

TSIMBA



ARCHAEOLOGICAL FOOTPRINTS (PTY) LTD

**PHASE 1 HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED KHUTSONG
SOUTH EXT. 8 DEVELOPMENT, MERAFO NG CITY LOCAL MUNICIPALITY,
WEST RAND DISTRICT MUNICIPALITY, GAUTENG PROVINCE**

JUNE 2020

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DOCUMENT INFORMATION

DOCUMENT INFORMATION ITEM	DESCRIPTION
Proposed development and location	The proposed project involves the construction of a total of 27 000 housing units within a total area of 391 Ha to accommodate the relocation of residents from the Khutsong Hostel, Khutsong Extensions 1 and 6 as well as the Khutsong informal Area.
Purpose of the study	To carry out a Heritage Impact Assessment to determine the presence/absence of cultural heritage and paleontological sites and the impact of the proposed project.
Topography	The topography of the area is flat.
Coordinates	<i>See Figure 1</i>
Municipalities	Merafong City Local Municipality, West Rand District Municipality, Gauteng Province
Predominant land use of surrounding area	
Applicant	The Gauteng Department of Human Settlements, in conjunction with, the Merafong City Local Municipality, and West Rand District Municipality.
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Author (s)	Mr. Roy Muroyi (Archaeology and Heritage Specialist)

EXECUTIVE SUMMARY

The Gauteng Department of Human Settlements, in conjunction with, the Merafong City Local Municipality, and West Rand District Municipality (the proponents) have handed in the relocation programme of certain Khutsong residents as tracts of land that is currently inhabited is not suitable for human settlement development. The proposed project involves the construction of a total of 27 000 housing units within a total area of 391 Ha to accommodate the relocation of residents from the Khutsong Hostel, Khutsong Extensions 1 and 6 as well as the Khutsong informal Area. The proposed development is situated near Carletonville within the Merafong City Local Municipality, West Rand District Municipality, Gauteng Province (See Figure 1).

This report undertook a review of a range of cultural heritage information included the Provincial and National heritage databases, lists and registers, as well as a range of other documented information (including heritage impact assessment reports and a range of ethno-historic and archaeological sources at both local and regional levels). The purpose of this report is to carry out a Heritage Impact Assessment to determine the presence/absence/significance of cultural heritage and paleontological sites and the impact of the proposed project.

The scope of work for this Phase 1 HIA was to assess the footprint of the proposed development footprint as well as the identification and mapping of heritage resources around it. The proposed project involves the construction of a total of 27 000 housing units within a total area of 391 Ha. The proposed development will require new roads and sewerage infrastructure to service all parts of the proposed development area. Existing Wastewater Treatment Plants (WWTP) in close proximity of the proposed development area will be upgraded to accommodate the increase domestic wastewater (effluent) which will be discharged from the proposed development. The proposed development will potentially require new pipeline and associated infrastructure for the bulk transportation of sewage to connect to the existing WWTP. The existing bulk water system will also be upgraded through the construction of a new reservoir linked to the development. All these activities trigger Section: 38(1) of the National Heritage Resources Act (NHRA- Act No. 25 of 1999) :- Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m² in extent;

- ❖ 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.

Conclusions



PHASE 1 HERITAGE IMPACT ASSESSMENT

The study area is not known to comprise any archaeological sites, cultural heritage resources or sites of historical significance. The undertaken archaeological and historical background study revealed that there are no archaeological sites within the immediate vicinity of the proposed development site. The broader geographic region is, however, home to the Sterkfontein Caves, a site of archaeological and paleontological significance, which lies approximately 52 kilometres from the study site. Other closest well-known Stone Age sites are those of Aasvoelkop, Melvillekoppies, Primrose and Linksfield (Bergh 1999: 4). Rock engraving sites are also known to occur north-east of Carletonville (Bergh 1999: 5). Historically the area does not carry any striking historical sites except for the apartheid system of segregation that led to the development of the Khutsong town as well as its close association with the West Rand gold mining industry.

TABLE OF CONTENTS

AUTHOR'S CREDENTIALS	2
COPYRIGHT	2
DOCUMENT INFORMATION.....	3
EXECUTIVE SUMMARY	4
TABLE OF CONTENTS	5
FIGURES AND TABLES	6
ABBREVIATIONS.....	6
GLOSSARY.....	7
1.0 INTRODUCTION.....	8
2.0 DESCRIPTION OF THE RECEIVING ENVIRONMENT	9
3.0 METHODOLOGY	Error! Bookmark not defined.
4.0 LEGISLATIVE FRAMEWORK.....	13
5.0 Archaeological Background.....	14
6.0 HISTORICAL BACKGROUND	17
7.0 Conclusions.....	20
8.0 REFERENCES.....	21
APPENDIX A : KNOWN NATIONAL HISTORICAL SITES IN SOUTH AFRICA.....	22
APPENDIX B: ENVIRONMENTAL CONTEXT FOR HERITAGE SPECIALIST STUDIES IN SOUTHERN AFRICA	23
APPENDIX C: RELATIONSHIP BETWEEN DIFFERENT HERITAGE CONTEXTS, HERITAGE RESOURCE LIKELY TO OCCUR WITHIN THESE CONTEXTS AND LIKELY SOURCES OF HERITAGE IMPACTS/ISSUES.....	24

FIGURES AND TABLES

Table 1: Archaeological time periods and their basic descriptions	14
Figure 1: Locality Map	10
Figure 2: Topographic Map of Johannesburg 1: 250,000 (Source University of Texas Libraries)	11
Figure 3: South Africa Thematic map showing the location of the West Rand area(Pointed at in black) as dominated by goldfields (Source University of Texas Libraries)	11
Figure 4: The heritage concept	12
Figure 5: A timeline showing the chronological order of southern African Later Stone Age technological complexes (Source Lombard et al (2012)	16
Figure 6: A reproduction of southern African Bush arrows made using bones and at times stone as arrow head	16
Figure 7: Map showing Khutsong and surrounding areas and associated activities (Source Statistics SA: 2011)	17
Figure 8: Historical Map of South Africa showing the approximate location of the study area (in red) in 1886	18
Figure 9: Employment statistics in the South African Gold Mines 1980 to 1999 (Source Crankshaw, 2002)	19

ABBREVIATIONS

Acronyms	Description
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PHASE 1 HERITAGE IMPACT ASSESSMENT

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Late Stone Age
LIA	Late Iron Age
MIA	Middle Iron Age
MSA	Middle Stone Age
SAHRA	South African Heritage Resources Agency
PIA	Paleontological Impact Assessment

GLOSSARY



Achievement	<ul style="list-style-type: none"> Something accomplished, esp. by valour, boldness, or superior ability
Aesthetic	<ul style="list-style-type: none"> Relating to the sense of the beautiful or the science of aesthetics.
Community	<ul style="list-style-type: none"> All the people of a specific locality or country
Culture	<ul style="list-style-type: none"> The sum total of ways of living built up by a group of human beings, which is transmitted from one generation to another.
Cultural	<ul style="list-style-type: none"> Of or relating to culture or cultivation.
Diversity	<ul style="list-style-type: none"> The state or fact of being diverse; difference; unlikeness.
Geological (geology)	<ul style="list-style-type: none"> The science which treats of the earth, the rocks of which it is composed, and the changes which it has undergone or is undergoing.
High	<ul style="list-style-type: none"> Intensified; exceeding the common degree or measure; strong; intense, energetic
Importance	<ul style="list-style-type: none"> The quality or fact of being important.
influence	<ul style="list-style-type: none"> Power of producing effects by invisible or insensible means.
Potential	<ul style="list-style-type: none"> Possible as opposed to actual.
Integrity	<ul style="list-style-type: none"> The state of being whole, entire, or undiminished.
Religious	<ul style="list-style-type: none"> Of, relating to, or concerned with religion.
Significant	<ul style="list-style-type: none"> important; of consequence
Social	<ul style="list-style-type: none"> Living, or disposed to live, in companionship with others or in a community, rather than in isolation.
Spiritual	<ul style="list-style-type: none"> Of, relating to, or consisting of spirit or incorporeal being.
Valued	<ul style="list-style-type: none"> Highly regarded or esteemed

1.0 INTRODUCTION

1.1 Project Background

Tsimba Archaeological Footprints (Pty) Ltd were appointed to undertake a Phase 1 Heritage Impact Assessment by Afzelia Environmental Consultants (Pty) Ltd on behalf of the project proponents, the Gauteng Department of Human Settlements, in conjunction with the Merafong City Local Municipality and West Rand District Municipality. The proposed project involves the construction of a total of 27 000 housing units within a total area of 391 Ha to accommodate the relocation of residents from the Khutsong Hostel, Khutsong Extensions 1 and 6 as well as the Khutsong informal Area. The proposed development triggers Section: 38(1) of the National Heritage Resources Act (NHRA- Act No. 25 of 1999) therefore a Phase 1 Heritage Impact Assessment is required before developing the area. The appointment of Tsimba Archaeological Footprints is therefore in terms of the National Heritage Resources Act (NHRA), No. 25 of 1999.

The aim of the survey is to identify and document archaeological sites, cultural resources, sites associated with oral histories (intangible heritage), graves, cultural landscapes, and any structures of historical significance (tangible heritage) that may be affected within the footprint of the proposed project. While the main purpose of the desktop study is to locate in existing literature any cultural heritage resources and landscapes within the broader region.

The findings of this report have been informed by desktop data review and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed project. This study was conducted as part of the specialist input for the Environmental Impact Assessment exercise. The impact assessment study also includes detailed recommendations on how to mitigate and manage negative impacts while enhancing positive effects on the project area.

1.2 Scope of works

The Heritage Impact Assessment scope of works covers three separate but interlinked components. Firstly, it provides a baseline understanding of the known and potential historical cultural heritage landscape of the project development area through the review of literature and archival data. Secondly, it identifies cultural heritage, archaeological and historical sites that may be on the proposed development site through a physical site specific survey. Thirdly, it designs and sets in place a strategy and management regime for cultural heritage that is consistent with the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).

2.0 DESCRIPTION OF THE RECEIVING ENVIRONMENT

2.1 Location

The Project includes one Alternative (see map below) situated near Carletonville within the Merafong City Local Municipality, West Rand District Municipality, Gauteng Province (See Figure 1). The development site is approximately 75km south-west of the Johannesburg CBD and 48km north-east of the Potchefstroom CBD.

At a local scale, the proposed development site is situated in between the Khutsong township, Khutsong South township and the Oberholzer area.

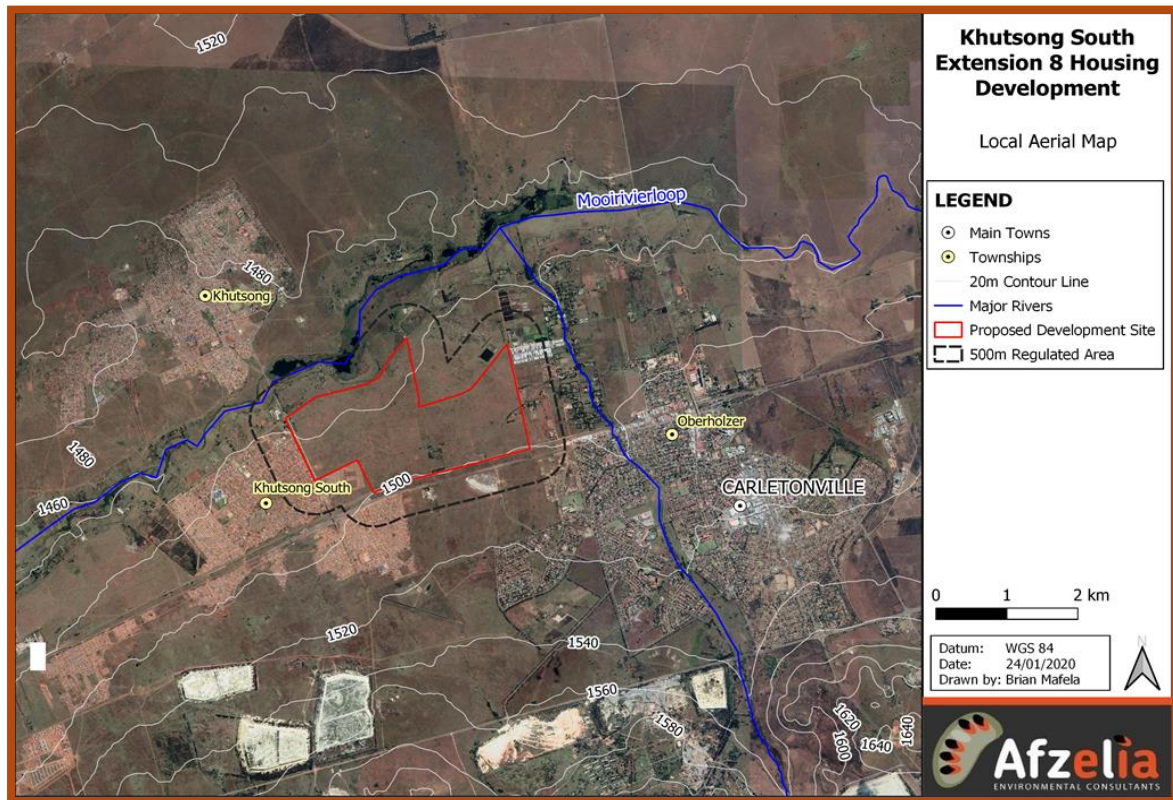


Figure 1: Locality Map (Source Afzelia Environmental Consultants)

2.2 Physical Environment

The Khutsong area is divided into sections such as Mandela, Khutsong SP, Sonderwater, Hani, Khutsong Ex 3, Slovo, Khutsong Ex 2 and Khutsong South (Statistic SA :2011). The Khutsong area is dominated by dolomites which renders 90% of land in Khutsong unfit for human habitation is one of the causes for Khutsong's underdevelopment" (Mavungu: 2011,p. 81). The instability of the land dates back to the 1940s and 1950s, during this period the issue was so bad that it limited gold exploration in the area (van Eeden 2010). The area has experienced the occurrence of sinkholes and subsidence due to the frequent dewatering of several of the groundwater compartments by mining companies. Geomorphologically, most of the West Rand area is characterised by a generally flat and at places gently undulating landscape consistent with the erosion of the almost horizontally orientated underlying sandstone and mudstone layers of the Ecca Group. The area is largely dominated by gold mining (See Figure 3)

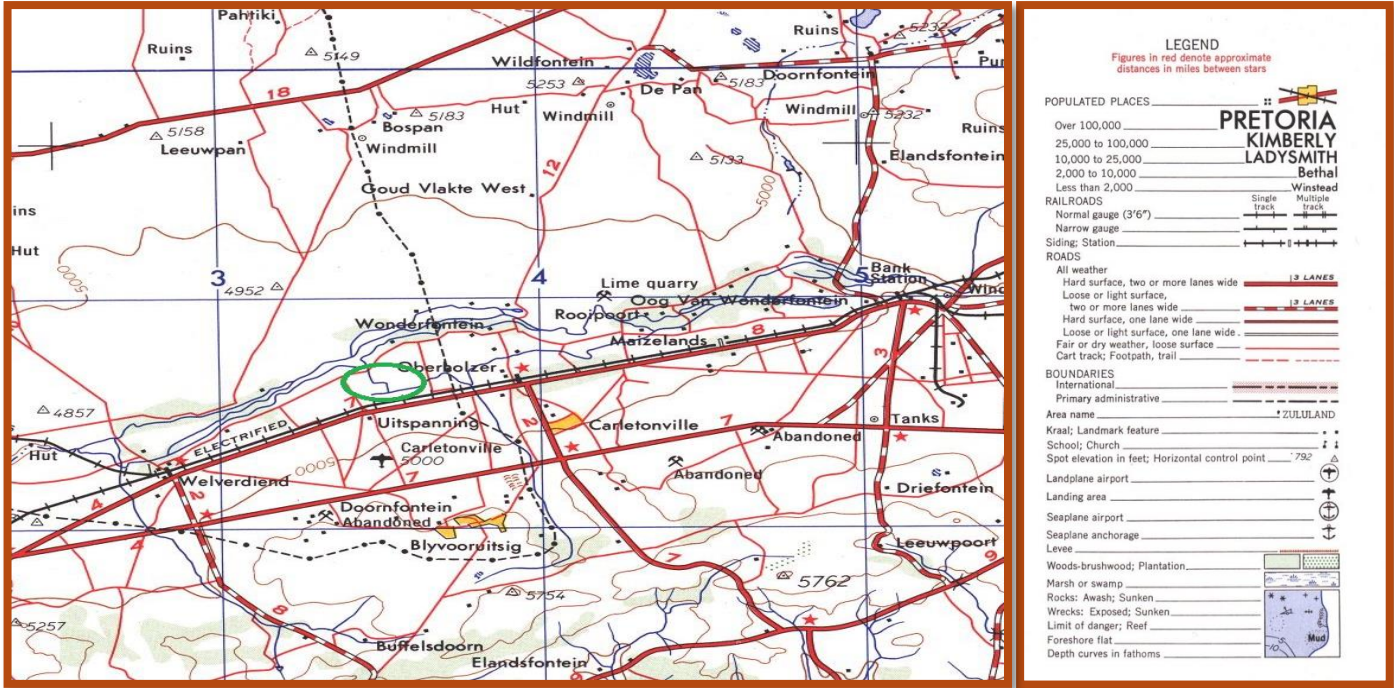


Figure 2: Topographic Map of Johannesburg 1: 250,000 (Source University of Texas Libraries)

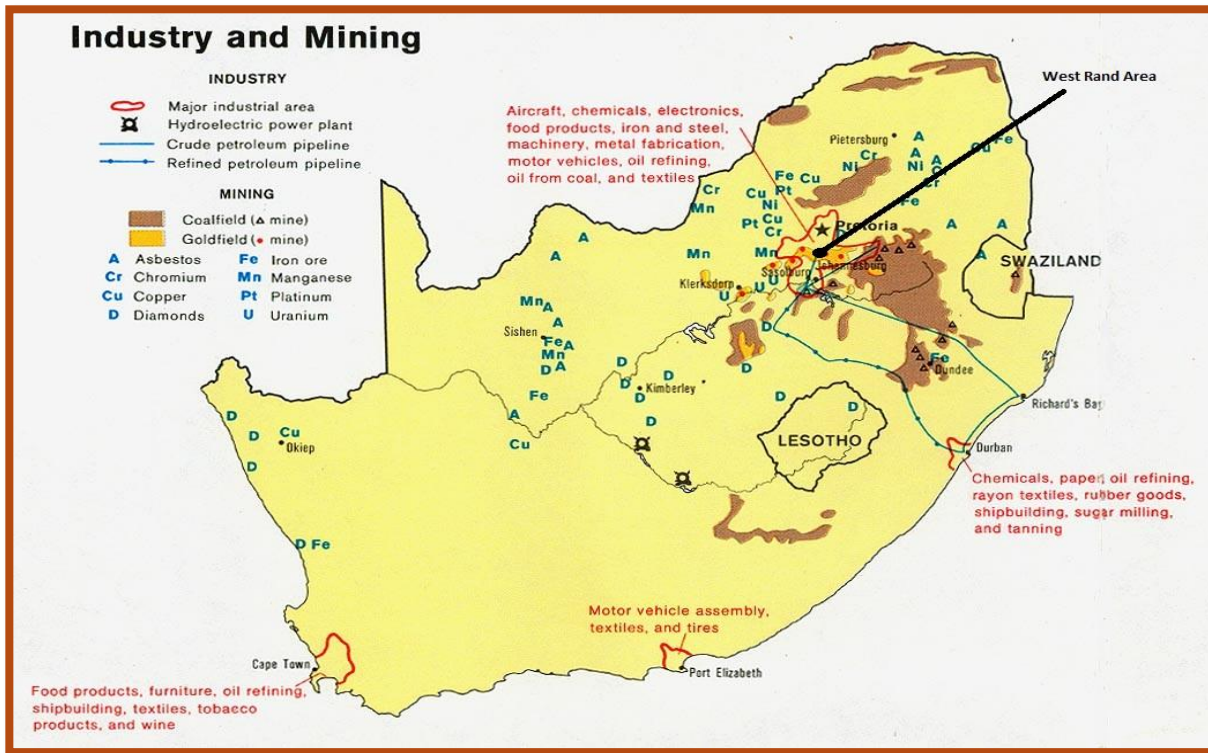


Figure 3: South Africa Thematic map showing the location of the West Rand area (Pointed at in black) as dominated by goldfields (Source University of Texas Libraries)

3.0 METHODOLOGY

The chosen methodology is influenced by the need to ensure proper management of change and ensure that the development conserves our heritage. The Heritage Impact Assessment ensures that input in EIA processes can play a positive role in the development process by enriching an understanding of the past and its contribution to the present.

3.1 Literature review

A brief survey of the available literature was conducted to gather data and information on the area in question in order to provide a general heritage context for the development. The background literature search included published material, unpublished commercial reports and online material, including CRM reports sourced from the South African Heritage Resources Information System (SAHRIS). Sources used in this study included:

- Published academic papers and HIA and PIA studies conducted in and around the region where the proposed infrastructure development will take place.
- Available archaeological literature covering the West Rand area was also consulted;
- The SAHRIS website and the National Data Base was consulted to obtain background information on previous heritage surveys and assessments in the area; and
- Map Archives - Historical maps of the proposed area of development and its surrounds were assessed to aid information gathering of the proposed area of development and its surrounds. Special thanks to the University of Texas Library for providing most of the maps used in this report.

The above methodology is guided by the need to acknowledge different readings of heritage significance over time, i.e. heritage significance as a dynamic concept which includes the following (see Figure 4)

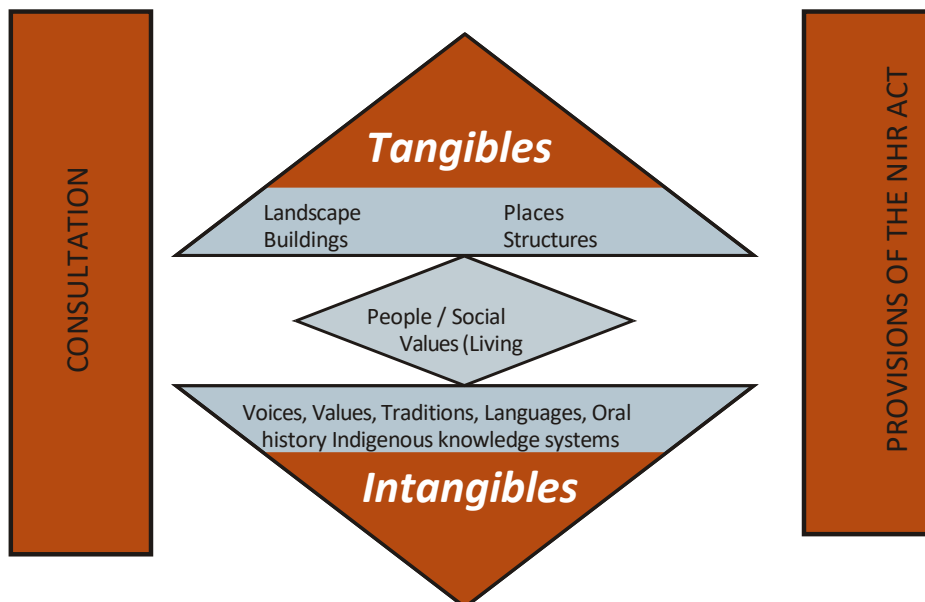


Figure 4: The heritage concept

4.0 LEGISLATIVE FRAMEWORK

According to ICOMOS (2011), the impacts of planned developments (internationally) on heritage have typically been assessed within the framework of Environmental Impact Assessment (EIA) (Bond et al. 2004) and/or Social Impact Assessment (Vanclay et al. 2015). Afzelia Environmental Consultants is preparing the Environmental Impact Assessment terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). This report constitutes a summary of the Cultural Heritage Impact Assessment Study completed to fulfil the requirements of the National Heritage Resources Act (No 25 of 1999) Section:381) of the the National Heritage Resources Act (NHRA- Act No. 25 of 1999) :- Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m² in extent;

- ❖ 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.

Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (Act No.25 of 1999): (i) (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens.

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

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

5.0 Archaeological Background

ARCHAEOLOGICAL PERIOD	APPROXIMATE DATES <for less than and > for greater than
Earlier Stone Age Tools = Handaxes and cleavers	more than 2 million years ago to >200 000 years ago
Middle Stone Age Tools = Stone flakes such as scrapers, points and blades	<300 000 years ago to >20 000 years ago
Later Stone Age (Includes gatherer rock art) Tools = Wood, bone, hearths, ostrich eggshell beads and even bedding material	<40 000 years ago up to historical times in certain areas
Early Iron Age	c. AD 200 - c. AD 900
Middle Iron Age	c. AD 900 – c. AD 1300
Late Iron Age (Stonewalled sites)	c. AD 1300 - c. AD 1840 (c. AD 1640 - c. AD 1840)

Table 1: Archaeological time periods and their basic descriptions

Early Stone Age

Concentrations of Early Stone Age (ESA) sites are usually present on the flood-plains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large concentrated deposits ranging from pebble tool choppers to core tools such as hand-axes and cleavers. The earliest hominids who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore fill sites. Sterkfontein Caves, archaeological and paleontological site lies 52 kilometres away from the study site. The caves were blasted in the Sterkfontein Caves in 1896. Anatomical indications which support the concept of evolution can be seen in hominid fossils from the Sterkfontein Caves and other sites in the Cradle of Humankind. Our earliest ancestors belonged to species now extinct and are known only from fossils at sites such as these. They had human-like teeth and could walk on two legs, but they also had several ape-like features, including much smaller brains than ours. Humans and apes probably had common ancestry relatively recently, in the Miocene period – perhaps about 8-million years ago. Australopithecines were discovered at the Sterkfontein Caves, these include several specimens, such as Stw 252, and Sts 71, discovered by Broom and his colleague, John Robinson, in 1947.

Palaeoanthropologist Professor Ron Clarke has argued that Stw 252 appears very different from *Australopithecus africanus* in that it has much larger teeth, a flatter upper face, a thinner brow region and a differently shaped braincase. He observed the same features in Sts 71, and suggested these, plus some other large-toothed hominids from Sterkfontein and the Makapans Valley, represent another *Australopithecus* which lived at the same time as *Australopithecus Africanus*. “Little Foot”, which is still being excavated from Sterkfontein Member 2, is one of the oldest australopithecines ever found, dating to between 4.1-million and 3.3-million years old, according to palaeomagnetic evidence and cosmogenic isotope dating. The species to which the skeleton belongs will only be determined when it has been completely extracted from the rock in which it lies embedded. Other hominid remains dating to a similar time have also been recovered from the Jacovec Cavern at Sterkfontein.

Middle Stone Age

During Middle Stone Age (MSA) times (c. 150 000 – 30 000 BP), people became more mobile, occupying areas formerly avoided. According to De Jong (2010) the MSA is a period that still remains somewhat murky, as much of the MSA lies beyond the limits of conventional radiocarbon dating. However, the concept of the MSA remains useful as a means of identifying a technological stage characterized by flakes and flake-blades with faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology. No known Stone Age sites or artefacts are present in close proximity to the development area. The closest well-known Stone Age sites are those of Aasvoelkop, Melvillekoppies, Primrose & Linksfield (Bergh 1999, p 4). Rock engraving sites are also known to occur north-east of Carletonville (Bergh 1999, p 5).

Later Stone Age

The LSA is usually associated with San hunter-gatherers or their immediate predecessors and date between 200 and 30 000 years ago (see Huffman 2007). The Late Stone Age, considered to have started some 20 000 years ago, is associated with the predecessors of the San and Khoi Khoi. Late Stone Age (LSA) people had even more advanced technology than the MSA people and therefore succeeded in occupying even more diverse habitats. Also, for the first time we now 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 with incised markings are traditionally linked with the LSA.

LSA people preferred, though not exclusively, to occupy rock shelters and caves and it is this type of sealed context that make it possible for us to learn much more about them than is the case with earlier periods. The West rand area is underlaid by dolomite rock and has many caves and sinkholes. The region is an unparalleled treasure trove of archaeological finds including the earliest authenticated man-made fire. Gaigher (2020) notes that the Khutsong area was first inhabited by Stone Age hunter-gatherers who roamed here some 50 000 years ago. These made stone tools that were specifically meant for hunting and gathering (See Figure 4 and 5 below).

No Early Iron Age sites are known in the larger geographical area, while Later Iron Age sites do occur. This includes sites at Melvillekoppies & around the Carletonville area (Bergh 1999:7) and Klipriviersberg (Huffman 2007: 171). De Jong mentions the occurrence of Late Iron Age stone-walled settlement sites close to Fochville and the Westonaria area (De Jong 2010).

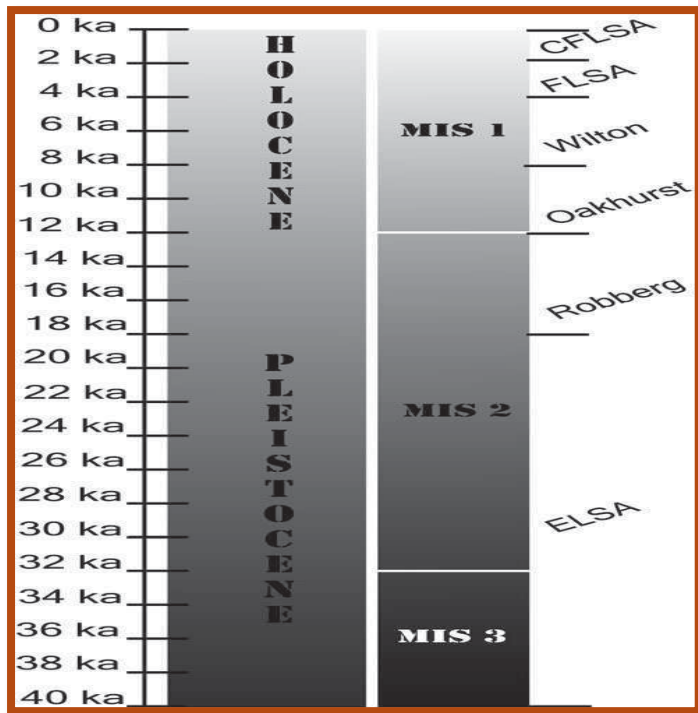


Figure 5: A timeline showing the chronological order of southern African Later Stone Age technological complexes (Source Lombard et al (2012))



Figure 6: A reproduction of southern African Bush arrows made using bones and at times stone as arrow head (Source Lombard et al (2012)).

6.0 HISTORICAL BACKGROUND

Historical background of Khutsong

Khutsong forms part of the Merafong City Local Municipality in the West Rand District Municipality of Gauteng. From 2005 to 2009 Merafong City was part of the North West Province; this followed the eradication of cross-border municipalities in the country (Misago, et al: 2010). Other areas that are also part of Merafong City Local Municipality include: Carletonville, Kokosi, Fochville, Wedela, Green Park, Oberholzer, Elandsridge, West Driefontein, East Driefontein, Welverdiend, East Village, Leeuport, Elandsfontein, Doornfontein and surrounding farms (Statistics SA: 2011).

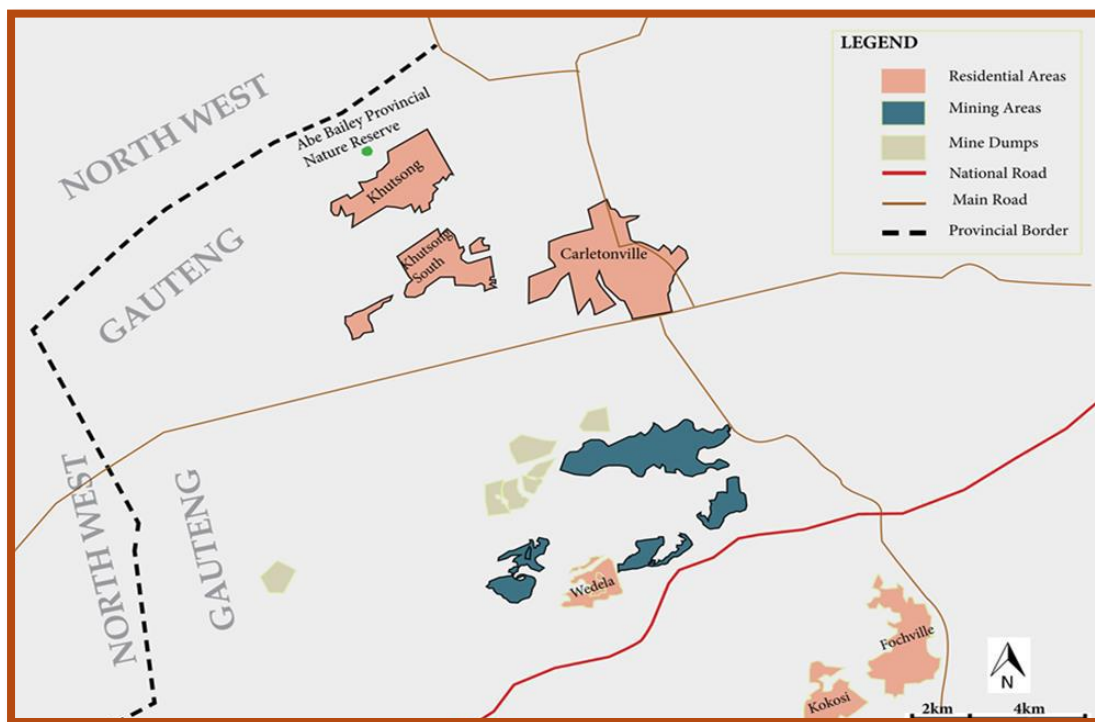


Figure 7: Map showing Khutsong and surrounding areas and associated activities (Source Statistics SA: 2011)



Figure 8: Historical Map of South Africa showing the approximate location of the study area (in red) in 1886 (Source University of Texas Libraries)

According to Gaigher (2020) the first Voortrekker parties crossed the Vaal River and started occupying the area in the 1830's. Farmers started moving into the areas surrounding the study area and declared farms for themselves, especially after the signing of the Sand River convention in 1852. Khutsong was to be officially formed in 1958 by the apartheid government, with the main purpose of serving as a 'black' township to the then all white and growing Carletonville. As in many narratives of the apartheid city the availability and supply of cheap labour to the surrounding areas was perhaps one of the most important contributors to the establishment and survival of Khutsong. Thus the location and development of Khutsong has multiple implications for its residents and probably evokes different notions of what it means to be in Johannesburg. Many of the residents of Khutsong work in Carletonville in varying jobs, some people work as far Johannesburg.

Gold Mining in the West Rand region

The Carletonville area has a history of research (van Eeden, 2010). This research focussed on the rise, development and decline in mining activity of the area. The Merafong Municipality developed mainly developed due to gold mining activities in the area. The municipality relies on the gold mining industry, though alterations in this industry are presently noticeable. The municipality fits the profile of an area where mine downscaling in the mining sector has occurred and where the GDP of the mining sector has decreased significantly. Gold mining on the other hand has played an important role in the establishment of Khutsong and other surrounding areas in Merafong. It is also the current unstable state of the gold mining sector in the country that has contributed to the vulnerability of Khutsong.

Between the 1940s and 1970s, South Africa's gold production grew significantly, despite the closures of more than 30 mines along the East, Central and West Rand. The mines that were still in operation at the turn of the 19th century were large and profitable mines that were established on the newer found goldfields in the late 20th century and were dominated by a new generation of companies – AngloGold, Gold Fields Limited, Durban Roodepoort Deep Gold Limited and Harmony (Davenport, 2013). Gold-mining has for many years formed the industrial backbone of an agricultural-dominated economy in South Africa and was the main reason for rapid urbanisation

and the development of infrastructure (roads, railways, water and electricity, educational and medical facilities) in the country (Nattrass, 1995). Mines also became the main employers in South Africa as well as in the West Rand.



Figure 9: Employment statistics in the South African gold mines 1980 to 1999 (Source Crankshaw, 2002)

In time, profitable mines were commissioned on the Far East Rand and Far West Rand and from 1923, these gold mines “eclipsed Central Rand”. With the gradual depletion of resources, the operation of Central Rand declined further between 1938 and 1949, accounting for a mere 34% of national production (Refer to Figure 1) (Harrison & Zack, 2012). The impact of this on the profitability of mining production was unavoidable. By the 1960s the average profitability per ton of rock mined for the Central Rand was only R1,92 versus R5,48 for the Far West Rand and R5,59 for the Free State. All the large mines operating in the Central Rand started to downscale and were shut down by the late 1970s (Harrison and Zack, 2012).

7.0 Conclusions

The study area is not known to comprise any archaeological sites, cultural heritage resources or sites of historical significance. The undertaken archaeological and historical background study revealed that there are no archaeological sites within the immediate vicinity of the proposed development site. The broader geographic region is, however, home to the Sterkfontein Caves, a site of archaeological and paleontological significance, which lies approximately 52 kilometres from the study site. Other closest well-known Stone Age sites are those of Aasvoelkop, Melvillekoppies, Primrose and Linksfield (Bergh 1999: 4). Rock engraving sites are also known to occur north-east of Carletonville (Bergh 1999: 5). Historically the area does not carry any striking historical sites except for the apartheid system of segregation that led to the development of the Khutsong town as well as its close association with the West Rand gold mining industry.

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APPENDIX A : KNOWN NATIONAL HISTORICAL SITES IN SOUTH AFRICA

<p>Free State The quaint, small towns of the Free State are rich historical and cultural heritage with friendly people where visitors are always welcome.</p>
<p>Eastern Cape Home of the Xhosa people, site where 9 border wars were fought between the Xhosa and the British and also birthplace of the major apartheid resistance movements.</p>
<p>Gauteng Since the discoveries of gold in 1886 the province has developed into an economic powerhouse with townships, battlefields and gravesites bearing testimony to the challenges faced by its people.</p>
<p>KwaZulu Natal Remnants of British colonialism and a mix of Zulu, Indian and Afrikaans traditions give the province a rich cultural and historical diversity</p>
<p>Limpopo It's also home to the Mapungubwe Cultural Landscape, one of the country's seven World Heritage sites.</p>
<p>Mpumalanga Mpumalanga - "the place where the sun rises" is home to the historic village of Pilgrims Rest - established during the gold rush.</p>
<p>North West Portions of two of South Africa's Unesco World Heritage sites fall within North West: the Vredefort Dome, the largest visible meteor-impact crater, and the Taung hominid fossil site.</p>
<p>Northern Cape The Northern Cape landscape is characterised by vast arid plains with outcroppings of haphazard rock piles and a land of many diverse cultures and of frontier history</p>
<p>Western Cape It is a region of majestic mountains, colourful patchworks of farmland set in lovely valleys, long beaches and, further inland, the wide-open landscape of the semidesert Karoo</p>

APPENDIX B: ENVIRONMENTAL CONTEXT FOR HERITAGE SPECIALIST STUDIES IN SOUTHERN AFRICA

This is categorized by a temporal layering including a substantial pre-colonial, early contact and early colonial history as distinct from other regions. The following table can be regarded as a useful categorization of these formative layers:

Indigenous:

Palaeontological and geological:

- ◀ Precambrian (1.2 bya to late Pleistocene 20 000 ya)

Archaeological:

- ◀ Earlier Stone Age (3 mya to 300 00ya) (ESA)
- ◀ Middle Stone Age (c300 000 to 30 000 ya) (MSA)
- ◀ Later Stone Age (c 30 000 to 2000 ya) (LSA)
- ◀ Late Stone Age Herder period (after 2000 ya) (LSA - Herder period)
- ◀ Early contact (c 1500 - 1652)

Colonial:

- ◀ Dutch East India Company (1652 - 1795)
- ◀ Transition British and Dutch occupation (1796-1814)
- ◀ British colony (1814 -1910)
- ◀ Union of South Africa (1911-1961)
- ◀ Republic of South Africa (1962 – 1996)

Democratic:

- ◀ Republic of South Africa (1997 to present)
- It is also useful to identify specific themes, which are relevant to the Western Cape context. These include, *inter alia*, the following:

- ◀ Role of women
- ◀ Liberation struggle
- ◀ Victims of conflict
- ◀ Slavery
- ◀ Religion
- ◀ Pandemic health crisis
- ◀ Agriculture
- ◀ Water

Specific spatial regions also reveal distinct characteristics, which are a function of the interplay between biophysical conditions and historical processes. Such broad regions include the following:

- ◀ West Coast
- ◀ Boland
- ◀ Overberg
- ◀ Karoo

A large number and concentration of formally protected Grade 1, 2 and World Heritage Sites, also characterize the Western Cape. Such sites include:

- ◀ Robben Island
- ◀ Table Mountain National Park

APPENDIX C: RELATIONSHIP BETWEEN DIFFERENT HERITAGE CONTEXTS, HERITAGE RESOURCE LIKELY TO OCCUR WITHIN THESE CONTEXTS AND LIKELY SOURCES OF HERITAGE IMPACTS/ISSUES

HERITAGE CONTEXT	HERITAGE RESOURCES	SOURCES OF HERITAGE IMPACTS/ISSUES
A. PALAEOLOGICAL LANDSCAPE CONTEXT	Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations.	<ul style="list-style-type: none"> ◀ Road cuttings ◀ Quarry excavation
B. ARCHAEOLOGICAL LANDSCAPE CONTEXT NOTE: Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.	Archaeological remains dating to the following periods: <ul style="list-style-type: none"> ▪ ESA ▪ MSA ▪ LSA ▪ LSA - Herder ▪ Historical ▪ Maritime history Types of sites that could occur include: <ul style="list-style-type: none"> ▪ Shell middens ▪ Historical dumps ▪ Structural remains 	<ul style="list-style-type: none"> ▪ Subsurface excavations including ground leveling, landscaping, foundation preparation. ▪ In the case of maritime resources, development including land reclamation, harbor/marina/water front developments, marine mining, engineering and salvaging.
C. HISTORICAL BUILT URBAN LANDSCAPE CONTEXT	<ul style="list-style-type: none"> ◀ Historical townscapes/streetscapes. ◀ Historical structures; i.e. older than 60 years ◀ Formal public spaces. ◀ Formally declared urban conservation areas. ◀ Places associated with social identity/displacement. 	A range of physical and land use changes within this context could result in the following heritage impacts/issues: <ul style="list-style-type: none"> ◀ Loss of historical fabric or layering related to demolition or alteration work. ◀ Loss of urban morphology related to changes in patterns of subdivision and incompatibility of the scale, massing and form of new development. ◀ Loss of social fabric related to processes of gentrification and urban renewal.



PHASE 1 HERITAGE IMPACT ASSESSMENT