

HERITAGE MANAGEMENT PLAN

FOR THE PHASE 1 SAMMY MARKS TOWNSHIP DEVELOPMENT, GAUTENG PROVINCE

Client:

Exigent

Client info:

Jacquette Adam



Beyond Heritage

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: jaco@heritageconsultants.co.za

Report Author:

Mr. J. van der Walt

Project Reference:

SAHRA CaseID: 16428

Beyond Heritage Project No 2132

Report date:

September 2021

Disclaimer

The findings, results, observations, conclusions, and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information.

The report is based on a survey and heritage significance assessment conducted by Kusel et al (2019) prior to Beyond Heritage being appointed for the Conservation Management Plan (CMP) compilation.

Beyond Heritage and its staff reserve the right to modify aspects of this report including the recommendations if and when new information becomes available from ongoing research or further work in this field or pertaining to this investigation.

Although Beyond Heritage exercises due care and diligence in rendering services and preparing documents, Beyond Heritage accepts no liability, and the client, by receiving this document, indemnifies Beyond Heritage and its directors, managers, agents and employees against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by Beyond Heritage and by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this 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 reference 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.

Document status

Document Version	V1.0	
Report Purpose	CMP	
Document Ref. No.	2132	
	Name	Date
Document Compilation	Mr. J. van der Walt	September 2021
Document Review	Mr R. van der Merwe	September 2021

Distribution List

Date	Report Reference number	Document Distribution	Number of Copies
2021/10/05	2132	Exigent Environmental	Electronic Copy

ACRONYMS AND ABBREVIATIONS

AIA: Archaeological Impact Assessment
APM: Archaeological and Paleontological Sites and Meteorites
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
DHMP: Development Heritage Management Plan
CFP: Chance Find Protocol
CMP: Conservation Management Plan
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
EMPr: Environmental Management Programme
ESA: Early Stone Age
GPS: Global Positioning System
GRP: Grave Relocation Plan
HIA: Heritage Impact Assessment
HMP: Heritage Management Plan
HS: Health and Safety
IAP: Interested and Affected Parties
IFP: International Finance Corporation
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act

NHRA: National Heritage Resources Act
PIA: Palaeontological Impact Assessment
PHRA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
SAPS: South African Police Services
SWOT: Strengths, Weaknesses, Opportunities and Threats

Executive Summary

Beyond Heritage was appointed to develop a CMP to ensure the continued protection or implementation of recommended mitigation measures for the heritage resources identified in the Phase 1 Sammy Marks Township Development. The Sammy Marks township is located on the Remainder of Portion 2 of the Farm Zwartkoppies 364 JR, City of Tshwane Metropolitan Municipality, Gauteng Province.

A Heritage Impact assessment (HIA) was conducted for the study area (Kusel *et al*/2019), that included results from previous studies (Kusel 2005 and 2006). The combined HIA recorded numerous Iron Age sites in four clusters, a possible informal grave, numerous historical sites including farm labourers' houses and homesteads, cemeteries and graves, shale quarries, irrigation features, possible Anglo Boer War trenches, a horse cart track and an avenue of trees.

Sites located within the Phase 1 of the development that will be directly impacted on by the development was mitigated (van der Walt 2021) under SAHRA permit number 3186 and a destruction permit was approved on 20 January 2021. The following sites (ZK 5, 6, 7, 8, 30, 63 & 64) are located outside of the impact footprint and were not mitigated and SAHRA required a CMP to ensure the continued protection or implementation of recommended mitigation measures for these heritage resources.

This document is compiled in adherence to the condition of the development of a CMP by SAHRA as stipulated in Permit 3186.

Contents

Disclaimer	2
ACRONYMS AND ABBREVIATIONS	4
Executive Summary	6
1. INTRODUCTION	11
1.1 Document Objective	11
1.2 Purpose	11
1.3 Scope	11
1.4. Principles and legal framework.....	11
2. BACKGROUND TO THE PROJECT	14
2.1 Location	15
2.2. Nature of the development	16
3. PROJECT SCOPE	16
3.1. Aims of the CMP	16
3.2 Goals and objectives of the CMP	17
3.2.1. Goals	17
3.2.2. Objectives	17
4. DATA INTERPRETATION: ASSESSMENT OF SIGNIFICANCE	17
4.1 Significance of Sites	17
4.2. Field Rating of Sites	19
4.3 Heritage context of the greater area and SWOT Analysis.....	21
4.4 SWOT Analysis	23
4.5. Guiding Principles	25
5. SITE DEFINITION	26
5.1. Iron Age Remains	26
5.2. Anglo Boer War Trenches	26
5.3. Graves	27
5.4. Paleontological Significance.....	28
6. HERITAGE MANAGEMENT ACTIONS.....	29
6.1. Heritage Awareness	30
6.2. Management Structure.....	31
6.3. Identified impacts to cultural resources	32
6.4. Specific Management Actions.....	34
6.5. Monitoring	54

6.6. Chance Find Procedure and Procedure for Reporting..... 56

7. THE WAY FORWARD..... 59

8 REFERENCES 60

Appendix A..... 61

Figures

Figure 1. Regional setting of the project. Map obtained from the HCAC mitigation report (Van der Walt 2021). 15

Figure 2. Location of sites in relation to the township lay out. Map obtained from the mitigation report (Van der Walt 2021). 22

Figure 3. Paleontological Sensitivity of the approximate study area (blue polygon) is indicated as high. 28

Tables

Table 1. Legal guidelines considered.....	11
Table 2. Field ratings.....	19
Table 3. Determined heritage significance of recorded sites (adapted from Kusel 2019).....	20
Table 4. Project SWOT Analysis.....	24
Table 5. Sources of impact to heritage resources based on the current lay out.	32
Table 6. Heritage Management Framework.....	33
Table 7. Preventative Protection Measures.....	34
Table 8. Monitoring requirements for the Sammy Marks Township Development.....	55

1. INTRODUCTION

1.1 Document Objective

The primary objective of this document is to define the management requirements in an implementable CMP to comply with Section 38(3)(g) of the NHRA. The CMP aims to ensure the management and/or mitigation measures encapsulated in the CMP at a minimum maintain the cultural significance of the identified heritage resources and greater cultural landscape in the area.

1.2 Purpose

The purpose of the CMP is to collate all the preceding steps (HIA, PIA and subsequent assessments) into a single management document to:

- Summarise the findings of the impact assessments;
- Proactive identification of potential risks to heritage resources from Project related activities;
- Defining the required management measures to ensure the potential risks or impacts to cultural resources in the project area is assessed, prioritised, and controlled to a level that is acceptable to the various management structures while maintaining the cultural significance of the recorded heritage sites.

1.3 Scope

To define practical management and mitigation measures, informed by the South African regulatory framework and international best practice standards, that retain and complement the cultural significance of heritage resources throughout the life of the Project.

1.4. Principles and legal framework

The principles of this document are informed by the national South African legislative framework, specifically SAHRA Site Management Plans: Guidelines for the Development of Plans for the Management of Heritage Sites or Places (2006) and draft Development Heritage Management Plan (DHMP) Guidelines for Archaeological, Palaeontological and Meteorites Heritage Resources (2017). The legal framework that guided the principles of this document is outlined in Table 1.

Table 1. Legal guidelines considered.

Applicable guidelines considered	Reference where applied
<p><u>South African Heritage Resources Agency (SAHRA) Archaeology, Palaeontology and Meteorites (APM) Guidelines: Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports (2007)</u></p> <p>The guidelines provide the minimum standards that must be adhered to for the compilation of a HIA Report that will feed into the CMP.</p>	<p>The HIA (Kusel 2019) complies with the minimum standards as defined by Chapter II of the SAHRA Archaeological and Palaeontological Sites and meteorites (APM) Guidelines (2007)</p>

Applicable guidelines considered	Reference where applied
<p>The minimum requirements for inclusion in the heritage assessment as follows:</p> <ul style="list-style-type: none"> ➤ Background information on the Project; ➤ Background information on the cultural baseline; ➤ Description of the properties or affected area; ➤ Description of identified sites or resources; ➤ Recommended field rating of the identified sites to comply with Section 38 of the NHRA; ➤ A statement of Cultural Significance in terms of Section 3(3) of the NHRA; and ➤ Recommendations for mitigation or management of identified heritage resources. 	
<p>Development of an HMP as provided for in Section 47 (3) of the National Heritage Resources Act No 25 of 1999 (NHRA)</p>	<p>Compilation of a CMP for the Sammy Marks Township was commissioned in July 2020 by Exigent Environmental on behalf of the developer Cosmopolitan Projects to comply with current legislation</p>
<p><u>South African Heritage Resources Agency (SAHRA) Site Management Plan Guidelines (2006)</u></p> <p>In these guidelines SAHRA proposes that all management plans should include at least the following basics:</p> <ul style="list-style-type: none"> ➤ Statement of site significance (including values); ➤ Site description, including environmental setting; ➤ History of the site; ➤ Stakeholders; ➤ Legal framework and management context; ➤ Present and past uses of the site; ➤ Site condition and history of conservation; ➤ Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis; 	<p>The CMP was compiled taking cognisance of these guidelines where applicable.</p>

Applicable guidelines considered	Reference where applied
<ul style="list-style-type: none"> ➤ Guiding principles; ➤ Visitor management; ➤ Objectives and strategies; ➤ Action plan; ➤ Objectives, strategies, and action plan should cover the management of the site, site presentation, interpretation, safety, education and research, marketing, and site conservation; ➤ Plans / alterations approvals system – process of getting approvals for changes, approvals committees, delegations, responsibilities etc ➤ Monitoring and evaluation; ➤ Documentation of implementation and monitoring <p>This is provided for in section 47 of the National Heritage Resources Act No 25 of 1999 (NHRA)</p>	
<p><u>South African Heritage Resources Agency (SAHRA) Development Heritage Site Management Plan Guidelines for Archaeological, Palaeontological and Meteorites Heritage Resources (2017)</u></p> <p>These proposed guidelines only pertain to development applications under the jurisdiction of SAHRA and are only applicable to archaeological, palaeontological and meteorite resources as defined in section 2(ii), and 2(xxv) and 2(xxxi) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).</p> <p>These plans should include the following:</p> <ul style="list-style-type: none"> ➤ Description of development including project details, locations, authorised activities, phases of development and the Environmental Authorisation (EA) conditions; ➤ SAHRA Comment/Decision; ➤ Legal framework; ➤ Objectives, impacts to heritage resources and potential risks to heritage resources; 	<p>The CMP was compiled taking cognisance of the proposed SAHRA 2017 guidelines.</p>

Applicable guidelines considered	Reference where applied
<ul style="list-style-type: none"> ➤ SWOT Analysis; ➤ Outcomes and aim of the CMP; ➤ Actions to be followed per phase per activity; ➤ Procedure for compliance monitoring, timeframes, and responsible individuals; ➤ Description of heritage resources including significance, pictures, map of resources, mitigation and/or monitoring requirements; ➤ Monitoring and reporting procedures. 	

2. BACKGROUND TO THE PROJECT

An HIA (Kusel et al 2019) was conducted for the proposed Sammy Marks mixed-used development. The report was submitted to SAHRA (Case number 14453) and SAHRA subsequently provided interim comments on the assessment requiring a Paleontological Assessment (PIA). Beyond Heritage (formerly HCAC) was appointed to facilitate the PIA. After submission of the PIA, SAHRA provided final comment on the case on 5 November 2020 and included the following recommendations:

- A palaeontological chance find procedure as part of the Environmental Management Program must be included;
- If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments and charcoal/ash concentrations) or palaeontological remains are found during the proposed activities, SAHRA must be alerted immediately, and a professional archaeologist or palaeontologist, based on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of significance a Phase 2 rescue operation might be necessary;
- Conduct Phase 2 archaeological mitigation of sites (Sites ZK9, ZK10, ZK65, ZK66, ZK 67; ZK68 and ZK69) that will be directly impacted on by the development.

HCAC (van der Walt 2021) successfully mitigated the sites as per the SAHRA comments under SAHRA permit number 3186 and submitted a destruction permit that was approved on 20 January 2021. The following sites (ZK 5, 6, 7, 8, 30, 63 & 64) are located outside of the impact footprint and SAHRA required a CMP to ensure the continued protection or implementation of recommended mitigation measures for these heritage resources. The construction of the township development could have an irreversible impact on these resources, and it is therefore important that the CMP include the development of management plans/actions that will minimise and avoid negative changes/impacts to heritage resources and enhance the positive.

This document fulfils the condition of the development of a CMP and must be submitted to the SAHRA for review by the Environmental Assessment Practitioner (EAP). The CMP is a tool to ensure the continued protection or implementation of recommended mitigation measures for the heritage resources identified in the HIA and to aid in the long-term conservation efforts for the sites located near the Sammy Marks Phase 1 Development. The township development could have an irreversible impact on heritage resources found within the project area. It is therefore important that the CMP include the development of management plans/actions that will minimise and avoid negative changes/impacts to heritage resources and enhance the positive.

2.1 Location

The proposed Sammy Marks Mixed Use Township is located on the Remainder of Portion 2 of the Farm Zwartkoppies 364 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. The prevailing vegetation type and landscape features of the area form part of the Marikana Thornveld within the Savanna Biome.

It is described as open *Acacia Karroo* woodland, occurring in valleys and slightly undulating plains, and some lowland hills. Shrubs are denser along drainage lines, on termitaria and rocky outcrops or in other habitat protected from fire (Mucina & Rutherford, 2006).

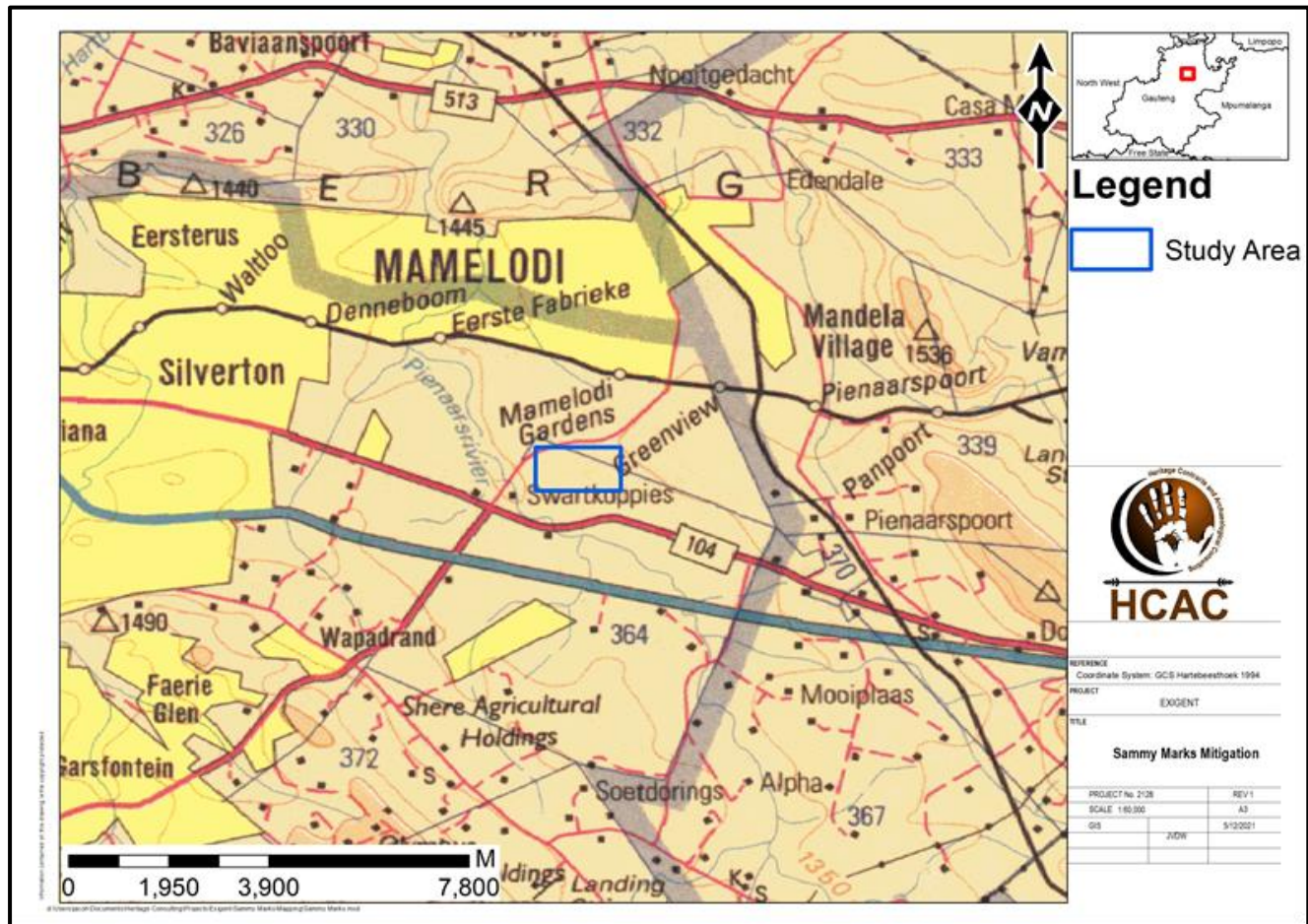


Figure 1. Regional setting of the project. Map obtained from the HCAC mitigation report (Van der Walt 2021).

2.2. Nature of the development

The project comprises a mixed-use township including business, residential, institutional and open space.

3. PROJECT SCOPE

Beyond Heritage was appointed to develop a CMP for the Phase 1 Sammy Marks Township Development to ensure the ongoing protection of non-renewable heritage resources. The construction of the township and associated infrastructure will have an impact on the heritage resources found within the project area. It is therefore important that the CMP includes the development of management plans that will minimise and avoid negative changes/impacts to heritage resources and enhance the positive.

3.1. Aims of the CMP

The overall purpose of the CMP for the Phase 1 Sammy Marks Township is:

- To provide a framework for ensuring a balance between legislative requirements, development and economic opportunities and non-renewable heritage resources in the project area;
- Ensuring long term protection of the heritage resources and the heritage record of the area through conservation, management, and maintenance of heritage resources;
- To provide a framework for the long-term monitoring of heritage resources in the project area;
- To provide a dynamic plan for heritage conservation that should be revised annually.

3.2 Goals and objectives of the CMP

3.2.1. Goals

The goals of the CMP for the project are to ensure the following:

- Increased general heritage awareness at the Phase 1 Sammy Marks Township Development.
- The long-term conservation of heritage resources and the archaeological record of the area through an open and transparent process.
- A balanced approach between development, conservation, and utilization.
- Easy, clear guidelines on cost effective maintenance and management of heritage resources in the project area.

3.2.2. Objectives

The objectives of the CMP for the project include:

- To ensure the conservation of the various heritage resources in a sustainable manner.
- To define management responsibilities for the identified heritage resources.
- To provide clear management actions for the different sites and chance finds.
- To provide a management framework to monitor and define the success of the CMP.

4. DATA INTERPRETATION: ASSESSMENT OF SIGNIFICANCE

4.1 Significance of Sites

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the Sammy Marks Township the project footprint was surveyed during the 2019 HIA and an additional condition assessment in 2021 (Van der Walt 2021). In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

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

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

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

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural, or spiritual reasons;
- Its strong or special association with the life or work of a person, group, or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa.

4.2. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. Field ratings assist the responsible heritage resources authority to grade heritage resources into national (Grade I), provincial (Grade II) or local (Grade III) categories and are required under Chapter II Section 7(J) of the SAHRA Minimum Standards (Table 2). Table 3 provides the ratings for the recorded sites.

Table 2. Field ratings

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

Table 3. Determined heritage significance of recorded sites (adapted from Kusel 2019)

Resource	Label	Description	Significance
Silverton Formation (Pretoria Group, Transvaal Supergroup)	Paleontological resources	Small chance that fossils are present	Low
Iron Age/ Historical settlements	ZK5	Large number of units, variable walling and scattered over a large area. Rand Water servitude impacts this area.	Part of Cluster 4. These sites are collectively assigned a medium significance. Proposed Field Rating/Grade IIIB Local Resource
	ZK6		
	ZK 7		
	ZK 8		
	ZK 64	Previously several settlements were investigated in a Phase 2(PGS 2014).	
Historical	ZK 30	Anglo Boer War trench on the eastern and northern sides of a low hill. Just north of this koppie in the new township of Nellmapius is another koppie with trenches. The Zwartkoppies farm formed part of the Diamond Hill Battlefield during the Anglo Boer War. This was the last conventional battle between the Boers and British soldiers before the Boers turned to guerrilla warfare.	Medium significance. Proposed Field Rating/Grade IIIC Local Resource

4.3 Heritage context of the greater area and SWOT Analysis

4.3.1. Background to area and cultural landscape

A Total of 70 heritage features were recorded by Kusel *et al* (2019) including features recorded in 2005 and 2006. Of these sites, Site ZK9, ZK10, ZK65, ZK66, ZK 67; ZK68 and ZK69 (Figure 2) will be directly impacted upon by the proposed Phase 1 development. The sites comprise Iron Age features that were recorded and mapped and further management measures proposed. The sites were successfully mitigated under permit number 3186. The mitigation (Van der Walt 2021) comprised the recording of detailed site layout plans, test excavations and a basic description of each site. The layout plans were recorded using standard survey equipment including a total station. Site ZK64, located on the boundary of the development area was investigated to determine the extent of the site within the development footprint, this site was however previously mitigated (PGS 2014) during the construction of the Rand Water Pipeline and subsequently destroyed.

Previous work in the area (Kusel 2019, Birkholtz 2014; Pelser & Van Vollenhoven 2009 and Van Schalkwyk *et al* 1996) highlighted the fact that the study area is essentially associated with the Southern Ndebele and more particularly with the Southern Ndebele group known as the Manala Ndebele. Excavations in the area also recorded limited number of artefacts and almost no cultural deposit and results are mostly related to mapping of the settlement layout.

Settlements within the Sammy Marks development conform to the central cattle pattern, consisting of a multicomponent site as outlined by van Schalkwyk *et al* (1996). The organisation of Southern Ndebele settlements emphasized a front-back axis first seen at Moor Park (Davies 1974) beehive huts stood on low hut platforms (evident at Site ZK9, ZK 10 and 69). At KwaMaza the central courtyard and cattle kraals were constructed to look the same and included two lobes, one for cattle and the other for calves (Schoeman 1997) like site ZK9. The lack of cultural material (i.e., ceramics or datable material) attest to a short occupation period. The mitigated features are likely related to the features mitigated by Birkholtz (2014) and date to the KoNonduna phase of the Manala Ndebele (around 1747 to 1825) concurring with the studies of Birkholtz (2014); Pelser & Van Vollenhoven (2009) and Van Schalkwyk *et al* (1996).

SAHRA subsequently issued a destruction permit (Permit ID 3287) for the sites mitigated by van der Walt (2021). The destruction permit is subject to compulsory monitoring of the site by Mr. van der Walt, or a representative approved by SAHRA, for the entire duration of the work undertaken under this permit.

The sites in the surrounding area (Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 30 and ZK 64) will require additional management measures to protect them from indirect damage (Figure 2) and is the focus of this CMP.

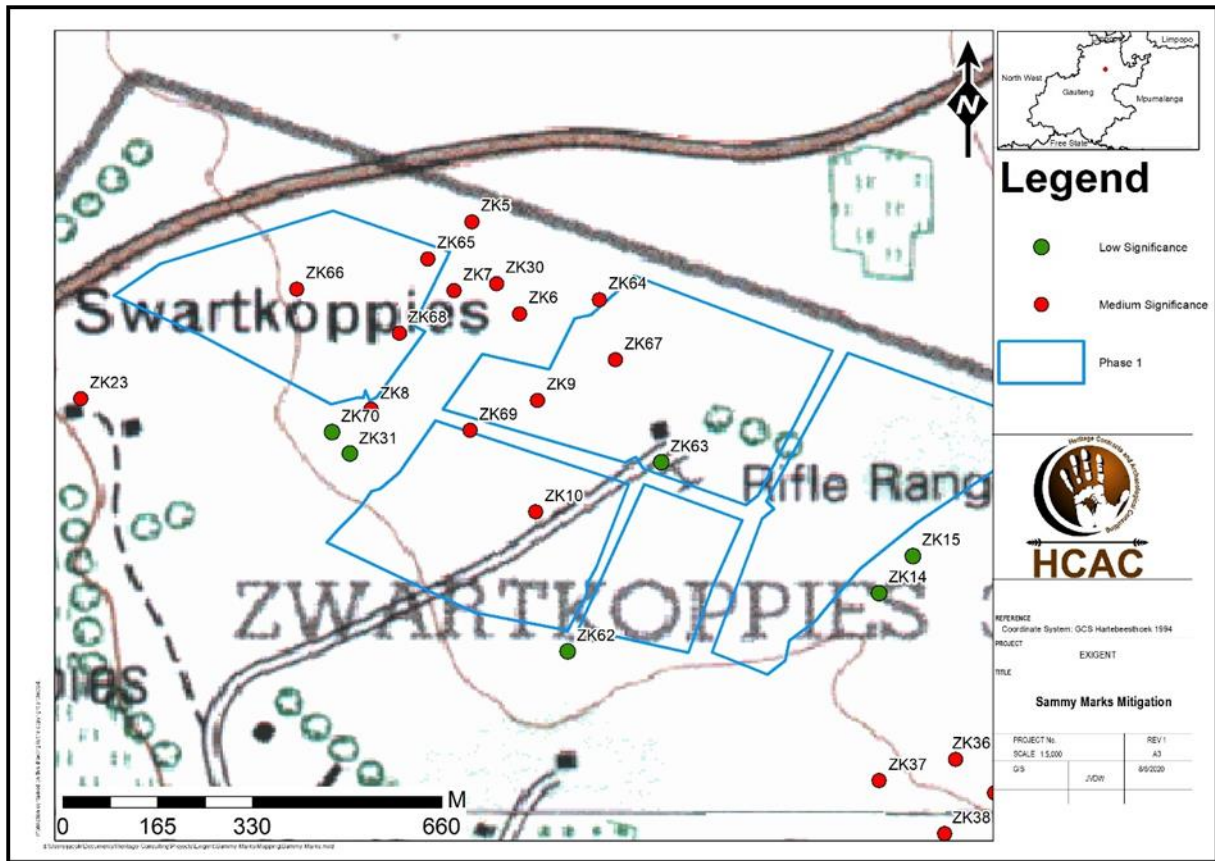


Figure 2. Location of sites in relation to the township lay out. Map obtained from the mitigation report (Van der Walt 2021).

4.4 SWOT Analysis

This chapter details a situational analysis of the Phase 1 Sammy Marks project as relevant to heritage resource management that informs the guiding principles of the CMP. The guiding principles form the foundation to develop specific and achievable objectives, targets, and strategies in line with the EMPr.

A situational analysis of the Project was undertaken by means of SWOT (Strengths, Weaknesses, Opportunities, and Threats) for the known heritage resources. The SWOT Analysis identified:

- Current strengths of the Project as relevant to the cultural resources of the project area;
- Current weaknesses of the Project as relevant to the cultural resources of the project area;
- Opportunities associated with the cultural resources of the project area; and
- Threats to the preservation and mitigation of heritage resources in the Project area.

The outcomes of the SWOT Analysis (Table 4) informed the development of guiding principles for the CMP and are discussed below in section 4.5.

Table 4. Project SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> ➤ The sites have been recorded providing information for updating the heritage record of the area. ➤ Heritage resources are formally protected by the NHRA, their management further informed by international best practice. ➤ Tangible heritage resources are known within the larger study area. ➤ Newly recorded heritage resources contribute to the understanding of the cultural landscape. ➤ The completed HIA provides reasonable and feasible management and mitigation recommendations approved by SAHRA. 	<p>Weaknesses</p> <ul style="list-style-type: none"> ➤ The known heritage resources within the site-specific study area do not represent an exhaustive list of heritage resources that may be present. ➤ It is difficult to determine site extent due to the subsurface nature of cultural resources. ➤ Stone Age and Iron Age scatters might not be correctly identified, especially by the untrained eye, and sites might be damaged or destroyed during construction. ➤ Intangible heritage resources were not addressed in the previous HIA's.
<p>Opportunities</p> <ul style="list-style-type: none"> ➤ The sites contribute to the archaeological record of the area. ➤ By educating employees and contractors further sites might be identified. ➤ This project presents an opportunity to enhance heritage awareness both for employees, construction teams and residents. ➤ Management of cultural heritage as a finite resource will ensure the accessibility to these resources for future generations. ➤ Implementation of recommended mitigation and management measures will reduce the intensity of the limited identified impacts and can promote the enhancement of the attributed Cultural Significance of the landscape. 	<p>Threats</p> <ul style="list-style-type: none"> ➤ Palaeontological and archaeological resources commonly occur at sub-surface levels, therefore, may not have been previously identified and could be accidentally destroyed. ➤ Heritage resources could be indirectly impacted on by the development. ➤ Lack of awareness and damage to the site by uninformed staff and independent contractors. ➤ Heritage Sites might contain unmarked graves. ➤ Heritage resources can be unknowingly destroyed including grave sites. ➤ Ineffective co-operation, participation, and communication between the management structures.

4.5. Guiding Principles

The guiding principles for this CMP are:

- Acknowledge that the project does not occur in isolation and planning must ensure synergy with the surrounding landscape;
- Recognize the mandate for the conservation of the various heritage resources in a sustainable manner based on South African national regulatory framework and best practice standards;
- Adhere to the acceptable limits of acceptable change to heritage resources and cultural landscapes;
- Accommodate strategic, flexible, and dynamic planning procedures.

5. SITE DEFINITION

Identified sites in the Kusel *et al* (2019) study was recorded using handheld GPS's and documented through photographs and notes (Figure 2). The sites were recorded by a single point (co-coordinates) but it must be kept in mind that these settlements are much larger than indicated on the site distribution maps. Below is a direct extract of the site descriptions (Kusel 2019 et al):

5.1. Iron Age Remains

Numerous Iron Age stone-walled settlements were recorded. At several of these the stones have been robbed to use in features such as garden walls at Zwartkoppies. Kusel (2005) and PGS (2014) also commented on numerous instances of robbed sections, where frequently only the foundations of stone walls remain. The Iron Age settlements have been grouped into several clusters and the sites in the report for part of Cluster 4 – described as many units scattered over a large area with variable walling. Rand Water servitude impacts this area. Previously several LIA stonewalled sites were recorded during a Phase 2 (PGS 2014).

The Iron Age stonewalled complexes comprise of a number of circular features and include cattle, domestic and production spaces (Kusel 2019). In some cases, the stone walling has been robbed (see also Kusel 2005; PGS 2014). Some of the lower stone walls may also represent foundations to wooden palisade enclosures. Evidence for local reoccupation of the sites in historical times are also evident. The sites on Zwartkoppies are most likely associated with the Manala Ndebele (Kusel 2019).

Significance: Sites ZK5, ZK6, ZK 7, ZK 8 and ZK 64 are of medium significance due to scientific considerations and require mitigation. All sites are sensitive for human remains.

5.2. Anglo Boer War Trenches

Kusel (2019) states that: Trenches on the eastern and northern sides of a low hill were recorded. The trenches are like the features constructed during the Anglo Boer War. Just north of this koppie in the new township of Nellmapius is another koppie with trenches. The Zwartkoppies farm formed part of the Diamond Hill Battlefield during the Anglo Boer War. This was the last conventional battle between the Boers and British soldiers before the Boers turned to guerrilla warfare. The koppie with the possible remains of the Anglo Boer War trenches needs further investigation. If it turns out that these trenches are indeed Anglo Boer War trenches the site would be worth preserving.

Significance: Site ZK 30 is of medium significance due to scientific considerations and require mitigation. All sites are sensitive for human remains.

5.3. Graves

Even though no grave sites were recorded in the area under investigation graves can occur anywhere on the landscape and this area may contain unmarked graves that were not detected during the survey. The area must be regarded as sensitive.

Any of these homestead ruins could contain unmarked graves, especially those of infants who could traditionally be buried inside the hut, or under the roof drip line.

Significance: Graves are highly sensitive with high social significance
--

5.4. Paleontological Significance



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No paleontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No paleontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 3. Paleontological Sensitivity of the approximate study area (blue polygon) is indicated as high.

6. HERITAGE MANAGEMENT ACTIONS

In accordance with the guiding principles and cultural heritage objectives discussed in Chapter 3 & 4, this chapter details the required preservation/management mechanism applicable to the Project. To develop appropriate and feasible management actions, resources protected by the NHRA is outlined in Section 6.1, responsible parties to implement the CMP is discussed under Section 6.2 and in Section 6.4 and identified impacts or risks to known cultural heritage resources are considered under Section 6.3. The consequent preservation of cultural resources through specific management actions are discussed in Section 6.4 and 6.5 and include:

- Project-related mitigation measures;
- Preventative protection measures;
- Monitoring requirements; and
- Chance Find procedures for the project

6.1. Heritage Awareness

It is important to ensure that all employees, contractors, and visitors at the Phase 1 Sammy Marks Township Development are aware of the applicable heritage legislation and what heritage resources are. It is recommended that this is communicated during induction training for employees and contractors as well as through notices placed in strategic places, highlighting the South African Heritage Resources Act (Act 25 of 1999) where the following applies:

Structures

34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeology, palaeontology, and meteorites

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

(e) destroy, damage, excavate, alter, deface, or otherwise disturb any archaeological or palaeontological site or any meteorite;

(f) destroy, damage, excavate, remove from its original position, collect, or own any archaeological or palaeontological material or object or any meteorite;

(g) trade in, sell for private gain, export, or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(h) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects or use such equipment for the recovery of meteorites.

36. Burial grounds and graves

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

(d) 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;

(e) 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

(f) 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.

6.2. Management Structure

SAHRA is the competent authority responsible for the regulation of the CMP in terms of the national legislative framework. This CMP should be submitted to the SAHRA in accordance with the scope and procedures contained herein. The developers of the Phase 1 Sammy Marks Township are ultimately responsible for managing heritage resources in the project area in a legally compliant and socially responsible manner. Generally, the environmental team or Environmental Control Officer (ECO) take responsibility for the day-to-day management and monitoring of heritage resources or appoint a suitably qualified person to do so during development after which the home owners association will be responsible. The responsible party must ensure that all actions and planned development that might have an impact (indirectly or directly) on heritage resources are subject to the requirements and guidelines in this CMP. This CMP must also be updated annually.

It is recommended that a project archaeologist is appointed on a consultancy basis to work together with the environmental management team and development management team to ensure that heritage resources are managed and monitored as per legal requirements. The project archaeologist will be responsible for training the ECO in heritage related matters as well as to supply the client with induction training material for contractors where needed. The project archaeologist together with the ECO will also be responsible for monitoring of heritage resources through implementation of the CMP. This will also provide the client with a valuable communication channel, who will be the first contact person in all heritage related matters and the contact person for the chance find procedure. It is recommended that the client should compile a heritage register of all identified sites in the project area with management actions taken.

The heritage management team should address heritage concerns with regular feedback and the evaluation of predetermined goals (monitoring of resources, evaluation of heritage concerns during construction processes, mitigation progress, project timing etc.).

The following parties will have roles and responsibilities in the implementation of this CMP.

- Applicant (Cosmopolitan Projects);
- Construction Contractor;
- Project Archaeologist/ Palaeontologist
- ECO
- Home owners association

The roles and responsibilities of each party are described in the sections below.

6.3. Identified impacts to cultural resources

Current and future risks to cultural heritage resources for the project were addressed in both the PIA and HIA. The PIA determined that the potential impact of the project on paleontological resources is extremely low while the HIA stated that resources impacted on by the development must be mitigated.

Impacts to heritage resources are permanent, irreversible and the impacts to the recorded features are local in extent. The impact of the project on the recorded Iron Age sites based on the HIA is (in the absence of a quantitative impact assessment in the HIA) is determined to be medium high prior to mitigation based on the cultural significance of the sites and low after mitigation (based on the mitigation of the features by van der Walt (2021) and previous grave relocation projects). The impact of the project on the recorded Anglo Boer War Trench is medium and with mitigation preservation is low. It should be noted that human remains are associated with Iron Age settlement sites as well as the Anglo Boer War trench (Kusel 2019) and if this is the case the impact is high (based on the high social significance of burial sites). Possible sources of impact to the recorded resources are outlined in Table 5.

Table 5. Sources of impact to heritage resources based on the current lay out.

Source of impact	Receptor	Impact
Construction of township development	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64. Potential subsurface heritage resources.	Accidental destruction or partial destruction of heritage resources. Impacts are irreversible and heritage resources are not replaceable.
Construction of Access Roads	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64. Potential subsurface heritage resources.	Accidental destruction or partial destruction of heritage resources. Impacts are irreversible and heritage resources are not replaceable.
Construction of Stormwater infrastructure	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64. The possibility of subsurface heritage features cannot be excluded.	Accidental destruction or partial destruction of heritage resources.
Laydown areas	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64	Accidental destruction or partial destruction of heritage resources.
Construction of boundary wall	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64. Potential subsurface heritage resources.	Accidental destruction or partial destruction of heritage resources
Subsurface infrastructure including water pipes, electrical infrastructure, and sewerage infrastructure.	Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64. The possibility of subsurface heritage features cannot be excluded.	Accidental destruction or partial destruction of heritage resources, especially due to the subsurface nature of heritage resources.
Erosion	All recorded heritage resources.	Displacement and destruction of heritage resources.
Increase of people in the project area	All recorded heritage resources.	Collection of surface artefacts.

In terms of the day-to-day management of heritage resources in the project area the framework detailed in Table 6 is suggested:

Table 6. Heritage Management Framework

Heritage Resources	Management Actions	Monitoring Requirements
High and Medium high significant sites (e.g., burial sites if present)	These areas should be avoided by development activities and demarcated to limit access and create and increase awareness of the sites. Future developments in these areas should be limited and if development cannot be avoided in these areas, the development will be subject to SAHRA approval and the correct permit application procedure.	The sites should be inspected regularly by the ECO and monthly by the project archaeologist/ palaeontologist (during the construction phase) whose recommendations should be included in the annual review of the CMP.
Medium Significant sites (e.g., Iron Age Sites)	These sites should be demarcated and avoided with a 30 m buffer. It is important that employees are educated on the importance of heritage resources and where these sites are located on development plans.	The sites should be inspected regularly by the ECO and monthly by the project archaeologist (during the construction phase) whose recommendations should be included in the annual review of the CMP.
Low Significant Sites and general Project area	Chance finds procedures apply to these areas.	The ECO will manage and monitor earthworks in these areas.

6.4. Specific Management Actions

Preventative protection measures as defined in Table 7 aims to prevent degradation of the identified heritage sites from the potential risks outlined above during the life of the Project. The preventative protection measures in Table 7 comply with the following standards:

- The National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- Regulations to the National Heritage Resources Act (GN R 548)
- South African Heritage Resources Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports
- International Finance Corporation Performance Standards 8: Cultural Heritage

Table 7. Preventative Protection Measures

Activity	Phase	Aspect	Management and Mitigation Requirements	Time Period for Implementation	Responsible
Construction of the township	Construction	Palaeontology	Implement the Chance Find Protocol (CFP) as a condition of authorisation for implementation throughout the life of the Project	Pre-construction and Construction	Construction Contractor Project Archaeologist ECO Palaeontologist if required.
		Archaeology	The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance. A Monitoring report undertaken by a suitably qualified and accredited archaeologist must be completed during earth moving activities to record all material cultural remains that may be exposed and to then apply for the relevant permits.		
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.		
Construction of new access roads	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction, Construction and Operation	Construction Contractor; Project Archaeologist/ Palaeontologist ECO
		Archaeology	The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance. A Monitoring report undertaken by a suitably qualified and accredited archaeologist must be completed during earth moving activities to record all material cultural remains that may be exposed.		
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.		

Stormwater infrastructure.	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction Construction Operation	and Construction Contractor; ECO Project Archaeologist If required Palaeontologist
		Archaeology	The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance. An archaeologist must be present to undertake monitoring of construction activities for the storm water management system and all earthworks. A report of the monitoring must be submitted to the case on SAHRIS.		
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.		
Laydown areas	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction	Construction Contractor; ECO Project Archaeologist If required Palaeontologist
		Archaeology	All construction staff should be trained on heritage features and the avoidance of the identified features. The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance.	Construction Operation	
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.		
Construction of boundary walls	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Construction	Construction Contractor ECO Project Archaeologist If required Palaeontologist
		Archaeology	The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance. Implement the CFP as a condition of authorisation for implementation throughout the life of the Project		
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.		
Infrastructure including water pipes, electrical infrastructure, and sewerage infrastructure.	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction Construction Operation	and Construction Contractor; ECO Project Archaeologist If required Palaeontologist Construction Contractor
		Archaeology	The recorded sites Site ZK 5, ZK 6, ZK 7, ZK 8, ZK 8, ZK 30 and ZK 64 should be retained <i>in situ</i> with a 30 m buffer following the SAHRA comments. These sites should be demarcated, indicated on development plans and staff should be trained on their heritage significance. Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Construction	
		Graves	Graves within the study area should be fenced with a 30 m buffer zone, and an access gate for family members. If graves cannot be preserved within the development, a relocation process can be conducted adhering to all legal requirements. This should be seen as a last resort.	Pre-construction Construction	

Erosion	All project phases	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction Construction Operation	Construction Contractor If required Palaeontologist
		Archaeology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	Pre-construction Construction	Project Archaeologist ECO
Increase of activity and human movement	Construction	Palaeontology	Implement the CFP as a condition of authorisation for implementation throughout the life of the Project	All phases	ECO
		Archaeology	Place notices to educate visitors on heritage resources and inform visitors that it is a criminal offence to collect archaeological artefacts from the area. This should be enforced by the ECO during the construction phase.		

6.5. Monitoring

Monitoring activities will be required throughout the life of the Project. Where required, external technical specialists must be appointed to comply with the requirements of the CMP. These requirements must be reviewed on a quarterly basis, altered where necessary, and requirements withdrawn where no longer relevant. Construction activities pose the greatest threat to tangible heritage resources within the cultural landscape.

Day to day monitoring can be conducted by the ECO. The ECO or other responsible persons should be trained along the following lines:

- *Induction training:* Responsible staff identified by the developer should attend a short course on heritage management and identification of heritage resources as well as the identified resources.
- *Site monitoring and Monitoring report:* As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are the initial soil removal and subsequent earthworks during construction. The EO should monitor all such activities daily. If any heritage resources are found, the chance finds procedure must be followed as outlined in this management plan.

Monitoring will be conducted pro-actively and reported on quarterly. Monitoring requirements for the project are summarized in Table 8 and should be implemented together with the specific management actions in Section 6.4. The Monitoring plan for the project should be revised annually.

Table 8. Monitoring requirements for the Sammy Marks Township Development.

Activity	Sensitivity	Responsible	Requirements	Timeline
Construction activities close to potential burial sites.	Very high	ECO	Guide construction to avoid possible impacts to chance finds	Ongoing during construction phase
		Project Archaeologist	Record and assess identified chance finds	If required
		Construction Site Supervisor	Implement requirements of NHRA and NHRA Regulations	Ongoing
			Compile Monitoring Report for submission to SAHRA	Quarterly
			Implement Chance Find Procedure	Ongoing
Construction activities in relation to defined archaeological sensitivities	Moderate	Construction Contractor;	On-site inspection	Monthly Site Inspection
		Project Archaeologist	Guide construction to avoid possible impacts to chance finds	Ongoing during construction phase
		ECO	Record and assess identified chance finds	If required
			Monitoring of earthworks	Ongoing
			Compile Monitoring Report for submission to SAHRA	Quarterly
	Low	Construction Contractor;	Monitoring of earthworks and Implement Chance Find Procedure	Ongoing
		Project Archaeologist		
		ECO		
	Very low			
	Negligible			

6.6. Chance Find Procedure and Procedure for Reporting.

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

The term 'heritage resource' includes structures, archaeology, palaeontology, meteors, and public monuments as per 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 as defined under NHRA Section 36 will be discussed separately as these require the implementation of separate criteria for Chance Find procedures.

Chance Find Procedures

The following procedural guidelines must be considered if previously unknown heritage resources or burial grounds and graves are exposed or found during the life of the project.

Initial Identification and/or Exposure (Chance Find)

If during the construction, operations, or closure phases of this project, any person employed by the mine, one of its subsidiaries, contractors and subcontractors, or service provider, find any artefact of cultural significance, this person must cease work at the site of the find. They must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

The initial procedure when such sites are found aim to avoid any further damage. If during the construction, operations or closure phases of this project, any person employed by the mine, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance the following steps and reporting structure must be followed in both instances:

- The person or group (identifier) who identified or exposed the heritage resource or burial ground must cease all activity in the immediate vicinity of the site;
- The identifier must immediately inform the senior on-site Manager of the discovery;
- The senior on-site Manager must make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area and ensure that the site is secured and control access;
- The senior on-site Manager will inform the ECO and Health and Safety (HS) officer of the chance find and its immediate impact on operations. The ECO will then contact the project archaeologist.

Chance Find Procedures: Heritage Resources

If previously unidentified heritage resources are identified and/or exposed during construction or operation of the Project, the following steps must be implemented after those outlined above:

- The project archaeologist must be notified of the discovery;
- The project archaeologist will visit the site for a field-based assessment of the finds and appropriate mitigation measures will then be presented to the client;
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Sections 34, 35, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify the South African Heritage Resources Agency (SAHRA).

Chance Find Procedures: Burials and Graves

If previously unidentified burial grounds and graves are identified and/or exposed during construction or operation of the Project, the following steps must be implemented after those outlined above:

- The project archaeologist must immediately be notified of the discovery to take the required further steps:
 - The local South African Police Service (SAPS) will be notified on behalf of the developer;
 - The project archaeologist will inspect the exposed burial and determine in consultation with the SAPS if any additional graves may exist in the vicinity as well as the temporal context of the remains, i.e.:
 - forensic
 - authentic burial grave (informal or older than 60 years, NHRA (1999) Section 36); or
 - archaeological (older than 100 years, NHRA (1999) Section 38);
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Section 36 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify SAHRA;
- SAHRA/LIHRA may require that an identification of interested parties, consultation and /or grave relocation take place;
- Consultation must take place in terms of NHRA (1999) Regulations 39, 40, 42; and 5. Grave relocation must take place in terms of NHRA (1999) Regulations 34.

Chance find protocol and Monitoring Program for Palaeontology – to commence once the construction activities begin.

1. The following procedure is only required if fossils are seen on the surface and when excavations/drilling commence.
2. When excavations begin the rocks must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the construction activities will not be interrupted.

3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones (for example see Figures 8-10). This information should be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued, and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished, then no further is required.

The Chance Find Procedures presented in this document serve as international best practice policy for the accidental discovery of heritage resources and burial grounds and graves. Based on the definitions provided within this document and the proposed lines of communication, VLNR will be able to mitigate the accidental discovery of heritage resources and burial grounds and graves throughout the various phases of the project.

The project archaeologist will be available to assist with the recommendation of mitigations for the accidental discovery of heritage resources and burial grounds and graves.

7. THE WAY FORWARD

Implementation of the CMP will ensure that the Phase 1 Sammy Marks Township project conserves heritage resources that will remain *in situ* within the development area and that could potentially be impacted on by long-term, and cumulative impacts caused by the development activities in the different phases of the project. By implementing the mitigation measures in this report damage to sites will be minimised and where required resources will be recorded and mitigated, ensuring that the archaeological record of the area benefits from the project. Ongoing monitoring of the project will ensure that future finds are recorded and managed in an appropriate manner to protect the integrity of the resources. The CMP should be implemented together with the EMP for the project.

The CMP should be viewed as a dynamic document that should be revised annually and adapted over time. The CMP should be submitted and approved by the developer and SAHRA prior to construction.

8 REFERENCES

- Bamford, M. 2020. Palaeontological Impact Assessment for the proposed Sammy Marks Extension mixed use development, southwest of Mamelodi, Gauteng Province. Unpublished report prepared for HCAC.
- Birkholtz P. 2014. Duplication Of The Vlakfontein (Benoni) – Mamelodi Water Supply Pipeline Within The Existing Servitude: R5 Phase 2: From The Southern Boundary Of The Rietvlei Nature Reserve To Mamelodi
- Küsel, U.S. 2005. A Cultural Heritage Resources Impact Assessment of the Farm Zwartkoppies, Pretoria East. An unpublished report by African Heritage Consultants.
- Kusel, S. 2019. Heritage Impact Assessment for the proposed Sammy Marks mixed-used development Remainder of Portion 2 of the Farm Zwartkoppies 364 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. Unpublished report by African Heritage Consultants
- Pelser, A.J. & A.C. van Vollenhoven. 2009. A Final Report on the Archaeological Investigation of a Late Iron Age (Ndebele) Stone Walled Settlement on the Remainder of Hatherley 331 JR, near Mamelodi, Gauteng. An unpublished report by Archætnos.
- Schoeman, M.H. 1998. Excavating Ndzundza Ndebele identity at KwaMaza. *Southern African Field Archaeology*. 7:42- 52.
- Van Schalkwyk, J.A., Pelser A. & Van Vuuren, C.J. 1996. Investigation of Late Iron Age sites on the farm Hatherley 331JR, Pretoria District. Research by the National Cultural History Museum. 5: 45-56.
- Van der Walt, J. 2021. Archaeological Mitigation Report For the Sammy Marks mixed-used development located on the Remainder of Portion 2 of the Farm Zwartkoppies 364 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. Unpublished report for Exigent Environmental.

Appendix A

Permit application checklist

Permit Supporting Documents:

Requirement	Responsible Party
Confirmation of Appointment	Developer
Landowners Permission Letter	Developer
Motivation for destruction/ alteration of sites	Developer
Confirmation that material would be curated (Museum)	BEYOND HERITAGE
Proof of payment	BEYOND HERITAGE