
	DEVELOPMENT OF 3000 BEDS FOR THE UNIVERSITY OF MPUMALANGA HERITAGE IMPACT ASSESSMENT REPORT	Internal Doc #	PDRO	1020	01
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		Date	10 January 2021		




UNIVERSITY OF MPUMALANGA

HERITAGE IMPACT ASSESSMENT REPORT FOR THE DEVELOPMENT OF 3000 BEDS

Date: 11 January 2021

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DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Proposed Student Accommodation and Associated Facilities on Portions of the farm Friedenheim 282, Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province
Purpose of the study	The Phase 1 Archaeological Impact Assessment is to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the proposed development site.
1:50 000 Topographic Map	See Figure 3
Coordinates	See Figure 3
Municipalities	Mbombela Local Municipality
Predominant land use of surrounding area	Agriculture (horticulture and timber plantations)
Heritage Practitioner	Minenviro (Pty) Ltd Cell: 071 887 1394 Email: Charles.chigurah@gmail.com
Authors	Trust Miilo
Date of Report	December 2020


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This report serves to inform and guide

The applicant and contractors about the possible impacts that the proposed construction activities have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located in the study area. As required by South African heritage legislation, a development such as this require archaeology and Heritage assessment by a competent heritage practitioner in order to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed development. In compliance with these laws AES Consulting (Pty) Ltd appointed Minenviro (Pty) Ltd to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) of the proposed student accommodation on the farm Friedenheim 282, Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province. Desktop studies, drive-throughs and fieldwalking were conducted to identity heritage landmarks on the farm Friedenheim 282 earmarked for development. The study site is not on pristine ground, having seen significant transformations owing to mainly industrial and infrastructure developments (see Figure 1 & 2). The general project area is known for occurrence of LIA sites. In terms of the built environment of the project area, no structures, or buildings older than 60 years of age were recorded on the proposed development site. In addition, sub-surface archaeological material and unmarked graves may still exist and when encountered during construction, work must be stopped forth-with and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must also be submitted to the SAHRA for review.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed development.
- Most sections of the project area are accessible, and the field survey was effective enough to cover all sections of the project receiving environs.
- The immediate project area is predominantly commercial farming.

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- Some sections of the proposed development site are severely degraded from previous commercial and industrial activities at the site (see Plate 3,8 and 9).
- The study did not record any archaeological site within the proposed development site.

The report sets out the potential impacts of the proposed development on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate.

The Report makes the following recommendations:

- Construction workers must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during subsurface construction prior to commencement of work on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds.
- If archaeological materials are uncovered, work must cease immediately and the SAHRA be notified and activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the legislations.

This report concludes that the impacts of the proposed development of the cultural environmental values are not likely to be significant on the entire project site if the EMP includes recommended safeguard and mitigation measures identified in this report.

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NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Mlilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.


Expertise:

Trust Mlilo, PhD *cand* (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, state owned enterprises (Eskom) and several private companies such as BHP Billiton and Rhino Minerals.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and the survey was carried out under Minenviro (Pty) Ltd. The company has no business, personal, financial, or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report

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The content of this report is based on the author's best scientific and professional knowledge as well as available information. Minenviro (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Minenviro (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).


Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.


Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the authorisation of development being proposed by the University of Mpumalanga

Signed by



17/ 12 / 2020

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ACKNOWLEDGEMENTS

The authors acknowledge AES Consulting and Minenviro (Pty) Ltd for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
SAHRA	South African Heritage Resources Agency

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ToR Terms of Reference

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KEY CONCEPTS AND TERMS

Periodization

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below.

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)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)


Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

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Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.


Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires

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authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.


Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or '**project area**' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed within the proposed student accommodation site during construction, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6)). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Integrated Specialist Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

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INTRODUCTION

Integrated Specialist Services (Pty) Ltd was appointed by Minenviro on behalf of AES Consulting (Pty) Ltd to carry out a Phase 1 AIA/ HIA for the proposed Student Accommodation and Associated Facilities on portions of the farm Friedenheim 282, Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province. The proposed development is gazetted in terms of section 38 (1) of the NHRA (see Figure 1). The overall purpose of this heritage report is to identify, assess any heritage resources that may be located in the study area and evaluate the positive and negative impacts of the proposed student accommodation development on these resources in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Late Iron Age (LIA) and historical sites most of which have been affected by massive agricultural activities and associated infrastructure in the area. It should be noted that while heritage resources may have been located in the entire study area, subsequent developments such as agriculture and infrastructure development work have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during construction. The proposed development may be permitted subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings there is no archaeological and heritage reasons why the development cannot proceed, taking full cognizance of clear procedures to follow in the event of chance findings.

1.1. Terms of Reference (ToR)

ISS was tasked by Minenviro (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed development site including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the proposed student accommodation.
- Identify all objects, sites, occurrences, and structures of an archaeological or historical nature (cultural heritage sites) located within the project site.
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

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- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
- Review applicable legislative requirements.

1.2. Project Location

The project is on portions of the farm Friedenheim 282 in Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province.

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Figure 1: Location of the proposed project (Minenviro 2020)

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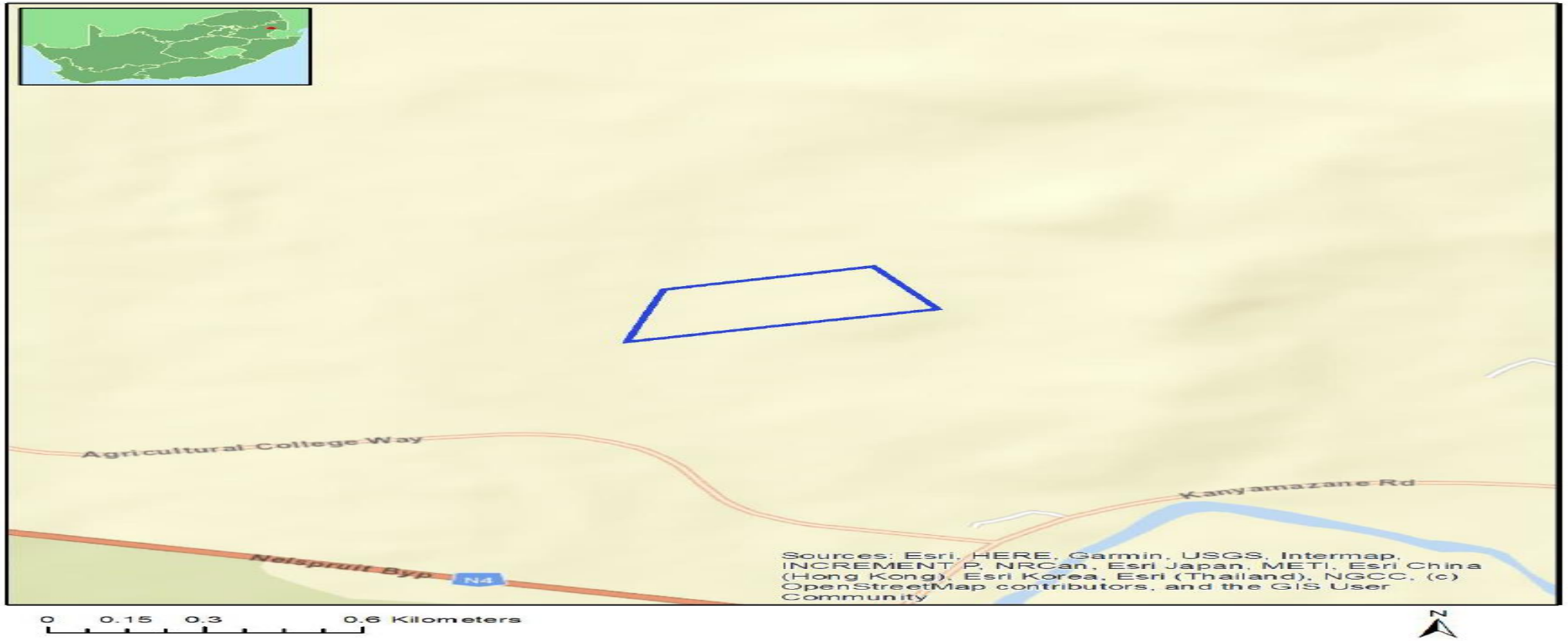



Figure 2: Location of the proposed development site (Minenviro 2020)

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No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	FRIEDENHEIM	282	0	25°25'50.23S	31°0'6.04E	Farm
2	FRIEDENHEIM	282	33	25°26'2.34S	31°0'57.96E	Farm Portion
3	FRIEDENHEIM	282	34	25°25'51.13S	31°0'56.02E	Farm Portion
4	FRIEDENHEIM	282	29	25°26'12.9S	31°1'0.36E	Farm Portion
5	FRIEDENHEIM	282	32	25°26'3.96S	31°0'35.09E	Farm Portion

Figure 3: Coordinates of proposed site (Minenviro 2020)

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1.3. Project Background and Description

The development will comprise of the construction of 3000 beds for the University of Mpumalanga, which will be developed in three (3) phases. The first phase will involve the construction of fifteen (15) U-shaped blocks with each block comprising of three (3) floors. An access road from Koedoe Street and Rietbok Street will be surfaced.

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LEGISLATIVE CONTEXT


Three main pieces of legislations are relevant to the present study and there are presented here. Under the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA), an AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process.

Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its PHRAs. There are different sections of the NHRA that are relevant to this study. The present development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require an HIA to be conducted by an independent heritage management consultant:

- Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
 - ❖ Exceeding 5000 sq m
 - ❖ Involving three or more existing erven or subdivisions
 - ❖ Involving three or more erven or divisions that have been consolidated within past five years
 - ❖ Rezoning of site exceeding 10 000 sq m
 - ❖ The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

Thus, any person undertaking any development in the above categories, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 sq m, then an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may **alter damage, destroy and relocate any building or structure older than 60 years, without a permit issued by**

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SAHRA or a provincial heritage resources authority. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed project.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant, SAHRA/ PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.



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Table 1: Evaluation of the proposed development as guided by the criteria in NHRA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq m	Yes
	Development involving three or more existing erven or subdivisions	No
	Development involving three or more erven or divisions that have been consolidated within past five years	Yes
	Rezoning of site exceeding 10 000 sq m	No
	Any other development category, public open space, squares, parks, recreation grounds	No
NHRA Section 34	Impacts on buildings and structures older than 60 years	Non recorded
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	No

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METHODOLOGY

This document falls under the Basic assessment phase of the AIA/HIA and therefore aims at providing an informed heritage-related opinion about the proposed student accommodation in Mpumalanga Province. This is usually achieved through a combination of a review of any existing literature and a basic site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the development footprint. Initially a drive-through was undertaken around the proposed development site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed residential units development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed development.

1.4. The Fieldwork survey

The fieldwork survey was undertaken on the 17th of December 2020. The main focus of the survey involved a pedestrian survey which was conducted within the proposed development site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence for building rubble, existing buildings and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern residential and on-going infrastructure developments; the general area where the proposed development is located would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by agricultural infrastructure and developments.


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1.5. Visibility and Constraints

Most sections of the proposed student accommodation site are visible because they were previously cleared for infrastructure development. It is conceded that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

1.6. Consultations

The study team consulted the landowner representative who confirmed that the buildings in the property earmarked for development are younger than 60 years which means that the proposed development does not trigger Section 34 of the NHRA. The study team consulted residents about the heritage character of the proposed development site. The Basic Assessment (BA) Public Participation process is conducted by the EAP. The BA Public Participation Process will invite and address comments from affected communities and any registered heritage bodies on any matter related to the proposed project including heritage concerns that may arise as a result of the development. The issues raised by the public in respect to the proposed development will also be included in the Final Basic Assessment Report.

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The following photographs illuminate the nature and character of the Project Area.



Plate 1: showing agricultural activity within the development site.



Plate 2: showing an existing building within the proposed development site.


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Plate 3: showing proposed development area



Plate 4: showing proposed development site



Plate 5: showing the proposed project site



Plate 6: showing built up area within the project site


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Plate 7: showing proposed development site



Plate 8: showing proposed project site


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Plate 9: showing built up area within project site



Plate 10: showing residential units within the proposed development site.


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Plate 11: showing proposed development site



Plate 12: showing the proposed project site.


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Plate 13: showing an existing house within the proposed development site. Note that this house is going to be used as staff quarters.


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Plate 14: showing proposed development site.



Plate 15: showing proposed project site


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Plate 16: showing existing buildings within the proposed development site. Note that the existing buildings will not be demolished.



Plate 17: showing builtup area within development site


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Plate 18: showing existing dining hall and kitchen within the proposed project site

ARCHAEOLOGICAL CONTEXT

Archaeological Context

In order to place the project area in archaeological and historical context, primary and secondary sources were consulted. Ethnographical and linguistic studies by early researchers such as Theal and Van Warmelo provide insights on the cultural groups who lived in and around the project area since ca 1600. Historic and academic sources by Küsel and Bergh, Makhura, Delius, and Webb were also consulted. Very little contemporary research has been done on prehistoric African settlements in the study area, and according to Bergh, there are no recorded sites that date from the Stone Age, (including Rock paintings or engravings), Early or Later Iron Age. Stone Age Archaeology

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (refers to the period from 250 000 years ago to 22


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000 years ago) and the Late Stone Age (the period from 22 000 years ago to 200 years ago). The Later Stone Age is also associated with rock paintings and engravings which were done by the San, Khoi Khoi and in more recent times by Iron Age farmers. Heritage surveys up to now have recorded few outstanding Stone Age sites, rock paintings and engravings in the Eastern Highveld - primarily as a result of limited extensive archaeological surveys. Stone tools have been recorded around some of the pans which occur on the Eastern Highveld.

In the larger geographical area there is material manifestation of Stone Age people but generally, Highveld area did not attract much of habitation in these early times due to lack of rock-shelters and domination of exposed environments. Thus, it is mostly in the vicinity of large watercourses and lower parts of mountains that some ESA (~ 2.6 million to 250 000 years ago) materials (crude chopper and other unifacial tools of the Oldowan industry and the characteristic Acheulian hand axes and cleavers) and MSA (~ 250 000 to 40-25 000 years ago) materials are generally found.

The MSA is a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology. More technological and behavioural changes than those witnessed in the MSA, occurred during the LSA (~ 40-25 000, to recently, 100 years ago), which is also associated with Homo Sapiens (Barham and Mitchell 2008). For the first time we get evidence of people's activities derived from material other than stone tools (ostrich eggshell beads, ground bone arrowheads, small bored stones and wood fragments) (Deacon and Deacon 1999). The LSA people are also credited with the production of rock art (engravings and paintings), which is an expression of their complex social and spiritual beliefs (Parkington *et al.* 2008). However, it is important to note that no Stone Age materials were recorded during the field walking, perhaps due to the presence of tall grass. Nonetheless, it is possible to encounter isolated finds of these objects in the study area, even though these would most likely be out of context due to the modern disturbances.


The Iron Age of the Mpumalanga region dates back to the 5th Century AD when the Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region which was then occupied by hunter-gatherers. These EIA communities are archaeologically referred to as the Mzonjani Facies of the Urewe EIA Tradition (Huffman, 2007: 127-9). They occupied the foothills and valley lands along the general Indian Ocean coastland introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007). Alongside the Urewe Tradition was the Kalundu Tradition whose EIA archaeological sites have been recorded along the Mpumalanga areas. From AD 650 to 750 the EIA sites in the region are classified as the

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Msuluzi Facies which was replaced by the Ndongondwane and Ntsekane Facies from AD 750 to 950 and AD 950 to 1050 respectively (Huffman, 2007).

By 1050 AD proto-Nguni Bantu-speaking groups associated with the Late Iron Age (LIA) called the Blackburn sub-branch of the Urewe Tradition had arrived in the eastern regions of South Africa, including modern day Mpumalanga, migrating from the central African region of the Lakes Tanganyika and Victoria (Huffman 2007: 154-5). According to archaeological data available, the Blackburn Facies ranged from AD 1050 to 1500 (ibid. p.155). The Mpumalanga and the Natal inland regions saw the development of the LIA Moor Park Facies between AD 1350 and 1750. This archaeological Facies is interpreted as representing inland migration by LIA Nguni speaking groups (Huffman 2007). Moor Park is associated with settlements marked by stonewalling. The period from AD 1300 to 1750 saw multiple Nguni dispersal from the coastland into the hinterland and eventually across the Drakensberg Escapement into central and eastern South Africa.

The Late Iron Age Nguni communities engaged in the Indian Ocean Trade exporting ivory and importing consumables such as cloth and glass beads. The exporting point was Delagoa. This brought the Nguni speaking community in touch with the Indo-Asian and first Europeans (Portuguese). It was the arrival of the Dutch and the English traders that opened up Delagoa Bay to more trade did the Nguni engaged in extensive trade with the international traders (Huffman 2007). From the late 1700s, trade in supply of meat to passing ship had increased substantially to an extent that by 1800 meat trade is estimated to have surpassed ivory trade. At the same time population was booming following the increased food production that came with the introduction of maize that became the staple food. Naturally, there were signs that population groups had to compete for resources especially along the east coastal regions. The KwaZulu Natal coastal region has a special place in the history of the region and country at large. This relates to the most referenced Mfecane (wandering hordes) period of tremendous insecurity and military stress which eventually affected the entire Southern Africa including the modern-day Mpumalanga area. Around the 1830s, the region also witnessed the massive movements associated with the Mfecane. The causes and consequences of the Mfecane are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988). In this context new African kingdoms emerged such as the Zulu Kingdom under Shaka in the second quarter of the 1800s AD. Military pressure from Zululand spilled onto the Highveld by at least 1821. Various marauding groups of displaced Sotho-Tswana moved across the plateau in the 1820s. Mzilikazi raided the plateau extensively between 1825 and 1837. At the same time the Boers trekked into this area in the 1830s. And throughout this time settled communities of Tswana people also attacked each other. As a result of this troubled period, Sotho-Tswana people concentrated into large towns for defensive purposes. Ethnographical and linguistic studies by early

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researchers such as Ziervogel, Theal and Van Warmelo shed light on the cultural groups living in the area since ca 1600. Historic and academic sources by Küsel and Bergh, were consulted, as well as historic sources by Makhura and Webb. Ziervogel and N.J. Van Warmelo, revealed that the study area before 1886, was inhabited by Eastern Sotho groups (Pulana, Kutswe and Pai), the Tsonga (Nhlanganu and Tshangana), from before the 18th century. By reason of its geographical position, this area was in pre-historic times the meeting place of African peoples from the East, South, West and the North-West, which resulted in a confused tangle of African groups, sections and scattered units. Several circular stone-walled complexes and terraces as well as graves have been recorded in the vicinities of Hazyview⁸, Bushbuckridge, Graskop and Sabie, and clay potsherds, upper as well as lower grinding stones, are common features at most of the archaeological sites. Secondary evidence suggests that the only early trade route which crossed this section, was a footpath used by the African groups from Delagoa Bay towards Bushbuckridge (Magashulaskraal), along the Sabie River, up the Escarpment, and further north to the Soutpansberg.

Intangible Heritage


As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage remains because no historically known groups occupied the study area and most of the original settler descendants moved away from the area.

SAHRIS Data Base and Impact Assessment Reports in the project area

Several archaeological and heritage studies were conducted within broader project area and their vicinity since 2002 and these presents the nature and heritage character of the area. There was also some mitigation work that was done for example by Huffman *et al.* 1997 at Nelspruit during the construction of Mpumalanga government offices. Big storage pits and layers of dung were found showing that the EIA people were cattle keepers. The location of the site also hints on the predictive areas where EIA sites can be found. The HIA conducted in the area also provide some predictive evidence regarding the types and ranges of heritage resources to be expected in the proposed project area: (see reference list for HIA reports). The studies include mining, water pipeline and powerline projects completed by Van Vollenhoven, (2011, 2018), Roodt (2008), Rowe, C., (2015). No sites were recorded, but the reports mention that structures older than 60 years occur in the area, Pelser and Van Vollenhoven

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(2011,2013, 2011, 2014, 2015) for mining and infrastructure development survey also recorded no sites. Van Schalkwyk did extensive work in the project area mostly for mining and infrastructure developments for example Van Schalkwyk, (2002, 2004, 2006, 2006, and 2010). Other than burial sites and buildings older than 60 years the studies did not record any significant archaeological sites in the project area. Phase 1 Archaeological and Heritage Impact Assessment for proposed agricultural development on the farm SIERAAD, Komatipoort area, (2013) revealed one possible Late Stone Age borer which was identified in a soil sample, one meter below the surface. Phase 1 Archaeological and Heritage Impact Assessment for proposed debushing of natural land for agricultural use: portion 10 of the farm Thankerton 175 JU, Hectorspruit area, (2014) revealed a few Later Stone Age tools and Iron Age potsherds and upper grinders. However, the current study could not locate any of the previous finds because the landscape has been cleared and altered due to mainly agriculture activities.

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RESULTS OF THE FIELD STUDY


Archaeology

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and digging for foundations of building foundations, indirect impacts may occur during movement of heavy construction vehicles. The excavation for foundations for buildings and structures and fence line posts will result in the relocation or destruction of all existing surface heritage material (if any are present).

Similarly, the clearing of access roads, haul roads and powerlines will impact material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to construction. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed development site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be negligible since the project area has previously been cleared for agriculture. The following section presents results of the archaeological and heritage survey conducted within the proposed project site.

Several LIA sites were previously recorded in the general project area. Although the project site is heavily degraded from previous and current land use such as infrastructure development, there is still a possibility of finding archaeological remains buried beneath the ground. It is the considered opinion of the author that the chances of recovering significant archaeological materials is low to moderate within the proposed development site.

The field study did not identify any confirmable archaeological sites or isolated archaeological remains within the study site. Based on the field study results and field observations, the receiving environment for the proposed development is low to medium potential to yield previously unidentified archaeological sites during subsurface

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excavations and construction work associated with the proposed development site. Literature review also revealed that no Stone Age sites are shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.


1.7. Burial grounds and Graves

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and concealed by thick vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities and construction. In some instances, packed stones or bricks may indicate the presence of informal burials. If any human bones are found during the course of construction work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or Department of Health for graves younger than 60 years.

The field survey did not identify any burial grounds or individual graves within the various portions of the farm Friedenheim 282 Mbombela, within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province. It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. In addition, graves are important in providing evidence for communities seeking land restitution. Wherever they exist or not, they may not be tampered with or interfered with during any development without a permit from SAHRA. It is also borne in mind that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low within the proposed development site, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected.

1.8. Public Monuments and Memorials

The study did not record any public memorials and monuments within the development site.

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1.9. Buildings and Structures

The field study did not identify any Historical building or structures within the proposed development site Therefore, the development does not trigger Section 34 of the NHRA. The building and structures at the site are younger than 60 years and according to the applicant most of the existing buildings are going to be retained.


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Table 2: Summary of Findings


Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None exist on the proposed development site.
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	None recorded
Graves and burial grounds	None recorded
Movable objects	None
Overall comment	The surveyed area has no confirmable archaeological resources on the surface, but sub-surface chance finds are still possible.

Methodology Adapted in Assessing the Impacts


An impact can be defined as any change in the physical-chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The significance of the impacts will be assessed considering the following descriptors:

Table 3: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.

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Magnitude (M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

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Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.


Table 4: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

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Table 5: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Significance before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Significance after mitigation
Clearing and construction	Destruction of archaeological remains	Cultural heritage	-	2	1	1	1	4	<ul style="list-style-type: none"> Use chance find procedure to cater for accidental finds 	2	1	1	1	4
	Disturbance of graves	Cultural heritage	-	2	1	1	1	4	<ul style="list-style-type: none"> Chance find procedure and heritage induction for construction workers 	2	1	1	1	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no historical buildings within the development site 	4	1	1	1	4
Haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no public monuments within the development site 	2	1	1	4	Low


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1.10. Cumulative Impacts

Cumulative are impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed development is considered the total impact associated with the proposed development when combined with other past, present, and reasonably foreseeable future developments projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this proposed development was undertaken during the preparation of this report. The total impact arising from the proposed project (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated.

The impacts of the proposed development were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation, this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments, including residential, road networks, commercial infrastructure where baselines have already been affected, the development will add to the existing impacts in the project area. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during the construction phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed student accommodation and associated facilities and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves, archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. Furthermore, many heritage resources in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when grass cover is dense. As such, construction

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workers may not see these resources, which results in increased risk of resource damage and/or loss. Earth moving and extraction of gravel have the potential to interact with archaeology, architectural and cultural heritage.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed development has the potential to impact on possible paleontological resources in the area. Sites of archaeological, paleontological, or architectural significance were not specifically identified, and cumulative effects are not applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.


Cumulative impacts that need attention are related to the impacts of clearances, digging foundations, access roads and impacts to buried heritage resources. Allowing the impact of the proposed student accommodation and associated facilities to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially construction vehicles during clearance and excavation within the development site. Movement of heavy construction vehicles must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if construction equipment is not monitored to avoid driving through undetected heritage resources.

1.11. Mitigation

Mitigation for the proposed development site is not required, however, the Chance find procedure applies.

ASSESSING SIGNIFICANCE

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

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1.12. Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture, and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

1.13. Historic Value


Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have historic value as the site of an important event. For any given place, the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

1.14. Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

1.15. Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national, or other cultural sentiment to a majority or minority group. Social value also extends to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.


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DISCUSSION

Various archaeological and heritage specialist studies were conducted in the general project area since 2002. The current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the general project area. These studies recorded sites of varying significance for example Kaplan (2006, 2008, 2011, 2014), van der Walt (2008, 2011, 2013, 2015); Morris (2011a 2011b), Van Ryneveld. (2007A, 2007B, 2007C) which testify that the project area is a cultural landscape with high potential to yield significant Stone Age sites. The study noted that the proposed development site is located within a degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical or burial sites, due to previous disturbances resulting from mainly agriculture activities in the area. However, the absence of confirmable and significant archaeological cultural heritage sites is not evidence in itself that such sites did not exist in the development site. There is potential of recovering significant archaeological remains beneath the surface. In addition, some sections were not easily accessible due to the steep nature of the project site. Significance of the sites of Interest is not limited to presence or absence of physical archaeological sites.


RECOMMENDATIONS

1. From a heritage perspective supported by the findings of this study, the proposed student accommodation and associated facilities on the farm Friedenheim 282 is feasible. However, the proposed development should be approved to proceed as planned under observation that the construction dimensions do not extend beyond the proposed student accommodation and associated facilities.
2. The footprint impact of the proposed student accommodation and associated facilities and associated infrastructure should be kept to a minimal to limit the possibility of encountering chance finds.
3. Should chance archaeological materials or human remains be exposed during subsurface construction work on any section of the proposed student accommodation and associated facilities, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding

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objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.

4. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed student accommodation and associated facilities to proceed as planned with special commendations to implement the recommendations here in made.

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CONCLUSION

Minenviro (Pty) Ltd was retained on by AES Consulting (Pty) Ltd to carry out HIA for the proposed student accommodation and associated facilities on the farm Friedenheim 282, Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province. Desktop research revealed that the project area is rich in LIA sites (Kusel 2003) and Pelsler (2007). There are no buildings or structures which are older than 60 years, therefore the proposed development does not trigger Section 34 of the NHRA which protects buildings and structures older than 60 years. The field study did not identify any burial site within the proposed development site. In terms of the archaeology and heritage in respect of the proposed student accommodation development, there are no obvious ‘Fatal Flaws’ or ‘No-Go’ areas. However, the potential for chance finds, remains and the applicant and contractors are advised to be diligent and observant during construction at the site. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the proposed student accommodation and associated facilities cannot be approved.

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APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED STUDENT ACCOMMODATION AND ASSOCIATED FACILITIES ON THE FARM FRIEDENHEIM 282, MBOMBELA WITHIN THE JURISDICTION OF MBOMBELA LOCAL MUNICIPALITY IN MPUMALANGA PROVINCE,.

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ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organisation

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CHANCE FIND PROCEDURE

Introduction


An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction. The main purpose of a CFP is to raise awareness of all construction workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of construction monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed development site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during construction.

Definitions

In short the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

Background


The proposed student accommodation and associated facilities on the farm Friedenheim 282, Mbombela within the jurisdiction of Mbombela Local Municipality in Mpumalanga Province is subject to heritage survey and assessment at planning stage in accordance with the NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed

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during surveys because they occur beneath the surface. These are often accidentally exposed in the course of construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by T. Mlilo (2020) on the proposed development site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2020) did not record any significant archaeological or heritage resources within proposed development site.

Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the development site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during digging of foundations and movement of construction equipment. The proposed construction activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Minenviro (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during construction. This ensures that appropriate treatment of chance finds while also minimizing disruption of the construction schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of construction scheduling. It is recommended that due to the low to moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during construction.

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Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

CHANCE FIND PROCEDURE

General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 25m buffer zone from all sides of the find.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ*.
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- **Finds rescue strategy:** All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a Museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.

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- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition, to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeological will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the permit application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when construction activities can resume.

Management of chance finds


Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Integrated Specialist (Pty) Ltd will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which Minenviro (Pty) Ltd will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or Minenviro Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

- a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:
- b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.

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- c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.
 - d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.
 - e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42.
 - f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to SAHRA Burial Ground and Graves Unit.
 - g. As soon as the project archaeologist receives the rescue permit from SAHRA he will in collaboration with the company/contractor arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.
 - h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.

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- i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the company.

Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

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APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED STUDENT ACCOMMODATION EMP

No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Objective		<ul style="list-style-type: none"> • Protection of archaeological sites and land considered to be of cultural value. • Protection of known physical cultural property sites against vandalism, destruction and theft; and • The preservation and appropriate management of new archaeological finds should these be discovered during construction. 						
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA-MP		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA-MP and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM



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Rehabilitation Phase	
	Same as construction phase.
Operational Phase	
	Same as construction phase.

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APPENDIX 3: HERITAGE MITIGATION MEASURES TABLE

SITE REF	HERITAGE ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	PENALTY	METHOD STATEMENT REQUIRED
Chance Archaeological and Burial Sites	General area where the proposed project is situated is a historic landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work which may disturb previously unidentified chance finds.	<p>Possible damage to previously unidentified archaeological and burial sites during construction phase.</p> <ul style="list-style-type: none"> • Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites. • Loss of historic cultural landscape. • Destruction of burial sites and associated graves • Loss of aesthetic value due to construction work • Loss of sense of place <p>Loss of intangible heritage value due to change in land use</p>	<p>In situations where unpredicted impacts occur construction activities must be stopped, and the heritage authority should be notified immediately.</p> <p>Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate.</p> <ul style="list-style-type: none"> • Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access thereto by the construction team must be denied. • Accidentally discovered burials in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. The heritage officer responsible should secure relevant heritage and health authorities permits for possible relocation of affected graves accidentally encountered during construction work. 	<ul style="list-style-type: none"> • Contractor / • Project Manager • Archaeologist • Project EO 	<p>Fine and or imprisonment under the PHRA-MP Act & NHRA</p>	<p>Monitoring measures should be issued as instruction within the project EMP.</p> <p>PM/EO/Archaeologists Monitor construction work on sites where such development projects commence within the farm.</p>

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APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans.

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must

(a) be clear and generally available to those affected thereby.


(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.


(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

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- (7) The identification, assessment and management of the heritage resources of South Africa must.
- (a) take account of all relevant cultural values and indigenous knowledge systems.
 - (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;
 - (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs.
 - (d) contribute to social and economic development.
 - (e) safeguard the options of present and future generations; and
 - (f) be fully researched, documented and recorded.

Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority
- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
 - (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
 - (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority

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(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy


47. (1) SAHRA and a provincial heritage resources authority

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned

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or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request



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