a walk-through by local residents, moving from one settlement/ urban ward to the other and to undertake the dumping of material and refuse. These activities would have impacted or obscured visible surface indicators of archaeological and grave sites.

In terms of the built environment 2 residential dwellings occur in the study area (Figure 9). From these two, only Feature 2 could be older than 60 years (based on archival maps of the study area). It is probably the remnants of the earlier farmstead or homestead of the area. As the Ennerdale area has been occupied from the 1940's the structure could date back to this time. It is currently occupied and access and site photographs were not possible. It is also heavily damaged and dilapidated. If the house is to be demolished, the structure should be assessed by a conservation architect and based on the findings of this assessment a demolition permit could be required. Furthermore as the house is currently occupied (even if by illegal occupants) social consultation will have to be undertaken.

No burial grounds or graves were recorded and no significant cultural landscapes or viewsapes were noted during the fieldwork due to the extensive residential developments surrounding the study area. As graves can be expected anywhere on the landscape and the fact that the area has been disturbed and some graves could have been overlooked it is recommended that a chance find procedure is incorporated for this project.

Table 1: Recorded features with Co-ordinates

LONGITUDE	LATITUDE	LABEL	LAYER
27° 51' 10.7928" E	26° 25' 28.1234" S	Feature 1	Structure younger than 60 years
27° 51' 11.1575" E	26° 25' 24.1115" S	Feature 2	Structure possibly older than 60 years



Figure 3: General site conditions



Figure 4. General site conditions .



Figure 5: Structure in the study area (Feature 1).



Figure 6. General site conditions.

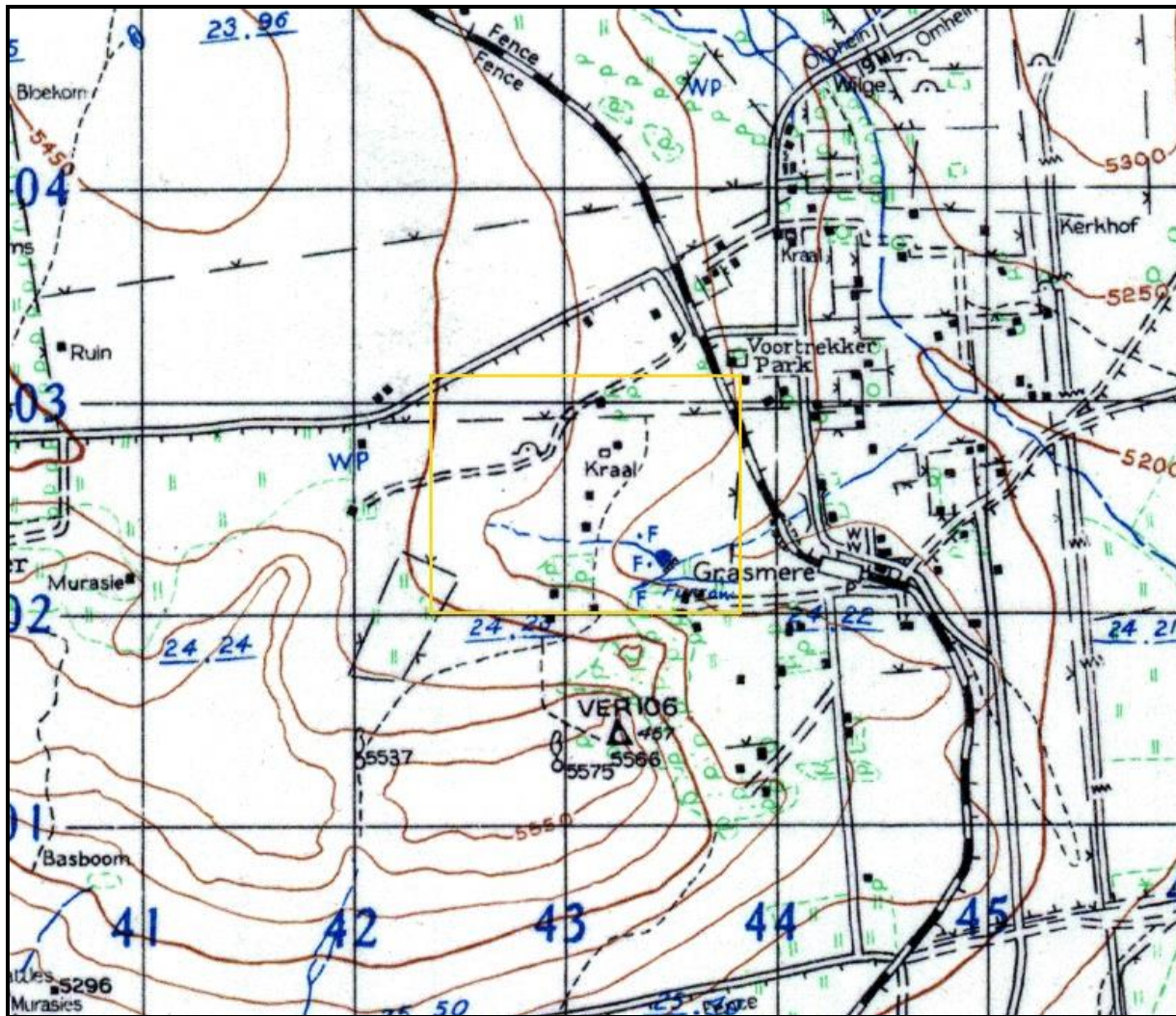


Figure 7. 1944 Topographic map indicating a Kraal and structures in the study area.



Figure 8. 1956 Topographic Map indicating huts and structures in the study area. The red circle indicates the location of Feature 2.

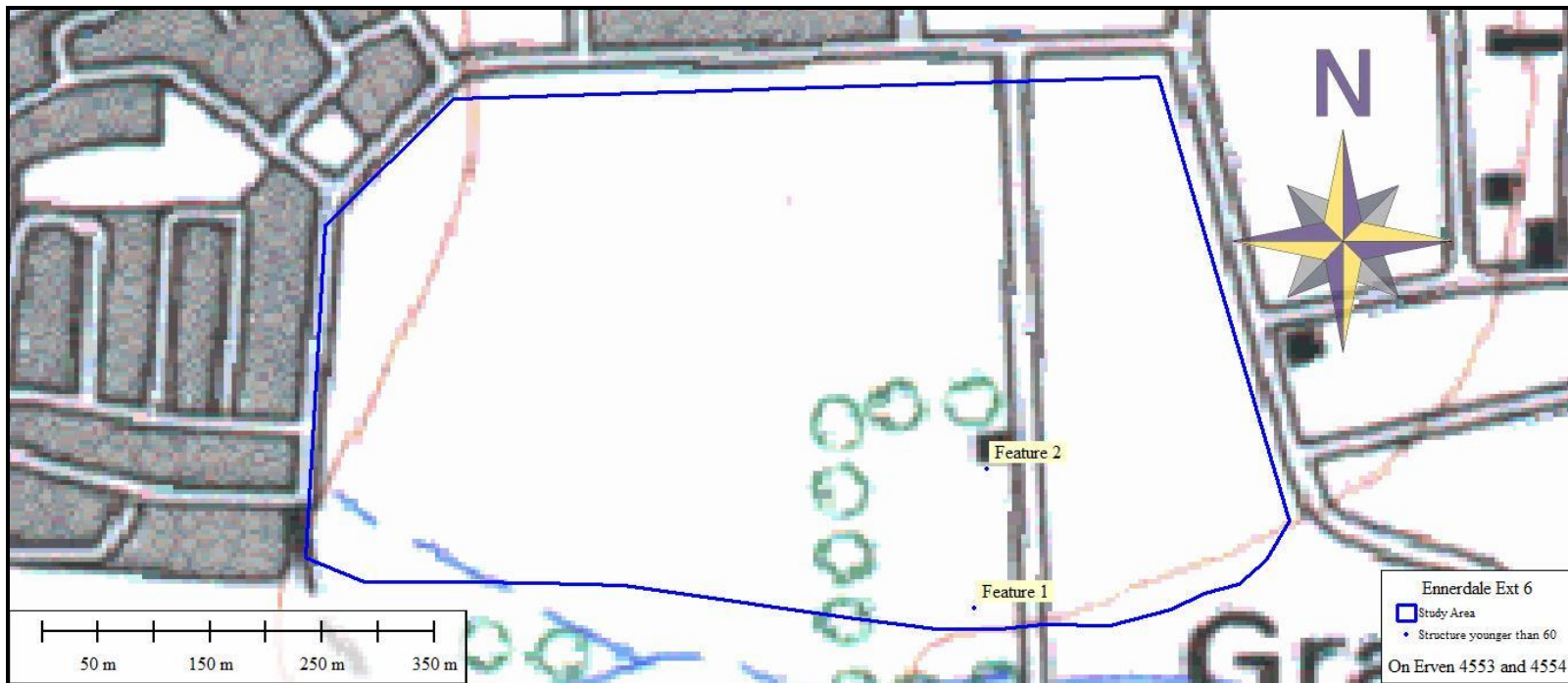


Figure 9. 1990 Topographic Map indicating the positions of feature 1 and feature 2.

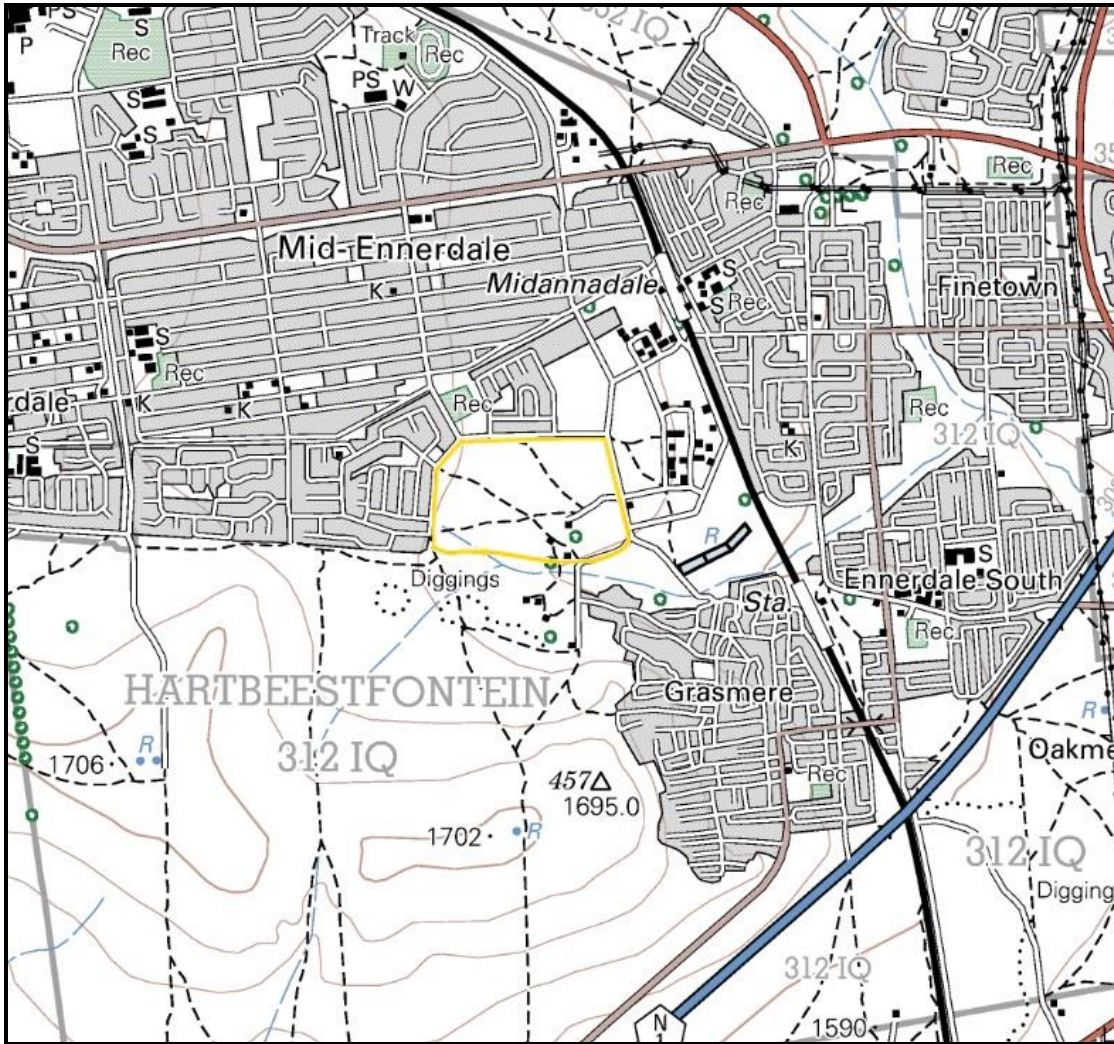


Figure 10. 2007 Topographic Map.



Figure 11. Site distribution map.

7. CONCLUSIONS AND RECOMMENDATIONS

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. No archaeological sites (Iron Age or Stone Age) of significance were recorded within the study area. No further mitigation is recommended in terms of Section 35 for the proposed development to proceed.

In terms of Section 34 of the Act two standing structures occur in the study area. From the topographic maps it is deduced that feature 2 could possibly be older than 60 years and if the structures will be impacted on it is recommended that a conservation architect should be appointed to assess the structures and assist with the application of a demolition/ alteration permit. Feature 1 is not indicated on the 1990 Topographic map and is assumed to be constructed after 1990.

In terms of Section 36 of the Act no burial sites were recorded. However if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation.

The study area is largely disturbed and due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP:

Chance find procedure

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

It is also recommended that as part of the public participation for the project the lack of graves must be confirmed. The study area is surrounded by residential developments and no significant cultural landscapes or viewsapes were noted during the fieldwork.

7.1 Reasoned Opinion

From a heritage perspective the proposed project is acceptable from a heritage point of view. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the development will not impact negatively on the archaeological record of the area. If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools, and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded, but can be easily mitigated by preserving the sites *in-situ* within the development.

8. PROJECT TEAM

Jaco van der Walt, Project Manager

Anton Pelsler, Archaeologist

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania and the DRC; having conducted more than 300 AIA's since 2000.

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