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# DELRON ENVIRONMENTAL: PROPOSED RUSTENBURG EXTENSION 30 TOWNSHIP ESTABLISHMENT ON THE REMAINING EXTENT OF PORTION 1 OF THE FARM TOWN AND TOWNLANDS OF RUSTENBURG 272-JQ, RUSTENBURG LOCAL MUNICIPALITY, NORTH WEST PROVINCE

**Archaeological Impact Assessment**


Prepared for: **Delron Enviromental**

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# ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF THE REMAINING EXTENT PORTION 1 OF THE FARM TOWN AND TOWNLANDS OF RUSTENBURG 272-JQ FOR THE PROPOSED RUSTENBURG EXTENSION 30 TOWNSHIP ESTABLISHMENT, RUSTENBURG LOCAL MUNICIPALITY, NORTH WEST PROVINCE

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**November 2015**

## Conducted on behalf of:

Delron Environmental
Exigo Sustainability

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Exigo Sustainability promotes the conservation of sensitive archaeological and heritage resources and therefore uncompromisingly adheres to relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980). In order to ensure best practices and ethics in the examination, conservation and mitigation of archaeological and heritage resources, Exigo Sustainability follows the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment as set out by the South African Heritage Resources Agency (SAHRA) and the CRM section of the Association for South African Professional Archaeologists (ASAPA).

**DECLARATION**

I, Nelius Le Roux Kruger, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Rustenburg Extension 30 Township Development Project in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, including the relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980), the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment (SAHRA, AMAFA and the CRM section of ASAPA), regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.

_____

Signature of specialist
**Company:** Exigo Sustainability
**Date:** 30 November 2015

## EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ in Rustenburg subject to an Enviromental Impact Assessment (BA) for the proposed Rustenburg Extension 30 Township Development. The proposed project, covering a surface area of approximately 17ha, will include the establishment of residential and business units, offices, a hotel, a conference centre as well as various public open spaces and access public roads. The AIA was conducted subject to requirements as set out by the National Environmental Management Act (Act 107 of 1998), the National Heritage Resources Act (NHRA - Act 25 of 1999). The report includes background information on the area's archaeology, its representation in southern Africa, and the history of the larger area under investigation, survey methodology and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the provincial heritage agency (NC-PHRA) and recommendations contained in this document will be reviewed.

The landscape around Rustenburg has always played an important ecological and cultural role in the history of South Africa. The natural environment of the area has established itself as an ideal occupational terrain; large rivers in the area have provided water, the fertile soil surrounding the rivers have provided food and the strategically situated Magaliesberg sheltered many groups of people and many generations. Thus, the area presents the most important time periods in the history of South Africa, the signs of which are still visible today in the hundreds of archaeological sites scattered across the landscape. These signs range from 300 000 year old handaxes from the Earlier Stone Age, microlithic tools from the Later Stone Age, pot sherds, grinding stones and spectacular stone walling of previous Tswana inhabitants, to rock paintings and engravings. War remnants and Colonial influence also dot the landscape around the town of Rustenburg. As a result of peculiar geo-processes, in particular the formation of the Bushveld Complex, the Rustenburg landscape is comprised of a latitudinal series of hills and valleys, which fostered early human settlement and later accommodated a series of communities and cultures. As such, a variety of heritage sites are known to occur in the larger region. These range from Stone Age sites, including rock engraving sites, Iron Age sites, mostly located in the flat areas where outcrops occur, as well as a large number of sites dating to Historic times. However, the proposed Rustenburg Extension 30 Township Development Project area is situated in an area that have been altered extensively as a result of refuse dumping, quarrying and surface soil removal and the site has largely been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times.

No heritage occurrences of interest were identified in the Rustenburg Extention 30 Township Development Project study area. However, since the study area is situated in a heritage rich landscape, a careful watching brief monitoring process is recommended whereby an informed ECO inspect the construction site on regular basis in order to monitor possible impact on heritage resources. Should any subsurface paleontological, archaeological or historical material or heritage resources be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.

***No heritage resources have been documented in the proposed Rustenburg Extension 30 Township Development footprint area. It is the opinion of the author of this Archaeological Impact Assessment Report that the proposed Rustenburg Extension 30 Township Development Project on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ will have no impact on archaeological heritage resources. The project should be allowed to proceed from a culture resources management***

***perspective, provided that mitigation measures provided in this assessment (monitoring), endorsed by the relevant Heritage Resources authority, are implemented where applicable, and provided that no subsurface heritage remains are encountered during construction.***

It is essential that cognisance be taken of the larger archaeological landscape of the Northwest Province in order to avoid the destruction of previously undetected heritage sites. Water sources such as pans, drainage lines and rivers should also be regarded as potentially sensitive in terms of possible Stone Age deposits. Should any previously undetected heritage resources be exposed or uncovered during construction phases of the proposed project, these should immediately be reported to SAHRA.

Since the intrinsic heritage and social value of graves and cemeteries are highly significant, these resources require special management measures. Should human remains be discovered at any stage, these should be reported to the Heritage Specialist and relevant authorities (SAHRA) and development activities should be suspended until the site has been inspected by the Specialist. The Specialist will advise on further management actions and possible relocation of human remains in accordance with the Human Tissue Act (Act 65 of 1983 as amended), the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), the National Heritage Resources Act (Act no. 25 of 1999) and any local and regional provisions, laws and by-laws pertaining to human remains. A full social consultation process should occur in conjunction with the mitigation of cemeteries and burials.

This report details the methodology, limitations and recommendations relevant to these heritage areas, as well as areas of proposed development. It should be noted that recommendations and possible mitigation measures are valid for the duration of the development process, and mitigation measures might have to be implemented on additional features of heritage importance not detected during this Phase 1 assessment (e.g. uncovered during the construction process).

## NOTATIONS AND TERMS/TERMINOLOGY

**Absolute dating:**

Absolute dating provides specific dates or range of dates expressed in years.

**Archaeology:**

The study of the human past through its material remains.

**Archaeological record:**

The archaeological record minimally includes all the material remains documented by archaeologists. More comprehensive definitions also include the record of culture history and everything written about the past by archaeologists.

**Artefact**:

Entities whose characteristics result or partially result from human activity. The shape and other characteristics of the artefact are not altered by removal of the surroundings in which they are discovered. In the southern African context examples of artefacts include potsherds, iron objects, stone tools, beads and hut remains.

**Assemblage:**

A group of artefacts recurring together at a particular time and place, and representing the sum of human activities.

**$^{14}$C or radiocarbon dating:**

The $^{14}$C method determines the absolute age of organic material by studying the radioactivity of carbon. It is reliable for objects not older 70 000 years by means of isotopic enrichment. The method becomes increasingly inaccurate for samples younger than ±250 years.

**Ceramic Facies:**

In terms of the cultural representation of ceramics, a facies is denoted by a specific branch of a larger ceramic tradition. A number of ceramic facies thus constitute a ceramic tradition.

**Ceramic Tradition:**

In terms of the cultural representation of ceramics, a series of ceramic units constitutes as ceramic tradition.

**Context:**

An artefact's context usually consists of its immediate *matrix*, its *provenience* and its *association* with other artefacts. When found in *primary context*, the original artefact or structure was undisturbed by natural or human factors until excavation and if in *secondary context,* disturbance or displacement by later ecological action or human activities occurred.

**Culture:**

A contested term, "culture" could minimally be defined as the learned and shared things that people have, do and think.

**Cultural Heritage Resource:**

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

**Cultural landscape:**

A cultural landscape refers to a distinctive geographic area with cultural significance.

**Cultural Resource Management (CRM):**

A system of measures for safeguarding the archaeological heritage of a given area, generally applied within the framework of legislation designed to safeguard the past.

**Ecofact:**

Non artefactual material remains that has cultural relevance which provides information about past human activities. Examples would include remains or evidence of domesticated animals or plant species.

**Excavation:**
The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and the other material covering and accompanying it.

**Feature:**
Non-portable artefacts, in other words artefacts that cannot be removed from their surroundings without destroying or altering their original form. Hearths, roads, and storage pits are examples of archaeological features

**GIS:**
Geographic Information Systems are computer software that allows layering of various types of data to produce complex maps; useful for predicting site location and for representing the analysis of collected data within sites and across regions.

**Historical archaeology:**
Primarily that aspect of archaeology which is complementary to history based on the study of written sources. In the South African context it concerns the recovery and interpretation of relics left in the ground in the course of Europe's discovery of South Africa, as well as the movements of the indigenous groups during, and after the "Great Scattering" of Bantu-speaking groups – known as the *mfecane* or *difaqane*.

**Impact:** A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

**Iron Age:**
Also known as "Farmer Period", the "Iron Age" is an archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture.

**Lithic:**
Stone tools or waste from stone tool manufacturing found on archaeological sites.

**Management / Management Actions:**
Actions – including planning and design changes - that enhance benefits associated with a proposed development, or that avoid, mitigate, restore, rehabilitate or compensate for the negative impacts.

**Matrix:**
The material in which an artefact is situated (sediments such as sand, ashy soil, mud, water, etcetera). The matrix may be of natural origin or human-made.

**Megalith:**
A large stone, often found in association with others and forming an alignment or monument, such as large stone statues.

**Midden:**
Refuse that accumulates in a concentrated heap.

**Microlith:**
A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.

**Monolith:**
A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

**Oral Histories:**
The historical narratives, stories and traditions passed from generation to generation by word of mouth.

**Phase 1 CRM Assessment:**
An Impact Assessment which identifies archaeological and heritage sites, assesses their significance and comments on the impact of a given development on the sites. Recommendations for site mitigation or conservation are also made during this phase.

**Phase 2 CRM Study:**
In-depth studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including

historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required. Mitigation / Rescue involves planning the protection of significant sites or sampling through excavation or collection (in terms of a permit) at sites that may be lost as a result of a given development.

**Phase 3 CRM Measure:**

A Heritage Site Management Plan (for heritage conservation), is required in rare cases where the site is so important that development will not be allowed and sometimes developers are encouraged to enhance the value of the sites retained on their properties with appropriate interpretive material or displays.

**Prehistoric archaeology:**

That aspect of archaeology which concerns itself with the development of humans and their culture before the invention of writing. In South Africa, prehistoric archaeology comprises the study of the Early Stone Age, the Middle Stone Age and the greater part of the Later Stone Age and the Iron Age.

**Probabilistic Sampling:**

A sampling strategy that is not biased by any person's judgment or opinion. Also known as statistical sampling, it includes systematic, random and stratified sampling strategies.

**Provenience**

Provenience is the three-dimensional (horizontal and vertical) position in which artefacts are found. Fundamental to ascertaining the provenience of an artefact is *association,* the co-occurrence of an artefact with other archaeological remains; and *superposition,* the principle whereby artefacts in lower levels of a matrix were deposited before the artefacts found in the layers above them, and are therefore older.

**Random Sampling**:

A probabilistic sampling strategy whereby randomly selected sample blocks in an area are surveyed. These are fixed by drawing coordinates of the sample blocks from a table of random numbers.

**Relative dating:**

The process whereby the relative antiquity of sites and objects are determined by putting them in sequential order but not assigning specific dates.

**Remote Sensing:**

The small or large-scale acquisition of information of an object or phenomenon, by the use of either recording or real-time sensing device(s) that is not in physical or intimate contact with the object (such as by way of aircraft, spacecraft or satellite). Here, ground-based geophysical methods such as Ground Penetrating Radar and Magnetometry are often used for archaeological imaging.

**Rock Art Research:**

Rock art can be "decoded" in order to inform about cultural attributes of prehistoric societies, such as dress-code, hunting and food gathering, social behaviour, religious practice, gender issues and political issues.

**Scoping Assessment:**

The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment. The main purpose is to focus the impact assessment on a manageable number of important questions on which decision making is expected to focus and to ensure that only key issues and reasonable alternatives are examined. The outcome of the scoping process is a Scoping Report that includes issues raised during the scoping process, appropriate responses and, where required, terms of reference for specialist involvement.

**Sensitive:**

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

**Site (Archaeological):**

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity. These include surface sites, caves and rock shelters, larger open-air sites, sealed sites (deposits) and river deposits. Common functions of archaeological sites include living or habitation sites, kill sites, ceremonial sites, burial sites, trading, quarry, and art sites,

**Slag:**
The material residue of smelting processes from metalworking.

**Stone Age:**
An archaeological term used to define a period of stone tool use and manufacture.

**Stratigraphy:**
This principle examines and describes the observable layers of sediments and the arrangement of strata in deposits

**Stratified Sampling**:
A probabilistic sampling strategy whereby a study area is divided into appropriate zones – often based on the probable location of archaeological areas, after which each zone is sampled at random.

**Systematic Sampling**:
A probabilistic sampling strategy whereby a grid of sample blocks is set up over the survey area and each of these blocks is equally spaced and searched.

**Tradition:**
Artefact types, assemblages of tools, architectural styles, economic practices or art styles that last longer than a phase and even a horizon are describe by the term *tradition*. A common example of this is the early Iron Age tradition of Southern Africa that originated ± 200 AD and came to an end at about 900 AD.

**Trigger:** A particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an *issue* and/or potentially significant *impact* associated with that proposed development that may require specialist input. Legal requirements of existing and future legislation may also trigger the need for specialist involvement.

**Tuyère:**
A ceramic blow-tube used in the process of iron smelting / reduction.

## LIST OF ABBREVIATIONS

| Abbreviation | Description |
|---|---|
| ASAPA | Association for South African Professional Archaeologists |
| AIA | Archaeological Impact Assessment |
| BP | Before Present |
| BCE | Before Common Era |
| CRM | Culture Resources Management |
| EC-PHRA | Eastern Cape Provincial Heritage Resources Agency |
| EIA | Early Iron Age (also Early Farmer Period) |
| EIA | Environmental Impact Assessment |
| EFP | Early Farmer Period (also Early Iron Age) |
| ESA | Earlier Stone Age |
| GIS | Geographic Information Systems |
| HIA | Heritage Impact Assessment |
| ICOMOS | International Council on Monuments and Sites |
| K2/Map | K2/Mapungubwe Period |
| KZNHA | KwaZulu-Natal Heritage Act of 2008 |
| LFP | Later Farmer Period (also Later Iron Age) |
| LIA | Later Iron Age (also Later Farmer Period) |
| LSA | Later Stone Age |
| MIA | Middle Iron Age (also Early later Farmer Period) |
| MRA | Mining Right Area |
| MSA | Middle Stone Age |
| NHRA | National Heritage Resources Act No.25 of 1999, Section 35 |
| PFS | Pre-Feasibility Study |
| PHRA | Provincial Heritage Resources Authorities |
| SAFA | Society for Africanist Archaeologists |
| SAHRA | South African Heritage Resources Association |
| YCE | Years before Common Era (Present) |

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# 1 BACKGROUND

## 1.1 Scope and Motivation

Exigo Sustainability was commissioned by the Delron Environmental for an Archaeological Impact Assessment (AIA) study subject to an Environmental Impact Assessment (EIA) for the proposed Rustenburg Extension 30 Township Development Project in Rustenburg. The rationale of this AIA is to determine the presence of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance in previously unstudied areas; to consider the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

## 1.2 Project Direction

Exigo Sustainability's expertise ensures that all projects be conducted to the highest international ethical and professional standards. As archaeological specialist for Exigo Sustainability, Mr Neels Kruger acted as field director for the project; responsible for the assimilation of all information, the compilation of the final consolidated AIA report and recommendations in terms of heritage resources on the demarcated project areas. Mr Kruger is an accredited archaeologist and Culture Resources Management (CRM) practitioner with the Association of South African Professional Archaeologists (ASAPA), a member of the Society for Africanist Archaeologists (SAFA) and the Pan African Archaeological Association (PAA) as well as a Master's Degree candidate in archaeology at the University of Pretoria.

## 1.3 Project Brief

Kylipac (Pty) Ltd proposes the development of a mixed-use township development known as "Rustenburg Extension 30" on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ in Rustenburg, North West Province. The size of the subject property is approximately 17, 04 hectares. The project proposal is to develop a mixed use development comprising:

| **Proposed Uses** | **Erf/Erven No** | **Size** | | **Height** | **Only for** |
|---|---|---|---|---|---|
| | | **Coverage** | **FSR** | | |
| "SPECIAL" (Shopping Centre) | 2 Erven | 60% | 0.45 | 3 Storeys | As per Scheme including builders yard and a bakery |
| "SPECIAL" (Office) | 3 Erven | 60% | 1 | 3 Storeys | Offices, cafeteria, kiosk, medical consulting rooms, place of refreshment, service enterprise |
| "SPECIAL" (Conference Facility) | 1 Erf | 50% | 0.4 | 3 Storeys | Conference Facility, Institution, Offices |
| "SPECIAL" (Hotel) | 1 Erf | 50% | 0.5 | 3 Storeys | Hotel, Conference Facility, Institution |
| RESIDENTIAL 2<br>25 units per hectare | 1 Erf | 50% | N/A | 3 Storeys | As per Scheme |
| As per Rustenburg Land Use Management Scheme, 2005 | | | | | |

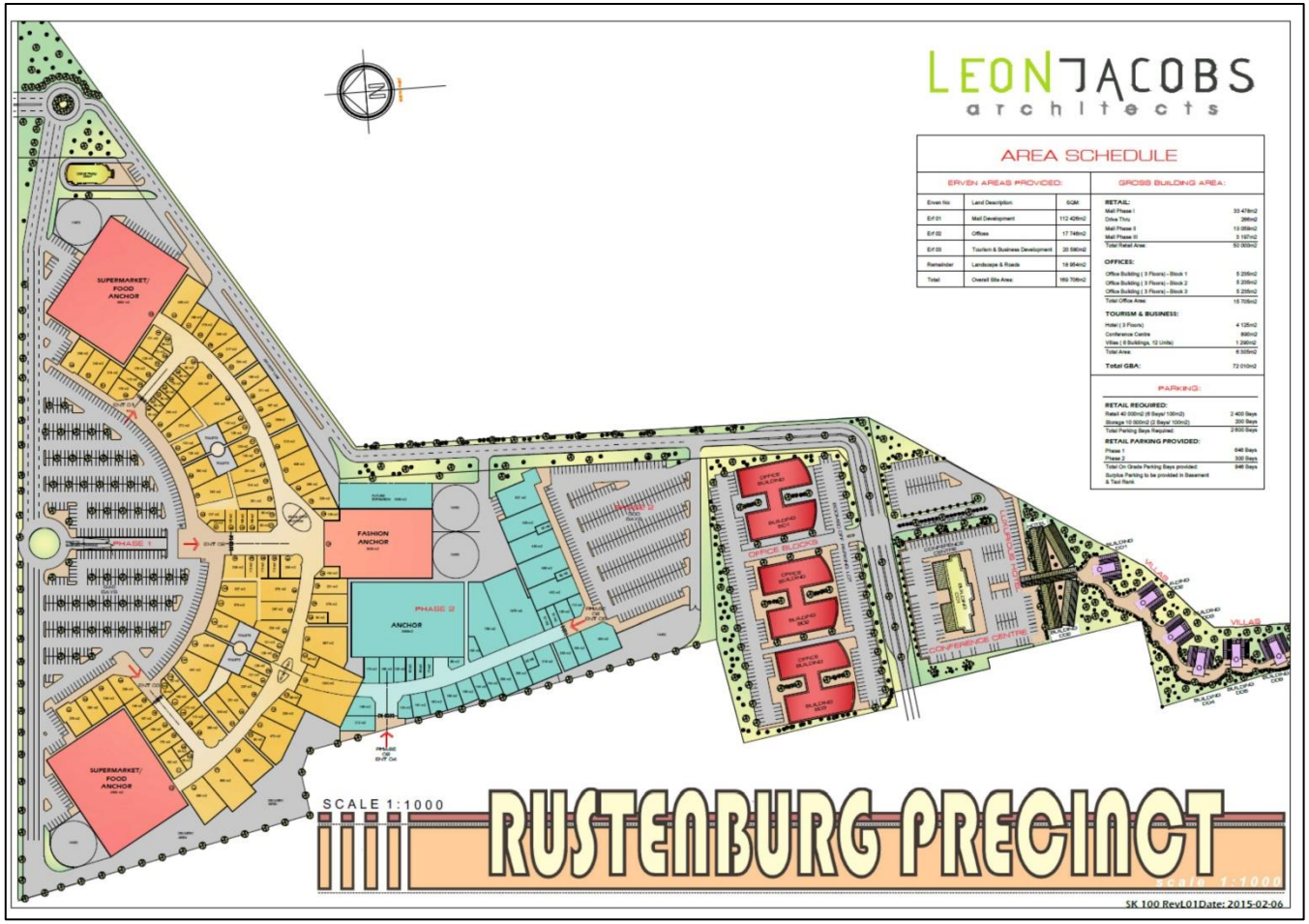


**Figure 1-1: Site Development Plan abd proposed layout for the proposed Rustenburg Extension 30 Township Development Project.**

### 1.4 Terms of Reference

Heritage specialist input into the Environmental Impact Assessment (EIA) process is essential to ensure that through the management of change, developments still conserve our heritage resources. Heritage specialist 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. It is also a legal requirement for certain development categories which may have an impact on heritage resources (Refer to Section 2.5.2).

Thus, EIAs should always include an assessment of Heritage Resources. The heritage component of the EIA is provided for in the **National Environmental Management Act, (Act 107 of 1998)** and endorsed by section 38 of the **National Heritage Resources Act (NHRA - Act 25 of 1999)** and the **KwaZulu-Natal Heritage Act (KZNHRA - Act of 2008)**. In addition, the NHRA and the KZNHRA protects all structures and features older than 60 years, archaeological sites and material and graves as well as burial sites. The objective of this legislation is to ensure that developers implement measures to limit the potentially negative effects that the development could have on heritage resources.

Based hereon, this project functioned according to the following **terms of reference for** heritage specialist input**:**

- *Provide detailed updated description of all additional archaeological artefacts, structures (including graves) and settlements which may be affected, if any.*
- *Assess the nature and degree of significance of such resources within the area.*
- *Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance.*
- *Assess any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities.*
- *Propose possible heritage management measures provided that such action is necessitated by the development.*
- *Obtain a comment from the EC-PHRA.*

### 1.5 CRM: Legislation, Conservation and Heritage Management

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

#### 1.5.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and their provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation at all times.

**a. National Heritage Resources Act No 25 of 1999, section 35**

According to the National Heritage Resources Act of 1999 a historical site is any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years. This clause is commonly known as the "60-years clause". Buildings are amongst the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Iron Age settlements. "Tell" refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts).

The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects, meteorites and rare geological specimens
- visual art objects
- military objects
- numismatic objects
- objects of cultural and historical significance
- objects to which oral traditions are attached and which are associated with living heritage
- objects of scientific or technological interest
- any other prescribed category

With regards to activities and work on archaeological and heritage sites this Act states that:

*"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority." (34. [1] 1999:58)*

and

*"No person may, without a permit issued by the responsible heritage resources authority-*

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

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

*(c) 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*

*(d) 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. (35. [4] 1999:58)."*

*and*

*"No person may, without a permit issued by SAHRA or a provincial heritage resources agency-*

*(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*

*(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*

*(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."*

**b. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925**

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

### 1.5.2 Background to HIA and AIA Studies

South Africa's unique and non-renewable archaeological and palaeontological heritage sites are 'generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

The National Heritage Resources Act (Act No. 25 of 1999, section 38) provides guidelines for Cultural Resources Management and prospective developments:

***"38.*** *(1) 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, powerline, 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 50m in length;*

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

*(i) exceeding 5 000 $m^2$ in extent; or*

*(ii) involving three or more existing erven or subdivisions thereof; or*

*(iii) involving three or more erven or divisions thereof which have been consolidated within*

*the past five years; or*

*(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*

*(d) the re-zoning of a site exceeding 10 000 $m^2$ in extent; or*

*(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,*

*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."*

And:

*"The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:*

*(a) The identification and mapping of all heritage resources in the area affected;*

*(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*

*(c) an assessment of the impact of the development on such heritage resources;*

*(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*

*(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*

*(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*

*(g) plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64)."*

**Consequently, section 35 of the Act requires Heritage Impact Assessments (HIAs) or Archaeological Impact Assessments (AIAs) to be done for such developments in order for all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic or technological value or significance to be protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.Heritage resources management and conservation**

### 1.6 Assessing the Significance of Heritage Resources

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places

in the landscape where people have lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable.* Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

**- Categories of significance**

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites. In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

- *Aesthetic value:*

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

- *Historic value:*

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

- *Scientific value:*

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality and on the degree to which the place may contribute further substantial information.

- *Social value:*

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group.

It is important for heritage specialist input in the EIA process to take into account the heritage management structure set up by the NHR Act. It makes provision for a 3-tier system of management including the South Africa Heritage Resources Agency (SAHRA) at a national level, Provincial Heritage Resources Authorities (PHRAs) at a provincial and the local authority. The Act makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

**Formally protected sites:**

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the provincial HRA (EC-PHRA).
- Grade 3 or local heritage sites.

**Generally protected sites:**

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 70 years.
- Structures older than 60 years.

With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low. The significance of archaeological sites is generally ranked into the following categories.

| Significance | Rating Action |
|---|---|
| No significance: sites that do not require mitigation. | None |
| Low significance: sites, which may require mitigation. | 2a. Recording and documentation (Phase 1) of site; no further action required<br>2b. Controlled sampling (shovel test pits, augering), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction |
| Medium significance: sites, which require mitigation. | 3. Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b] |
| High significance: sites, where disturbance should be avoided. | 4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism |
| High significance: Graves and burial places | 4b. Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinterment [including 2a, 2b & 3] |

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

**A fundamental aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information, which would otherwise be lost.**

# 2 REGIONAL CONTEXT

## 2.1 Area Location

The Rustenburg Extension 30 Township Development Project area occurs on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ in the town Rustenburg, North West Province. The proposed development is located west of the Rustenburg CBD, between the Olympia Park Sports Stadium and the Rustenburg Golf course in Ward 8 of the Rustenburg Municipality. The property is bounded by the R104 Swartruggens Road to the north and the Rustenburg Golf Course and Olympia Park sports stadium to the south, east and west respectively.

The study area appears on 1:50000 map sheet 2527CA (see Figure 2-1) with general geographical reference **S25.661002° E27.226754°.**

## 2.2 Area Description: Receiving Environment

The Rustenburg Extension 30 Township Development Project is situated within the Savanna biome which is the largest biome in Southern Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants such as trees and shrubs. The most recent classification of the area by Mucina & Rutherford shows that the proposed development site is classified as Gold Reef Mountain Bushveld. The vegetation and landscape features of the Gold Reef Mountain Bushveld are rocky hills and ridges with more dense woody vegetation on the south-facing slopes associated with distinct floristic differences. A number of distinct ecological systems occur in the Rustenburg are. These include mountainous areas, wetlands, streams and river courses, dams, indigenous woodland and grassland floral communities.

## 2.3 Site Description

The site for the proposed Rustenburg Extension 30 Township Development Project is situated on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ in the town Rustenburg. The proposed project site is bordered to the east by the Rustenburg Golf Course and to the west by the Olympia Park Sports Stadium. The site is situated in an area that have been altered extensively as a result of refuse dumping, quarrying and surface soil removal and the site has largely been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times. Pioneering species such as Sickle Bush covers most of the site with little dense surface cover.

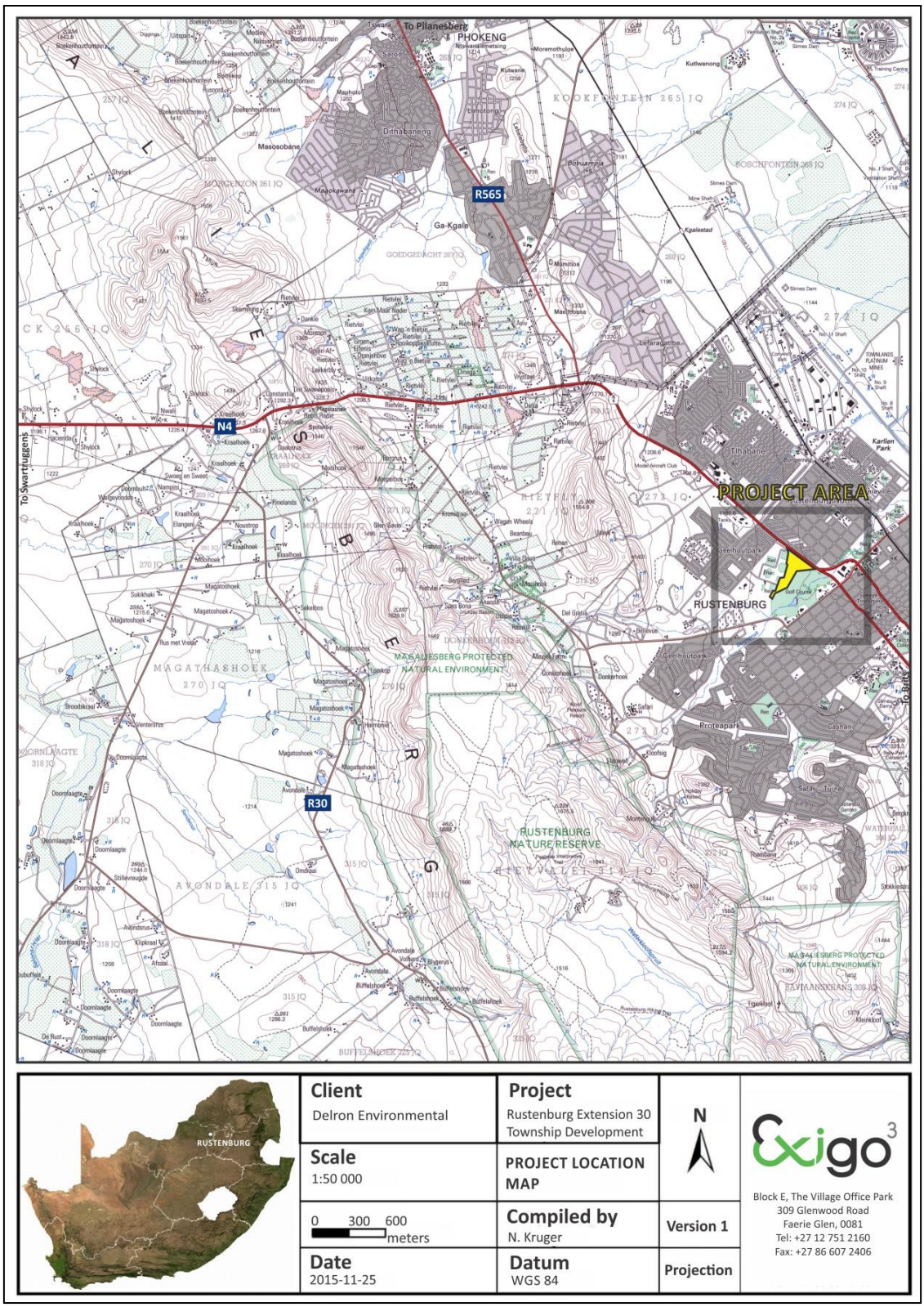


**Figure 2-1: 1:50 00 Map representation of the location of the Rustenburg Extension 30 Township Development Project Area (sheet 2630DD).**

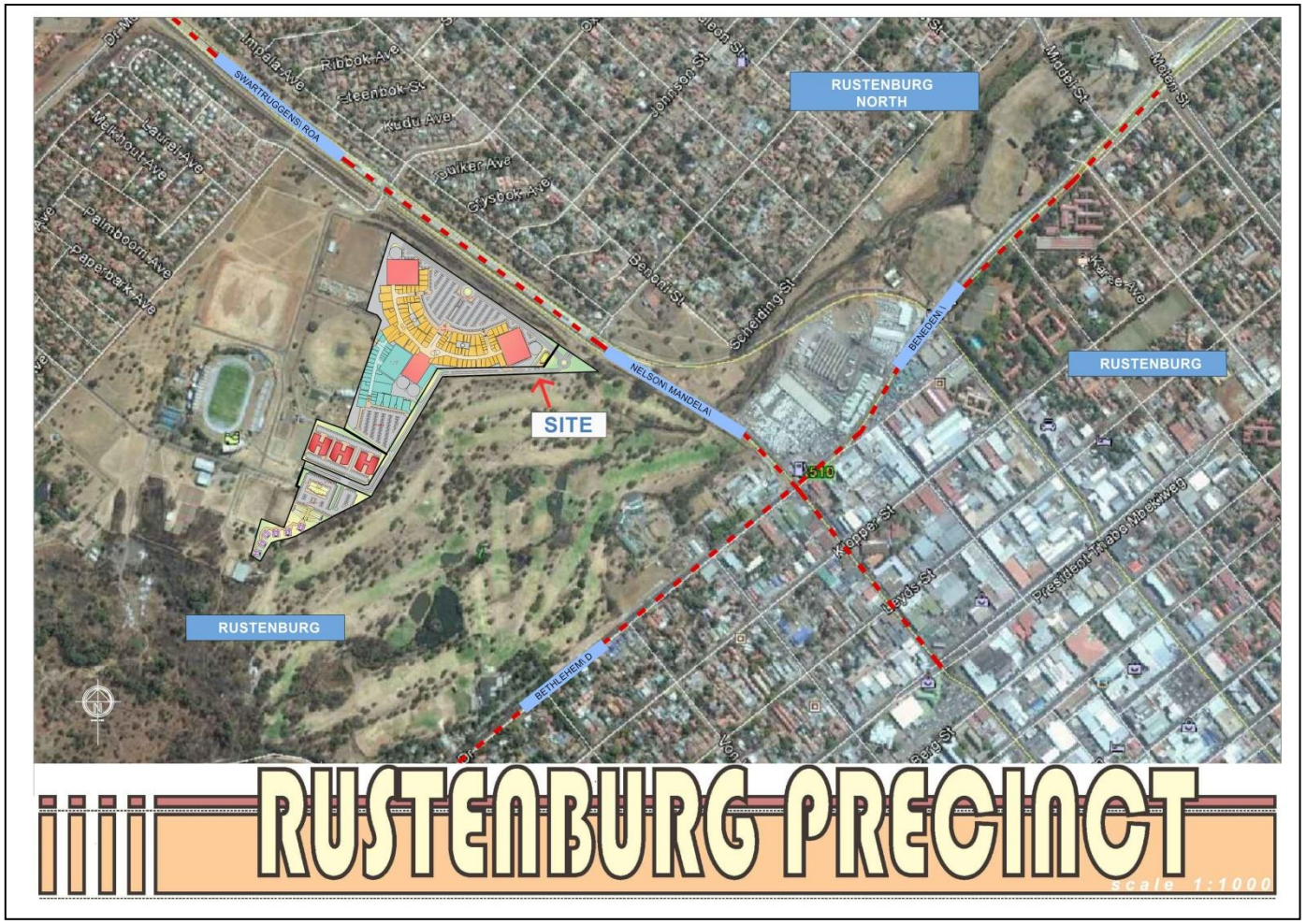


**Figure 2-2: Aerial orientation for proposed Rustenburg Extension 30 Township Development Project.**

# 3 METHOD OF ENQUIRY

## 3.1 Sources of Information

Data from detailed desktop, aerial and field studies were employed in order to sample surface areas systematically and to ensure a high probability of heritage site recording.

### 3.1.1 Desktop Study

The larger landscape around Rustenburg has not been well documented in terms of its archaeology and history. A desktop study was prepared in order to contextualize the proposed project within a larger historical milieu. The study drew on available unpublished archival databases and unpublished Heritage Assessment reports to give a comprehensive representation of known sites in the study area. Furthermore, numerous academic papers and research articles supplied a historical context for the proposed project and archival sources, aerial photographs, historical maps and local histories were used to create a baseline of the landscape's heritage.

### 3.1.2 Aerial Representations and Survey

Aerial photography is often employed to locate and study archaeological sites, particularly where larger scale area surveys are performed. This method was applied to assist the foot site surveys where depressions, variation in vegetation, soil marks and landmarks were examined. Specific attention was given to shadow sites (shadows of walls or earthworks which are visible early or late in the day), crop mark sites (crop mark sites are visible because disturbances beneath crops cause variations in their height, vigour and type) and soil marks (e.g. differently coloured or textured soil (soil marks) might indicate ploughed-out burial mounds). Attention was also given to moisture differences, as prolonged dampening of soil as a result of precipitation frequently occurs over walls or embankments. By superimposing high frequency aerial photographs with images generated with Google Earth, potential sensitive areas were subsequently identified, geo-referenced and transferred to a handheld GPS device. These areas served as referenced points from where further vehicular and foot surveys were carried out. From the aerial survey it is evident that entire surface areas subject to the Rustenburg Extension 30 Township Development Project have been subjected to historical and more recent disturbances and impacts as a result of forestry.

### 3.1.3 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the footprint area proposed for the Rustenburg Extension 30 Township Development Project was conducted in November 2015. The process encompassed a systematic field survey in accordance with standard archaeological practice by which heritage resources are observed and documented. In order to sample surface areas systematically and to ensure a high probability of site recording the proposed development footprint was systematically surveyed on foot, GPS reference points were visited and random spot checks were made (see detail in previous section). Using a Garmin Montana 650 GPS objects and structures of archaeological / heritage value were recorded and photographed with a Canon 450D Digital camera. Real time aerial orientation, by means of a mobile Google Earth application was also employed to investigate possible disturbed areas during the survey. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion.

## 3.2 Limitations

### 3.2.1 Access

The study area is accessed directly via the Swartruggens Road (R104) with smaller roads to the Olympia Park Sports Stadium providing admission to the site. Access control is not applied to the area relevant to this assessment and no restrictions were encountered.

### 3.2.2 Visibility

The surrounding vegetation in the Rustenburg area is mostly comprised out of mixed grasslands and scattered trees with the occurrence of mountain vegetation in places. However, vegetation in the study area has been disrupted and pioneering species and a single layer of low grass occur on the site. Visibility at the time of the AIA site inspection (November 2015) was moderate (see Figures 3-1 to 3-8). In single cases during the survey sub-surface inspection was possible. Where applied, this revealed no archaeological deposits.

**Figure 3-1: View of general surroundings in a northern section of the study area at the time of the survey.**

**Figure 3-2: View of Sickle Bush and surface cover in a northern section of the study area.**

**Figure 3-3: Building rubble and refuse along the western periphery of the study area.**

**Figure 3-4: View of large excavation and digging in the north of the study area.**

**Figure 3-5: Household rubble, prevalent accross the study area.**

**Figure 3-6: View of a central protion of the study area. Note large building material dumps and heaps.**

**Figure 3-7: View of general surroundings along the southern border of the study area. The Rustenburg golf course is visible in the distance.**

**Figure 3-8: Surface pollution and disturbances occur across the project area.**

### 3.2.3 Limitations and Constraints

The foot survey for the Rustenburg Extension 30 Township Development Project AIA primarily focused around areas tentatively identified as sensitive and of high heritage probability (i.e. those noted during the aerial survey) as well as areas of high human settlement catchment.

- **Visibility** proved to be a constraint where higher trees and grasses obscured surfaces.

Yet, even though it might be assumed that survey findings are representative of the heritage landscape of the project area, it should be stated that the possibility exists that individual sites could be missed due to the localised nature of some heritage remains as well as the possible presence of sub-surface archaeology. Therefore, maintaining due cognisance of the integrity and accuracy of the archaeological survey, it should be stated that the heritage resources identified during the study do not necessarily represent all the heritage resources present in the project area. The subterranean nature of some archaeological sites, dense vegetation cover and visibility constraints sometimes distort heritage representations and any additional heritage resources located during consequent development phases must be reported to the Heritage Resources Authority or an archaeological specialist.

### 3.3 Impact Assessment

For consistency among specialists, impact assessment ratings by Exigo Specialist are generally done using the Plomp[1] impact assessment matrix scale supplied by Exigo. According to this matrix scale, each heritage receptor in the study area is given an impact assessment. A cumulative assessment for the proposed project is also included.

## 4 ARCHAEO-HISTORICAL CONTEXT

### 4.1 The archaeology of Southern Africa

Archaeology in southern Africa is typically divided into two main fields of study, the **Stone Age** and the **Iron Age** or **Farmer Period**. The following table provides a concise outline of the chronological sequence of periods, events, cultural groups and material expressions in Southern African pre-history and history.

**Table 1 Chronological Periods across southern Africa**

| Period | Epoch | Associated cultural groups | Typical Material Expressions |
|---|---|---|---|
| Early Stone Age<br>2.5m – 250 000 YCE | Pleistocene | Early Hominins:<br>*Australopithecines*<br>*Homo habilis*<br>*Homo erectus* | Typically large stone tools such as hand axes, choppers and cleavers. |
| Middle Stone Age<br>250 000 – 25 000 YCE | Pleistocene | First *Homo sapiens* species | Typically smaller stone tools such as scrapers, blades and points. |
| Late Stone Age<br>20 000 BC – present | Pleistocene / Holocene | *Homo sapiens sapiens* including San people | Typically small to minute stone tools such as arrow heads, points and bladelets. |
| Early Iron Age / Early Farmer Period 300 – 900 AD | Holocene | First Bantu-speaking groups | Typically distinct ceramics, bead ware, iron objects, grinding stones. |
| Middle Iron Age (Mapungubwe / K2) / early | Holocene | Bantu-speaking groups, ancestors of present-day | Typically distinct ceramics, bead ware and iron / gold / copper objects, trade goods and |

[1] Plomp, H.,2004

| | | | |
|---|---|---|---|
| Later Farmer Period 900 – 1350 AD | | groups | grinding stones. |
| Late Iron Age / Later Farmer Period<br>1400 AD -1850 AD | Holocene | Various Bantu-speaking groups including Venda, Thonga, Sotho-Tswana and Zulu | Distinct ceramics, grinding stones, iron objects, trade objects, remains of iron smelting activities including iron smelting furnace, iron slag and residue as well as iron ore. |
| Historical / Colonial Period<br>±1850 AD – present | Holocene | Various Bantu-speaking groups as well as European farmers, settlers and explorers | Remains of historical structures e.g. homesteads, missionary schools etc. as well as, glass, porcelain, metal and ceramics. |

### 4.1.1 The Stone Ages

- **The Earlier Stone Age (ESA)**

The Earlier Stone Age from between 1.5 million and 250 000 years ago refers to the earliest that *Homo sapiens sapiens* predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduwan Industry originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant southern African Early Stone Age Industry, replaced the Olduwan Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. Bifaces emerged in East Africa more than 1.5 million years ago but have been reported from a wide range of areas, from South Africa to northern Europe and from India to the Iberian coast. Earlier Stone Age deposits typically occur on the flood-plains of perennial rivers. These ESA open sites sometimes contain stone tool scatters and manufacturing debris ranging from pebble tool choppers to core tools such as handaxes and cleavers. These groups seldom actively hunted and relied heavily on the opportunistic scavenging of meat from carnivore fill sites. The most well-known Early Stone Age site in southern Africa is Amanzi Springs, situated about 10km north-east of Uitenhage, near Port Elizabeth (Deacon 1970). In a series of spring deposits a large number of stone tools were found in situ to a depth of 3-4m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old.

- **The Middle Stone Age (MSA)**

The Middle Stone Age (MSA) spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art and symbolism. Various stone artefact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean 2008). The large handaxes and cleavers were replaced by smaller stone artefactscalled the MSA flake and blade industries. Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artefacts to be found between the surface and approximately 50-80cm below ground. Fossil bone may in rare cases be associated with MSA occurrences (Gess 1969). These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material. The MSA is distinguished from the ESA by the smaller-sized and distinctly different stone artefacts and chaine operatoire (method) used in manufacture, the introduction of other types of artefacts and evidence of symbolic behaviour. The prepared core technique was used for the manufacture of the stone artefacts which display a characteristic facetted striking platform and includes mainly unifacial and bifacial flake bladesand points. The Howiesons Poort Industry (80 000-55 000 years ago) is distinguished from the other MSA stone artefacts: the size of tools are generally smaller, the range of raw materials include finer-

grained rocks such as silcrete, chalcedony, cJartz and hornfels, and include segments, backed blades and trapezoids in thestone toolkit which were sometimes hafted (set or glued) onto handles. In addition to stone artefacts, bone was worked into points, possibly hafted, and used as tools for hunting (Deacon & Deacon 1999). Other types of artefacts that have been encountered in archaeological excavations include tick shell beads, the rim pieces of ostrich eggshell (OES) water flasks, ochre-stained pieces of ostrich eggshell and engraved and scratched ochre pieces, as well as the collection of materials for purely aesthetic reasons. The majority of MSA sites occur on flood plains and sometimes in caves and rock shelters. Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom remain preserved in the archaeological record. Limited drive-hunting activities are associated with the MSA.

- **The Later Stone Age (LSA)**

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the MSA to LSA; although there is a lack of crucial sites and evidence that represent this change. By the time of the Later Stone Age the genus Homo, in southern Africa, had developed into *Homo sapiens sapiens*, and in Europe, had already replaced *Homo neanderthalensis*. The LSA is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg, Wilton Industries and in between, the larger Albany/Oakhurst and the Kabeljous Industries. Bored stones used as part of digging sticks, grooved stones for sharpening and grinding and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Polished bone tools such as eyed needles, awls, linkshafts and arrowheads also become a more common occurrence. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2000 years that earthenware pottery was introduced, before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Decorative items like ostrich eggshell and marine/fresh water shell beads and pendants were made. Hunting and gathering made up the economic way of life of these communities; therefore, they are normally referred to as hunter-gatherers. Hunter-gatherers hunted both small and large game and gathered edible plant foods from the veld. For those that lived at or close the coast, marine shellfish and seals and other edible marine resources were available for the gathering. The political system was mainly egalitarian, and socially, hunter-gatherers lived in bands of up to twenty people during the scarce resource availability dispersal seasons and aggregated according to kinship relations during the abundant resource availability seasons. Symbolic beliefs and rituals are evidenced by the deliberate burial of the dead and in the rock art paintings and engravings scattered across the southern African landscape. Sites dating to the LSA are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

### 4.1.2 The Iron Age Farmer Period

- **Early Iron Age (Early Farming Communities)**

The Early Iron Age (also Early Farmer Period) marks the movement of Bantu speaking farming communities into South Africa at around 200 A.D. These groups were agro-pastoralists that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Artefact evidence from Early Farmer Period sites is mostly found in the form of ceramic assemblages and the origins and archaeological identities of this period are largely based upon ceramic typologies and sequences, where diagnostic

pottery assemblages can be used to infer group identities and to trace movements across the landscape. Early Farmer Period ceramic traditions are classified by some scholars into different "streams" or trends in pot types and decoration that, over time emerged in southern Africa. These "streams" are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). More specifically, in the northern regions of South Africa at least three settlement phases have been distinguished for prehistoric Bantu-speaking agropastoralists. The first phase of the Early Iron Age, known as Happy Rest (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of Diamant is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the Eiland tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. Early Farmer Period ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. The Early Iron Age continued up to the end of the first millennium AD.

- **Middle Iron Age / K2 Mapungubwe Period (early Later Farming Communities)**

The onset of the middle Iron Age dates back to ±900 AD, a period more commonly known as the Mapungubwe / K2 phase. These names refer to the well known archaeological sites that are today the pinnacle of South Africa's Iron Age heritage. The inhabitants of K2 and Mapungubwe, situated on the banks of the Limpopo, were agriculturalists and pastoralists and were engaged in extensive trade activities with local and foreign traders. Although the identity of this Bantu-speaking group remains a point of contestation, the Mapungubwe people were the first state-organized society southern Africa has known. A considerable amount of golden objects, ivory, beads (glass and gold), trade goods and clay figurines as well as large amounts of potsherds were found at these sites and also appear in sites dating back to this phase of the Iron Age. Ceramics of this tradition take the form of beakers with upright sides and decorations around the base (K2) and shallow-shouldered bowls with decorations as well as globular pots with long necks. (Mapungubwe). The site of Mapungubwe was deserted at around 1250 AD and this also marks the relative conclusion of this phase of the Iron Age.

- **Later Iron Age (Later Farming Communities)**

The late Iron Age of southern Africa marks the grouping of Bantu speaking groups into different cultural units. It also signals one of the most influential events of the second millennium AD in southern Africa, the difaqane. The difaqane (also known as "the scattering") brought about a dramatic and sudden ending to centuries of stable society in southern Africa. Reasons for this change was essentially the first penetration of the southern African interior by Portuguese traders, military conquests by various Bantu speaking groups primarily the ambitious Zulu King Shaka and the beginning of industrial developments in South Africa. Different cultural groups were scattered over large areas of the interior. These groups conveyed with them their customs that in the archaeological record manifest in ceramics, beads and other artefacts. This means that distinct pottery typologies can be found in the different late Iron Age groups of South Africa.

- **Bantu Speaking Groups in the South African interior**

*It should be noted that terms such as "Nguni", "Sotho", "Venda" and others refer to broad and comprehensive language groups that demonstrated similarities in their origins and language. It does not imply that these Nguni / Sotho groups were homogeneous and static; they rather moved through the landscape and influenced each other in continuous processes marked by cultural fluidity.*

Ethnographers generally divide major Bantu-speaking groups of southern Africa into two broad linguistic groups, the Nguni and the Sotho with smaller subdivisions under these two main groups. Nguni groups were found in the eastern parts of the interior of South Africa and can be divided into the northern Nguni and the southern Nguni. The various Zulu and Swazi groups were generally associated with the northern

Nguni whereas the southern Nguni comprised the Xhosa, Mpondo, Thembu and Mpondomise groups. The same geographically based divisions exist among Sotho groups where, under the western Sotho (or Tswana), groups such as the Rolong, Hurutshe, Kwena, Fokeng and Kgatla are found. The northern Sotho included the Pedi and amalgamation of smaller groups united to become the southern Sotho group or the Basutho. Other smaller language groups such as the Venda, Lemba and Tshonga Shangana transpired outside these major entities but as time progressed they were, however to lesser or greater extend influenced and absorbed by neighbouring groups.

### 4.1.3 Pastoralism and the last 2000 years

Until 2000 years ago, hunter-gatherer communities traded, exchanged goods, encountered and interacted with other hunter-gatherer communities. From about 2000 years ago the social dynamics of the southern African landscape started changing with the immigration of two 'other' groups of people, different in physique, political, economic and social systems, beliefs and rituals. One of these groups, the Khoekhoe pastoralists or herders entered southern Africa with domestic animals, namely fat-tailed sheep and goats, travelling through the south towards the coast. They also introduced thin-walled pottery common in the interior and along the coastal regions of southern Africa. Their economic systems were directed by the accumulation of wealth in domestic stock numbers and their political make-up was more hierarchical than that of the hunter-gatherers.

### 4.1.4 Historical and Colonial Times and Recent History

The Historical period in southern Africa encompass the course of Europe's discovery of South Africa and the spreading of European settlements along the East Coast and subsequently into the interior. In addition, the formation stages of this period are marked by the large scale movements of various Bantu-speaking groups in the interior of South Africa, which profoundly influenced the course of European settlement. Finally, the final retreat of the San and Khoekhoen groups into their present-day living areas also occurred in the Historical period in southern Africa.

## 4.2 The Rustenburg Heritage Landscape: Specific Themes.

The landscape around Rustenburg has always played an important ecological and cultural role in the history of South Africa. The natural environment of the area has established itself as an ideal occupational terrain; large rivers in the area have provided water, the fertile soil surrounding the rivers have provided food and the strategically situated Magaliesberg sheltered many groups of people and many generations. Thus, the area presents the most important time periods in the history of South Africa, the signs of which are still visible today in the hundreds of archaeological sites scattered across the landscape. These signs range from 300 000 year old handaxes from the Earlier Stone Age, microlithic tools from the Later Stone Age, pot sherds, grinding stones and spectacular stone walling of previous Tswana inhabitants, to rock paintings and engravings. War remnants and Colonial influence also dot the landscape around the town of Rustenburg.

Various historical accounts, research reports as well as anthropological, archaeological and historical sources have compiled the pre-history and history of the Rustenburg area. In early years, L.V. Praagh produced his encyclopaedic work, *The Transvaal and its Mines in 1906.* In this publication he provided detailed information of the state of development in the region. This source serves as baseline for determining heritage features dating to early colonial times. Later research in the area includes important work by Government Ethnologist N.J van Warmelo in the first part of the 20$^{th}$ century as well as work by ethnographers such as P Breutz and Izaak Schapera. In recent years, the Northwest Province cultural landscape has been the subject of frequent archaeological and historical studies. Middle and Later Stone Age occurrences dating to the last two millennia, particularly Rock Art and stone implements have been

extensively investigated by Maria Van Der Ryst, Bronwyn Van Doornum and Sven Ouzman. TM Evers, Revil Mason, Simon Hall, Jan Boeyens and Tom Huffman, amongst others informed on the history of Iron Age farming communities and the significant Tswana towns during the first and early second millennia AD in their research. Recent archaeological work by researchers such as Boeyens & Hall (2009) and Pistorius (1992, 1997, 2000, 2001) has greatly contributed to our understanding of the history of the various Tswana-speaking groups in the region. A vast number of Archaeological Impact Assessments by qualified archaeological specialists and consultancies have been conducted in the Marico area.

As a result of peculiar geo-processes, in particular the formation of the Bushveld Complex, the Rustenburg landscape is comprised of a latitudinal series of hills and valleys, which fostered early human settlement and later accommodated a series of communities and cultures. As such, a variety of heritage sites are known to occur in the larger region. These range from Stone Age sites, including rock engraving sites, Iron Age sites, mostly located in the flat areas where outcrops occur, as well as a large number of sites dating to Historic times.

### 4.2.1 Early History and the Stone Ages

The formation of the Rustenburg landscape began some 2300 million years ago, when quartzite, shale, dolomite and chert rocks were deposited in a series of layers, known as the Transvaal Sequence. An abundance of water, lush natural vegetation, large numbers of game, mild climate and the presence of quartzite for making tools and weapons were factors that attracted Stone Age communities to the area about half a million years ago. The first communities were hunters and gatherers who were able to make tools and weapons from stone, bone and wood, collectively constituted in the so-called Early Stone Age (ESA). The area is so far not known for major ESA sites but sites dating to the Middle Stone Age (MSA), which marked the transition from a more archaic Homo (*Homo ergaster*) to anatomically modern humans *(Homo sapiens*), have been documented. The Later Stone Age (LSA), which occurred from about 20 000 years ago, is signalled by a series of technological innovations and social transformations within these early hunter-gatherer societies.

### 4.2.2 Rock Art

Rock paintings are mainly known from the mountainous areas of Botswana, Namibia, Zimbabwe and South Africa, while rock engravings are mainly confined to the Kalahari-fringe areas of Namibia, Botswana, Zimbabwe and the central and northern interior of South Africa. Most engravings were made by pecking, a technique that made use of a hammer stone and stone punch, or by direct percussion. Three painting traditions have been identified in the Northwest and Limpopo Province areas; Hunter-Gatherer, Khoenkhoen and Bantu-speaker art.

- **Hunter-Gatherer rock paintings**

The delicate and frequently detailed San fine-line paintings were made using brushes made from twigs, quills, sticks or feathers. Red and yellow pigments applied in this way were made from various shades of ferric oxides or ochres; black pigments were prepared from charcoal and minerals like specularite, and white pigments from silicas and various riverine clays.

- **Khoekhoe rock paintings**

Khoekhoe rock art mainly comprises red and white finger paintings of dots, strokes, geometric forms, handprints and a component of representational motifs. This painting tradition extends from Central Africa to the southern parts of South Africa. Khoekhoe art comprises handprints, finger dots and strokes, variations of the circle motif, and images of fringed and unfringed women's aprons. The accompanying chart illustrates the image classes found in the region. The paintings are large and bold, and were painted in red or white, applied by human fingers, unlike the more familiar San paintings which are fine and

delicate, painted with sticks and bristles in a variety of colours, and depict things we can recognise: animals and people. Like the San paintings, however, Geometric Tradition pigments were carefully applied, albeit by finger, as evidenced by the crisp clear outlines and with no sign of splashing — images clearly made without haste and without a mess. Again, like the San paintings, Khoekhoe paintings are made with colourants like red ochres and white minerals that were finely ground and mixed with binders, judging from the way the paints penetrate and adhere to the rock and are not easily washed off by water seepage. Although the art is sometimes found in the same rock shelters as engravings, San paintings, or Northern Sotho paintings, or various combinations of these techniques and traditions the Khoekhoe paintings are often found in small low-ceilinged shelters high up on the sides of hills or between tumbled rocks on the summits of hills — one has to bend down or even crawl in order to view the art where it is frequently placed on the ceiling. They are also frequently found in huge shelters with sharply sloping floors. All these locations are in stark contrast to San preferences for painting sites. The San generally used comfortable rock shelters at ground level, with horizontal, usually sandy floors — and preferred to paint on vertical rock faces.

- **The rock paintings of Bantu-speakers**

Another tradition of painting known as “Late Whites” is found in the Northwest and the Limpopo Valley. These finger-paintings consist of anthropomorphic, zoomorphic and geometric designs. These paintings were often daubed in several colours, but generally speaking the imagery is predominantly white. Recent research in south-central Africa suggests that the Late White tradition is at least partially explicable. Because the art is fairly recent; and the people who live near the sites are only a few generations removed from the painters, it has been possible to relate the symbolism depicted in the art to modern forms of ritual and the use of symbolism. In the Limpopo Province, at least some of the Late White tradition paintings can be linked to Sotho-speakers. It is likely that the imagery was linked to rites of passage.

- **Rock engravings: Utilitarian hollows, Mafuvha and Cupules**

Utilitarian hollows are small pecked depressions usually about the size of a bottle cap and roughly 20 millimetres deep. These hollows are typically found on horizontal surfaces: pavements in the open, or on stone floors and on loose rocks within shelters. They may have been used as anvils for cracking open the seeds of the Marula or Sour Plum, for example, which both contain edible nuts, or as receptacles for holding ostrich-eggshell ‘blanks’ or ‘roughouts’ whilst the central hole was being drilled. Although the San may have made some of the hollows that were used as work surfaces, others were possibly also made and/or used by Khoekhoen and Bantu-speakers. Another type of hollow is that of the mafuvha board game. Used mainly as a form of recreation, the game also has a ritual function and is linked to rain and fertility throughout Africa. Although mainly associated with Khoekhoen and Bantu-speakers, this game, generally known as mankala, is also played by San people so it is quite possible that at least some of the game boards on stone pavements in the Limpopo River Valley were also made by San hunter-gatherers. A final category of small hollows, called ‘cupules’, comprises groups of apparently randomly distributed depressions situated on sloping or vertical rock faces or on large boulders within rock shelters. In some shelters up to 1000 cupules are found on rounded free-standing boulders, and to a lesser extent, on vertical rock faces. Some of these rows or random arrangements of cupules are situated up to 3,5 metres above ground level, suggesting that the engravers built some sort of scaffold to laboriously peck some of these marks into the relatively hard and durable sandstone rock faces. Their situation on the rock also suggests that they were made for a specific ritual rather than a mundane purpose. Their position and planar orientation on big boulders similarly suggest a ritual and symbolic function. Some of the cupules, in contrast to the utilitarian hollows, have a silica skin over them, the result of a process of salt deposition that must have occurred over a very long period of time. The apparent age of these cupules alone suggests that were probably made by hunter-gatherers.

- **Rock engravings: Grooves**

Grooves are elongated, usually parallel, marks incised or abraded into the rock face. They generally range from the length of a matchstick to the length of an outstretched hand. Some have rounded profiles, while others are V-shaped. Grooves, like cupules discussed in the previous section, are divided into the utilitarian: those found on open, horizontal pavements or on loose rocks within shelters and the symbolic, those occurring on vertical or sloping rock faces in shelters. The utilitarian grooves may have been used for sharpening iron, bone or wooden points. They are situated in places in which it would have been comfortable to sit at ease while executing such a task. These grooves might have been made by anyone, however, not necessarily the San. Symbolic grooves are situated on rock faces up to four metres above ground level. Their great height suggests that they also served some symbolic function. Like the symbolic cupules, some of the grooves are covered in a silica skin, a phenomenon that suggests some antiquity. More often than not, cupules and grooves are associated — their co-occurrence hints at a related, symbolic function.

- **Rock engravings: Engraved animals**

San peoples or their ancestors undoubtedly made the engravings of animals, because similar engravings all over southern Africa have been shown to have San authorship. Like San paintings, these engravings have been shown to have their roots in a shamanistic cosmology. In most areas of the subcontinent engravings were associated with ideas about rainmaking or depict elements of the medicine dance and the supernaturally potent animals).

### 4.2.3 Iron Age / Farmer Period

The expansion of early farmers occurred in this area between AD 400 an AD 1100 and brought the Early Iron Age (EIA) to South Africa. These communities migrated from the Lowveld and coastal areas to the higher regions in the interior (such as the Rustenburg landscape) during the latter part of the EIA. An important early settlement site with evidence of iron smelting and working is located near Broederstroom in the Brits area. Sites were found within 100m of water, either on a riverbank or at the confluence of streams. The close proximity to streams meant that the sites were often located on alluvial fans. The nutrient rich alluvial soils would have been favoured for agriculture. The availability of floodplains and naturally wetter soils would have been important for the practice of dry land farming. Iron Age Farmer occupation intensified from the 15th century onwards due to a gradually warmer and wetter climate. From here communities spread to other parts of the Highveld during the Late Iron Age (LIA) with settlements, which was was accompanied by extensive stonewalled settlements, occurring at Kaditshwene (near Zeerust), Molokwane (east of Rustenburg) and Olifantspoort near Koster. By the 1700s, with growing trade wealth, economically driven centres of control began to emerge and the North-West landscape became an important thoroughfare for both local and foreign traders.

The second phase of the Moloko Tradition is associated with the large number of stone-walled complexes found in Gauteng, North West and Mpumalanga, as well as the Free State. The stone walls were erected to construct stock byres and to demarcate residential units; huts were pole-and-dagha structures except in some cases in the Free State, where corbelled stone huts were built. There is still no clarity about why the Late Iron Age inhabitants started building with stone or exactly when the Late Moloko phase commenced. According to Mike Evers (1988:129), the majority of radiocarbon dates indicate that the stone wall phase began in about the middle of the 17th century AD. The few dates which suggest that some of the stone-walled complexes had been occupied earlier derive from the base of ash heaps and, according to him, may not date the human occupation of the sites.

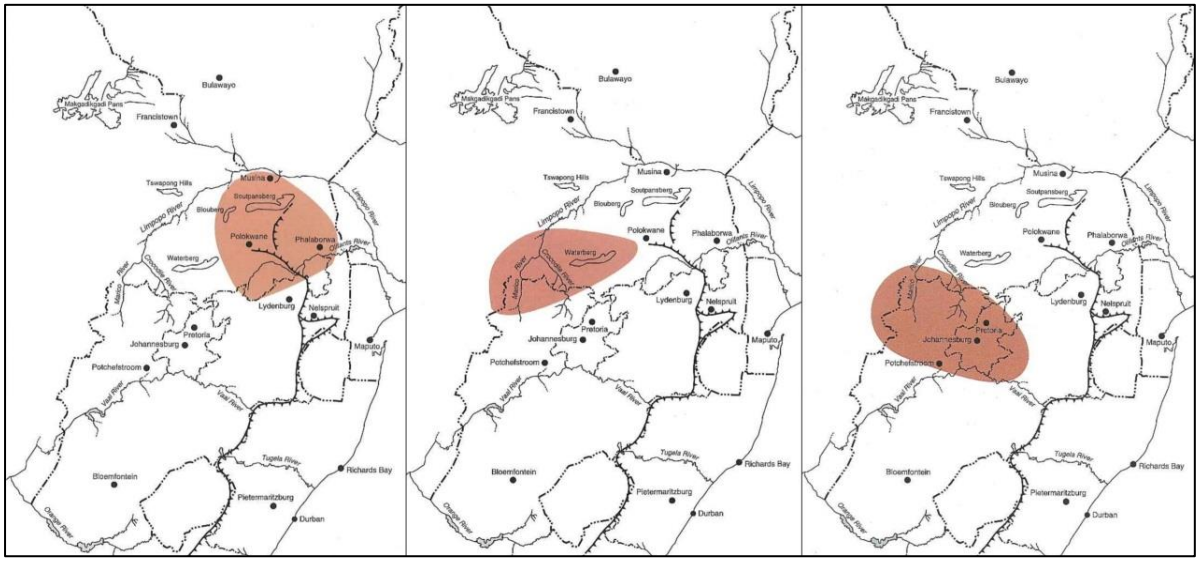


**Figure 4-1: Map detailing the distribution of 16th century Moloko (left), 17th century Madikwe (centre) and 18th century Buispoort tradition sites (After Huffman 2007).**

**Figure 4-2: Ceramic decoration motives typical of 17th century Madikwe (left) and later Buispoort (right) facies (After Huffman 2007).**

The most abundant heritage, however, are those that date from the Late Iron Age and which are associated with the numerous Tswana chiefdoms who occupied this region during the last four centuries. The interaction between the climate, geology, topography, and the fauna and flora of the Central Bankeveld established a milieu in which the first Tswana found a suitable living environment in order to practise herding, agriculture, metal working and trading. It was here that their chiefdoms flourished during AD1600 to 1840. The settlements of these early Tswana chiefdoms are characterised by an impressive and elaborate stone-built tradition. Hundreds and perhaps thousands of sites were built along the bases of the norite hills. The most formidable of these chiefdoms were the Kwena Môgôpa, Kwena Môgale (Bapô), Bakgatla and Fokeng. Further to the west, closer to Rustenburg was the Fôkeng chiefdom while several Kgatla spheres of influence emerged further to the west near Brits. The Kgatla were subjugated by Mzilikazi and were used as labourers to built one of the Ndebele's villages, probably known as emHlalandlela. The

Bapô, a people whose earliest ancestors were descended from the Amambô Nguni from Kwa Zulu/Natal, arrived in the Magaliesberg during the 16th or 17th centuries. One of their capitals was Tlhôgôkgôlô (Wolhuterskop). Several of the chiefs of this clan where known by the name of Môgale. The name of the Magalies Mountains (Magaliesberg) was derived from the name Môgale.

Numerous difaqane wars were fought during the last quarter of the 18th century and during the first quarter of the 19th century in the Central Bankeveld. These wars led to the displacement of large numbers of Tswana in the Bankeveld. The difaqane wars were caused by the Ndebele (Matabele) of Mzilikazi who arrived from the Vaal River region to occupy the Bankeveld in August 1827. The Ndebele destroyed the Kwena Môgôpa, the Kgatla and what had remained of the Bapô after an earlier defeat by the Pedi of Thulare. These wars exacerbated the havoc started earlier in the Bankeveld and gradually became a characteristic feature of historical events in this region during the early 19th century. Succession disputes also led to the splintering of the existing chiefdoms into a growing number of independent spheres of influence in the Bankeveld. During the early 19th century travellers, traders and missionaries visited the Central Bankeveld where they encountered the devastated Tswana chiefdoms. They also mentioned that numerous Tswana tribes were displaced. These travellers included the traders Robert Schoon and William McLuckie in August 1829. They were soon followed by the missionary Robert Moffat who visited Mzilikazi in an umuzi near what is today Pretoria. In June 1835 Charles Bell and other members of Andrew Smith's expedition visited a Ndebele village near Rustenburg which Bell subsequently painted. One year later, in December 1836, Cornwallis Harris also visited the Central Bankeveld where he painted emHlalandlela near Brits. The Bankeveld was rich in fauna which attracted the Griqua and the first white hunters to the region. Ivory was plentiful, with herds of elephants roaming the area. Ivory and the skins of the wide variety of fauna were sought after as precious trade commodities. Although the Tswana hunted the fauna of the Bankeveld, they were more renowned as agriculturists and cattle herders than as hunters. Complex causes led to the unfolding of the numerous Tswana chiefdoms and their spheres of influence throughout the Bankeveld during the last decades of the 18th century and during the first decades of the 19th century. These causes were multidimensional and included the ecological potential of the region, the social and political formation and expansion of different spheres of influence, the establishment of short and long distance trade relations and local and regional wars. These causes and historical events were complex and are not fully recorded in oral traditions or in any other records.

During the second half of the 18th century, some of these stone-walled complexes, especially those occupied by Tswana communities in what is now known as the North West Province, expanded into enormously large settlements covering several kilometres. Good examples of these "megasites", as they have been described by Revil Mason, are Molokwane, the capital of the Bakwena-ba-Modimosana-ba-Mmatau near present-day Rustenburg, Morothodi near Pilanesberg and Kaditshwene, the capital of the Hurutshe near the modern town of Zeerust. Factors which contributed to this process of aggregation include population growth, reduced access to unoccupied land, political centralisation, and the incorporation of foreign groups through the ward system. It has also been suggested that these large settlements among the Tswana were the outcome of military pressure as a result of raids by the Kora (Korana) and the Griqua from the south, as well as escalating conflicts among neighbouring Tswana chiefdoms, which preceded the upheavals of the so-called difaqane or mfecane. Both Molokwane and Kaditshwene were evacuated in the early 1820s during the difaqane, a period of conflict during which many African communities were attacked and dislodged, first, by refugee Sotho groups, who had been driven from the Free State and, finally, by the Ndebele (Matabele) of Mzilikazi, who had migrated from KwaZulu-Natal.

### 4.2.4 Archaeo-Metallurgy and Prehistoric Mining

Africa is fortunate as its general geology is such that iron deposits exist almost everywhere in some level of mine-able ore - from solid nuggets of hematite to iron ore dust or clays rich in iron. In South Africa, the Later Iron Age is characterised by a greater degree of economic specialisation where villages were no longer self-sufficient units; instead, there was greater regional interdependency and more emphasis on trade. Iron smelting activities no longer occurred on most sites; instead, there were a number of main centres which specialised in the mining and production of iron. Phalaborwa in the Limpopo Province was one of the most important iron and copper production centres. Iron was used mainly to manufacture hoes, knife-blades, axes, spears, adzes, awls and metalworking tools. In addition, it also acted as currency and bridal wealth (lobola) as well as fulfilling ceremonial and political functions. Copper production was even more restricted and there is little evidence of copper-working south of the Vaal and the Nkomati Rivers. Copper and bronze were used to manufacture ornaments such as beads, earrings and arm bangles. Tin was mined at Rooiberg near Warmbaths/Bela-Bela in the Limpopo Province, while gold objects, particularly beads, were recovered from a few sites such as Mapungubwe and Machemma in the Limpopo Province and Thulamela in the Kruger National Park. Metal products were important trade items during the Late Iron Age. Furnaces were usually constructed in an oval shape with at least two vents that held the tuyères or blowpipes that were attached to bellows. Grass, charcoal and wood was used to reach temperatures of up to 1500ºC inside the furnace, sufficient to reduce iron ore to iron.

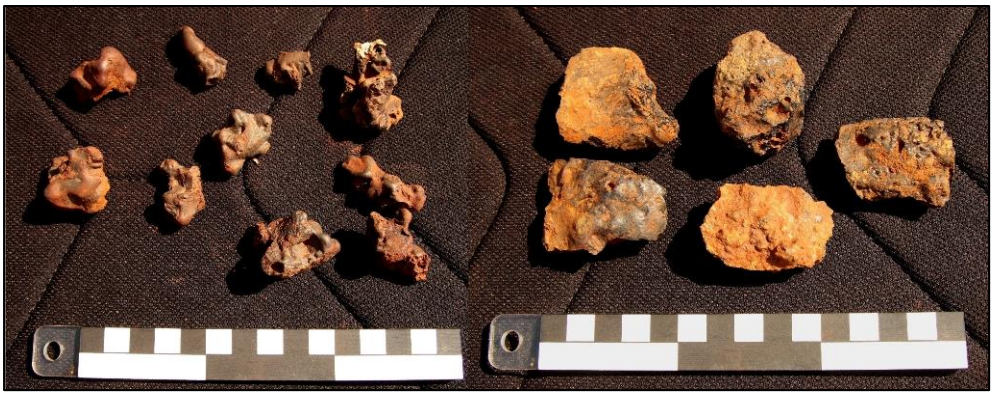

**Figure 4-3: Copper Smelting residues from a smelting site in the Pilanesberg area.**

**Figure 4-4: Copper Smelting tuyere fragments from a smelting site in the Pilanesberg area.**

The role of metallurgy in the cultural life ways of metal workers in Africa is sophisticated and includes much more than just the practical value associated with metals. In unstratified societies metal smiths were free

independent agents and part-time specialists that conserved their knowledge. In some instances smaller clans or settlements had their own metal smiths. Metal smiths were respected and did not easily share knowledge of the practise but they sometimes would employ helpers such as bellow operators. In stratified societies metal smiths were not independent and they had to pay dues to a chief or king. With the appearance of large states in Africa, metal smiths were permanently hired by royalty in order to perform iron smelting practices.

### 4.2.5 Ethno-history and the Fokeng

Whereas it is impossible to correlate any living group of people to Early Iron Age communities, it is possible, by using ethnographic evidence, to identify some of the groups of people that entered the region in pre-colonial times (i.e. the Later Iron Age) and are currently settled in the larger region. The Tswana-speakers were located over most of the area, with some Ndebele (Nguni-speakers) to the east.

The Thaba-ea-Nape (also known as the Thaba-ea-Maralla) range of mountains was home to numerous ancestral rulers of the Fokeng people. According to oral tradition different branches (clans) of the Fokeng settled from the north to the south along this range of mountains from as early as the 17th century. The places of settlement were: Serutube, Marekana, Tsitsing (Kanana), Thekoane (Thekwana) and Photsaneng (Bleskop). The oldest legends state that the Fokeng entered the Transvaal through Tweedepoort, under the leadership of Nape, the earliest known Fokeng chief. This was before AD1700 AD. The group moved south-eastwards and settled on the banks of the Elands River (Kgetleng). Three Fokeng groups detached themselves from the main branch and moved southwards on different occasions. The Fokeng are therefore spread over the Orange Free State, Lesotho and even the former homeland of Transkei. The Fokeng are, next to the San people, the oldest inhabitants of the Orange Free State. The domain under Fokeng control during the last two centuries was the following: the northern border was the Kgetleng River (and the Tlôkwa and Kgatla Kgafêla chiefdoms); the western boundary was the Kwena Modimosana chiefdoms and the southern boundary the Magaliesberg. The eastern boundary was determined by the presence of the Kwena Môgôpa and the Kwena Mogale chiefdoms.

The history of the Fokeng begins with Sekete III (Maleriba) who probably ruled in AD1700. He had three sons Kgantsi, Pitswe and Diale. (The last two had the same mother). Kgantsi was born from a Hurutshe father after the Hurutshe had abducted his mother. (Controversy surrounded Sekete's III position until his death, although he was the oldest son). Diale succeeded Sekete III and his reign probably began in AD1720. His sons were Mokuru, Mogotsi, Ramarwa, Ramogase, Tlase and Ntê. (The first two died young). Diale's sons freed the Fokeng from the Hurutshe's custom to castrate the Fokeng's bulls, an act that was considered offensive by the Fokeng as it indicated the Huruthse's seniority above the Fokeng. This particular incident put an end to the Huruthse's domination of the Fokeng. With the exception of Ramorwa all the known sons of Diale became leaders of dikgoro, Ntê, the progenitor of the kgoro Seloko, Tlase, of Mathebetswaane and Ramogware of Metlapeng. Ramorwa succeeded Diale as chief and had four sons: Mmutle, Sekete, Katane and Mpie. Sekete succeeded Ramorwa in about AD1790. He was a formidable warrior and is remembered as one of the greatest Fokeng chiefs. The following individuals were sons of Sekete: Thete, Nameng, Nôge, Mogotsi, Molefe, Pitswe, Ramarue, Mohue, Manaana, Rantsogwana and Marahtsane (more can be added). Important individuals were Thete, Nameng and Nôge. Katane, or Raikane acted as regent for Thethe (also known as Mmakgongwana) who became the next chief. He had the following sons: Diale, Mokgatle, Molotlegi, Molefe, Liphatse and Pogwe. (The first, third and fifth died young). Môkgatle, Molefe and Pogwe played important parts in the next phase of Fokeng history. Thethe was very fond of his two younger brothers, Namemg and Nôge. The two brothers, however, turned against him. (The main concentration point in Thethe's time was at Makotshaneng [Makojaneng], east of

Rustenburg near the Hex River). Thethe fled with his followers and took refuge with the Modimosana Mmatau. The Fokeng accepted Nameng as chief. Nameng reigned for only eight months after the enforced departure of Thethe as he was killed by the doings of Nôge, who now became chief.

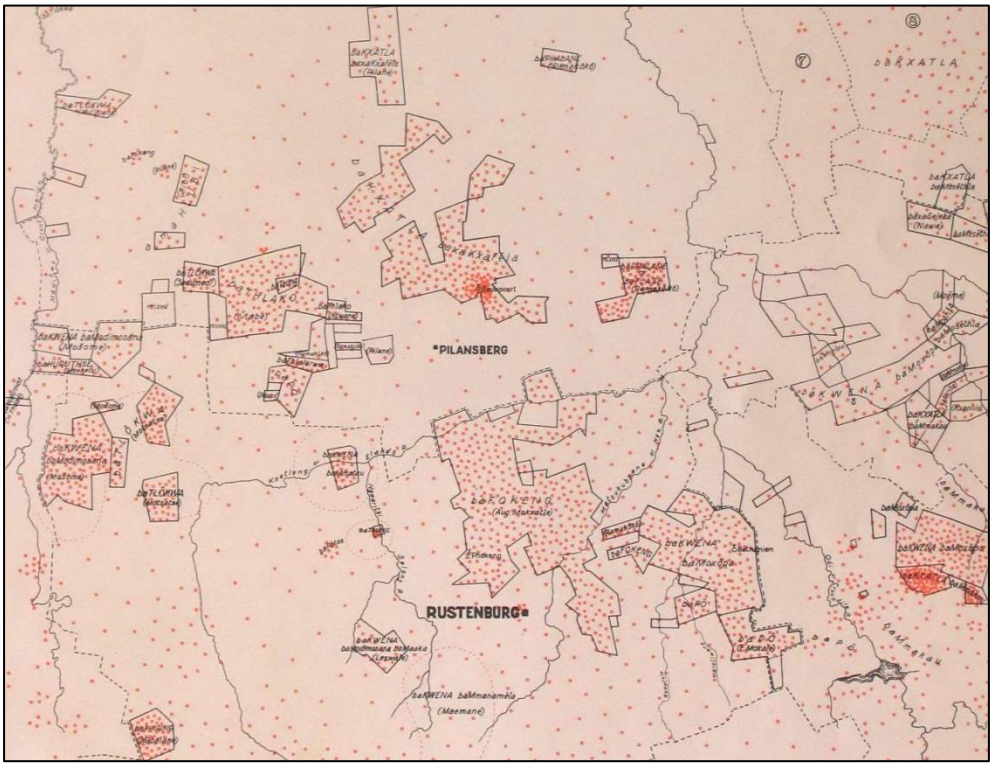


**Figure 4-5: Map showing the historic distribution of the different Tswana-speaking groups. (Map: Van Warmelo 1925)**

Nameng reigned for only eight months after the enforced departure of Thethe as he was killed by the doings of Nôge, who now became chief. Nôge's rule commenced in about 1820 and ended when he was ousted in 1829 to 1830. Nôge's reign represents a stormy period in Fokeng history. Thethe invited the Pedi to attack the Fokeng whereupon Malekutu destroyed the Fokeng in 1823 to 1824. The devastation caused by the Pedi accounts for the fact that Mzilikazi amassed very little from the Fokeng's territory in 1826 to 1829. Nôge became unpopular and fled to Moshoeshoe in the Orange Free State. Môkgatle's accession was somewhere between 1834 and 1836. His reign had hardly begun when the Voortrekkers drove the Ndebele out of the Transvaal. He remained in office until his death in 1891 when he was about eighty years old. His principal village was named Mmakgongwana (after Thethe), today located in Rustenburg and partly on Paardekraal. Dirêpotsana Hill, where Phokeng now stands, was also re-occupied as residential area in Mokgatle's time.

### 4.2.6 Later History: Colonial Period

The historic timeframe sometimes intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available. The first Europeans to trek through the interior of South Africa north of the Vaal River were the expedition party of Dr Andrew Cowan who travelled from the Cape to the border of Botswana and from there eastwards to Delagoa Bay. The party however disappeared and was never heard of after a final report written by Cowan in 1808. The Voortrekkers crossed the Vaal River in 1836, and within a few years, began to spread north. The earliest European explorers of the Transvaal left behind a wealth of data on Iron Age peoples e.g. John Campbell. Early travellers have moved through this part of the Northwest Province, some of which were

Coenraad de Buys in 1821 and 1825, David Hume in 1825, Robert Scoon and William McLuckie in 1827 and 1829 and Robert Moffat and Reverend James Archbell in 1829. The well-known explorer, Dr David Livingston passed through this area in 1847. In 1837, a Voortrekker commando moved out against Mzilikazi and was engaged in a battle with his impi to the north of Swartruggens. Permanent occupation by white settler-farmers in the mid-1840s and Voortrekker farmers established the farms that today form the area around Rustenburg (Bergh 1999). Some of the earliest Voortrekkers who moved across the Magaliesberg established themselves on the farms Kafferskraal and Witpensfontein and Schaapkraal, to the east of Rustenburg. Tobacco and citrus farming, together with cattle herding, became a subsistence pattern that has lasted to this day. Old farm homesteads, agricultural implements and other infrastructure such as tobacco drying sheds may still exist on farms adjacent to the study area.

The settlement of the Voortrekkers in the Pilanesberg area during the 1830s appears to have been largely peaceful and uncontested as the Tswana groups in the area had already been greatly weakened by the Matabele conflicts. The Boers named the area after the Kgatla chief Pilane. The superior weaponry of the Boers and the weakened state of the Tswana tribes made the Pilanesberg particularly easy to occupy. As the Voortrekkers had previously fought both the Zulu and Matabele on their journey from the Cape, they found a natural alliance with the Tswana, who shared their common enemy. After the defeat of the Ndebele the Boer settlers claimed the Western Transvaal area by right of conquest, despite the large number of Tswana, Griqua and Korana who had aided them in the struggle. Settlement of the area between Pilanesberg and Rustenburg had already occurred as early 1840 under the leadership of Andries Pretorius, seen by the purchase of the farm Doornkop (Rustenburg) by Potgieter and Paul Kruger's acquisition of Saulspoort in Pilanesburg. The farm Saulspoort became an arena for the often brutal treatment of local tribes by the Boer settlers. During this time enforced labour of the Kgatla on Boer farms, such as Saulspoort, became common practise, and an incident is recorded during which Kruger bound and flogged the Kgatla chief Kgamanyane in front of a public gathering.

### 4.2.7 Later History: The Anglo Boer War

Possibly the most prominent colonial remnants in the Northwest Province landscape can be attributed to the South African War or the Anglo-Boer War (1899-1902), interestingly enough the first shots of both the 1st and 2nd Anglo-Boer Wars were fired in the Northwest Province. Thus, the various battles and skirmishes resulting from this influential conflict left a legacy of heritage sites scattered across the Transvaal where fortifications, war cemeteries and battlefields still remain. Throughout the 19th century, after Great Britain had acquired the Cape of Good Hope in 1814 and expanded its possessions in southern Africa, ill feeling mounted between the Afrikaners, or Boers, and British settlers. This resulted in the Great Trek (1835-1843) and the consequent establishment of the Afrikaner republics: Natal, Orange Free State, and the South African Republic. Natal became a British colony in 1843, but the Transvaal territories were granted independence from Great Britain in 1852, and Orange Free State in 1854. In the late 1850s, the Transvaal territories formed the South African Republic. The stage for war was set in 1884, when gold was discovered in the Witwatersrand, a region then encompassing parts of the southern Transvaal. The discovery lured thousands of British miners and prospectors to settle in the area, the influx being so great that the city of Johannesburg was created almost overnight.

The Afrikaners, primarily farmers, resented the newcomers, whom they called Uitlanders ("foreigners"), and in token of their feeling, taxed them heavily and denied them voting rights. The resentment on both sides grew, ultimately leading to a revolt by the Uitlanders in Johannesburg against the Afrikaner government. This revolt was instigated by the British colonial statesman and financier Cecil Rhodes, then premier of the Cape Colony, who desired to bring all of southern Africa into the British Empire. In December 1895, Leander Starr Jameson, a friend of Rhodes, led a band of 600 British armed men in an

unauthorized attempt to support the rebellious Uitlanders in the South African Republic. Called the Jameson Raid, the venture resulted in Jameson's capture and imprisonment and in Rhodes's resignation. Jameson later served as premier of the Cape Colony from 1904 to 1908. Direct negotiations to solve the South African problem proved unfruitful, and hostility between the Afrikaners and the Uitlanders continued unabated. The president of the South African Republic, Paul Kruger, was unyielding in his opposition to the Uitlanders. In 1899 the recently appointed British governor of Cape Colony, Alfred Milner, who strongly resented the Afrikaners' treatment of British subjects, issued orders to build up the 12,000-man British army contingent then in southern Africa into a force of at least 50,000 troops. On October 9, 1899, Kruger demanded the withdrawal of all British troops from the Transvaal frontiers within 48 hours, with the alternative of formal war. British non-compliance with Kruger's demands brought immediate action, and an alliance of the South African Republic and the Orange Free State declared war on October 12, 1899. Boer forces under the command of General De la Rey attacked the British garrison and railway siding at Kraaipan, south west of Mafikeng, thereby signalling the start of the Anglo-Boer War.

The North West province saw a number of important battles as both sides sought control of the main railway link to the north. The Afrikaner forces were initially successful, invading Natal and Cape Colony. Within days they succeeded in surrounding British forces at Ladysmith, Natal, and at Mafeking (now Mafikeng) and Kimberley, Cape Colony. In December the British commander in chief Sir Redvers H. Buller sent fresh troops to relieve besieged British forces in three areas of the war zone: Colenso, Natal; the hills of Magersfontein on the Orange Free State and Cape Colony borders; and the mountain range of Stormberge in the Cape Colony. Within a week's time, referred to as Black Week by the British, each of the new units had been defeated by Afrikaner forces.

On January 10, 1900, the British general Frederick S. Roberts was sent to replace Buller as commander in chief. (Buller, however, remained to fight throughout the war). Early in February, Roberts ordered the British commander John D. P. French north to relieve the city of Kimberley; French's objective was attained four days later. Simultaneously, Roberts undertook a north-eastward march from Cape Colony into the Orange Free State. Attacked by the Afrikaner general Piet Cronje on February 27, Roberts fought back successfully and forced the surrender of Cronje and his troops, altogether about 4000 men. On March 13, Roberts entered Bloemfontein, capital of the Orange Free State. Two months later, on May 17, besieged Mafeking, defended by troops under the command of the British soldier Robert Baden-Powell, was relieved. The Siege of Mafikeng commenced on 14 October 1899 and lasted for 217 days until 17 May 1900. The town became somewhat of an icon at the time. Roberts captured Johannesburg on May 31 and Pretoria, the capital of the South African Republic, on June 5. Upon these defeats, President Kruger fled to Europe, and Roberts, believing the war to be won, returned to England in January 1901. The War saw Rustenburg and surroundings turned into a war zone. Numerous battles took place in the region, the most well-known being the siege of the British by the Boers near Mafikeng. Undoubtedly the area was affected by the British 'Scorched Earth' policy, and after the war many families were left with virtually nothing. The Battle of Koster River, fought on 21/22 July 1900, is another major confrontational site in the region. Here the Australian Bushman Contingent, on their way to Rustenburg, was caught in an ambush by the Transvaal soldiers. 39 casualties were recorded and over 200 of their horses killed. The town of Koster was proclaimed in 1913. Near Swartruggens (founded in 1875) the Battlefield of Elandsriver can still be seen. This site marks some of the last conventional fighting in the Second Boer War before the *Boers* had to resort to guerrilla warfare, and their victory here allowed them access to British supplies.

### 4.2.8 Burial Sites / Human Remains

Human remains and burials are commonly found close to archaeological sites; they may be found in "lost" graveyards, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is

often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500).

## 5 RESULTS: ARCHAEOLOGICAL SURVEY

The proposed Rustenburg Extension 30 Township Development Project area is situated in an area that have been altered extensively as a result of refuse dumping, quarrying and surface soil removal and the site has largely been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times. As such, no heritage occurrences of interest were identified in the proposed Development Project study area.

### 5.1 The Stone Age

No Stone Age occurrences were observed in the survey area of the proposed Rustenburg Extension 30 Township Development.

### 5.2 The Iron Age Farmer Period

No Iron Age (Farmer Period) occurrences were observed in the survey area of the proposed Rustenburg Extension 30 Township Development.

### 5.3 Historical / Colonial Period

No Historical / Colonial Period occurrences were observed in the survey area of the proposed Rustenburg Extension 30 Township Development.

### 5.4 Graves / Human Burials

No human burials or graves were observed in the survey area of the proposed Rustenburg Extension 30 Township Development. However, graves and cemeteries generally occur within settlements, often around homesteads in this area and it is highly probable that these heritage resources are present in the general landscape. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist.

### 5.5 Other Features / Occurrences

No other features or occurrences of heritage potential were observed in the project area.

## 6 RESULTS: STATEMENT OF SIGNIFICANCE AND IMPACT RATING

### 6.1 Potential Impacts and Significance Ratings[2]

The following section provides a background to the identification and assessment of possible impacts and alternatives, as well as a range of risk situations and scenarios commonly associated with heritage

[2] Based on: W inter, S. & Baumann, N. 2005. *Guideline for involving heritage specialists in EIA processes: Edition 1.*

resources management. A guideline for the rating of impacts and recommendation of management actions for areas of heritage potential within the study area is supplied in Section 10.2 of the Addendum.

### 6.1.1 General assessment of impacts on resources

Generally, the value and significance of archaeological and other heritage sites might be impacted on by any activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, any archaeological material or object (as indicated in the National Heritage Resources Act (No 25 of 1999)). Thus, the destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. However, in the long run, the proximity of operations in any given area could result in secondary indirect impacts. The EIA process therefore specifies impact assessment criteria which can be utilised from the perspective of a heritage specialist study which elucidates the overall extent of impacts.

### 6.1.2 Direct impact rating

**Direct or primary effects** on heritage resources occur at the same time and in the same space as the activity, e.g. loss of historical fabric through demolition work. **Indirect effects or secondary effects** on heritage resources occur later in time or at a different place from the causal activity, or as a result of a complex pathway, e.g. restriction of access to a heritage resource resulting in the gradual erosion of its significance, which is dependent on ritual patterns of access (refer to Section 10.3 in the Addendum for an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected).

**Since no significant heritage receptors were found in the Rustenburg Extension 30 Township Development Project area no potential impacts to heritage resources is foreseen.**

### 6.1.3 Discussion: Evaluation of Results and Impacts

Previous studies conducted in the Northwest Province suggest a rich and diverse archaeological landscape. The proposed Rustenburg Extension 30 Township Development Project areas are situated in landscapes that have, in places been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times. Cognisance should nonetheless be taken of archaeological material that might be present in surface and sub-surface deposits.

***No heritage resources have been documented in the proposed Rustenburg Extension 30 Township Development footprint area. It is the opinion of the author of this Archaeological Impact Assessment Report that the proposed Rustenburg Extension 30 Township Development Project on the Remaining Extent of Portion 1 of the Farm Town and Townlands of Rustenburg 272-JQ will have no impact on archaeological heritage resources. The project should be allowed to proceed from a culture resources management perspective, provided that mitigation measures provided in this assessment (monitoring), endorsed by the relevant Heritage Resources authority, are implemented where applicable, and provided that no subsurface heritage remains are encountered during construction.***

## 6.2 Management actions

Recommendations for relevant heritage resources management actions are vital to the conservation of heritage resources. A general guideline for recommended management actions is included in Section 10.4 of the Addendum. The following management measures would be required during implementation of the proposed Rustenburg Extension 30 Township Development Project.

**OBJECTIVE:** prevent unnecessary disturbance and/or destruction of previously undetected heritage receptors.

***The following protocol is recommended in terms of general heritage management Rustenburg Extension 30 Township Development Project:***

| | | | |
|---|---|---|---|
| **PROJECT COMPONENT/S** | All phases of construction. | | |
| **POTENTIAL IMPACT** | Damage/disturbance of previously undetected heritage remains. | | |
| **ACTIVITY RISK/SOURCE** | Digging foundations and trenches into sensitive deposits that are not visible at the surface. | | |
| **MITIGATION: TARGET/OBJECTIVE** | To adequately document the historic fabric of previously undetected heritage remains as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work. | | |
| **MITIGATION: ACTION/CONTROL** | | **RESPONSIBILITY** | **TIMEFRAME** |
| Fixed Mitigation Procedure | | | |
| **Site Monitoring:** Regular examination of trenches and excavations. | | ECO, DEVELOPER | Monitor as frequently as practically possible. |
| **PERFORMANCE INDICATOR** | Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance. | | |
| **MONITORING** | Successful location of sites by person/s monitoring. | | |

## 7 RECOMMENDATIONS

Previous studies conducted in the larger Northwest Province suggest a rich and diverse archaeological landscape. However, the proposed Rustenburg Extension 30 Township Development Project area is situated in an area that have been altered extensively as a result of refuse dumping, quarrying and surface soil removal and the site has largely been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times. No heritage occurrences of interest were identified in the Development Project area. The following recommendations are made based on general observations in the Project Area:

- A careful watching brief monitoring process is recommended whereby an informed ECO inspect the construction sites on regular basis in order to monitor possible impact on heritage resources. Should any subsurface paleontological, archaeological or historical material or heritage resources be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. Should any subsurface paleontological / archaeological / historical material and /or graves/human remains be uncovered, all activities should be suspended and the archaeological specialist should be alerted immediately.
- It should be noted that mitigation measures are valid for the duration of the development process, and mitigation measures might have to be implemented on additional features of heritage importance not detected during this Phase 1 assessment (e.g. uncovered during the construction process).

In addition to these site-specific recommendations, careful cognizance should be taken of the following:

- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits.

## 8 GENERAL COMMENTS AND CONDITIONS

This AIA report serves to confirm the extent and significance of the heritage landscape of the proposed Rustenburg Extension 30 Township Development Project area. The larger heritage horizon encompasses rich and diverse archaeological landscapes and cognisance should be taken of heritage resources and archaeological material that might be present in surface and sub-surface deposits. If, during construction, any possible archaeological material culture discoveries are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find. Such material culture might include:

- Formal Earlier Stone Age stone tools.
- Formal Middle Stone Age stone tools.
- Formal Later Stone Age stone tools.
- Potsherds and Iron objects.
- Beads made from ostrich eggshell and glass.
- Ash middens and cattle dung deposits and accumulations.
- Faunal remains.

- Human remains/graves.
- Stone walling or any sub-surface structures.
- Historical glass, tin or ceramics.
- Fossils.

If such site were to be encountered or impacted by any proposed developments, recommendations contained in this report, as well as endorsement of mitigation measures as set out by AMAFA, SAHRA, the National Resources Act and the CRM section of ASAPA will be required. It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, represent the area's complete archaeological legacy. Many sites/features may be covered by soil and vegetation and might only be located during sub-surface investigations. If subsurface archaeological deposits, artefacts or skeletal material were to be recovered in the area during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)). It must also be clear that Archaeological Specialist Reports will be assessed by the relevant heritage resources authority (SAHRA).

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# 10 ADDENDUM 1: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE

## 10.1 Site Significance Matrix

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these. The following matrix is used for assessing the significance of each identified site/feature.

| 2. SITE EVALUATION | | | |
|---|---|---|---|
| 2.1 Heritage Value (NHRA, section 2 [3]) | High | Medium | Low |
| It has importance to the community or pattern of South Africa's history or pre-colonial history. | | | |
| It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage. | | | |
| It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage. | | | |
| It is of importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects. | | | |
| It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group. | | | |
| It has importance in demonstrating a high degree of creative or technical achievement at a particular period. | | | |
| It has marked or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place). | | | |
| It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa. | | | |
| It has significance through contributing towards the promotion of a local sociocultural identity and can be developed as a tourist destination. | | | |
| It has significance relating to the history of slavery in South Africa. | | | |
| It has importance to the wider understanding of temporal changes within cultural landscapes, settlement patterns and human occupation. | | | |
| 2.2 Field Register Rating | | | |
| National/Grade 1 [should be registered, retained] | | | |
| Provincial/Grade 2 [should be registered, retained] | | | |
| Local/Grade 3A [should be registered, mitigation not advised] | | | |
| Local/Grade 3B [High significance; mitigation, partly retained] | | | |
| Generally Protected A [High/Medium significance, mitigation] | | | |
| Generally protected B [Medium significance, to be recorded] | | | |
| Generally Protected C [Low significance, no further action] | | | |
| 2.3 Sphere of Significance | High | Medium | Low |
| International | | | |
| National | | | |
| Provincial | | | |
| Local | | | |
| Specific community | | | |

## 10.2 Impact Assessment Criteria

The following table provides a guideline for the rating of impacts and recommendation of management actions for sites of heritage potential.

**Significance of the heritage resource**

This is a statement of the nature and degree of significance of the heritage resource being affected by the activity. From a heritage management perspective it is useful to distinguish between whether the significance is embedded in the physical fabric or in associations with events or persons or in the experience of a place; i.e. its visual and non-visual qualities. This statement is a primary informant to the nature and degree of significance of an impact and thus needs to be thoroughly considered. Consideration needs to be given to the significance of a heritage resource at different scales (i.e. sitespecific, local, regional, national or international) and the relationship between the heritage resource, its setting and its associations.

**Nature of the impact**

This is an assessment of the nature of the impact of the activity on a heritage resource, with some indication of its positive and/or negative effect/s. It is strongly informed by the statement of resource significance. In other words, the nature of the impact may be historical, aesthetic, social, scientific, linguistic or architectural, intrinsic, associational or contextual (visual or non-visual). In many cases, the nature of the impact will include more than one value.

**Extent**

Here it should be indicated whether the impact will be experienced:

- On a site scale, i.e. extend only as far as the activity;
- Within the immediate context of a heritage resource;
- On a local scale, e.g. town or suburb
- On a metropolitan or regional scale; or
- On a national/international scale.

**Duration**

Here it should be indicated whether the lifespan of the impact will be:

- Short term, (needs to be defined in context)
- Medium term, (needs to be defined in context)
- Long term where the impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or by human intervention; or
- Permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

Of relevance to the duration of an impact are the following considerations:

- Reversibility of the impact; and
- Renewability of the heritage resource.

**Intensity**

Here it should be established whether the impact should be indicated as:

- Low, where the impact affects the resource in such a way that its heritage value is not affected;
- Medium, where the affected resource is altered but its heritage value continues to exist albeit in a modified way; and
- High, where heritage value is altered to the extent that it will temporarily or permanently be damaged or destroyed.

**Probability**

This should describe the likelihood of the impact actually occurring indicated as:

- Improbable, where the possibility of the impact to materialize is very low either because of design or historic experience;
- Probable, where there is a distinct possibility that the impact will occur;
- Highly probable, where it is most likely that the impact will occur; or
- Definite, where the impact will definitely occur regardless of any mitigation measures

**Confidence**

This should relate to the level of confidence that the specialist has in establishing the nature and degree of impacts. It relates to the level and reliability of information, the nature and degree of consultation with I&AP's and the dynamic of the broader socio-political context.

- High, where the information is comprehensive and accurate, where there has been a high degree of consultation and the socio-political context is relatively stable.

- Medium, where the information is sufficient but is based mainly on secondary sources, where there has been a limited targeted consultation and socio-political context is fluid.
- Low, where the information is poor, a high degree of contestation is evident and there is a state of socio-political flux.

**Impact Significance**

The significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature and degree of heritage significance and the nature, duration, intensity, extent, probability and confidence of impacts and can be described as:

- Low; where it would have a negligible effect on heritage and on the decision
- Medium, where it would have a moderate effect on heritage and should influence the decision.
- High, where it would have, or there would be a high risk of, a big effect on heritage. Impacts of high significance should have a major influence on the decision;
- Very high, where it would have, or there would be high risk of, an irreversible and possibly irreplaceable negative impact on heritage. Impacts of very high significance should be a central factor in decision-making.

## 10.3 Direct Impact Assessment Criteria

The following table provides an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected

| | TYPE OF DEVELOPMENT | | | |
|---|---|---|---|---|
| **HERITAGE CONTEXT** | **CATEGORY A** | **CATEGORY B** | **CATEGORY C** | **CATEGORY D** |
| **CONTEXT 1** High heritage Value | Moderate heritage impact expected | High heritage impact expected | Very high heritage impact expected | Very high heritage impact expected |
| **CONTEXT 2** Medium to high heritage value | Minimal heritage impact expected | Moderate heritage impact expected | High heritage impact expected | Very high heritage impact expected |
| **CONTEXT 3** Medium to low heritage value | Little or no heritage impact expected | Minimal heritage impact expected | Moderate heritage impact expected | High heritage impact expected |
| **CONTEXT 4** Low to no heritage value | Little or no heritage impact expected | Little or no heritage impact expected | Minimal heritage value expected | Moderate heritage impact expected |

**NOTE: A DEFAULT "LITTLE OR NO HERITAGE IMPACT EXPECTED" VALUE APPLIES WHERE A HERITAGE RESOURCE OCCURS OUTSIDE THE IMPACT ZONE OF THE DEVELOPMENT.**

| HERITAGE CONTEXTS | CATEGORIES OF DEVELOPMENT |
|---|---|
| **Context 1:** Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources<br><br>**Context 2:** Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.<br><br>**Context 3:** Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources<br><br>**Context 4:** Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage. | **Category A: Minimal intensity development**<br>- No rezoning involved; within existing use rights.<br>- No subdivision involved.<br>- Upgrading of existing infrastructure within existing envelopes<br>- Minor internal changes to existing structures<br>- New building footprints limited to less than 1000m2.<br><br>**Category B: Low-key intensity development**<br>- Spot rezoning with no change to overall zoning of a site.<br>- Linear development less than 100m<br>- Building footprints between 1000m2-2000m2<br>- Minor changes to external envelop of existing structures (less than 25%)<br>- Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%).<br><br>**Category C: Moderate intensity development**<br>- Rezoning of a site between 5000m2-10 000m2. |

| | |
|---|---|
| | - Linear development between 100m and 300m.<br>- Building footprints between 2000m2 and 5000m2<br>- Substantial changes to external envelop of existing structures (more than 50%)<br>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%)<br><br>**Category D: High intensity development**<br>- Rezoning of a site in excess of 10 000m2<br>- Linear development in excess of 300m.<br>- Any development changing the character of a site exceeding 5000m2 or involving the subdivision of a site into three or more erven.<br>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%) |

## 10.4 Management and Mitigation Actions

The following table provides a guideline of relevant heritage resources management actions is vital to the conservation of heritage resources.

**No further action / Monitoring**

Where no heritage resources have been documented, heritage resources occur well outside the impact zone of any development or the primary context of the surroundings at a development footprint has been largely destroyed or altered, no further immediate action is required. Site monitoring during development, by an ECO or the heritage specialist are often added to this recommendation in order to ensure that no undetected heritage\ remains are destroyed.

**Avoidance**

This is appropriate where any type of development occurs within a formally protected or significant or sensitive heritage context and is likely to have a high negative impact. Mitigation is not acceptable or not possible. This measure often includes the change / alteration of development planning and therefore impact zones in order not to impact on resources.

**Mitigation**

This is appropriate where development occurs in a context of heritage significance and where the impact is such that it can be mitigated to a degree of medium to low significance, e.g. the high to medium impact of a development on an archaeological site could be mitigated through sampling/excavation of the remains. Not all negative impacts can be mitigated.

**Compensation**

Compensation is generally not an appropriate heritage management action. The main function of management actions should be to conserve the resource for the benefit of future generations. Once lost it cannot be renewed. The circumstances around the potential public or heritage benefits would need to be exceptional to warrant this type of action, especially in the case of where the impact was high.

**Rehabilitation**

Rehabilitation is considered in heritage management terms as a intervention typically involving the adding of a new heritage layer to enable a new sustainable use. It is not appropriate when the process necessitates the removal of previous historical layers, i.e. restoration of a building or place to the previous state/period. It is an appropriate heritage management action in the following cases:

- The heritage resource is degraded or in the process of degradation and would benefit from rehabilitation.
- Where rehabilitation implies appropriate conservation interventions, i.e. adaptive reuse, repair and maintenance, consolidation and minimal loss of historical fabric.
- Where the rehabilitation process will not result in a negative impact on the intrinsic value of the resource.

**Enhancement**

Enhancement is appropriate where the overall heritage significance and its public appreciation value are improved. It does not imply creation of a condition that might never have occurred during the evolution of a place, e.g. the tendency to sanitize the past. This management action might result from the removal of previous layers where these layers are culturally of low significance and detract from the significance of the resource. It would be appropriate in a range of heritage contexts and applicable to a range of resources. In the case of formally protected or significant resources, appropriate enhancement action should be encouraged. Care should, however, be taken to ensure that the process does not have a negative impact on the character and context of the resource. It would thus have to be carefully monitored