

HERITAGE IMPACT ASSESSMENT

REQUIRED BY THE NHRA Section 38 (1) (No. 25 OF 1999)

**MAGALIESBURG RIVER LODGE ON PTN 77 OF THE FARM KRUITFONTEIN, MAGALIESBURG,
GAUTENG PROVINCE.**

Type of development:

Lodge

Client:

Eco Assessments

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Project Reference:

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October 2020

APPROVAL PAGE

Project Name	Magaliesburg River Lodge, Gauteng Province
Report Title	Heritage Impact Assessment for the Magaliesburg River Lodge, Gauteng Province
Authority Reference Number	Project number: 2057
Developer	Magaliesburg River Lodge CC

	Name	Qualifications and Certifications	Date
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REPORT OUTLINE

Appendix 6 of the GNR 982 EIA Regulations, 2014 [as amended] provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

Table 1. Specialist Report Requirements.

Requirement from Appendix 6 of GNR 982 EIA Regulations, 2014 [as amended]	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section a Section 12
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	<i>Declaration of Independence</i>
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 1
(cA) an indication of the quality and age of base data used for the specialist report	Section 3.4 and 7.1.
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	9
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3.4
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 8 and 9
(g) Identification of any areas to be avoided, including buffers	Section 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	Section 8
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 3.7
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity including identified alternatives on the environment or activities;	Section 9
(k) Mitigation measures for inclusion in the EMPr	Section 9 and 10
(I) Conditions for inclusion in the environmental authorisation	Section 9 and 10
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 9 and 10
(n) Reasoned opinion - (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 10.2
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 6
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Project was approved in 2020. NA
(q) Any other information requested by the competent authority	Section 10

Executive Summary


HCAC was appointed by Eco Assessments to conduct a Heritage Impact Assessment for the Magaliesburg River Lodge located on Ptn 77 of the farm Kruitfontein 511 JQ near Magaliesburg, Gauteng Province. The aim of the assessment is to understand the heritage character of the study area to inform a site development plan for the study area that was assessed both on desktop level and by a non-intrusive pedestrian field survey.

Key finding of the assessment includes:

- The dilapidated remains of three structures were identified during the survey. Based on aerial photographs and topographic maps these features are approaching the 60 years NHRA protection threshold. Their potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and the structures are therefore of no heritage significance. It should be noted that structures like these are often associated with the graves of stillborn babies;
- No surface evidence of significant heritage resources was identified during the survey;
- An independent paleontological assessment concluded it is extremely unlikely that any fossils would be preserved in the area. However, since trace fossils such as mat related features have been found in another site in the Daspoort Formation, there is a very small chance that fossils may occur here. Therefore, a Fossil Chance Find Protocol should be added to the EMPr;
- No grave sites were identified in the study area.

The impact of the project on heritage resources is considered very low and the project has a positive socio-economic impact on the surrounding area. From a heritage point of view there are no objections to the project based on approval from SAHRA and no further mitigation is required.

Declaration of Independence

Specialist Name	Jaco van der Walt
Declaration of Independence	<p>I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 108 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations, that I:</p> <ul style="list-style-type: none"> • I act as the independent specialist in this application; • I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant; • I declare that there are no circumstances that may compromise my objectivity in performing such work; • I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity; • I will comply with the Act, Regulations and all other applicable legislation; • I have no, and will not engage in, conflicting interests in the undertaking of the activity; • I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; • All the particulars furnished by me in this form are true and correct; and • I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.
Signature	
Date	18/10/2020

a) Expertise of the specialist

Jaco van der Walt has been practising as a CRM archaeologist for 15 years. He obtained an MA degree in Archaeology from the University of the Witwatersrand focussing on the Iron Age in 2012 and is a PhD candidate at the University of Johannesburg focussing on Stone Age Archaeology with specific interest in the Middle Stone Age (MSA) and Later Stone Age (LSA). Jaco is an accredited member of ASAPA (#159) and have conducted more than 500 impact assessments in Limpopo, Mpumalanga, North West, Free State, Gauteng, KZN as well as he Northern and Eastern Cape Provinces in South Africa.

Jaco has worked on various international projects in Zimbabwe, Botswana, Mozambique, Lesotho, DRC Zambia, Guinea and Tanzania. Through this he has a sound understanding of the IFC Performance Standard requirements, with specific reference to Performance Standard 8 – Cultural Heritage.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BGG Burial Ground and Graves
BIA: Basic Impact Assessment
CFPs: Chance Find Procedures
CMP: Conservation Management Plan
CRR: Comments and Response Report
CRM: Cultural Resource Management
DEA: Department of Environmental Affairs
EA: Environmental Authorisation
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Programme
ESA: Early Stone Age
ESIA: Environmental and Social Impact Assessment
GIS Geographical Information System
GPS: Global Positioning System
GRP Grave Relocation Plan
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, 1998 (Act No. 107 of 1998)
NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID Notification of Intent to Develop
NoK Next-of-Kin
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 Introduction and Terms of Reference:

HCAC was appointed by Eco Assessments to conduct a Heritage Impact Assessment for the Magaliesburg River Lodge located on the farm Kruitfontein on Ptn 77 (a Ptn of Ptn 75) 511 JQ (Figure 1-1 to 1-3) to inform a site development plan for the study area. This report was conducted as per the requirements of section 38(1) of the NHRA.

The aim of the study is to survey the development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the 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 No 25 of 1999). The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of relevant literature; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey, three ruins were recorded. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified, and mitigation measures are proposed in the following report. SAHRA as a commenting authority under section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) require all environmental documents, compiled in support of an Environmental Authorisation application as defined by NEMA EIA Regulations section 40 (1) and (2), to be submitted to SAHRA. As such the Environmental Impact Report and its appendices must be submitted to the case officer as well as the EMP, once it's completed by the Environmental Assessment Practitioner (EAP).

1.1 Terms of Reference

Field study

Conduct a field study to: (a) locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the development.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the 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 project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards 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 No 25 of 1999).

1.2 Project description

The project comprises an existing Lodge and associated infrastructure as indicated in Table 2 and 3.

Table 2: Project Description

Project size	Approximately 8 hectares
Magisterial District	Mogale City Local Municipality
1: 50 000 map sheet number	2527 DC
Starting point of line	25°59'16.79"S
End point of the line	27°32'52.15"E

Table 3: Infrastructure and project components

Type of development	Lodge
Project Components	<p>Function venue with ancillary uses that may include:</p> <ul style="list-style-type: none"> - conference facilities - a chapel - receptor facilities - overnight facilities - restaurant - tea-garden - kiosk - staff accommodation.

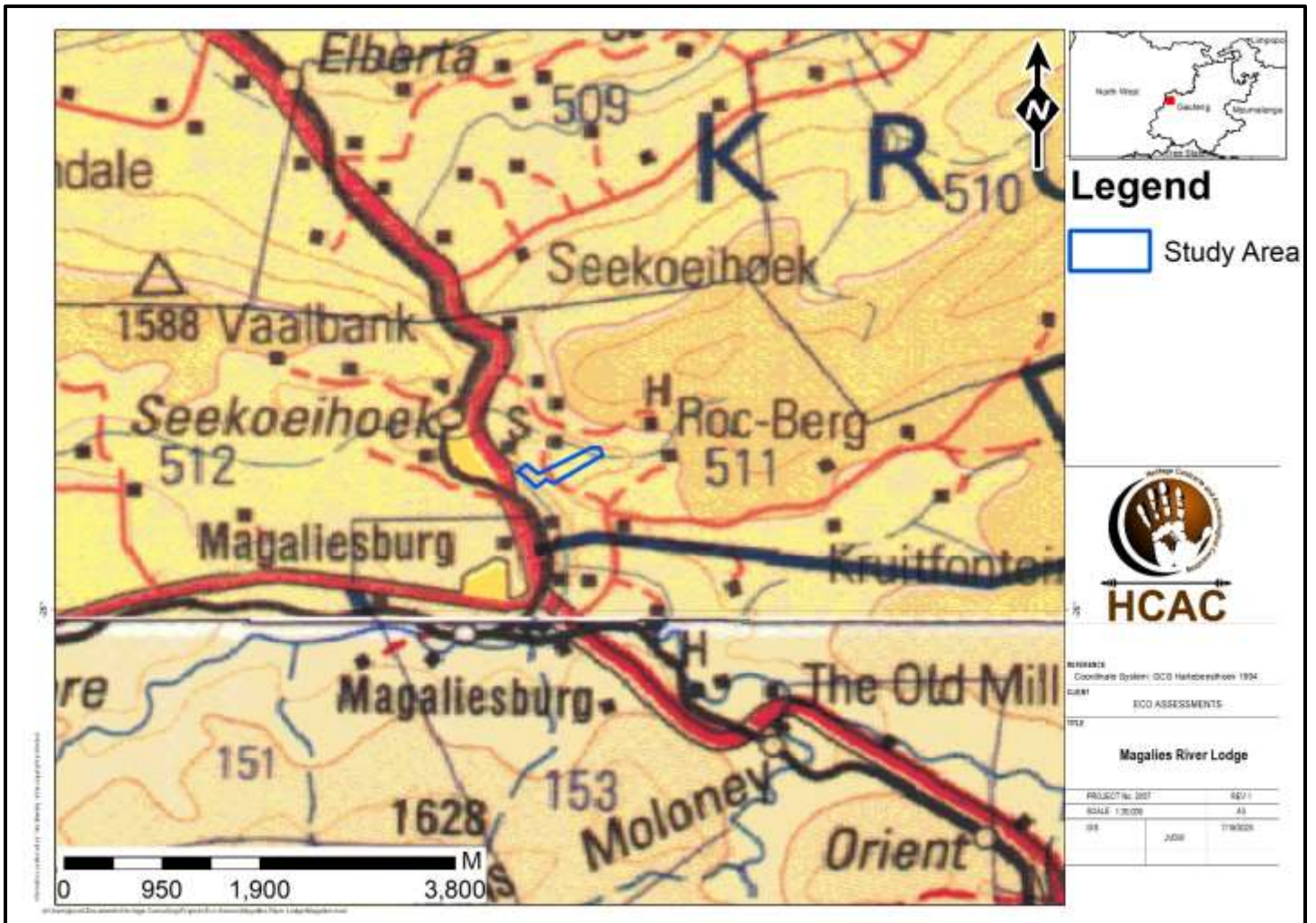


Figure 1-1. Regional setting (1: 250 000 topographical map) of the study area.

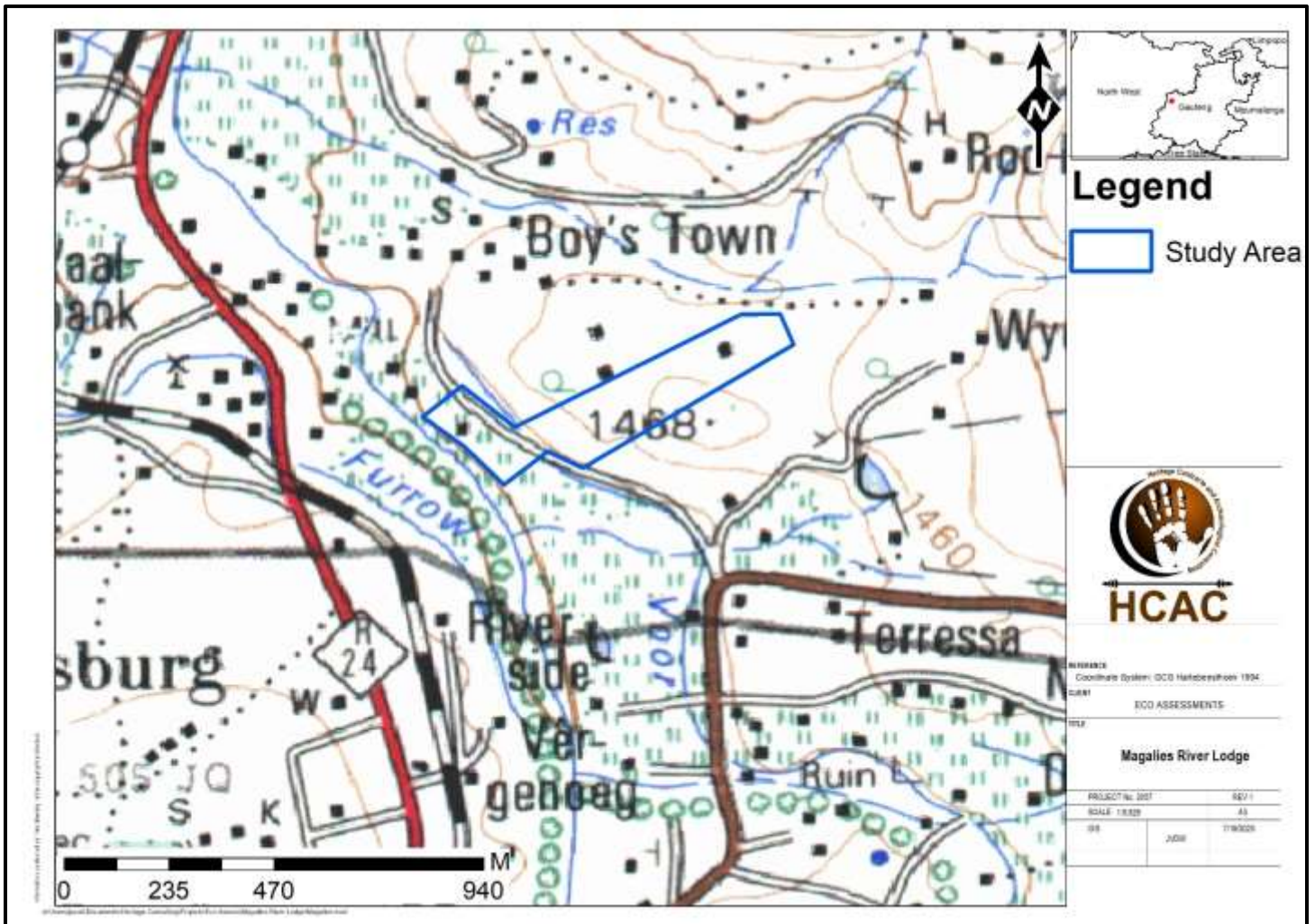
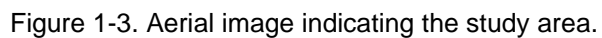


Figure 1-2: Local setting (1:50 000 topographical map) of the study area.



2 Legislative Requirements

The HIA, as a specialist sub-section of the EIA, is required under the following legislation:

- National Heritage Resources Act (NHRA), Act No. 25 of 1999)
- National Environmental Management Act (NEMA), Act No. 107 of 1998 - Section 23(2)(b)
- Mineral and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 - Section 39(3)(b)(iii)

A Phase 1 HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation.

The overall purpose of 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; and
- Make recommendations for the appropriate heritage management of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will ultimately be responsible for the professional evaluation of Phase 1 reports upon which review comments will be issued. 'Best practice' requires Phase 1 reports and additional development information, as per the impact assessment report and/or 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 heritage 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 with SAHRA by the applicant 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).

3 METHODOLOGY

3.1 Literature Review

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

3.2 Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located; these locations were marked and visited during the field work phase. The database of the Genealogical Society was consulted to collect data on any known graves in the area.

3.3 Public Consultation and Stakeholder Engagement:

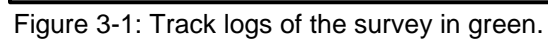
No Stakeholder engagement was conducted as part of the HIA. However consultation is part of the town planning processes.

3.4 Site Investigation

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

Table 4: Site Investigation Details

	Site Investigation
Date	13 October 2020
Season	Summer - Vegetation in the study area is low and archaeological visibility is high. The area was sufficiently covered (Figure 3-1) to understand the heritage character of the study area and to record finds of significance.



3.5 Site Significance and Field Rating

Section 3 of the NHRA 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.

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 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 with cognisance of Section 3 of the NHRA:

- 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; and
- Potential to answer present research questions.

In addition to this criteria field ratings 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 10 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

3.6 Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
 - * the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
 - * the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
 - * medium-term (5-15 years), assigned a score of 3;
 - * long term (> 15 years), assigned a score of 4; or
 - * permanent, assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the *degree* to which the impact can be mitigated.

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

$$S=(E+D+M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

3.7 Limitations and Constraints of the study

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. 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 graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components will be highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

4 Description of Socio-Economic Environment

Stats SA indicates that according to Census 2011, Mogale City Local Municipality has a total population of 820 995 of people, of which 75,6% are black African, 21,0% are white, 0,8% are coloured, and 2,2% are Indian/Asian. Of those aged 20 years and older, 4,0% have completed primary school, 35,0% have some secondary education, 32,6% have completed matric, and 14,2% have some form of higher education.

134 635 people are economically active (employed or unemployed but looking for work), and of these, 24,6% are unemployed. Of the 60 706 economically active youth (15–34 years) in the area, 32,3% are unemployed.

5 Description of the Physical Environment:

The property can be divided into two sections. The western half of the property is situated within the riparian zone of the river making the vegetation fairly wooded and overgrown. Multiple buildings, modern foundations, walkways, wooden platforms, manicured lawns and pavements is built across this entire area. The second section of the property is an elongated section that runs over a rocky ridge line with a tented camp in the southern portion. The rest of this portion is fairly open with a general lack of any substantial grass cover. Small thickets of trees and brushes are scattered across the property while large sections have been extensively modified through the construction of the lodge and extends to either side of the main access road. This entire portion has a general scatter of dumped refuse material. These range from cans, glass bottle, batteries, and other modern-day industrial material. General site conditions are illustrated in Figure 5-1 to Figure 5-6.



Figure 5-1. General site conditions – Eastern section.



Figure 5-2. General site conditions – Eastern section.



Figure 5-3. Main lodge in the western section.



Figure 5-4. General site conditions in the Western Section.



Figure 5-5. Existing developments



Figure 5-6. Existing developments.

6 Results of Public Consultation and Stakeholder Engagement:

Consultation is conducted as part of the town planning processes and relevant results will be provided.

7 Literature / Background Study:

7.1 Literature Review

Based on the desktop review the heritage character of the area is dominated by finds dating to the Iron Age, historic structures and burial sites. The following studies were consulted for this report:

Author	Year	Project	Finding
Fourie, W.	2002	Blaauwbank Historic Gold Mine Magaliesburg, Culutural Heritage Scoping	Historic structures and cemetery.
Mathoho, N, E.	2015	Archaeological Impact Assessment Relating to The Proposed Magaliesberg Cemetery on Portion 22 Of Farm Rietpoort 395 Within Mogale City Local Municipality, Gauteng Province	No sites
Miilo, T.	2017	Phase 1: Archaeological Impact Assessment Report for The Proposed Development of Two Filling Stations and Associated Infrastructure Along The R24 Road In Magaliesburg, Gauteng Province	Burial sites
Marais, L.	2018	Phase 1 Heritage Impact Assessment (HIA) For the Proposed New Access Road on Portions 11, Re/12, Re/13, A Portion of Portion 24 And 74 Of the Farm Kruitfontein 511-JQ, Gauteng Province	Three cemeteries and structures older than 60 years
Miilo, T.	2018	Phase 1 Archaeological And Heritage Impact Assessment Report For Proposed Prospecting Right Application With Bulk Sampling On	Burial site and historic structures.

		Portion 2,9,12,14,27,29,30,37,38,39 Of The Farm Kaalfontein 44 Iq And Portion 1, 3-6,9,13,19,20,25,30-32, ,35,37-39,45 Of The Farm Koesterfontein 45 IQ Situated In The Magisterial District Of Krugersdorp In Gauteng Province	
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7.1.1 Genealogical Society and Google Earth Monuments

No known grave sites are on record in the study area. A small cemetery is indicated 730 m to the north of the project area and another three to the south east approximately 2 km from the project area. These sites are located well away from the study area and no impact is expected.

7.1.2 Archaeology of the area

The archaeological record for the greater study area consists of the Stone Age, Iron Age and Historical Period.

7.1.2.1 Stone Age

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contain sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. The three main phases can be divided as follows;

- * Later Stone Age; associated with Khoi and San societies and their immediate predecessors. Recently to ~30 thousand years ago
- * Middle Stone Age; associated with Homo sapiens and archaic modern humans. 30-300 thousand years ago.
- * Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. 400 000- > 2 million years ago.

The ESA is represented in the area by the Wonderboom site on the southern slopes of the Magaliesberg north of Pretoria. This site is characterised by numerous cleavers, hand axes, cores and flakes (Mason, 1958). The nearby Jubilee shelter has been excavated and provides a record from the Late Pleistocene to the 7th Century AD (Turner, 1986), an extended cultural sequence with assemblages' characteristic of the Middle Stone Age, Early Later Stone Age and Later Stone Age including assemblages from the Oakhurst and Wilton industries (Wadley, 1986). The Jubilee shelter provides evidence of hunter–gatherer occupation during three phases of agro pastoralist contact, beginning in 225 AD and characterised by cooperative contact, prior to the hunter-gatherers being either assimilated or dispersed to other areas (Wadley, 1996).

7.1.2.2 The Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

- The Early Iron Age: Most of the first millennium AD.
- The Middle Iron Age: 10th to 13th centuries AD
- The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living. The Broederstroom Early Iron Age site is located to the north east of the study area and consist of around 250 years of occupation by iron and copper producers (Mason, 1981) and provided evidence on the role of cattle and the central cattle pattern in spatial arrangement of Early Iron Age sites

(Huffman 1993). The copper smelting sites (Middle Iron Age) at Uitkomst and Ifafa from the 15th/16th Centuries were described by Mason (1962). The Late Iron Age in the area is characterised by extensive stone walled sites (Mason, 1986; Dreyer, 1995) of the Sotho-Tswana (Pistorius 1992). Rock engravings from the Magaliesberg include depictions of animals, shields, animal pens and settlements and are attributed to the Tswana people who occupied the area (Mason, 1986; Maggs, 1995).

7.1.3 Historical Information

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: 14; 116-119) In 1825 as a result of the Mfecane Mzilikazi of the Matabeles conquered the area and displaced the Tswana tribes that used to live in the area. Mzilikazi established his kraal north of the Magaliesberg in the vicinity of the present day Hartbeespoort Dam. (Steyn et al, 1978).

Broederstroom was founded in 1903 with the opening of a trading post in the area. The history of this area is mainly nestled in farming and commercial activities and this is emphasized by important 19th and early 20th century farm and store buildings located in this area (Marais –Botes 2011).

7.1.4 Anglo-Boer War

The Anglo-Boer War, which took place between 1899 and 1902 in South Africa, was one of the most turbulent times in South Africa’s history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence, republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was; however, a clear statement of British war aims. (Du Preez 1977). No battles occurred in the study area but one battalion of British troops moved through Rustenburg between February and September 1900. This was the regiment of General Major R. S. S. Baden-Powell. The Boer war-hero General Jacobus Herculaa de la Rey (more commonly known as Koos de la Rey) also moved past Rustenburg on his route between Barberton and Lichtenburg. (Bergh 1999: 51). The Battle of Kalkheuveld Pass took place in the area on 3 June 1900. The battle can be described as forming part of the bigger onslaught on Pretoria. At Roodewal Genl French’s forces were attacked by Boer Forces, leaving numerous men wounded and dead on both sides (Copley 1993).

7.2 Cultural Landscape

The development is located in an area characterised by hotels, spas and tourism related developments. The area has been developed from the 1960's (Figure 7-1 – Figure 7-7).



Figure 7-1. 1961 Aerial image of the study area with no discernible structures.



Figure 7-2. 1968 Aerial image of the study area, structures are indicated with a red arrow.

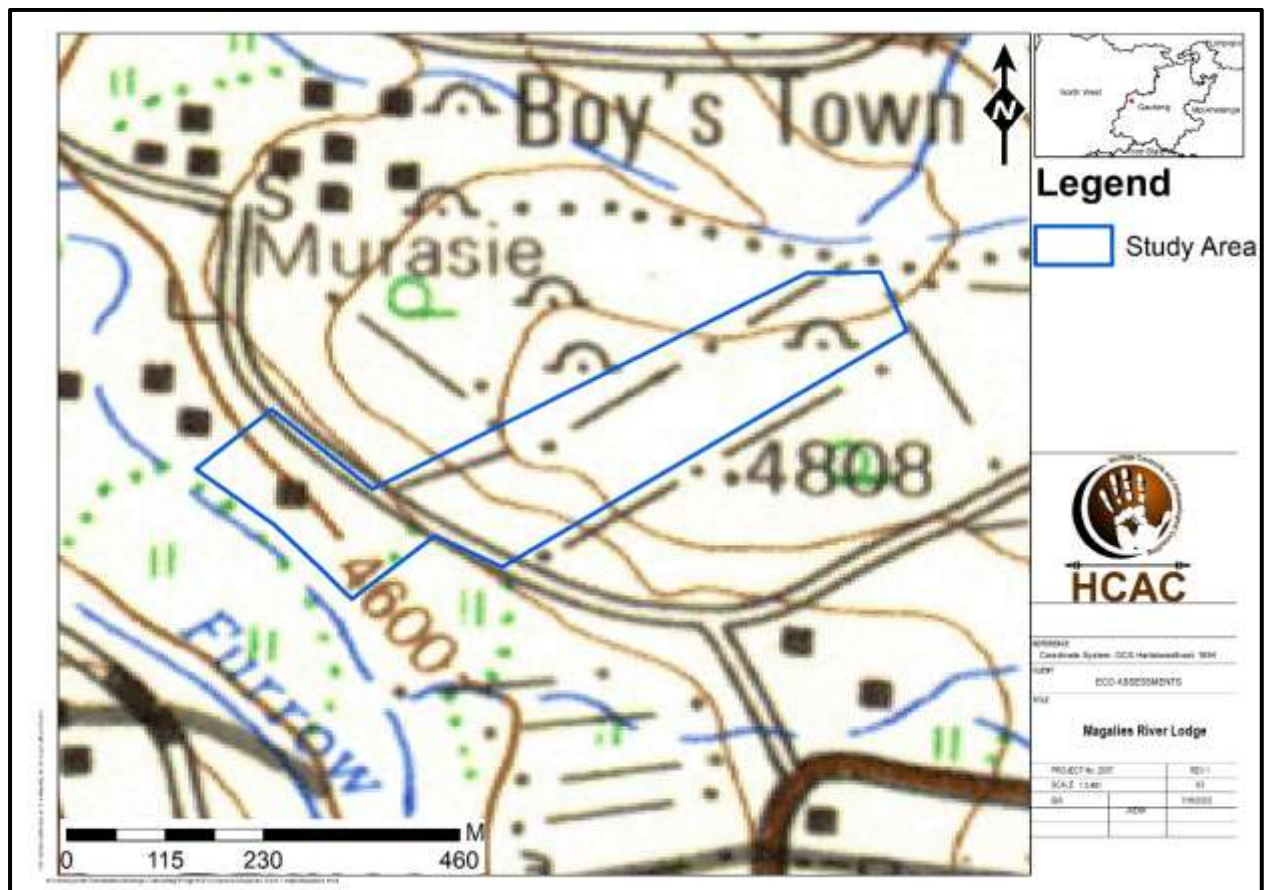
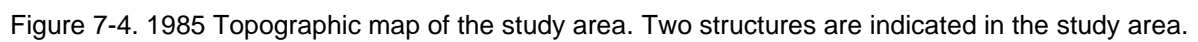


Figure 7-3. 1968 Topographic map of the study area. A house (western section) and hut (eastern section) is indicated in the study area.



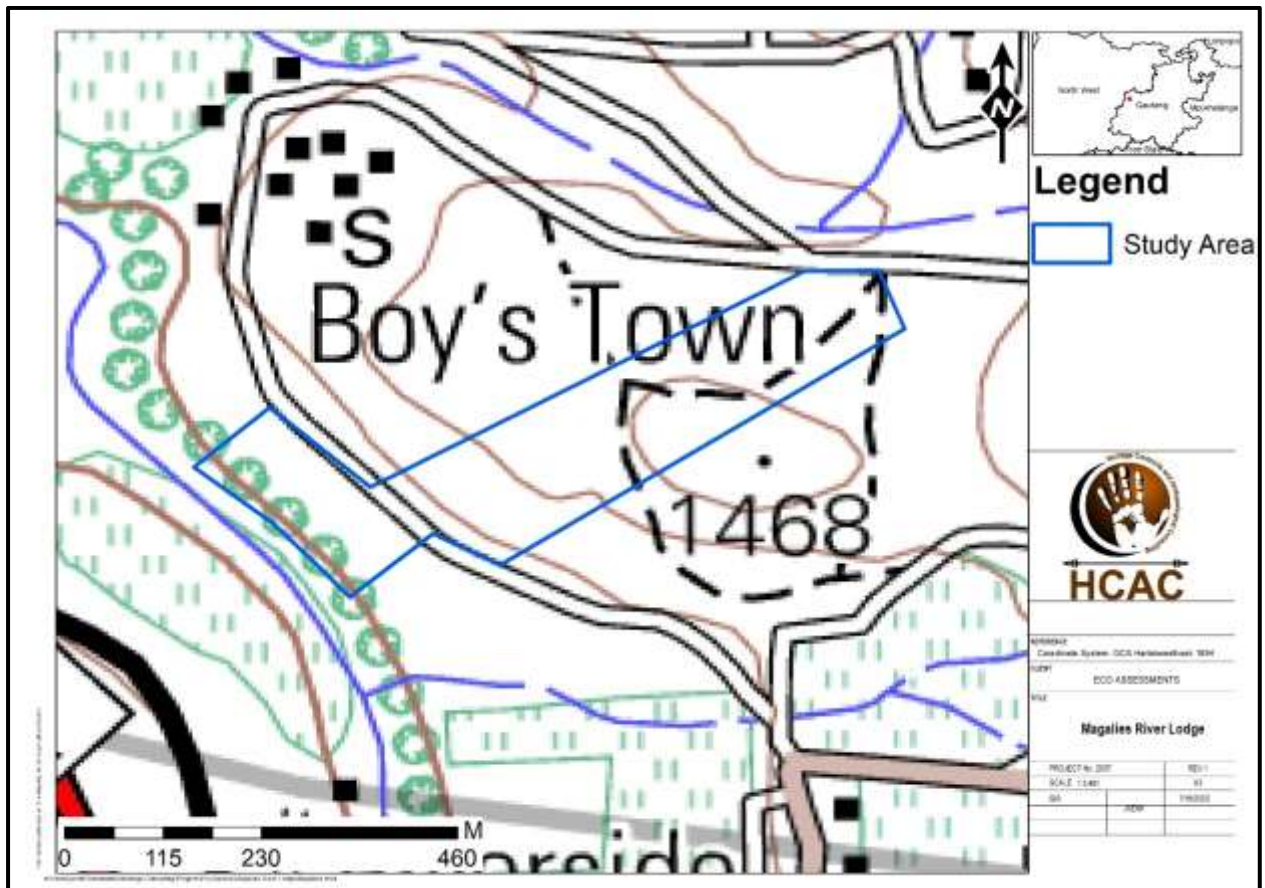


Figure 7-5. 1996 Topographic map of the study area. No structures are indicated in the study area and it is possible that the structures indicated on previous maps were demolished.



Figure 7-6. 2016 Aerial image of the study area with the current lodge development visible.

8 Findings of the Survey

The study area is known as the Magalies River Lodge and is situated next to the Magalies-river about 500 m from the R24. The property is characterised by several existing developments relating to the lodge (i.e. main lodge, ablution blocks, tented camps etc.) illustrated in Figure 8-1. In the undeveloped section of the property the remains of three ruins were recorded as Feature 1 – 3 and mapped with the abbreviation “F” (Table 5 & Figure 8-2). The following section describes the heritage resources recorded in the study area.



Figure 8-1. Existing structures in the study area.

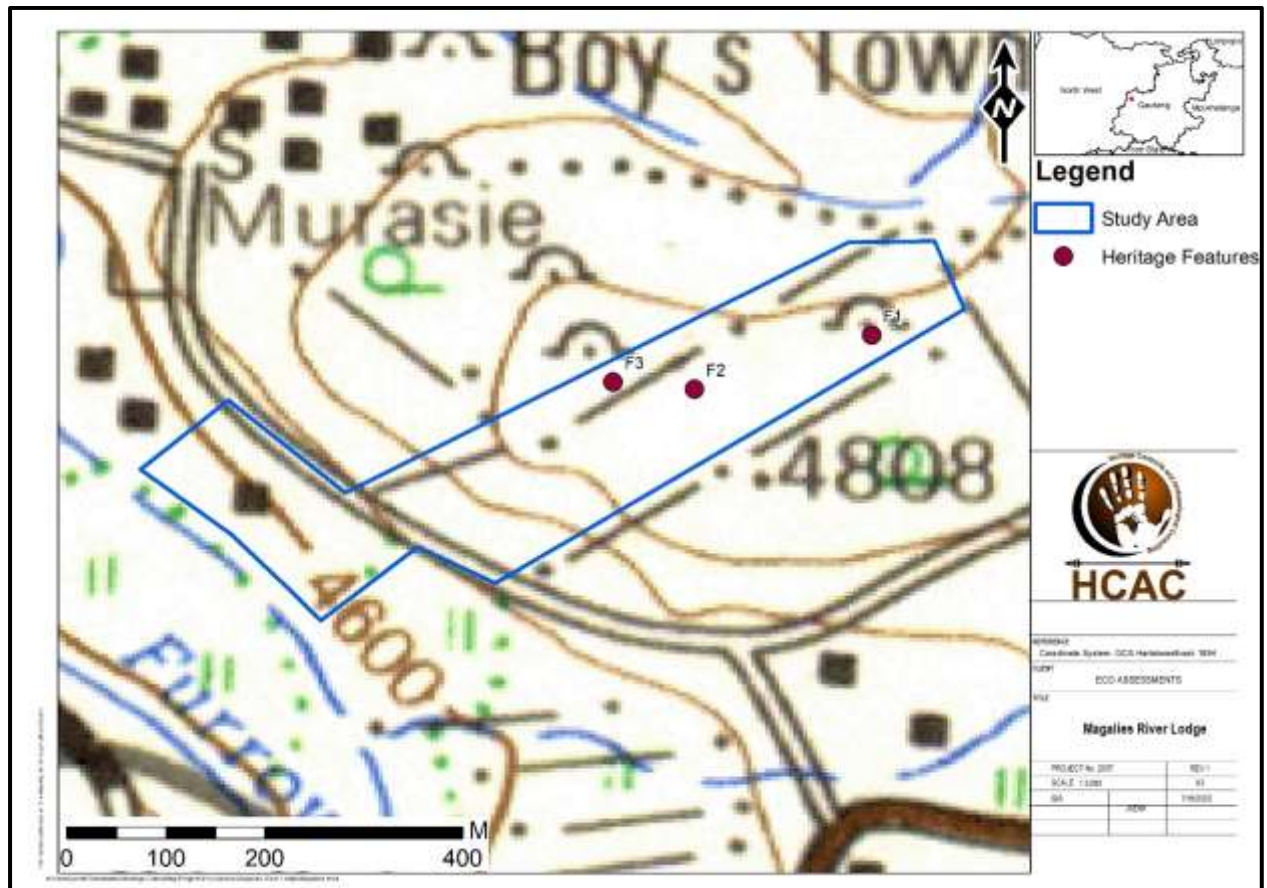


Figure 8-2. Features identified in the study area.

Table 5. Features recorded in the study area.

Label	Longitude	Latitude	Description
F1	27° 33' 02.2031" E	25° 59' 12.0445" S	Ruin
F2	27° 32' 56.4071" E	25° 59' 13.8157" S	Ruin
F3	27° 32' 53.7469" E	25° 59' 13.5743" S	Ruin

8.1 Built Environment (Section 34 of the NHRA)

The study area has been developed from 1996 onwards and the existing standing structures are modern buildings. Away from the current structures three partly demolished ruins were recorded as F1, F2 and F3 that could have been farm labourer dwellings. All three structures are similar in construction style with mud and packed stone walls with industrial refuse scattered around the sites. F1 consist of two rooms of measuring approximately 10 x 10 m. The structure has walls of clay and stone foundations and is situated in a thicket of trees (Figure 8-3).

The second structure F2 (Figure 8-4) is larger with multiple rooms. The structure measures approximately 20x 20 m and has clay and stone walls with a gravel fill. The feature is also situated in a thicket of trees.

F3 is similar in size (20 x 15 m) with stone and clay walls. The feature is situated just outside property fence within a thicket of trees. F1 and F3 are indicated on Topographic maps dating to 1968 and 1985 (Figure 7-3 and Figure 7-4) but not indicated on the 1996 topographic maps (Figure 7-5). The exact age of the structures is unknown based on the available historical aerial photographs but are at least older

than 50 years and approaching the 60-year protection threshold of the NHRA as they are indicated on the 1968 aerial photograph and map (Figure 7-2 and Figure 7-3).

The features are dilapidated ruins, destroyed to such an extent that the features' potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance. It should be noted that these features are often associated with the graves of stillborn babies and if older than 60 years and would then be protected by the NHRA.



Figure 8-3. Dilapidated ruin at Feature 1.



Figure 8-4. Remains of feature at Feature 2 .



Figure 8-5. Feature 3 located outside of the fence.

8.2 Archaeological and paleontological resources (Section 35 of the NHRA)

No archaeological features or sites of significance were identified. The palaeontological component of this project was addressed in an independent assessment conducted by Prof Marion Bamford (2020). The study concluded that the site lies on the quartzites of the Daspoort Formation (Pretoria Group, Transvaal Supergroup). These rocks are older than the evolution of body fossils but trace fossils such as mat related structures formed by microbes on sands have been recorded from one site to the east of Pretoria. None have been reported from here but a Fossil Chance Find Protocol should be added to the EMPr. No further mitigation measures are required in terms of Section 35 of the NHRA Act 25 of 1999 prior to construction.

8.3 Burial Grounds and Graves (Section 36 of the NHRA)

No graves or burial sites were recorded during the survey. The possibility of unidentified graves being present on site cannot be excluded. If any additional graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation.

8.4 Cultural Landscapes, Intangible and Living Heritage.

The development has a negligible impact on the surrounding cultural landscape due to the lack of heritage features of high significance in the area. The expansion of the existing lodge is in line with the current land use of the site and conforms to the tourism orientated use of the area. Visual impacts to scenic routes and sense of place are also considered to be low.

8.5 Battlefields and Concentration Camps

There are no battlefields or related concentration camp sites located in the study area.

8.6 Potential Impact

Based on the field survey the development of the existing lodge did not impact on known heritage resources and no future impacts to heritage resources are expected by the project (Figure 8-6). The chances of impacting unknown archaeological sites in the study area is considered to be negligible, but the possibility of graves cannot be excluded. Cumulative impacts occur from the combination of effects of various impacts on heritage resources. The importance of identifying and assessing cumulative impacts is that the whole is greater than the sum of its parts. In the case of the development, it will, with the recommended mitigation measures and management actions, not impact any heritage resources directly. However, this and future developments in the area could have an indirect impact on the heritage landscape. The lack of any heritage resources in the immediate area minimises additional impact on the landscape.

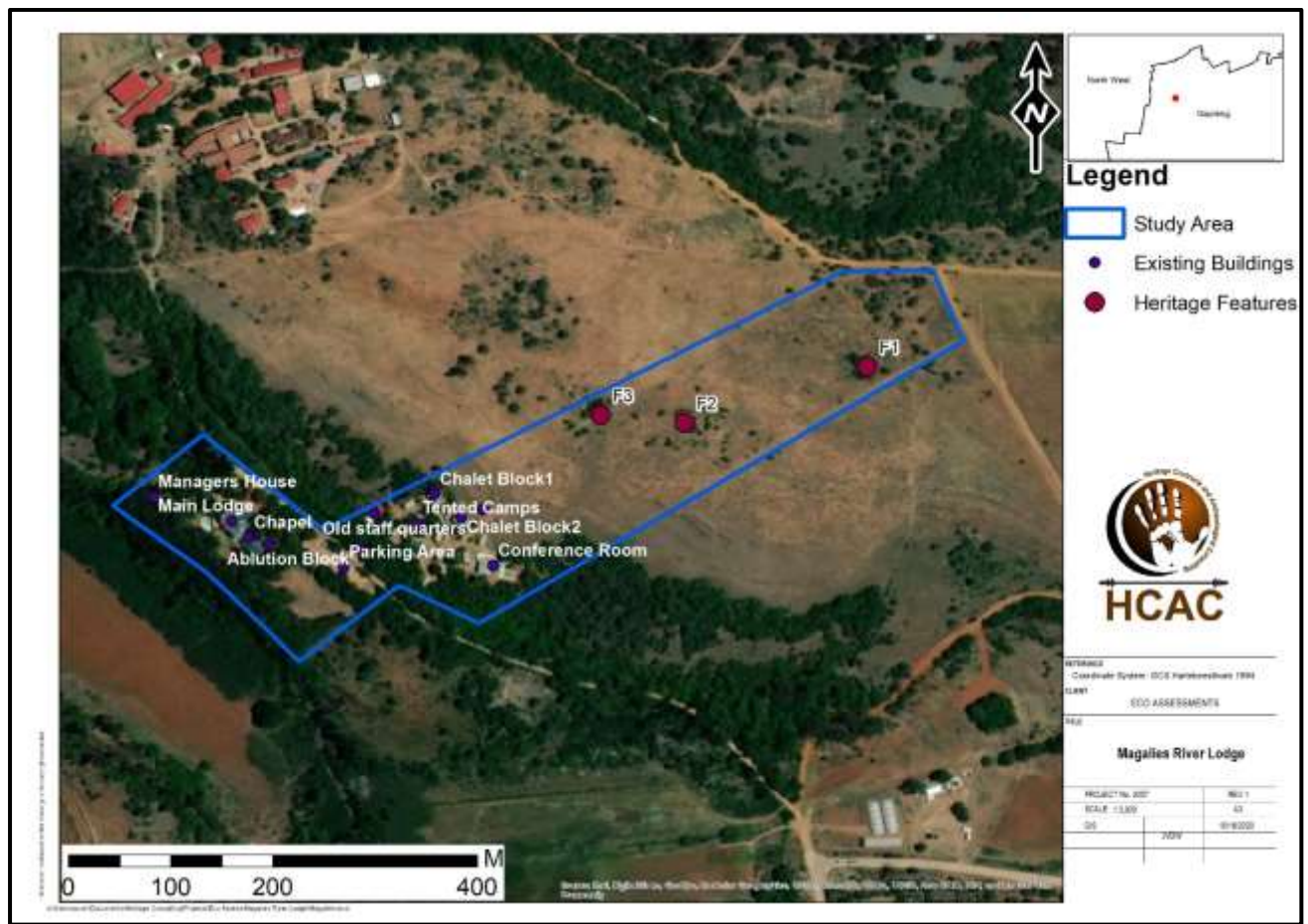


Figure 8-6. Identified features located well away from existing structures.

Table 6. Impact Assessment of the project on heritage resources

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/ excavation of site)
Extent	Local (3)	Local (3)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (4)	Low (2)
Probability	Not probable (2)	Minor (2)
Significance	24 (Low)	20 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes
Mitigation: <ul style="list-style-type: none"> It is recommended that a Chance Find Procedure should be implemented for the project. If Feature 1 – 3 will be impacted on by future development and the sites are older than 60 years a destruction permit will be required prior to construction and these sites should be monitored during construction. 		
Cumulative impacts: No additional impact is expected on heritage resources and cumulative impacts are considered to be low.		
Residual Impacts: Although surface sites can be avoided or mitigated there is a chance that completely buried sites would still be impacted but this cannot be quantified		

9 Recommendations and conclusion

HCAC was appointed by Eco Assessments to conduct a Heritage Impact Assessment for the existing Magaliesburg River Lodge located on the farm Kruitfontein on Ptn. 77 (a Ptn. of Ptn. 75) 511 JQ. The study area has been developed from 1996 onwards and the existing standing structures are all modern buildings. The existing lodge did not impact on any significant heritage features. Away from the current structures three partly demolished ruins were recorded as F1, F2 and F3 that could have been farm labourer dwellings. All three structures are similar in construction style with mud and packed stone walls with industrial refuse scattered around the sites. F1 and F3 are indicated on Topographic maps dating to 1968 and 1985 (Figure 7-3 and Figure 7-4) but not indicated on the 1996 topographic maps (Figure 7-5). The exact age of the structures is unknown based on the available historical aerial photographs but they are at least older than 50 years and approaching the 60-year protection threshold of the NHRA as they are indicated on the 1968 aerial photograph and map (Figure 7-2 and Figure 7-3).

The features are dilapidated ruins, destroyed to such an extent that the features' potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance. It should be noted that these features are often associated with the graves of stillborn babies and if older than 60 years and would then be protected by the NHRA. These structures are not impacted on by the existing development and no further action is necessary.

An independent paleontological assessment (Bamford 2020) concluded it is extremely unlikely that any fossils would be preserved in the area. However, since trace fossils such as mat related features have been found in another site in the Daspoort Formation, there is a very small chance that fossils may occur here. Therefore, a Fossil Chance Find Protocol should be implemented for the project. No grave sites were identified in the study area

The project will result in a socio-economic benefit in creating employment opportunities. Pending the discovery of new finds within the project area, there are no significant heritage issues and the project is acceptable from a heritage perspective provided that the identified features are not impacted on as per the current development lay out and based on approval from SAHRA with the implementation of a chance find procedure as outlined below and the recommendations as in Table 6:

9.1 Chance Find Procedures

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during future construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

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.

Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (mat related structures, plants, insects, bone) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

9.2 Reasoned Opinion

From a heritage perspective, the project is acceptable. 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 heritage record of the area.

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11 Appendices:

Curriculum Vitae of Specialist

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Archaeologist

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Education:

Particulars of degrees/diplomas and/or other qualifications:

Name of University or Institution:		University of Pretoria
Degree obtained	:	BA Heritage Tourism & Archaeology
Year of graduation	:	2001
Name of University or Institution:		University of the Witwatersrand
Degree obtained	:	BA Hons Archaeology
Year of graduation	:	2002
Name of University or Institution	:	University of the Witwatersrand
Degree Obtained	:	MA (Archaeology)
Year of Graduation	:	2012
Name of University or Institution	:	University of Johannesburg
Degree	:	PhD
Year	:	Currently Enrolled

EMPLOYMENT HISTORY:

2011 – Present:	Owner – HCAC (Heritage Contracts and Archaeological Consulting CC).
2007 – 2010 :	CRM Archaeologist , Managed the Heritage Contracts Unit at the University of the Witwatersrand.
2005 - 2007:	CRM Archaeologist , Director of Matakoma Heritage Consultants
2004:	Technical Assistant , Department of Anatomy University of Pretoria
2003:	Archaeologist , Mapungubwe World Heritage Site
2001 - 2002:	CRM Archaeologists , For R & R Cultural Resource Consultants, Polokwane
2000:	Museum Assistant , Fort Klapperkop.

Countries of work experience include:

Republic of South Africa, Botswana, Zimbabwe, Mozambique, Tanzania, The Democratic Republic of the Congo, Lesotho and Zambia.

SELECTED PROJECTS INCLUDE:

Archaeological Impact Assessments (Phase 1)

Heritage Impact Assessment Proposed Discharge Of Treated Mine Water Via The Wonderfontein Spruit Receiving Water Body Specialist as part of team conducting an Archaeological Assessment for the Mmamabula mining project and power supply, Botswana

Archaeological Impact Assessment Mmamethlake Landfill

Archaeological Impact Assessment Libangeni Landfill

Linear Developments

Archaeological Impact Assessment Link Northern Waterline Project At The Suikerbosrand Nature Reserve

Archaeological Impact Assessment Medupi – Spitskop Power Line,

Archaeological Impact Assessment Nelspruit Road Development

Renewable Energy developments

Archaeological Impact Assessment Karoshoek Solar Project

Grave Relocation Projects

Relocation of graves and site monitoring at Chloorkop as well as permit application and liaison with local authorities and social processes with local stakeholders, Gauteng Province.

Relocation of the grave of Rifle Man Maritz as well as permit application and liaison with local authorities and social processes with local stakeholders, Ndumo, Kwa Zulu Natal.

Relocation of the Magolwane graves for the office of the premier, Kwa Zulu Natal

Relocation of the OSuthu Royal Graves office of the premier, Kwa Zulu Natal

Phase 2 Mitigation Projects

Field Director for the Archaeological Mitigation For Booyendal Platinum Mine, Steelpoort, Limpopo Province. Principle investigator Prof. T. Huffman

Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline under directorship of Gavin Anderson.

Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province. Under directorship of Prof T. Huffman.

Field Director for the Phase 2 surface sampling of Stone Age sites effected by the Medupi – Spitskop Power Line, Limpopo Province

Heritage management projects

Platreef Mitigation project – mitigation of heritage sites and compilation of conservation management plan.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:

- Association of Southern African Professional Archaeologists. Member number 159
Accreditation:
 - Field Director Iron Age Archaeology
 - Field Supervisor Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation
- Accredited CRM Archaeologist with SAHRA
- Accredited CRM Archaeologist with AMAFA
- Co-opted council member for the CRM Section of the Association of Southern African Association Professional Archaeologists (2011 – 2012)

PUBLICATIONS AND PRESENTATIONS

- A Culture Historical Interpretation, Aimed at Site Visitors, of the Exposed Eastern Profile of K8 on the Southern terrace at Mapungubwe.
 - J van der Walt, A Meyer, WC Nienaber
 - Poster presented at Faculty day, Faculty of Medicine University of Pretoria 2003
- 'n Reddingsondersoek na Anglo-Boereoorlog-ammunisie, gevind by Ifafi, Noordwes-Provinsie. South-African Journal for Cultural History 16(1) June 2002, with A. van Vollenhoven as co-writer.
- Fieldwork Report: Mapungubwe Stabilization Project.
 - WC Nienaber, M Hutten, S Gaigher, J van der Walt
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2004
- A War Uncovered: Human Remains from Thabantšho Hill (South Africa), 10 May 1864.
 - M. Steyn, WS Boshoff, WC Nienaber, J van der Walt
 - Paper read at the 12th Congress of the Pan-African Archaeological Association for Prehistory and Related Studies 2005
- Field Report on the mitigation measures conducted on the farm Bokfontein, Brits, North West Province .
 - J van der Walt, P Birkholtz, W. Fourie
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2007
- Field report on the mitigation measures employed at Early Farmer sites threatened by development in the Greater Sekhukhune area, Limpopo Province. J van der Walt
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2008
- Ceramic analysis of an Early Iron Age Site with vitrified dung, Limpopo Province South Africa.
 - J van der Walt. Poster presented at SAFA, Frankfurt Germany 2008

- Bantu Speaker Rock Engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga (*In Prep*)
 - J van der Walt and J.P Celliers
- Sterkspruit: Micro-layout of late Iron Age stone walling, Lydenburg, Mpumalanga. W. Fourie and J van der Walt. A Poster presented at the Southern African Association of Archaeologists Biennial Conference 2011
- Detailed mapping of LIA stone-walled settlements' in Lydenburg, Mpumalanga. J van der Walt and J.P Celliers
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Bantu-Speaker Rock engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga. J.P Celliers and J van der Walt
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Pleistocene hominin land use on the western trans-Vaal Highveld ecoregion, South Africa, Jaco van der Walt.
 - J van der Walt. Poster presented at SAFA, Toulouse, France. Biennial Conference 2016

REFERENCES:

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