

HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38 (8) OF THE NHRA (No. 25 OF 1999))

FOR THE CONTROL OF WATERCOURSE / RIVERS / STREAMS / HYDRAULICS IN LOMBARDY EAST WITHIN THE CITY OF JOHANNESBURG, GAUTENG PROVINCE.

Client:

LEAP

Client info:

Dr Gwen Theron



HCAC - Heritage Consultants

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: jaco.heritage@gmail.com

Report Author:

Mr. J. van der Walt

Project Reference:

2034

Report date:

June 2020

DOCUMENT PROGRESS

Distribution List

Date	Report Reference Number	Document Distribution	Number of Copies
24 June 2020	2034	LEAP	Electronic Copy

Amendments on Document

Date	Report Reference Number	Description of Amendment

INDEMNITY AND CONDITIONS RELATING TO THIS REPORT

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and HCAC reserves the right to modify aspects of the report including the recommendations if and when new information becomes available from ongoing research or further work in this field or pertaining to this investigation.

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

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

COPYRIGHT

Copyright on all documents, drawings and records, whether manually or electronically produced, which form part of the submission and any subsequent report or project document, shall vest in HCAC.

The client, on acceptance of any submission by HCAC and on condition that the client pays to HCAC the full price for the work as agreed, shall be entitled to use for its own benefit:

- The results of the project;
- The technology described in any report; and
- Recommendations delivered to the client.

Should the applicant wish to utilise any part of, or the entire report, for a project other than the subject project, permission must be obtained from HCAC to do so. This will ensure validation of the suitability and relevance of this report on an alternative project.

REPORT OUTLINE

Appendix 6 of GNR 326 EIA Regulations (7 April 2017) as amended provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

Table 1. Specialist Report Requirements.

Requirement from Appendix 6 of GNR 326 EIA Regulations (7 April 2017)	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section a Section 12
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	<i>Declaration of Independence</i>
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 1
(cA) an indication of the quality and age of base data used for the specialist report	Section 1, 3.4 and 7.1.
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	9
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3.4
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternative;	Section 8 and 9
(g) Identification of any areas to be avoided, including buffers	Section 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	Section 8
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 3.7
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity including identified alternatives on the environment or activities;	Section 9
(k) Mitigation measures for inclusion in the EMPr	Section 9 and 10
(l) Conditions for inclusion in the environmental authorisation	Section 9 and 10
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 9 and 10
(n) Reasoned opinion - (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 10.2
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 6
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Refer to BA Report
(q) Any other information requested by the competent authority	Section 10

Executive Summary

HCAC was appointed to conduct a Heritage Impact Assessment of the proposed control of Watercourse / Rivers / Streams / Hydraulics in Lombardy East within the City of Johannesburg. The study area is located along the Lombardy East Stream of the Jukskei River. The aim of the assessment is to understand the heritage character of the study area as well as the impact of the proposed development on non-renewable heritage resources. The study area was assessed both on desktop level and by a non-intrusive pedestrian field survey.


The entire study area seems to have been developed into a recreational park with children's play areas, soccer fields and multiple cement benches. Brick footpaths are also still visible throughout the study area. The entire park has fallen into disuse and is currently characterised by illegal dumping. Clearing activities as well as illegal dumping would have impacted on surface indicators of heritage sites if any occurred in the study area. The lack of significant heritage resources in the study area was confirmed by a survey of the impact areas of the proposed project, and no surface indications of significant heritage sites were identified.

According to the SAHRIS Paleontological Sensitivity Map the study area is of insignificant paleontological significance. Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

Due to the apparent lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered to be low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr and based on approval from SAHRA:

- Implementation of a chance find procedure (archaeological and paleontological).

Declaration of Independence

Specialist Name	Jaco van der Walt
Declaration of Independence	<p>I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 108 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations, that I:</p> <ul style="list-style-type: none"> - I act as the independent specialist in this application; - I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant; - I declare that there are no circumstances that may compromise my objectivity in performing such work; - I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity; - I will comply with the Act, Regulations and all other applicable legislation; - I have no, and will not engage in, conflicting interests in the undertaking of the activity; - I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; - All the particulars furnished by me in this form are true and correct; and - I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.
Signature	
Date	24/06/2020

a) Expertise of the specialist

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

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

TABLE OF CONTENTS

Contents

REPORT OUTLINE 1

EXECUTIVE SUMMARY 2

DECLARATION OF INDEPENDENCE 3

 a) Expertise of the specialist 3

ABBREVIATIONS 7

GLOSSARY 7

1 INTRODUCTION AND TERMS OF REFERENCE: 8

 1.1 Terms of Reference 8

2 LEGISLATIVE REQUIREMENTS 13

3 METHODOLOGY 14

 3.1 Literature Review 14

 3.2 Genealogical Society and Google Earth Monuments 14

 3.3 Stakeholder Engagement and Public consultation 14

 3.4 Site Investigation 15

 3.5 Site Significance and Field Rating 17

 3.6 . Impact Assessment Methodology 18

 3.7 Limitations and Constraints of the study 19

4 DESCRIPTION OF SOCIO-ECONOMIC ENVIRONMENT 19

5 DESCRIPTION OF THE PHYSICAL ENVIRONMENT: 20

6 RESULTS OF PUBLIC CONSULTATION AND STAKEHOLDER ENGAGEMENT: 22

 7.1. Literature Review 23

 7.1.1. Genealogical Society and Google Earth Monuments 23

 7.2. Archaeology of the greater study area 24

 7.2.1. History of Modderfontein 24

 7.2.2. Cultural Landscape 25

8. FINDINGS OF THE SURVEY 30

9. POTENTIAL IMPACT 32

 9.1. Pre-Construction phase: 32

 9.2. Construction Phase 32

 9.3. Operation Phase: 32

 9.4. Cumulative Impacts 34

10. RECOMMENDATIONS AND CONCLUSION 35

 10.1. Chance Find Procedure 35

 10.2. Reasoned Opinion 36

 10.3. Potential risk 36

11. REFERENCES 37

LIST OF FIGURES

Figure 1. Regional setting (1: 250 000 topographical map)..... 10

Figure 2: Local setting (1:50 000 topographical map). 11

Figure 3. Satellite image indicating the study area (Google Earth 2020). 12

Figure 4: Track logs of the survey in green. 16

Figure 5. General site conditions 21

Figure 6.General site conditions along Sheridan road 21

Figure 7. General site conditions along Shakespeare road..... 21

Figure 8. recreational park infrastructure. 21

Figure 9. Extensive illegal dumping in study area 22

Figure 10. Extensive illegal dumping in study area 22

Figure 11. Extensive illegal dumping in study area 22

Figure 12. Extensive illegal dumping in study area 22

Figure 13. 1939 map of the study area. No developments are indicated for the area. 26

Figure 14. 1954 Topographical map of the study area indicating township developments to the south of the study area. 27

Figure 15. 1975 Topographical map of the study area. A township development is indicated to the south and excavations are indicated north of the study area. 28

Figure 16. 1983 Topographical map of the study area. The map is very similar to the 1975 map. 29

Figure 17. 2002 Topographical map of the study area. The surrounding area has been developed as a recreational park with numerous walk ways. 30

Figure 18. Approximate location of study area (in yellow) indicated as of insignificant and low sensitivity on the SAHRA Paleontological Sensitivity map..... 31

LIST OF TABLES

Table 1. Specialist Report Requirements.	1
Table 2: Project Description.....	9
Table 3: Infrastructure and project activities	9
Table 4: Site Investigation Details	15
Table 5. Impact of the project on heritage resources.	33
Table 6. Cumulative Impact of the project.	34

ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BA: Basic Assessment
BGG Burial Ground and Graves
BIA: Basic Impact Assessment
CFPs: Chance Find Procedures
CMP: Conservation Management Plan
CRR: Comments and Response Report
CRM: Cultural Resource Management
DEA: Department of Environmental Affairs
EA: Environmental Authorisation
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Programme
ESA: Early Stone Age
ESIA: Environmental and Social Impact Assessment
GIS Geographical Information System
GPS: Global Positioning System
GRP Grave Relocation Plan
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID Notification of Intent to Develop
NoK Next-of-Kin
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)
 Early Stone Age (~ 2.6 million to 250 000 years ago)
 Middle Stone Age (~ 250 000 to 40-25 000 years ago)
 Later Stone Age (~ 40-25 000, to recently, 100 years ago)
 The Iron Age (~ AD 400 to 1840)
 Historic (~ AD 1840 to 1950)
 Historic building (over 60 years old)

1 Introduction and Terms of Reference:

Heritage Contracts and Archaeological Consulting CC (**HCAC**) has been contracted by LEAP to conduct a heritage impact assessment of the proposed control of Watercourse / Rivers / Streams / Hydraulics in Lombardy East within the City of Johannesburg located along the Lombardy East stream of the Jukskei River (Figure 1 – 3).

The aim of the study is to survey the proposed development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999). The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of relevant literature; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey, no heritage features of significance were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report. SAHRA as a decision-making authority under section 38(1) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) require all documents, compiled in support of this application to be submitted to SAHRA.

1.1 Terms of Reference

Field study

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

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

Table 2: Project Description

Size of property	Approximately 9 hectares
Magisterial District	City of Johannesburg
1: 50 000 map sheet number	2628 AA
Central co-ordinate of the development	-26.109904° 28.121796°

Table 3: Infrastructure and project activities

Type of development	Control of Watercourse / Rivers / Streams / Hydraulics in Lombardy East within the City of Johannesburg
Project size	Approximately 9 hectares

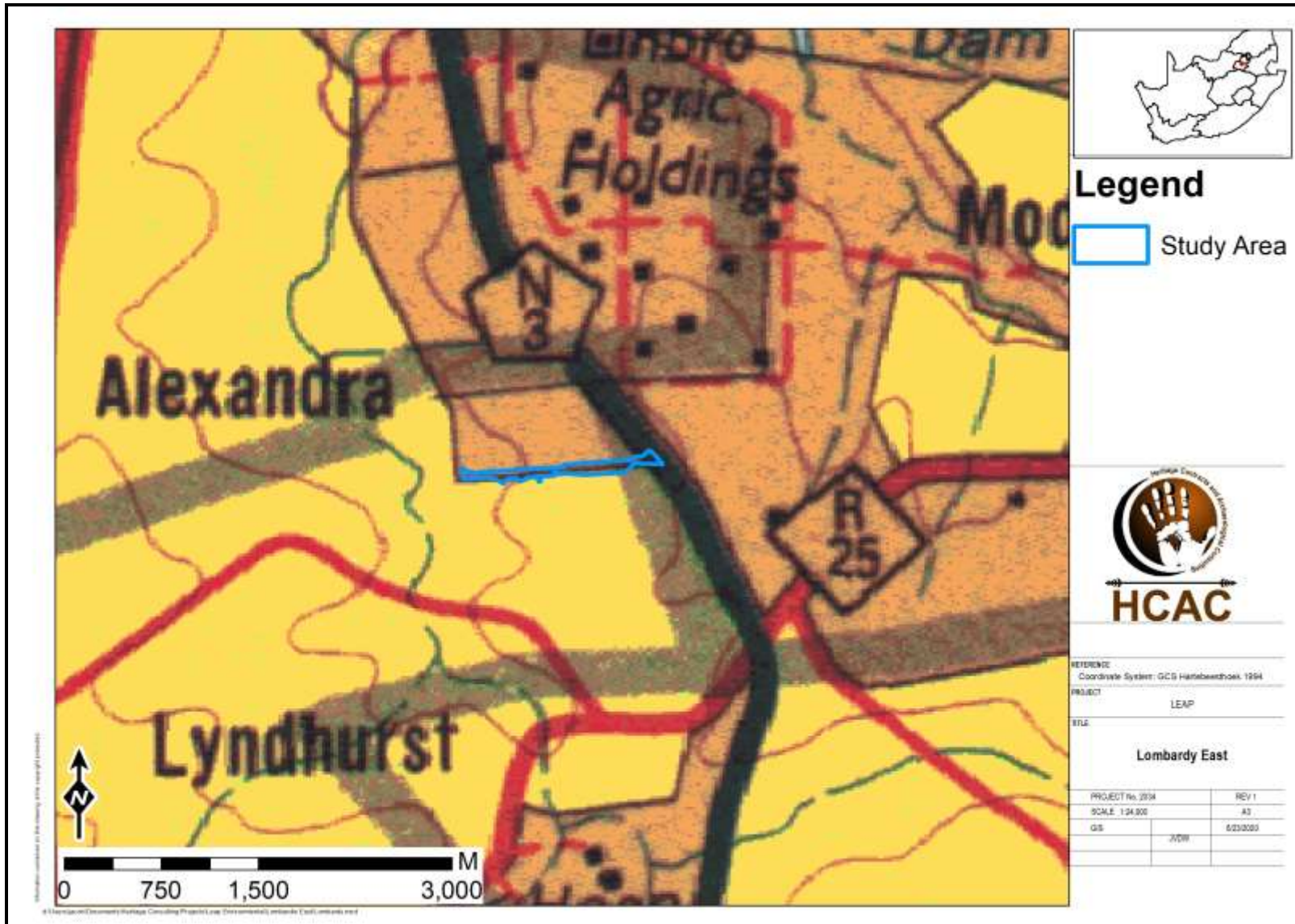


Figure 1. Regional setting (1: 250 000 topographical map).

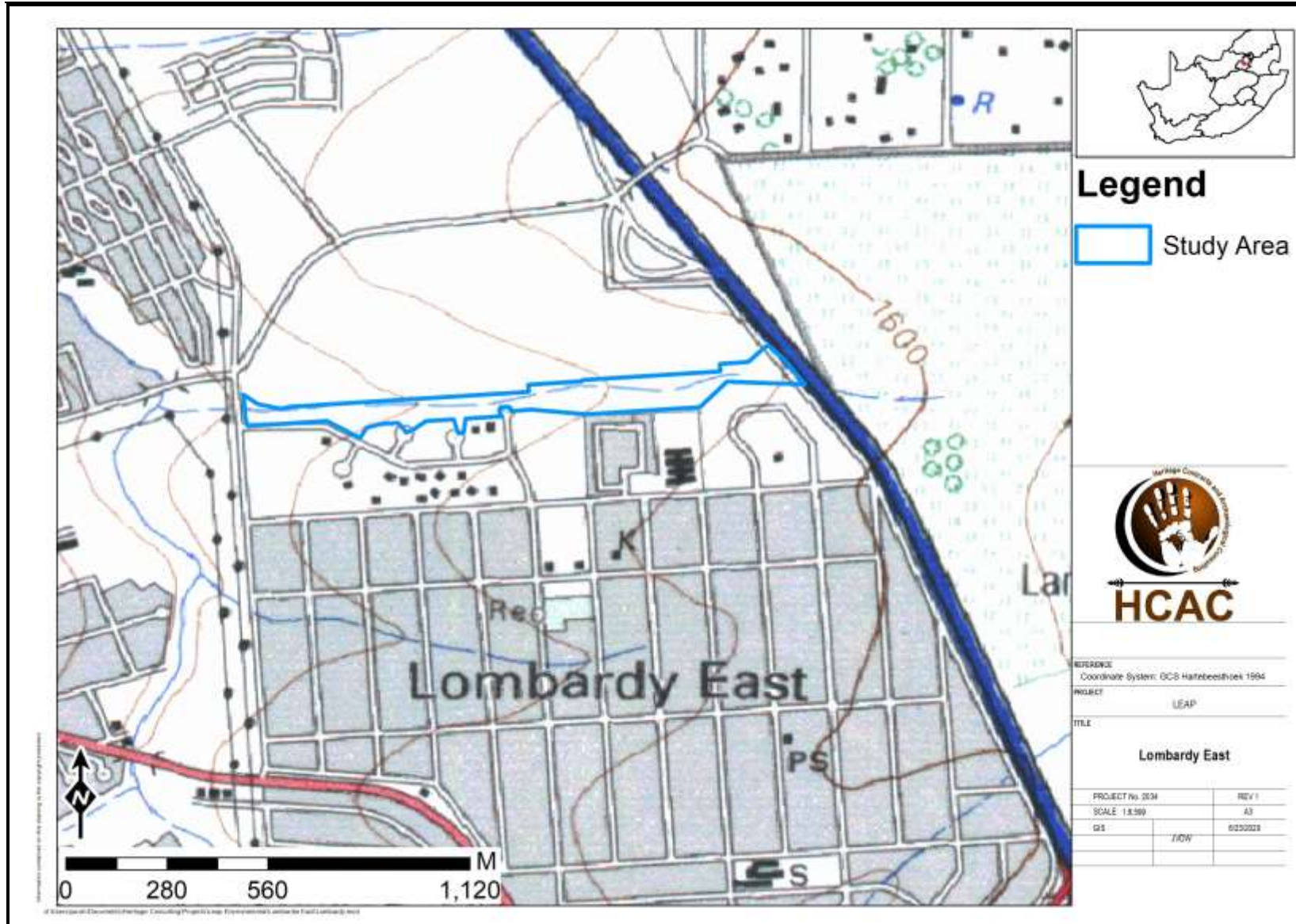


Figure 2: Local setting (1:50 000 topographical map).

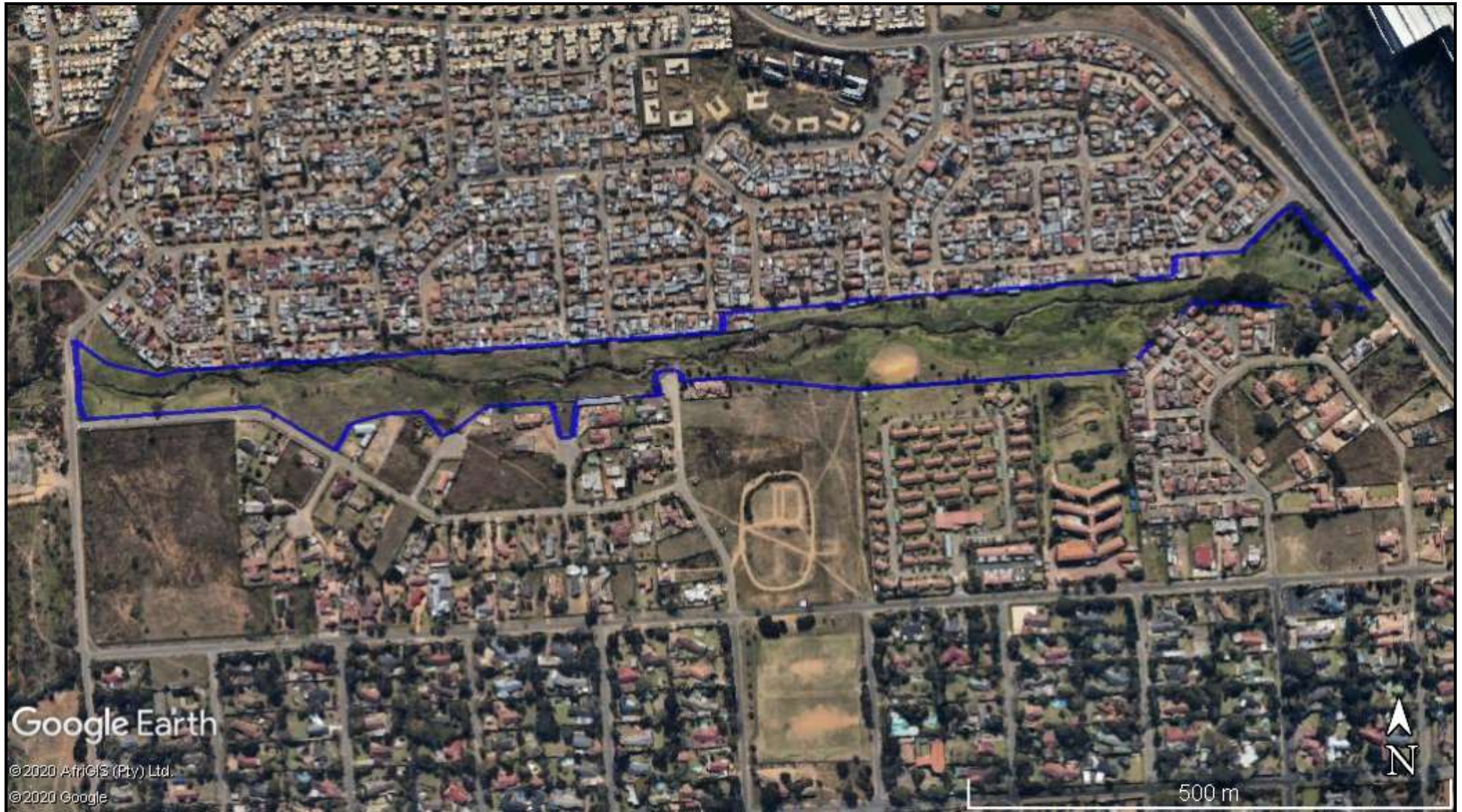


Figure 3. Satellite image indicating the study area (Google Earth 2020).

2 Legislative Requirements

The HIA is required under the following legislation:

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

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

The overall purpose of heritage specialist input is to:

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

The HIA should be submitted to the PHRA if established in the province or to SAHRA. SAHRA will ultimately be responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the impact assessment report and/or EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level). Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision-making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for with SAHRA by the applicant before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999 is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

3 METHODOLOGY

3.1 Literature Review

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

3.2 Genealogical Society and Google Earth Monuments

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

3.3 Stakeholder Engagement and Public consultation

Stakeholder engagement is a key component of any BAR process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process was to capture and address any issues raised by community members and other stakeholders during key stakeholder and public meetings. The process involved:

- Placement of advertisements and site notices
- Stakeholder notification (through the dissemination of information and meeting invitations);
- Stakeholder meetings undertaken with I&APs;
- Authority Consultation
- The compilation of a Basic Assessment Report (BAR).

Please refer to section 6 for more detail.

3.4 Site Investigation

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

Table 4: Site Investigation Details

	Site Investigation
Date	23 June 2020
Season	Winter- The environment is very dry making visibility on site fairly high with grass having been cut across most of the study area due to the area being used as a recreational park. The area was sufficiently covered to inform the impact assessment (Figure 4).



Figure 4: Track logs of the survey in green.

3.5 Site Significance and Field Rating

Section 3 of the NHRA distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

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

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

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

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

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

3.6. Impact Assessment Methodology

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

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

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

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

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

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

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

3.7 Limitations and Constraints of the study

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. The possibility exists that some features or artefacts may not have been discovered/recorded during the survey. Similarly, the possible occurrence of graves and other cultural material cannot be excluded. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

4 Description of Socio-Economic Environment

Stats SA provides the following information: According to 2011 census the City of Johannesburg Local Municipality has a total population of 4,4 million of which 76,4% are black African, 12,3% are white people, 5,6% are coloured people, and 4,9% are Indian/Asian. Of those 20 years and older 3,4% have completed primary school, 32,4% have some secondary education, 34,9% have completed matric, 19,2% have some form of higher education, and 2,9% of those aged 20 years and older have no form of schooling. There are 2 261 490 economically active (employed or unemployed but looking for work) people in the City of Johannesburg; of these 25,0% are unemployed. Of the 1 228 666 economically active youth (15–35 years) in the area, 31,5% are unemployed.

5 Description of the Physical Environment:

The study area is situated in the northern parts of Lombardy east along an arbitrary of the Jukskei river. The study area follows the stream on either side from Sheridan road directly next to the N3 (Figure 6), and runs west towards Shakespeare road (Figure 7). The entire study area seems to have been developed into a recreational park with multiple areas having children's play areas, soccer fields and multiple cement benches scattered across the study area (Figure 8). Brick footpaths are also still visible running all across the study area.

The entire park has fallen into disuse due to a lack of management on site. Most of the existing footpaths are overgrown. The banks of the stream are extremely worn out, resulting in some areas of the stream becoming deep dongas. In some cases, the erosion of the stream has extended to within meters of residential buildings. (Figure 9)

The entire study area is also currently being used as an illegal refuse dump by the local residents (Figure 10 – 12) This has resulted in large portions of the area to be covered in refuse material, hampering archaeological visibility.

The dominant vegetation type and landscape features of the region are described as the "Egoli Granite Grassland" (Mucina & Rutherford, 2006). It is described as moderately undulating plains and low hills supporting tall, usually *Hyparrhenia hirta*-dominated (thatching grass) grassland. The rocky habitats show a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small trees (Mucina & Rutherford, 2006).



Figure 5. General site conditions



Figure 6. General site conditions along Sheridan road



Figure 7. General site conditions along Shakespeare road.



Figure 8. recreational park infrastructure.



Figure 9. Extensive illegal dumping in study area



Figure 10. Extensive illegal dumping in study area



Figure 11. Extensive illegal dumping in study area



Figure 12. Extensive illegal dumping in study area

6 Results of Public Consultation and Stakeholder Engagement:

Adjacent landowners and the public at large were informed of the proposed activity as part of the BA process and no formal consultation was conducted by the heritage team. Site notices and advertisements notifying interested and affected parties were placed at strategic points and in local newspapers as part of the process conducted by LEAP.

7. Literature / Background Study:

7.1. Literature Review

Several sites are on record for the larger geographical area at the Wits database. These sites consist of Stone Age (ESA & LSA) sites and Historical remains. None of these sites are located within or close to the project area but provide a background to the sites that can be expected.

Several previous studies are on record for the general study area (Mason 1997, Huffman 1999, Bosman 2010). Mason conducted excavations for the boulders shopping centre approximately 10 km North of the current study area and found occupation levels dating to the Stone, Iron Age and historic periods. Huffman conducted an AIA for residential development at Blue Hills A.H approximately 7.5 km north-west of the study area and recorded LSA sites and historic buildings. Bosman conducted a heritage study in the Modderfontein area and recorded numerous historic structures. Other studies consisted of Hall (1997) and van Schalkwyk (2006), De Jong (2006) as well as van der Walt (2015). De Jong recorded historic structures. CRM Studies conducted in Edenvale include Pelser (2011) and Van der Walt (2015). Pelser (2011) recommended exemption as there were no sites of significance in the highly disturbed study area. Van der Walt (2015) recorded structures older than 60 years and Van der Walt (2018) recorded a cemetery.

7.1.1. Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. The database of the Genealogical Society of South Africa indicated no known grave sites within the study area.

7.2. Archaeology of the greater study area

Excavations by Mason (1997) at the Boulders shopping centre (approximately 17 km to the north of the current study area) was aimed at interpreting the cultural layering of the area and provides a good platform for understanding the cultural use of the landscape in this area. He identified 7 occupational layers in his excavations that can be broadly divided into Stone Age, Iron Age and historical occupations.

The Stone Age can be divided in three main phases as follows;

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

Remains dating to all three of these phases were identified by Mason at the Boulders shopping Centre site, MSA and LSA material was also recorded at Glenn Ferness cave.

The Iron Age of the region consists of Tswana speaking people who settled the area from the early 16th century.

The Difaqane (Sotho), or Mfekane (“the crushing” in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820’s until the late 1830’s. (Bergh 1999: 10) It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes. (Bergh 1999: 14; 116-119) It seems that, in 1827, Mzilikazi’s Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence. (Bergh 1999: 11).

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720’s. It was however only by the late 1820’s that a mass-movement of Dutch-speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39) By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp. (Bergh 1999: 15).

7.2.1. History of Modderfontein

A site of interest in the general area that require further mention is Modderfontein village. The village was established in 1894 to meet the dynamite need of the gold mining industry brought on by underground mining (<http://www.modderfonteinreserve.co.za>). The Modderfontein Dynamite Factory was officially opened by President Paul Kruger of the Transvaal Republic in April 1896, it was situated about 20 km north-east of Johannesburg in order to ensure it is a safe distance from human habitation due to the hazardous nature of it operations (<https://modderconserve.wordpress.com>).

Germans were responsible for building the original factory. A cosmopolitan labour force was recruited from all over Europe. Villages with names depicting the residents’ countries of origin were established around the factory.

Three years after the factory began production, the Anglo-Boer War broke out in October 1899 and the role of the factory was greatly changed. Within a matter of months, the factory became the munitions supplier to the two Boer Republics, making propellants for the big guns and cartridges by the hundred thousand for rifles and hand guns (<https://modderconserve.wordpress.com>).

General J R P Morgan and the 3rd Cavalry Brigade occupied Modderfontein in 1900. Soon afterward, a 'peacekeeping' force called the South African Constabulary was formed under the command of Major-General Baden-Powell. Modderfontein became the South African Constabulary's first depôt and Baden-Powell's headquarters (<https://modderconserve.wordpress.com>).

After the war, the old explosives company was liquidated and reconstituted with a British parent headquartered in London. It was now called the British South African Explosives Company. The majority of shares were held by the Nobel Trust and its subsidiary companies (<https://modderconserve.wordpress.com>).

Various heritage buildings have been retained in Modderfontein, these include The Modderfontein Dynamite Company Museum (constructed in 1895 this was originally the residence of first chief engineer, it has served as a museum since 1987), Franz Hoenig Haus (first factory manager's house, constructed in 1896), the Casino (established for recreational requirements in 1897) and 33 High Street (the assistant factory manager's house constructed in 1897) (<http://www.modderfonteinreserve.co.za>).

The proposed development will not have any impact on the historical Modderfontein Reserve or Modderfontein Village.

7.2.2. Cultural Landscape

Land use in the area has been altered over the years from intensive agricultural activities to residential and recreational uses. Visual impacts to scenic routes and sense of place are also considered to be low due to the extensive developments in the area. The surrounding area has been developed from 1954 onwards.

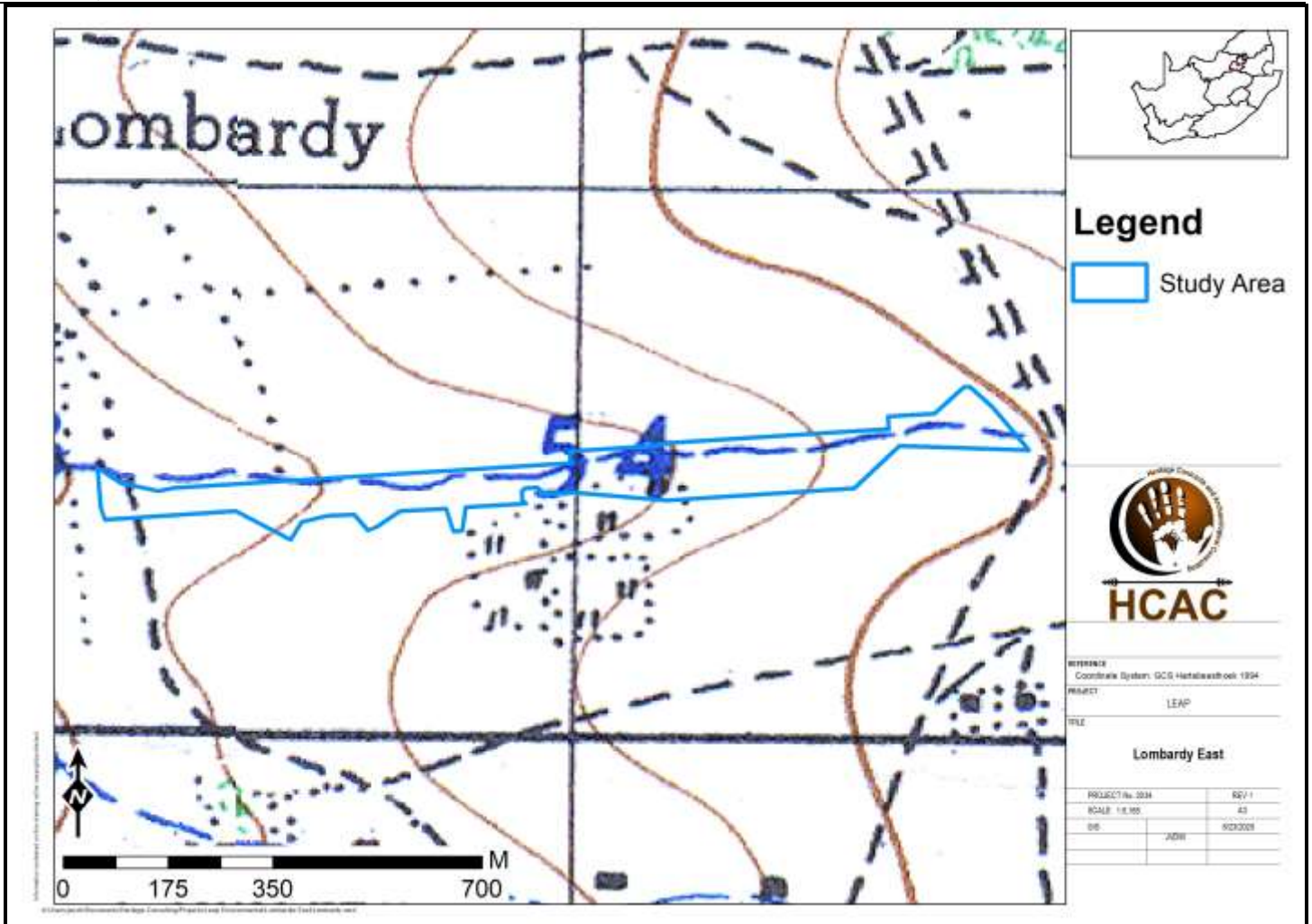


Figure 13. 1939 map of the study area. No developments are indicated for the area.

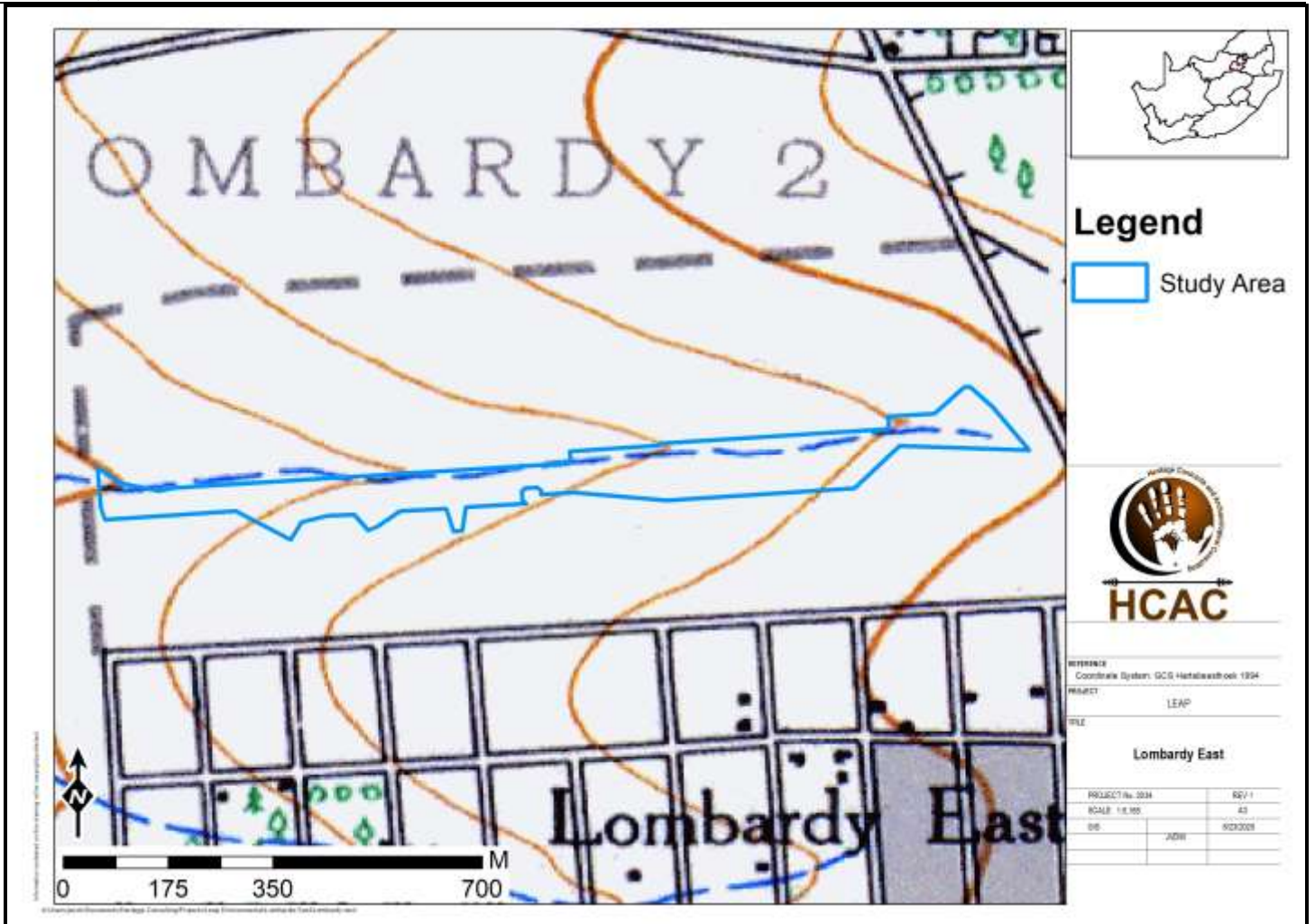


Figure 14. 1954 Topographical map of the study area indicating township developments to the south of the study area.

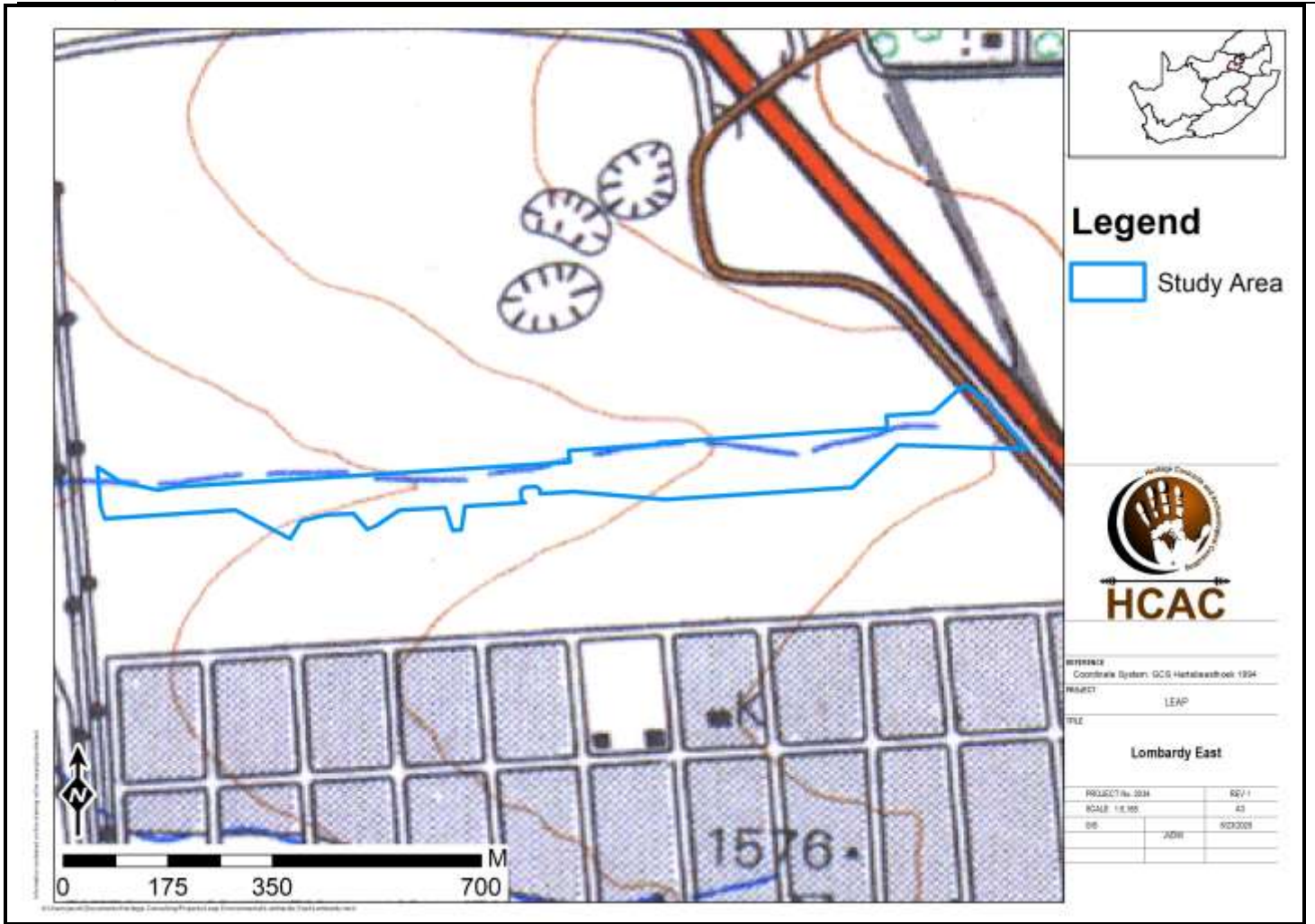


Figure 15. 1975 Topographical map of the study area. A township development is indicated to the south and excavations are indicated north of the study area.

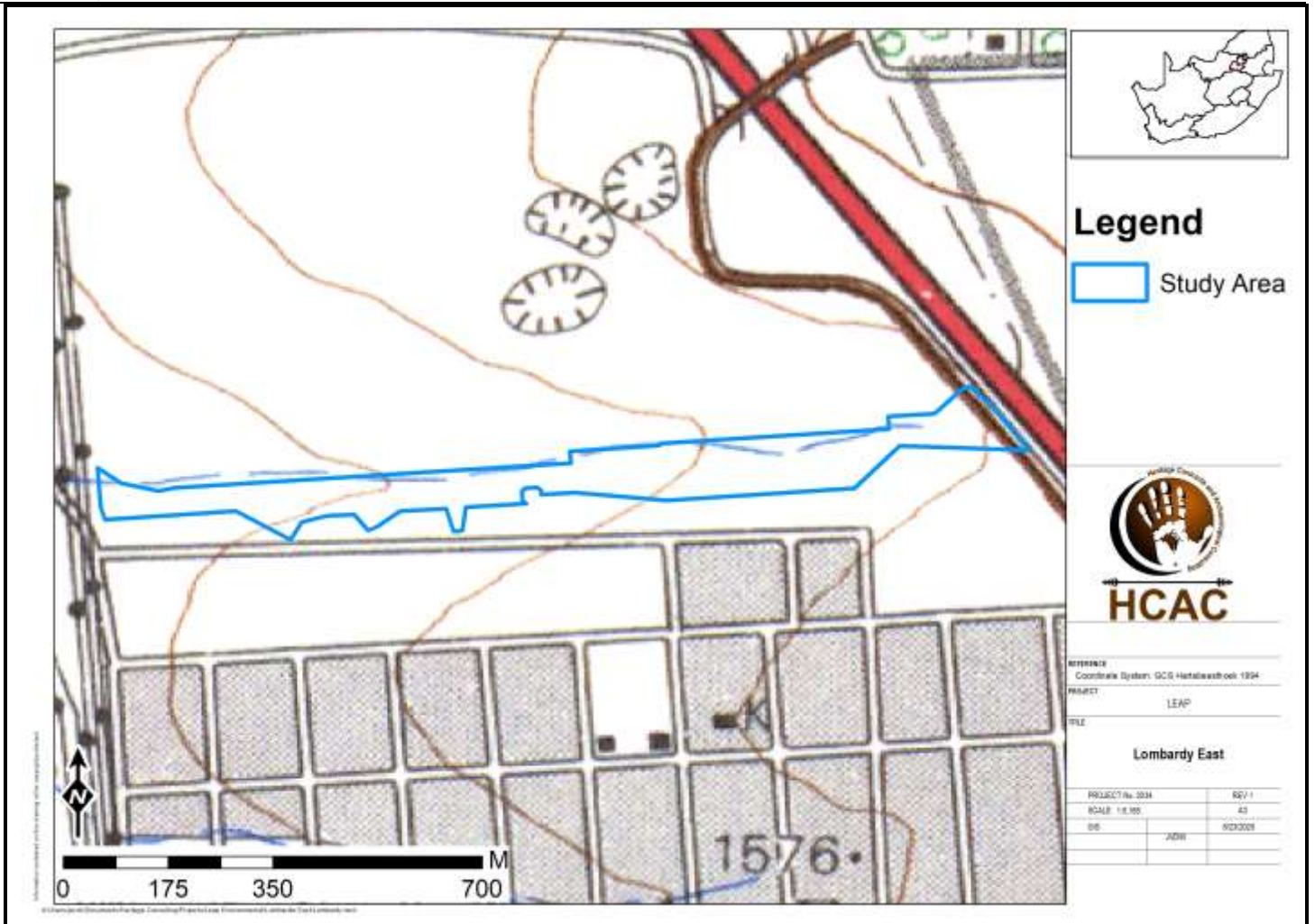


Figure 16. 1983 Topographical map of the study area. The map is very similar to the 1975 map.

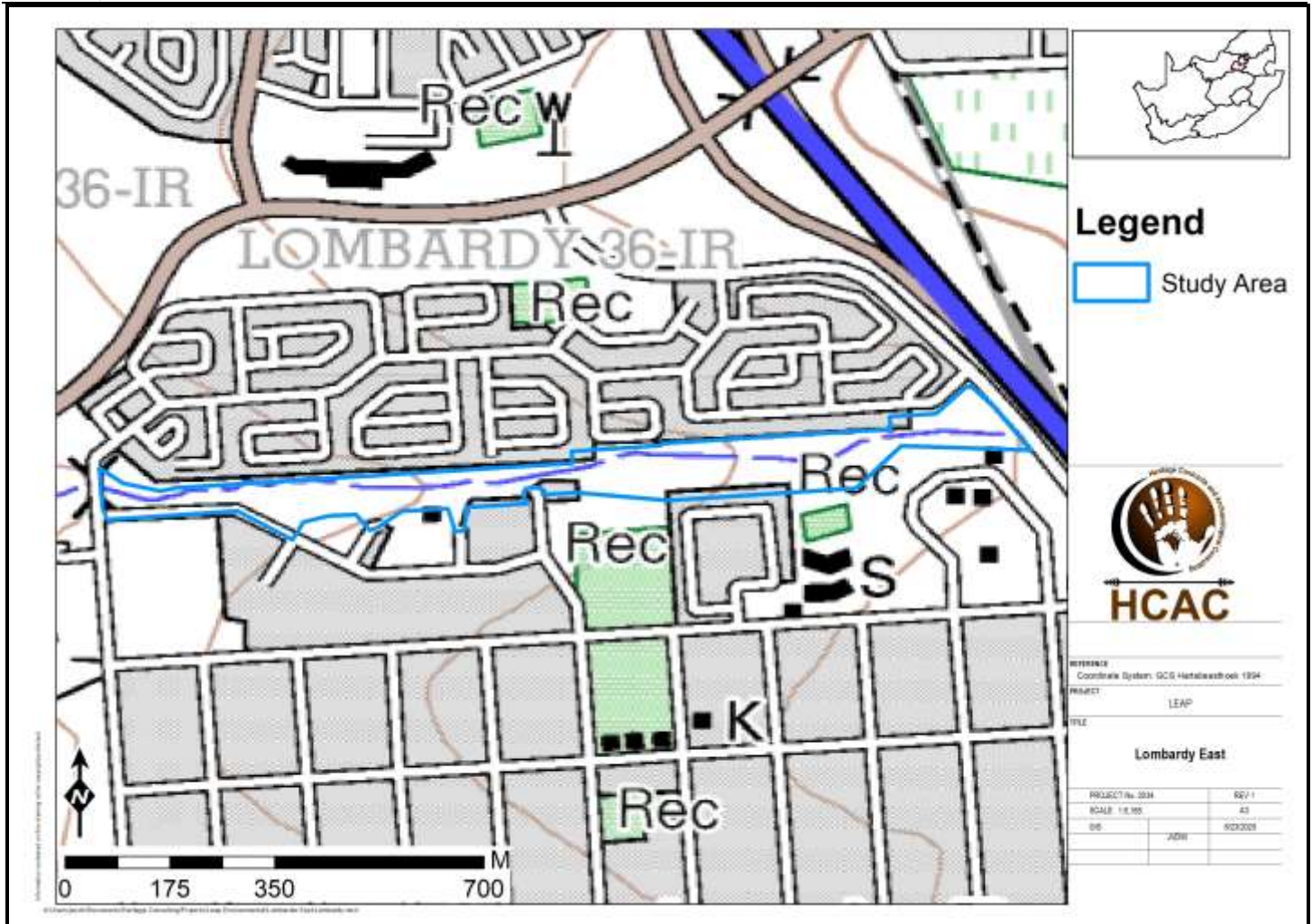


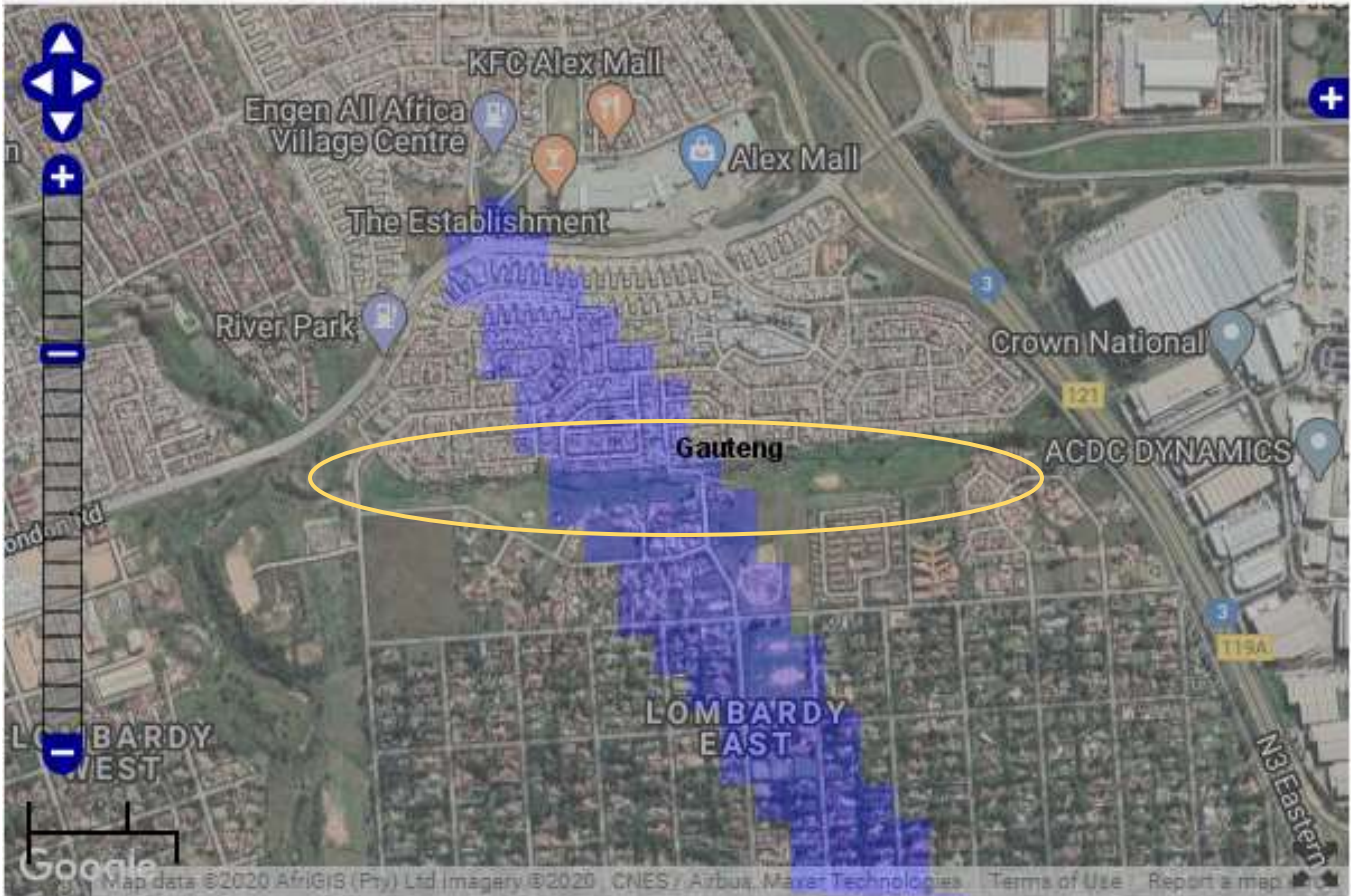
Figure 17. 2002 Topographical map of the study area. The surrounding area has been developed as a recreational park.

8. Findings of the Survey

It is important to note that only the development footprint was assessed as indicated in Figure 1 - 4. The study area mainly consists of a recreational park that has fallen into disuse and subsequent extensive illegal dumping.

The above-mentioned activities have transformed the study area and would have impacted on surface indicators of heritage features if any ever existed in the area. During the survey no heritage significant features were identified within the study area and there are no standing structures older than 60 years.

Based on the SAHRA paleontological sensitivity map the area is of insignificant and low paleontological significance and no further studies are required (Figure 18).



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

Figure 18. Approximate location of study area (in yellow) indicated as of insignificant and low sensitivity on the SAHRA Paleontological Sensitivity map

9. Potential Impact

The chances of impacting unknown archaeological sites in the study area is considered to be negligible as no heritage resources were identified. If any direct impacts did occur it would be during the construction phase only and would be of low to medium significance.

9.1. Pre-Construction phase:

The area will be upgraded and it is assumed that this phase will entail clearing activities. Impacts (if heritage resources are present) include destruction or partial destruction of non-renewable heritage resources.

9.2. Construction Phase

During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

9.3. Operation Phase:

No impact is envisaged during this phase.

Table 5. Impact of the project on heritage resources.

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects as well as graves (if present).		
	Without mitigation	With mitigation (Preservation/ excavation of site)
Extent	Local (3)	Local (3)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (2)	Low (2)
Probability	Not probable (2)	Not probable (2)
Significance	20 (Low)	20 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	No resources were recorded	No resources were recorded.
Can impacts be mitigated?	Yes, a chance find procedure should be implemented.	Yes
Mitigation: A chance find procedure must be incorporated for the project.		
Residual Impacts: Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted but this cannot be quantified.		

9.4. Cumulative Impacts

Cumulative impacts occur from the combination of effects of various impacts on heritage resources. The importance of identifying and assessing cumulative impacts is that the whole is greater than the sum of its parts. The area is of low heritage sensitivity and the possibility of unearthing subsurface heritage resources is small.

Table 6. Cumulative Impact of the project.

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects as well as graves (if present).		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (2)	Minor (2)
Probability	Very Improbable (1)	Very Improbable (1)
Significance	8 (Low)	8 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	No resources were recorded	No resources were recorded.
Can impacts be mitigated?	Yes, a chance find procedure should be implemented.	Unknown
Confidence in findings	High	High
Mitigation: A Chance Find Procedure should be implemented.		

10. Recommendations and conclusion

The study area is vacant and is characterised by a recreational park that has fallen into disuse and is subsequently used for extensive illegal dumping. The afore-mentioned activities have transformed the study area and would have impacted on surface indicators of heritage features if any ever existed in the area. During the survey no heritage significant features were identified within the study area and no standing structures older than 60 years occur in the area.

According to the SAHRIS Paleontological Sensitivity Map the study area is of insignificant paleontological significance. Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

Due to the apparent lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered to be low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr and based on approval from SAHRA:

- Implementation of a chance find procedure as outlined below.

10.1. Chance Find Procedure

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

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

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

10.2. Reasoned Opinion

The impact of the proposed project on heritage resources is considered low and no further pre-construction mitigation in terms of archaeological resources is required based on approval from SAHRA. Furthermore, the socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures (i.e. chance find procedure) are included in the EMPr.

10.3. Potential risk

Potential risks to the proposed project are the occurrence of unknown and unmarked graves. The possibility exists that the study area could contain graves of which surface indicators have been destroyed or obscured by vegetation and subsurface material could be uncovered during earth works. These risks can be mitigated to an acceptable level with monitoring and the implementation of a chance find procedure as outlined in Section 10.1.

11. References

- Bergh, J.S., (ed.) *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: J. L. van Schaik Uitgewers. 1999.
- Bosman, R. 2010. Modderfontein Village Development Heritage Impact Assessment. Unpublished report.
- Hall, S: 1997. A Phase 1 Archaeological Assessment of Modderfontein. Department of Archaeology University of the Witwatersrand
- De Jong, R.C. Final Heritage Impact Assessment Report Version 3: Proposed Huddle Park Golf Course Development, Johannesburg.
- Huffman, T.N. 1999. Archaeological survey of Blue Hills farm. Unpublished report by ARM.
- Mason, R. 1997. Recording Midrand Heritage from the earliest occupation. The Boulders shopping centre project
- Mucina, L. & Rutherford, M.C. 2006. The vegetation map of South Africa, Lesotho and Swaziland. SANBI, Pretoria.
- National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)
- Ross, R. *A concise history of South Africa*. Cambridge University Press. Cambridge. 1999.
- SAHRIS. Referenced June 2015
- SAHRIS, Palaeontological sensitivity map. Referenced June 2015
- Wits Archaeological Database (referenced 2009)
- Van der Walt, J. 2015. Archaeological Impact Assessment For the Clulee (Linbro Park East) and The Reid (Linbro Park West) Developments, Modderfontein, Gauteng
- Van der Walt, J. 2018. HIA for the Jukskei River development. Unpublished report.
- Van Schalkwyk, J and Meyer, C: 2006. Review of Cultural Heritage Resources in the Modderfontein Area. National Cultural History Museum

Appendix A - Curriculum Vitae of Specialist

Jaco van der Walt
Archaeologist

jaco.heritage@gmail.com
+27 82 373 8491
+27 86 691 6461

Education:**Particulars of degrees/diplomas and/or other qualifications:**

Name of University or Institution: University of Pretoria
Degree obtained : BA Heritage Tourism & Archaeology
Year of graduation : 2001

Name of University or Institution: University of the Witwatersrand
Degree obtained : BA Hons Archaeology
Year of graduation : 2002

Name of University or Institution : University of the Witwatersrand
Degree Obtained : MA (Archaeology)
Year of Graduation : 2012

Name of University or Institution : University of Johannesburg
Degree : PhD
Year : Currently Enrolled

EMPLOYMENT HISTORY:

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

Countries of work experience include:

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

SELECTED PROJECTS INCLUDE:

Archaeological Impact Assessments (Phase 1)

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

Archaeological Impact Assessment Mmamethlake Landfill

Archaeological Impact Assessment Libangeni Landfill

Linear Developments

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

Archaeological Impact Assessment Medupi – Spitskop Power Line,

Archaeological Impact Assessment Nelspruit Road Development

Renewable Energy developments

Archaeological Impact Assessment Karoshoek Solar Project

Grave Relocation Projects

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

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

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

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

Phase 2 Mitigation Projects

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

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

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

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

Heritage management projects

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

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:

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

PUBLICATIONS AND PRESENTATIONS

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

-
- Ceramic analysis of an Early Iron Age Site with vitrified dung, Limpopo Province South Africa.
 - J van der Walt. Poster presented at SAFA, Frankfurt Germany 2008

 - Bantu Speaker Rock Engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga (*In Prep*)
 - J van der Walt and J.P Celliers

 - Sterkspruit: Micro-layout of late Iron Age stone walling, Lydenburg, Mpumalanga. W. Fourie and J van der Walt. A Poster presented at the Southern African Association of Archaeologists Biennial Conference 2011

 - Detailed mapping of LIA stone-walled settlements' in Lydenburg, Mpumalanga. J van der Walt and J.P Celliers
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011

 - Bantu-Speaker Rock engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga. J.P Celliers and J van der Walt
 - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011

 - Pleistocene hominin land use on the western trans-Vaal Highveld ecoregion, South Africa, Jaco van der Walt.
 - J van der Walt. Poster presented at SAFA, Toulouse, France. Biennial Conference 2016

REFERENCES:

1. Prof Marelize Lombard Senior Lecturer, University of Johannesburg, South Africa
E-mail: mlombard@uj.ac.za

2. Prof TN Huffman Department of Archaeology Tel: (011) 717 6040
University of the Witwatersrand

3. Alex Schoeman University of the Witwatersrand
E-mail: Alex.Schoeman@wits.ac.za