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Phase 1 Heritage Impact Assessment for the Frankenwald Development

Johannesburg North Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province



Issue date	29 July 2020
Heritage	African Heritage Consultants CC
Developer & Applicant	Frankenwald Development (Pty) Ltd, a Joint Venture between ERIS Property Group (Pty) Ltd and Calgro M3 Land (Pty) Ltd
Environmental Practitioner	Dr Gwen Theron LEAP

Declaration of independence

This report has been compiled by Dr U.S. Küsel and Siegwalt Küsel. We declare that as independent consultants we have no business, financial, personal or other interest in the proposed development project, application or appeal in respect of which we were appointed other than fair remuneration for work performed in connection with the activity or application.

Note that a copy of the report will be lodged with SAHRA as stipulated by the NHRA (Act No. 25 of 1999), Section 38 (particularly subsection 4).



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List of acronyms

AIA	Archaeological Impact Assessment
ASAPA	Association of Southern African Professional Archaeologists
BAR	Basic Assessment Report
BIFs	Banded Ironstone Formations
BP	Before Present
CCS	Cryptocrystalline silicas
CFP	Chance Finds Procedure
CoJ	City of Johannesburg
CRM	Cultural Resources Management
DEA	Department of Environmental Affairs
EAA	Environmental Authorisation Application
EAP	Environmental Assessment Practitioner
EIA(I)	Early Iron Age
ESA	Earlier Stone Age
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
EIA	Environmental Impact Assessment
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
HBEIA	Heritage Built Environment Impact Assessment
HMF	Heritage Management Framework
ICOMOS	International Council on Monuments and Sites
LCTs	Large Cutting Tools
LIA	Late Iron Age
LOM	Life of Mine
LSA	Later Stone Age
MPRDA	Mineral and Petroleum Resources Development Act (No. 28 of 2002)
MRA	International Council on Monuments and Sites
MSA	Middle Stone Age
NEMA	National Environmental Management Act (No. 107 of 1998)
NHRA	National Heritage Resources Act (No. 25 of 1999)
OES	Ostrich Eggshell
PHRAs	Provincial Heritage Resources Authorities
SACLAP	South African Council for the Landscape Architectural Profession
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
ToR	Terms of Reference
UDF	Urban Development Framework

1 Executive summary¹

1.1 Purpose

This Phase I Cultural Heritage Resources Impact Assessment was conducted as part of a NEMA application for an Environmental Impact Assessment (EIA) in view of the Frankenwald Development, a Mixed Use Development that will comprise Residential, Commercial, Business, Industrial and ancillary uses. The Frankenwald Development is a joint venture between ERIS Property Group (Pty) Ltd and Calgro M3 Land (Pty) Ltd.

African Heritage Consultants CC (Registration No. 2001/077745/23) has been appointed by LEAP Landscape Architects and Environmental Planners to conduct a Phase 1 Cultural Heritage Resources Impact assessment.

1.2 Findings

Despite the rich history of Frankenwald there is virtually nothing that remains on site to remind one of the rich histories of this land parcel. From the desktop assessment it was clearly evident that a large number of structures were historically present on the said land parcel. During the assessment it emerged that all former structures have been removed and today little more than foundations remain. Where foundations do remain, it is also clear that the former structures were frequently altered and changed, added to or sections demolished as use changed over time. The remaining foundations are thus deemed of no heritage value.

The only features present on site that are of significance is the formal workers' cemetery. This cemetery formerly was at the end of a tree lane. It is severely overgrown but possibly contain 10—15 graves, both formal and informal. The graves with formal headstones date from 1950—1970.

¹ Note that the structure of this report is according to the Minimum Standards for the Archaeological & Palaeontological Components of Impact Assessment Reports as required by SAHRA (2007) and the Draft proposals (2016).

1.3 Recommendations

Despite the long and rich past of the property, very little of the historical Frankenwald remains. It is recommended that in the development of the site the history is acknowledged and incorporated through the development of a memorial park where the story of Frankenwald and the area can be told through multiple narratives and from multiple perspectives. Some of the historical fabric and materials that still remain on the property can be incorporated as part of such a project.

The existing cemetery located at **26° 4'42.01"S; 28° 6'16.21"E** is deemed to be of **Medium significance at the local scale**. It is recommended that the cemetery site must be cleaned documented/recorded and appropriate mitigation proposed.

The mitigation may include the exhumation and relocation of the graves to an existing cemetery or alternatively incorporated into the existing development where it can be incorporated into an open space or similar use.

The resource is assigned a **Field Rating/Grade IIIB Local Resource**

From a heritage perspective it is recommended that the proposed Frankenwald Mixed Use be approved subject to the mitigation of the cemetery.

There is a medium probability of finding/exposing heritage resources during the construction phase given the rich historical landscape of this context.

- In the event that any sub-surface heritage resources or graves are unearthed all work has to be stopped until an assessment as to the significance of the site (or material) in question has been made by a heritage practitioner. Note that no archaeological material that has been uncovered may be removed. This applies to graves and cemeteries as well. In the event that any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply. If human remains are uncovered, or previously unknown graves are

discovered, a qualified archaeologist needs to be contacted and an evaluation of the finds made. If the remains are to be exhumed and relocated, the relocation procedures as accepted by South African Heritage Resources Agency (SAHRA) need to be followed. This includes an extensive social consultation process.

- If any archaeological material is uncovered during the course of development, then work in the immediate area should cease. The finds will need to be reported to SAHRA or an archaeologist.

1.4 Stakeholders

This report forms part of the environmental process and water use licence application that will be subject to consultation.

2 Terms of reference

African Heritage Consultants CC (Registration No. 2001/077745/23) has been appointed by LEAP Landscape Architects and Environmental Planners to conduct a Phase 1 Cultural Heritage Resources Impact Assessment.

3 Background information on the project

3.1 Project description

This report details the results of the Cultural Heritage Resources Impact Study conducted on 25 June 2020 for the proposed Frankenwald Mixed Use development that will comprise Residential, Commercial, Business, Industrial and ancillary uses.

The site under investigation is located at Portion 5 Farm Bergvalei 37 IR, Buccleuch Ext 2. (Note that this is the spelling on maps).

Project title	Frankenwald Mixed Use Development
1: 50 000 map sheet number	2628AA Johannesburg
Project location	Portion 5, Farm Bergvalei 37 IR, Buccleuch Ext 2, located west of the N3 north of the Marlboro Dr interchange and southeast of De Villiers Graaf Motorway

	26° 4'19.03"S 28° 6'12.82"E
Magisterial District	Johannesburg North Magisterial District
Province	Gauteng Province

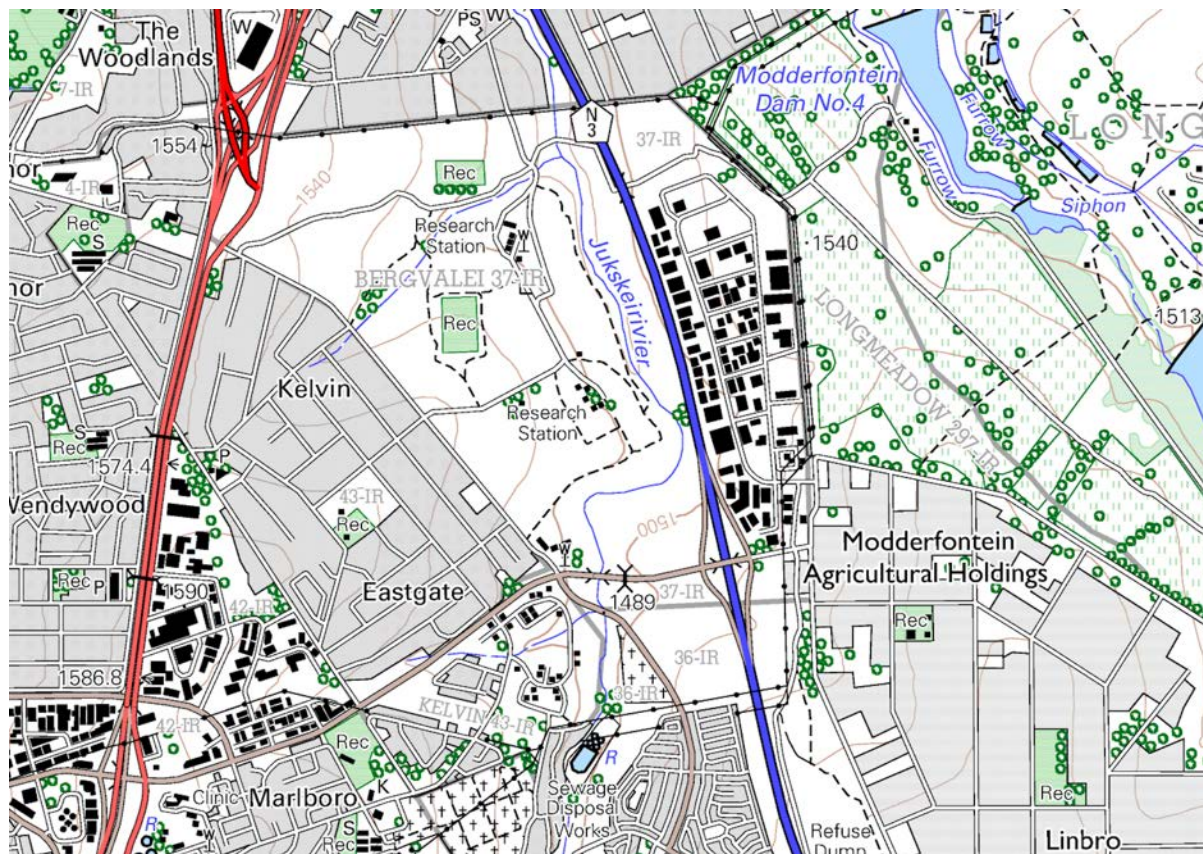


Figure 1. Excerpt from Topocadastral Quad sheet 2628AA Johannesburg.

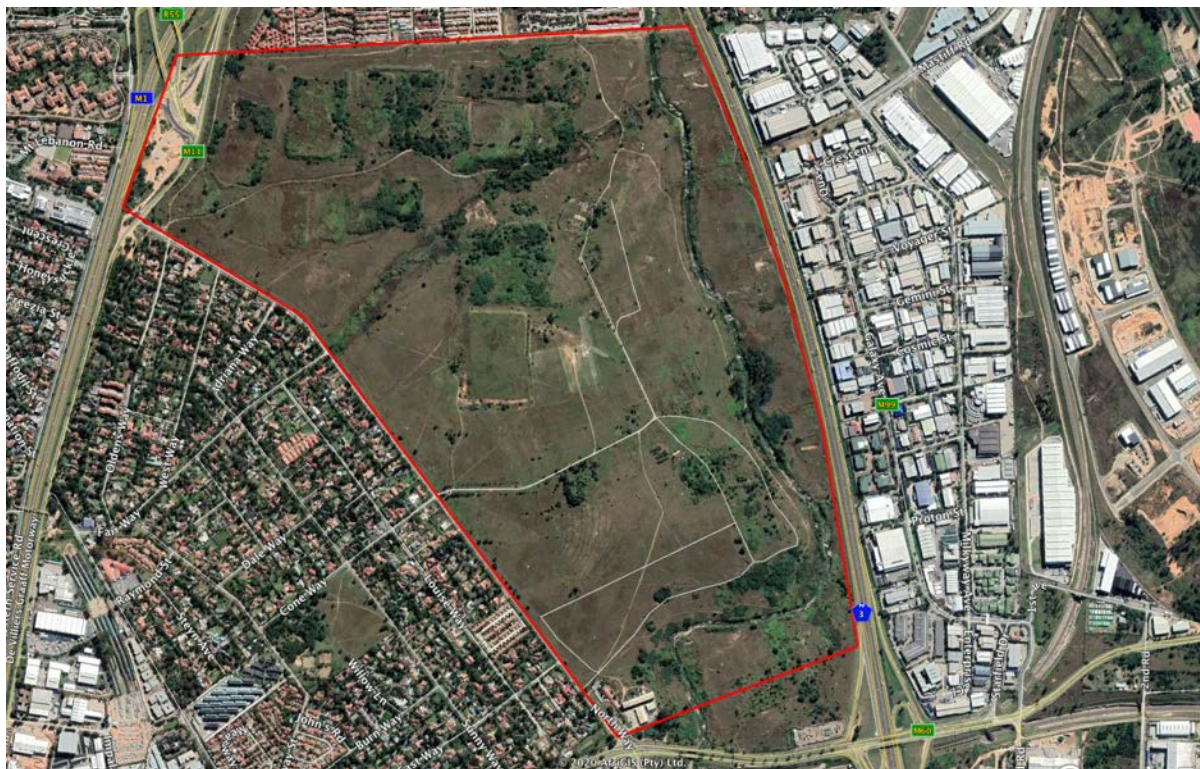


Figure 2. Google Earth map of the study area.

3.2 Land use

The proposed Mixed Use Development of Residential, Commercial, Business, Industrial and ancillary uses.

3.3 Whether re-zoning and/or subdivision of land is involved

The project will likely require township establishment to obtain the necessary land use rights.

3.4 Developer and consultant contact detail

Developer: Frankenwald Development (Pty) Ltd, a joint venture between ERIS Property Group (Pty) Ltd and Calgro M3 Land (Pty) Ltd

Applicant: Frankenwald Development (Pty) Ltd

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Date of Report: 6 July 2020

4 Scope and purpose of the report

This report outlines the results of an HIA study conducted for the Frankenwald Mixed Use Development that comprises Residential, Commercial, Business, Industrial and ancillary uses.

The purpose of the Cultural Heritage Resources Impact Assessment was to identify possible areas of heritage sensitivity and constraints that would affect the proposed development, and to provide assessments and recommendations on the mitigation and management of all documented heritage resources.

The report presents a general background to the project area with reference to the historical context of Frankenwald. In addition, it sets out the methodologies that were applied during this particular Heritage Impact Assessment (HIA). The findings of the HIA are discussed, potential impacts are reviewed, and recommendations with regard to mitigation are made. (Note that Annexure B provides a background to the southern African heritage with a brief outline of the chronological succession of the various phases of settlement and also provides context for the known heritage resources of the immediate region).

5 Information on the authors

Dr Udo Küsel has more than 50 years of experience in heritage planning, development and management. From a strategic planning perspective, he was involved in the planning and the declaration of the Robben Island Museum as a National Cultural Institution. He also served as President of the South African Museums Association as well as the South African Cultural History Association. In 2001 he established African Heritage Consultants CC and has undertaken more than 1500 Heritage Impact Assessments and compiled numerous heritage management plans. As consultant he has been involved in the development of the Dzata Museum in Venda, the Tšate Site Museum in Sekhukhune and Thomo Cultural Village near Giyane to name but a few. He also served as a part-time lecturer in Museum and Heritage Studies at Pretoria University for 30 years. More recently he trained 30 unemployed people in Sekhukhune to undertake the recording of the heritage of the area. He supervised the project for three years and recorded 200 heritage sites in the area with the aim to develop the heritage resources of the region.

Siegwalt has been practicing for more than 20 years as both a Landscape Architect and an Archaeologist. He has broad experience in a diverse range of projects from the initial conceptualization through to implementation. He has an extensive working knowledge of the Government and Environmental sectors and development management processes. His in-depth experience in assessment, planning, development and management has led to his involvement in numerous strategic policy and planning formulations in both the public and the private sector. He has a strong bias towards heritage projects, large-scale planning, strategic and community projects. In addition, he has extensive experience as a field archaeologist having been involved in archaeological research, heritage surveys, sensitivity and probability mapping, site development, planning and management throughout his career.

6 Legislative framework

6.1 National Heritage Resource Act (NHRA)

The National Heritage Resources Act (NHRA) (Act No. 25 of 1999) is the primary legislative act dealing with the conservation and management of heritage resources. In brief the Act aims

to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that this may be bequeathed to future generations.

The NHRA clearly defines the national estate and sets out principles for the management of heritage resources, determines the constitution, powers, functions and duties of heritage authorities and provides a framework for the enforcement of the Act. All sites, heritage resources and archaeological remains are protected in terms of the National Heritage Resources Act (NHRA) Act No. 25 of 1999:

- All archaeological remains, artefactual features and structures older than 100 years and historical structures older than 60 years are protected by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999, section 35). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the South African Heritage Resources Agency (SAHRA).
- Human remains older than 60 years are protected by the National Heritage Resources Act Section 36. Human remains that are less than 60 years old are protected by the Human Tissue Act (Act 65 of 1983 as amended).

The following sections of the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) must be noted:

In terms of section 3 (1 & 2) of the NHRA, heritage resources of South Africa that are of cultural significance or other special value for the present community and for future generations and are considered part of the national estate and fall within the sphere of operations of heritage resources authorities include:

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including —

- | |
|---|
| <ul style="list-style-type: none"> (i) ancestral graves; (ii) royal graves and graves of traditional leaders; (iii) graves of victims of conflict; (iv) graves of individuals designated by the Minister by notice in the Gazette; (v) historical graves and cemeteries; and (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983); <p>(h) sites of significance relating to the history of slavery in South Africa;</p> <ul style="list-style-type: none"> (i) movable objects, including— (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens; (ii) objects to which oral traditions are attached or which are associated with living heritage; (iii) ethnographic art and objects; (iv) military objects; (v) objects of decorative or fine art; (vi) objects of scientific or technological interest; and (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996). |
| <p>(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—</p> <ul style="list-style-type: none"> (a) its importance in the community, or pattern of South Africa's history; (b) its possession of uncommon, rare or endangered aspects of South Africa's 30 natural or cultural heritage; (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage; (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects; (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group; (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period; (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and (i) sites of significance relating to the history of slavery in South Africa. |

Note that all sites and artefacts associated with the Anglo Boer War are sensitive. It is critical

that this information be relayed to visitors, tour operators and private landowners. This message also needs to be reinforced through appropriate signage. From a tourism development and visitor management perspective there are a number of activities that can potentially trigger the need for a permit application or the submission of a Heritage Management Plan to SAHRA.

6.2 Grading and field rating

Section 7 of the NHRA distinguishes between three grades of declared (formally protected) heritage resources.

- National (**Grade I**): Heritage resources with qualities so exceptional that they are of special national significance.
- Provincial (**Grade II**): Heritage resources which, although forming part of the national estate, can be considered to have special qualities that make them significant within the context of a province or a region. All other declared heritage resources in the province are by default Grade II.
- Local (**Grade III**): Other heritage resources worthy of conservation. The Grade III tier is further split into three sub-categories, with IIIa = high, IIIb = medium and IIIc = low local significance (SAHRA 2005/2007, 2016; Wiltshire 2013: 325).

Grading is intended to allow for the identification of the appropriate level of management for any given heritage resource. Grade I resources are intended to be managed by the national heritage authority. Provincial heritage resources authorities would manage Grade II sites. Grade III resources would be managed by the relevant local planning authority (Wiltshire 2013; Orton 2016). These bodies are responsible for grading, but anyone may make recommendations for grading. Unfortunately, only a few Provincial Heritage Resources Authorities (PHRAs) are fully functional.

While **grading** is actually the responsibility of the heritage resources authorities, all reports must include **Field Ratings** for the site(s) discussed (proposals for grading), to comply with section 38 of the national legislation (SAHRA Draft Minimum Standards 2016: 25-26):

- a) **Proposed Field Rating/Grade 1 National Resource:** This site is considered to be of Field Rating/Grade I and must be nominated as such (mention must be made of any relevant international ranking), a protected buffer zone must be proposed, these sites must be maintained *in situ* and a CMP must be recommended for the *in situ* conservation of the site;
- b) **Proposed Field Rating/Grade II Provincial Resource:** This site is considered to be of Field Rating/Grade II and must be nominated as such, a protected buffer zone must be considered, these sites must be maintained *in situ* and a CMP must be recommended for the *in situ* conservation of the site;
- c) **Proposed Field Rating/Grade IIIA Local Resource:** The site must be retained as a heritage register site (High significance) and so mitigation as part of the development process is not advised, a protected buffer zone must be considered, these sites must be maintained *in situ* and a CMP must be recommended for the *in situ* conservation of the site;
- d) **Proposed Field Rating/Grade IIIB Local Resource:** This site could be mitigated and (part) retained as a heritage register site (High/Medium significance). Mitigation of these sites must be subject to a formal permit application process lodged with the relevant heritage resources authority;
- e) **Proposed Field Rating/Grade IIIC Local Resource:** These are sites have been assigned a Low field rating which, once adequately described in the phase I assessment, may be granted destruction authorisation at the discretion of the relevant heritage authority outside of the formal permitting process, (with regard to section 38(8) cases, this will be subject to the granting of the Environmental Authorisation).

6.3 International treaties, conventions and charters

South Africa is signatory to a number of international agreements, which have implications for heritage conservation and management including the World Heritage Convention that places certain obligation on the state and civil society for the management of heritage resources.

South Africa as a member of the United Nations Organization for Education, Science and Culture (UNESCO) subscribes to and takes part in a number of the subsidiary programs

including the International Council of Museums (ICOM), International Committee for Monuments and Sites (ICOMOS) and various other international conservation bodies under the umbrella of UNESCO.

Of these the most important and pertinent is the ICOMOS Charter for the Conservation of Places of Cultural Significance, commonly known as the Burra Charter. First adopted in 1979, with minor revisions made in 1981 and 1988 and more substantial changes in 1999, the Charter remains current with the latest version adopted in October 2013 custodians (Australian ICOMOS Burra Charter 2013). The Charter is considered to be the international blueprint on the conservation of places of cultural significance (Patiwael *et al.* 2018). The Burra Charter accordingly sets the international standard for standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians (Burra Charter 2013).

7 Description of the Property or Affected Environment

The proposed development is located on Portion 5, Farm Bergvalei 37 IR, Buccleuch Ext 2.

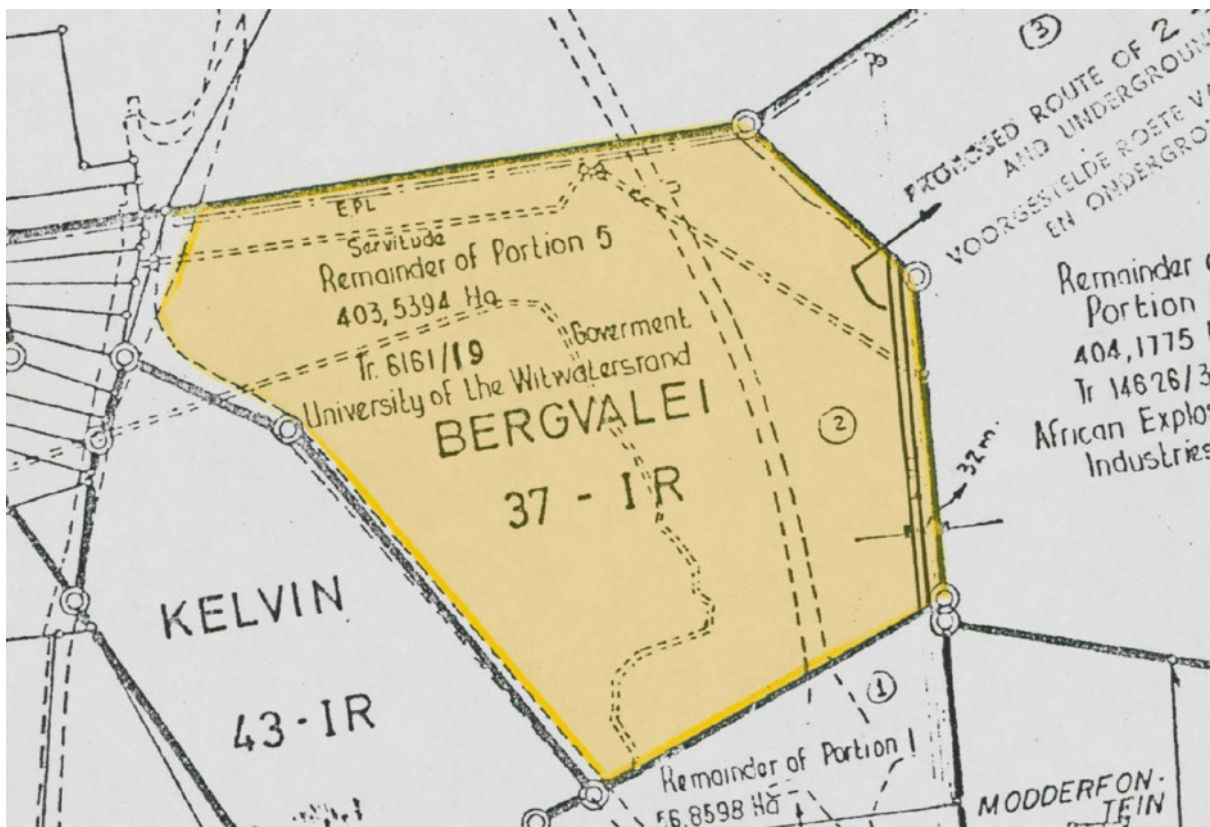
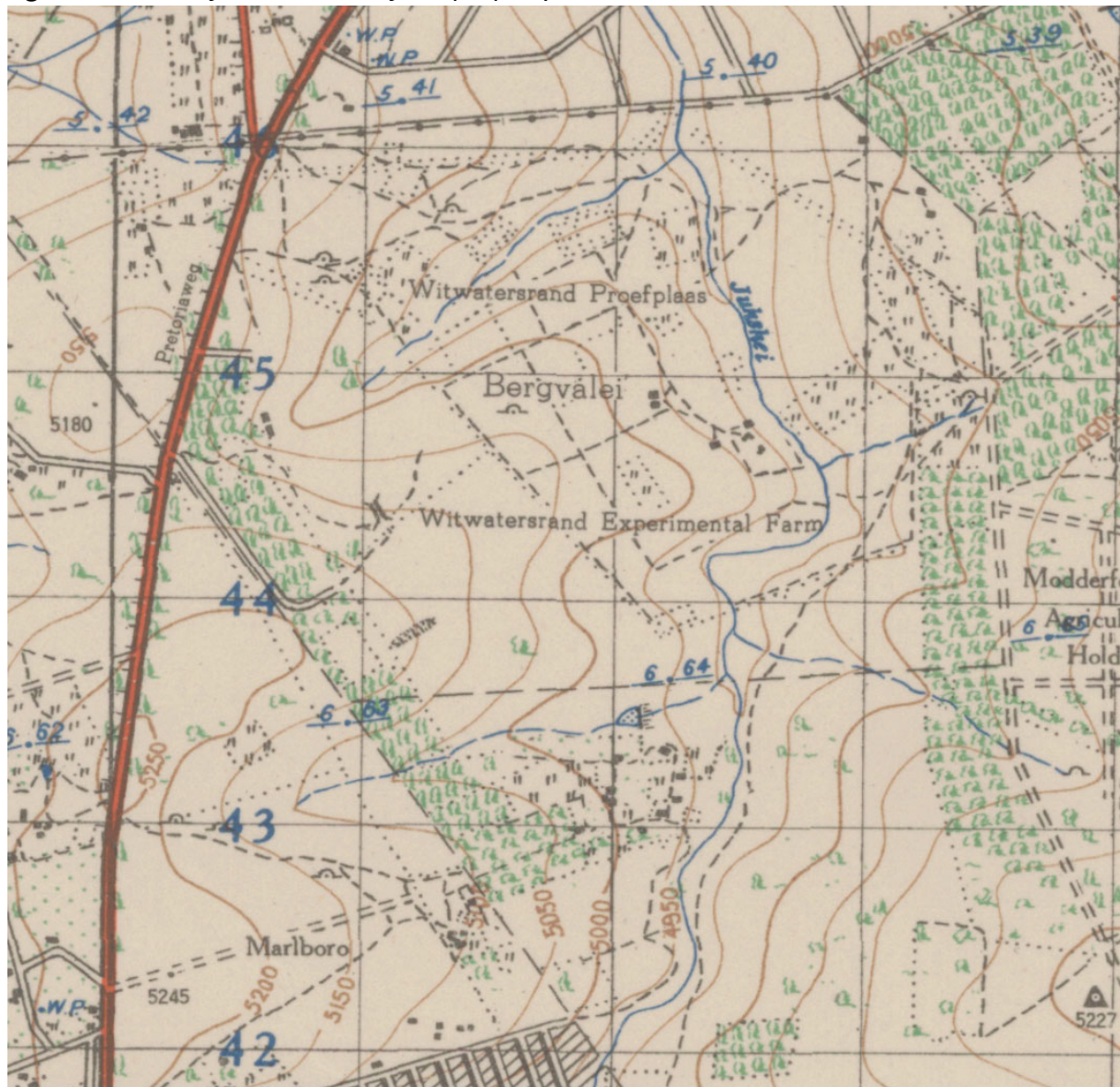


Figure 3. *Detail of the location of the property.*Figure 4. *1:50 000 2628AA Johannesburg 1st edition 1939.*

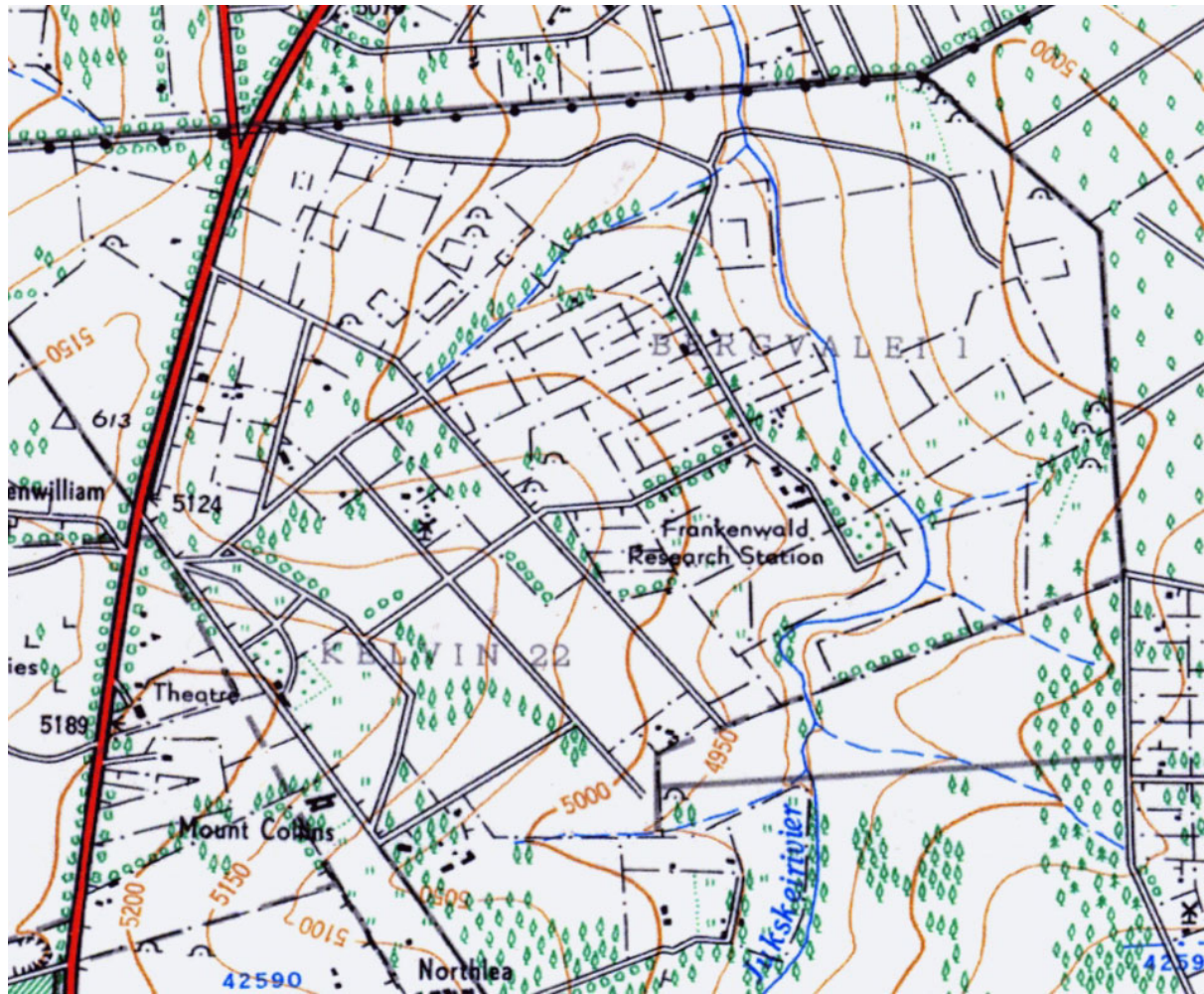


Figure 5. 1:50 000 2628AA Johannesburg 3rd edition 1954.

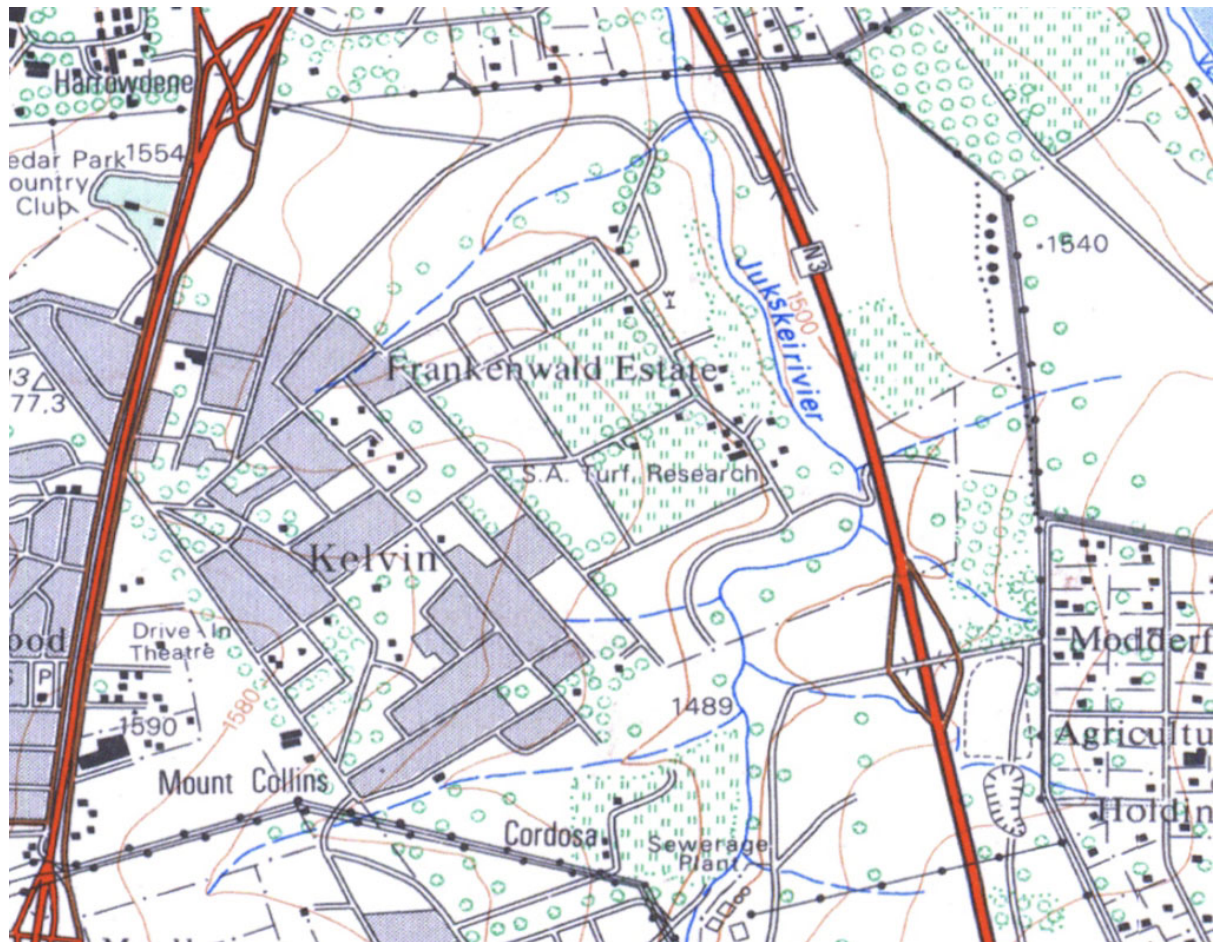


Figure 6. 1:50 000 2628AA Johannesburg 5th edition 1975.

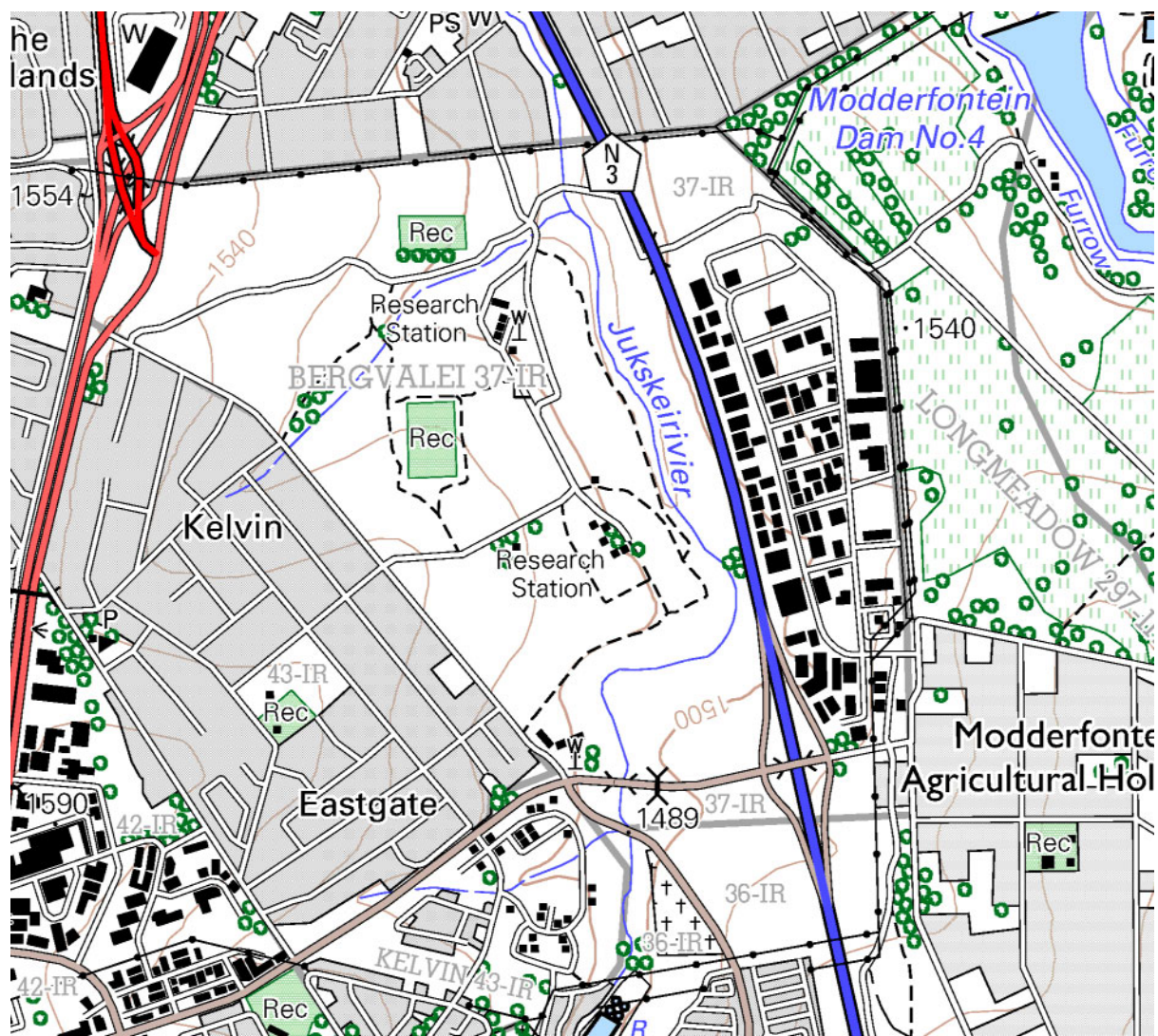


Figure 7. 1:50 000 2628AA Johannesburg 8th edition 2002.

7.1 Methodology

During the desktop phase a large number of potential sites were identified from the eight topographic 1:50 000 map editions that run from 1939 to 202, historical aerial photography and a number of other documents that contained data on the history of Frankenwald. Prior to the survey all potential sites were mapped from the desktop information and transferred to a GPS so that all the localities likely to have sites could be investigated.



Figure 8. *Spatial extent of structures from 1939–1975 as well as the extent of dumping, disturbance, cut and fill present on site.*



Figure 9. *Site survey map indicating the location of potential structures and the extent of possible sites in yellow.*

7.2 Surveyed map area

The project site was visited on the 25th of June 2020. All potential areas that could contain heritage features were inspected on foot. The survey area is severely transformed, overgrown and neglected.



Figure 10. *Track of surveyed area in purple.*

7.2.1 Sources of information

7.2.1.1 Desktop study

Prior to conducting the site assessment, a desktop study of existing literature on the wider region was conducted to assess the heritage context. The relevant 1:50 000 topographical map sheet 2628AA Johannesburg was consulted for pointers to possible heritage resources. Eight topographic 1:50 000 maps from 1939 to the most recent edition were accessed. The available aerial photographs were scrutinised for any evidence of structural remains, likely areas for archaeological features and heritage resources.

The SAHRIS data base was also accessed for previous heritage reports that relate to the general region of the survey. The Catalogue of Stone Age artefacts from Southern Africa in the British Museum is a valuable source too since it lists early collections of stone tools with the localities where these were obtained from (Mitchell 2002b).

7.2.1.2 Historical imagery, maps and the survey

These sources of data were applied to assist the foot site survey. Historical imagery and maps

were scrutinised to identify potential sites, areas of disturbance and vegetation anomalies. The available aerial photographs were studied for any evidence of structural remains, likely areas for archaeological features and heritage resources.

Prior to the field work all maps and diagrams of the proposed development provided by the Client were mapped and plotted on Google Earth and high-resolution aerial imagery and converted to .gpx format. The data were transferred to the mobile App GPS HD (Motion X) to allow for georeferencing during the field survey via Ipad and Iphone. GPS coordinates were recorded with a Garmin e-Trex 30 (Datum WGS84).

During the field survey the locality under review was systematically surveyed on foot to ensure a high probability of site recording.

7.3 Constraints

All field surveys are limited to a degree by the available time budget. It is the considered opinion of the authors that sufficient time and efforts were allocated during the current survey to document possible heritage resources within the study area.

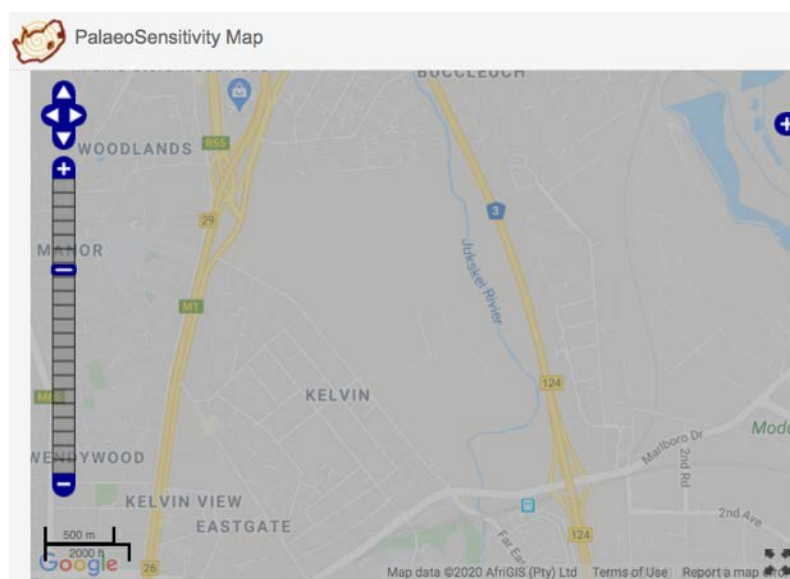
The general archaeological visibility on the site may be regarded as low due to the overgrown nature of the study area.

From the historical maps and images, it is clear that a number of people resided on the property probably from the 1900s and up to the 1950s. There is subsequently a high probability for unmarked and marked graves on this property.

8 Background to the Study Area

8.1 Palaeontological sensitivity

The study area is associated with granites and fall into the grey paleo sensitivity zone meaning that no paleontological studies are required.



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 map.

Figure 11. Extract from the Paleo sensitivity map indicating that the study area is within the grey zone where no studies are required (<https://sahris.sahra.org.za/map/palaeo>).

8.2 The early history of the Frankenwald Estate

In this report we contextualize the recent history of the study area as background to the proposed Frankenwald Mixed Use Development that entails Residential, Commercial, Business, Industrial and ancillary uses that are located in the Johannesburg Magisterial District. The discussion in this section is largely based on Colman (2019).

The mining magnate Alfred Beit bought a large section of bare veld in 1895 (1600 to 2000 acres, varying according to different sources). He intended to run Frankenwald as a country estate. Some sources report that there was already a Cape Dutch-style homestead on the

property. Over some nine years he converted the landholding into a prime agricultural and horticultural estate. There were vineyards, orchards, a vegetable garden and crops such as maize, potatoes were produced. Beit established eucalyptus, pine, pencil cedar and camphor trees on 800 acres. The house afforded a view of the estate. Bungalows and stables were also built.

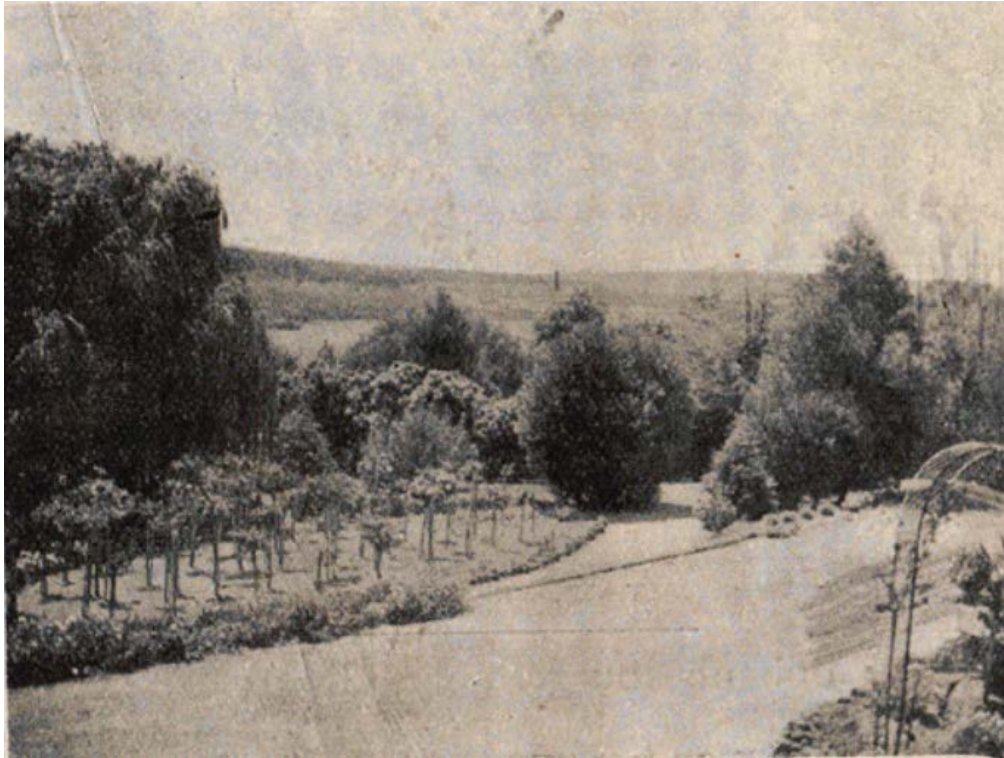


Figure 12. *Tree plantings at Frankenwald Estate by 1905 (Colman 2019: 9).*



Figure 13. *Frankenwald Estate by 1905 (Colman 2019: 9).*

The German born Alfred Beit (1853–1906), a contemporary and business friend of Cecil Rhodes, was a gold and diamond magnate. He played a key role in the development of the South African mining industry. As philanthropist he bequeathed around £2 million to charitable causes in England, South Africa and Germany. In southern Africa he set up the Beit Trust, bestowing funding for infrastructure development, education and research (<http://historicalpapers-atom.wits.ac.za/alfred-beit-deed-of-gift>). Beit donated the Frankenwald landholding to the Colony of the Transvaal in 1904. According to the *Guide to the Transvaal*, issued for the Johannesburg meeting of the British Association for the Advancement of Science, 1905, Beit donated 1600 acres to a trust, and another 1000 was acquired by the State according to the terms of the gift, bringing the property to a total of 2600 acres (Colman 2019: 9). The property comprised two portions of the farm Klipfontein No. 88, District of Pretoria, and was valued at £80 000.

Three conditions were set for the trust:

- The Transvaal Government had to increase the size of Frankenwald. They accordingly acquired the adjoining 572 acre portion of the farm Bergvlei No. 199, bringing the

property a total of 2626 acres.

- That the land should be used for educational purposes, a matter that would be of much controversy over the next 115 years.
- The creation of a government authority to supervise the educational development.

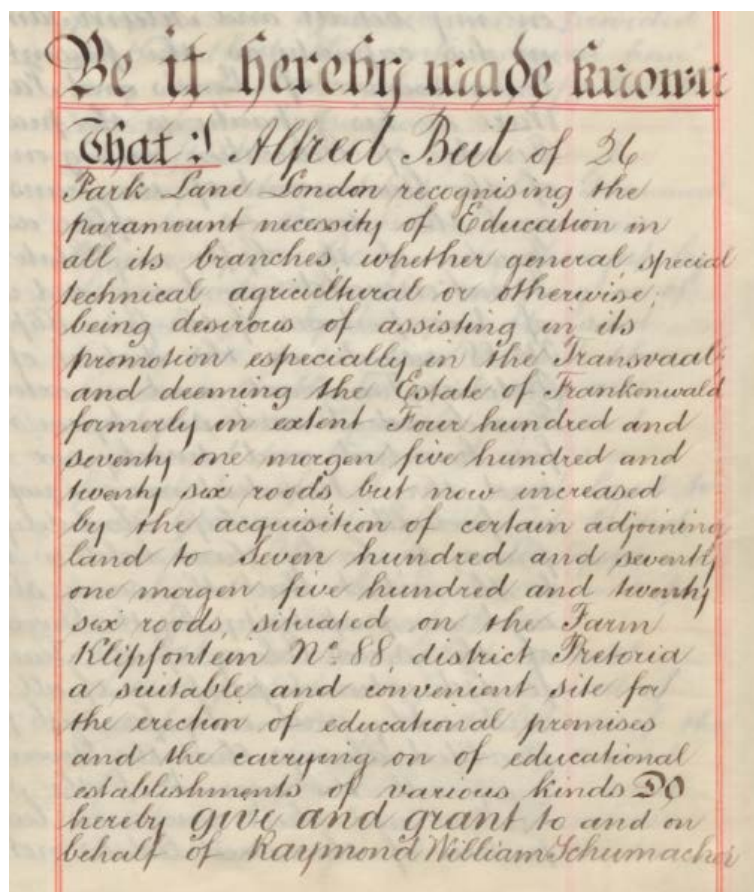


Figure 14. Excerpt from the Beit Deed of Gift for Frankenwald (Colman 2019: 2).

There were conflicting views on whether a new university should be established in Cape Town (favoured by General Smuts), or in Johannesburg. In 1919, Frankenwald was transferred to the Union Government. After the Johannesburg College became the University of the Witwatersrand, Frankenwald was transferred to this institution under Act No. 7 of 1922. The only restriction to the transfer was that any future alienation of Frankenwald could only be made with the consent of the Minister of Education. Beit also bequeathed £200 000 to construct and equip university buildings at Frankenwald and to build a tramway connection between the estate and Johannesburg to be used within a period of ten years, after the money would revert to his heirs. The proposals for education included the establishment of

a second university campus, or either an agricultural or industrial college. With the holdup in progress for such developments, the money was ultimately transferred to the University of Cape Town.

Prof. John Phillips of the Wits University's Botany Department took an interest in Frankenwald. He remarked on the poor soil with ouklip/hardpan, an iron-rich lateritic conglomerate, formed from the decomposition of underlying rocks. In spite of the holes that Beit had blasted in the hard substructure to be able to plant trees, they did not flourish. A parcel of land was sold to AECl for £4000. This would become the Modderfontein Estate.

A sum of only £600 was made available by the university for a small laboratory at Frankenwald. Infrastructure were gradually built. These included some rondawels, a small dormitory for scientists and visitors. AECl gave support in the form of fencing and fertilisers. The area had excellent grass cover by the 1930s and numerous scientific articles would emanate on the Highveld grasslands and field ecology from the Frankenwald Research Centre that was eventually established by Wits at this locality.



Figure 15. *Alfred Beit (Colman 2019: 7).*

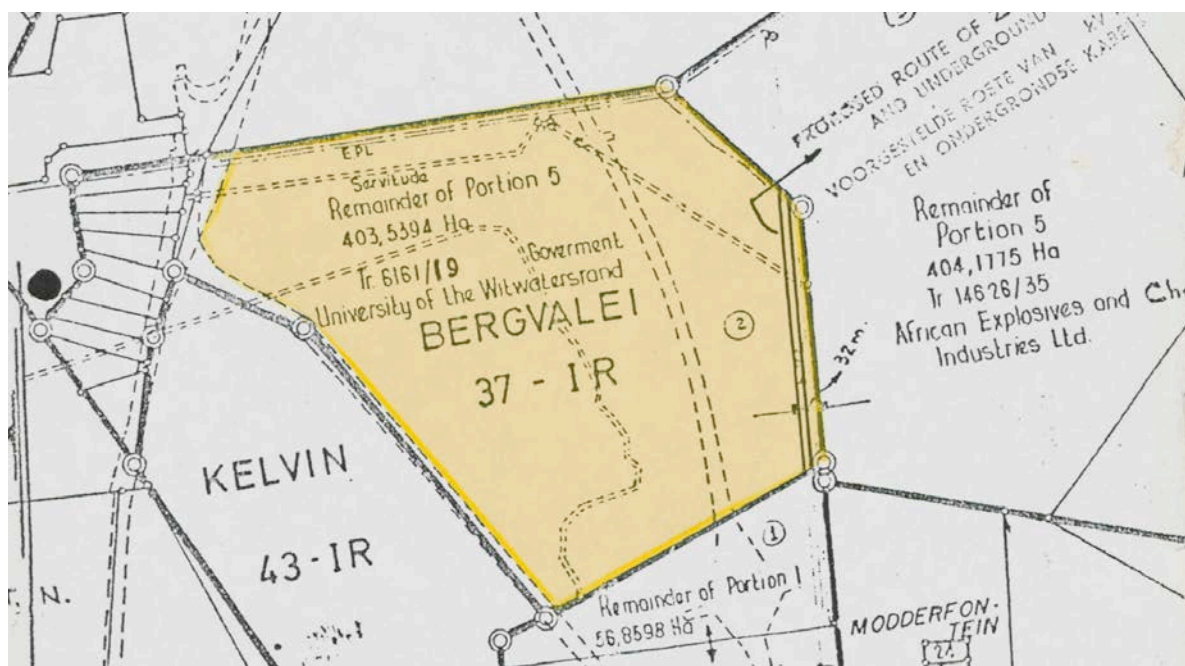


Figure 16. *Frankenwald 1919-1945. The highlighted section was transferred to Wits University in 1922 (Colman 2019: 5).*

After WWII a course in soil conservation and veld management over three years was introduced. Around 100 men enrolled for the BSc course, and another 60 to 90 entered to study over four academic years. Government support was terminated after the first course and the programme was terminated. The dormitories were converted into flats for university staff.

Various institutions rented Frankenwald, e.g. for a Turf Research Association, the CSIR established a recording station for the Telecommunications Research Laboratory and a meteorological research station was set up in partnership with Weather Bureau in Pretoria.



Figure 17. *The 1941 aerial photograph of the study area relative to Frankenwald indicating the extent of agricultural activities (National Geospatial Information Aerial Photograph 162_005_57401).*

After 1950 various plans were proposed for Frankenwald but nothing positive came of it. Road and freeway developments with land expropriations encroached on the size of the property. From 1959 AECl terminated their financial support. A Central Animal Research Unit came into being in 1960 with the aim of housing animals for medical research by university departments, and in particular the Department of Surgery.



Figure 18. *Portion of Frankenwald 1951, with mostly agricultural development and prior to the development of the highways (National Geospatial Information Aerial Photograph 249_001_54135).*



Figure 19. *Frankenwald 1968. Note that the construction on the N3 bypass has commenced (National Geospatial Information Aerial Photograph 603_018_07757).*



Figure 20. *Frankenwald in 1973 following the completion of the highway and the new estate manager's house (National Geospatial Information Aerial Photograph 298_27_002_00588).*

Other infrastructure on Frankenwald include a house built in 1972 for an Estates Officer. Sports fields were constructed at Frankenwald, including a baseball diamond in 1978. Proposals to use Frankenwald as a second university campus were not carried further. A portion of Frankenwald east of the Eastern Bypass (N3) was given to the Johannesburg Council in exchange for the portion of the showgrounds, to the west of the Milner Park campus. By 1982 the land size of Frankenwald had been cut to 268 ha, a tenth of the original land parcel.

A Science Park was established at Frankenwald. A Materials Handling Research Unit was followed by the University of the Witwatersrand Technology Centre (UWTec), was officially

opened in October 1983.



Figure 21. *Frankenswald 1983. Note the science centre in the bottom left hand corner, the baseball field and the reduced agricultural usage of the facility (National Geospatial Information Aerial Photograph 498_311_002_00697).*



Figure 22. *The only extant building from the Science Park era (Colman 2019: 17).*

Wits then engaged into partnerships with industry. Over the following five years the National Repository of Biological Materials, a MechaTronics Research Facility and the Desmond Bolton Road Transport Research Facility were established at Frankenwald. Despite various proposed initiatives for extending the facilities, financial problems resulted in the closing of the venture in 1990.

8.3 Background to the proposed development

In 1919 the land was transferred to the University of the Witwatersrand. In 1988, Frankenwald was rezoned (A/S 1052) under the Sandton Town Planning Scheme, 1980 to an 'Educational' and 'Special' zoning to allow for the development of educational facilities including the existing Science Park linked to the Wits Engineering Faculty. Bordering on Alexandra, Frankenwald was well situated to extend the township.

In 1994 the University entered into an agreement to sell Frankenwald for R25 million to the

Central Witwatersrand Regional Services Council (CWRSC) which was replaced after two years by the Greater Johannesburg Transitional Metropolitan Council (GJTMC) who was to transfer Frankenwald to the Eastern Metropolitan Substructure (EMSS) for the building of low-cost housing, specifically for the de-densification of Alexandra. Residents of Ward 7 Sandton that comprises suburbs neighbouring on Frankenwald such as Kelvin and Buccleuch, objected to the transaction while Alexandra residents also demanded insets. Several court cases and initiatives followed, but in 2000 the University sold the estate to the American-based Maharishi Global Development Project who envisaged a luxury development. After payment of a non-refundable deposit of around R6 million rand, no more payments were forthcoming and the transaction was cancelled. A 10-year land availability agreement was subsequently established with land developer iProp Ltd (later extended until 2016).

In 2003, an application for township establishment was submitted to establish a township called Buccleuch Ext 2. The applicant would apply for township rights with mixed-use elements. An MOU with the Gauteng Department of Housing would cover subsidised housing as part of the Alexandra Renewal Project. This initiative was countered by an appeal by the Witwatersrand Estates Ltd and the Waterval Islamic Institute.

A dispute and protracted court case was initiated by the Mia Trust, who opposed the development for 16 years to protect their commercial interests in Woodmead and Waterfall, delayed these proposed developments. The opposition to Ext 2 was finally withdrawn in 2018 (when the Mall of Africa was opened). In the context of the 'Fees Must Fall Campaign', Wits University decided to liquidate this asset and invited tender proposals to develop the land.

The successful bidder is a consortium between Calgro M3 and ERIS. After consultation with the CJMM City Transformation it was decided that the best way to facilitate the development of the land and meet the conditions of the original 2004 township approval, was to prepare an Urban Development Framework (UDF) to enable technical departments and affected parties to share in the formalization of a development plan for this key development initiative. A professional team was appointed and City Transformation formally initiated the UDF process on 20 June 2019. Various specialist studies and engineering reports are presently underway and the current consultation with departments and MOE's aims to complete the

status quo portion of the Frankenwald UDF to circulate it for public comment. (Extracted from Frankenwald Planning Background 2020).

In the Spatial Development Framework 2040 for the City of Johannesburg (CoJ) (2016) the spatial inequality in the settlement pattern of Johannesburg is highlighted. The two major spatial discontinuities in the City structure are the north-south segregation and the vacant zones of undeveloped land within the urban structure in the northeast, which includes Frankenwald. These form a spatial divide between the CoJ and Ekurhuleni.

9 Heritage context based on previous impact assessments in the general region

Archaeological Impact Assessments (AIAs), Heritage Impact Assessments (HIAs) and academic publications on the prehistory and historical period generated a data base for the heritage resources of the Gauteng Province. These sources demonstrated a diverse cultural landscape with settlement and utilisation of the local resources starting from the deep past over a period of time that spans millions of years up to recent times. It documents the earliest occupations of hominins, Stone Age settlement, migrations of African farmers and subsequently the movement of white farmers into the region, mining, industrialization, urbanization, warfare and conflict. Please refer to Annexure A for an overview of the southern African cultural succession and a brief synthesis of the archaeological and other heritage resources that could be present within the study region.

Some of the more recent archaeological and heritage surveys previously conducted in the general region undertaken to record and mitigate heritage resources prior to development were consulted on the SAHRIS data base.

The majority of impact assessments pointed out that the absence of heritage resources can be ascribed to the extensive agricultural, mining and industrial activities that have been carried out within the general region.

The following is a synopsis of some of the more recent HIAs and AIAs conducted around the study area.

2019

Graves and formal cemeteries represent some of the heritage resources that have to be preserved in what are now mostly disturbed areas through agriculture, infrastructure and mining, and built-up zones. A Pelsers Archaeological Consulting (2018) exhumated approximately 174 known and unknown graves from the remainder of Portion 221 of the farm Zuurfontein 33IR, Ekurhuleni Metropolitan Municipality. All burials and remains were relocated to the Mooifontein Municipal Cemetery.

An isolated burial was discovered during construction work on Portion 32 of the farm Modderfontein 76-IR Alliance Extensions 6 to 8 and 12 to 17 in Ekurhuleni (Integrated Specialist Services 2018).

Shasha Heritage Consultants (2019) in a Phase 1 Heritage Resources scoping report for the proposed rehabilitation of the gabion structure at 37 Alexandra Avenue, Craighall on the Farm Klipfontein 203 IR, portion 23 recorded no heritage resources.

2017

G & A Heritage (2017a) in an HIA for the proposed new Modder Ext 6 light industrial development on Part of the Remainder of Portion 1 of the Farm Modderfontein 76 IR near Benoni, Ekurhuleni Metropolitan Municipality, Gauteng Province found no sites of heritage significance. In another HIA for the Proposed New Modder Ext 4 Residential Development on Part of the Remainder of Portion 1 of the Farm Modderfontein 76 IR near Benoni G & A Heritage (2017b) recorded an old mine shaft and the overburden dump with associated infrastructure.

A basic assessment was undertaken for the proposed rehabilitation and upgrade of the Bridge Road Bridge located in Buccleuch, within the City of Johannesburg, Gauteng Province (Envirolution Consulting 2017). No identified heritage sites were found.

Naudé (2017) made a heritage assessment of the Dynamite Coffee Co. restaurant building, reporting that only the shell of the building remains.

2010

Nzumbululo Heritage Solutions (2010) in a Phase 1 Archaeological and Heritage Impact Assessment specialist study for the proposed Linbro substation found no archaeological or historical sites.

2009

Huffman (2009) in an HIA for proposed housing on Portion 32 of Modderfontein 76 IR found no archaeological or heritage sites on a portion of land of about 230 ha.

2008

Wits Enterprise (2008a) in an AIA for a proposed township development on Portion 30 of the farm Modderfontein 76 IR, Daveyton, Gauteng Province recorded an absence of sites of heritage significance. In another AIA on the remainder of Portion 7 of the farm Modderfontein East 72 IQ, Benoni Gauteng Province Wits Enterprise (2008b) reported a poorly preserved site possibly associated with early gold mining in the Benoni area

2007

Matakoma Heritage Consultants (2007) in a Heritage Scoping for the Centenary Road re-alignment at Modderfontein as part of the larger Gautrain project found no sites of cultural significance.

10 Findings

10.1 Infrastructure and other buildings

Despite the rich history of Frankenwald there is virtually nothing that remains from the early and later developments on this land parcel. From the desktop assessment it was evident that many structures were historically present on the said land parcel. From the field assessment it is clear that all former structures have been removed and today little more than foundations remain. Where foundations are present, it is also clear that the former structures were

frequently altered and changed, added to or sections demolished as use changed over time. The remaining foundations are thus deemed of no heritage value.



Figure 23. *Remains of the 1970s baseball club.*



Figure 24. *Remains of the gardens around the 1970s house.*



Figure 25. *Example of a dressed piece of sandstone area (approximately 380mm x 380mm x 300 mm). Several of these pillar blocks and also the blocks of a sandstone arch are scattered over a large.*



Figure 26. *The remains of handmade bricks (note the different frogs) these were found in proximity to a rectangular mud structure.*



Figure 27. *Remains of former buildings dumped in a heap. The heap contained materials that date mostly from 1960–1970.*



Figure 28. *Remains of an agricultural terrace or animal enclosure.*

Close to the N3 highway was a tarmac strip where model aeroplane enthusiasts would fly their aeroplanes. There were some foundations and animal posts in the area that was once the site of an animal research centre. The research centre was closed down and moved to Wits University. This part was subsequently rented out to the Gallo Manor Police Station in Sandton that formerly housed staff and stabled horses on the property.



Figure 29. *Tarmac and lapa used by model aeroplane members, and right: remains of animal stabling (Colman 2019: 18).*



Figure 30. *Frankenwald before the 2018 fire (Colman 2019: 6).*

10.2 Cemetery



Figure 31. *General view of the cemetery. Note the three headstones that are visible.*

The only feature present on site that are of significance is the formal workers' cemetery located at 26° 4'42.01"S; 28° 6'16.21"E. This cemetery formerly was at the end of a tree lane. It is severely overgrown but possibly contain 10–15 graves, both formal and informal. The graves with formal headstones date from 1950–1970.



Figure 32. *The location of the graves from the 1968 aerial photograph (National Geospatial Information Aerial Photograph 603_018_07757).*



Figure 33. *The remains of a grave without headstone, note the porcelain cup and the red PRIMROSE brick made in Germiston that date from the 1930s to 1950s.*



Figure 34. *Some of the marked graves in the cemetery.*

Some of these graves were well maintained up to a few years ago, presumably by families of

the deceased and bearing evidence of family visits.



Figure 35. Graves from the 1950s and 1960s (Colman 2019: 6).

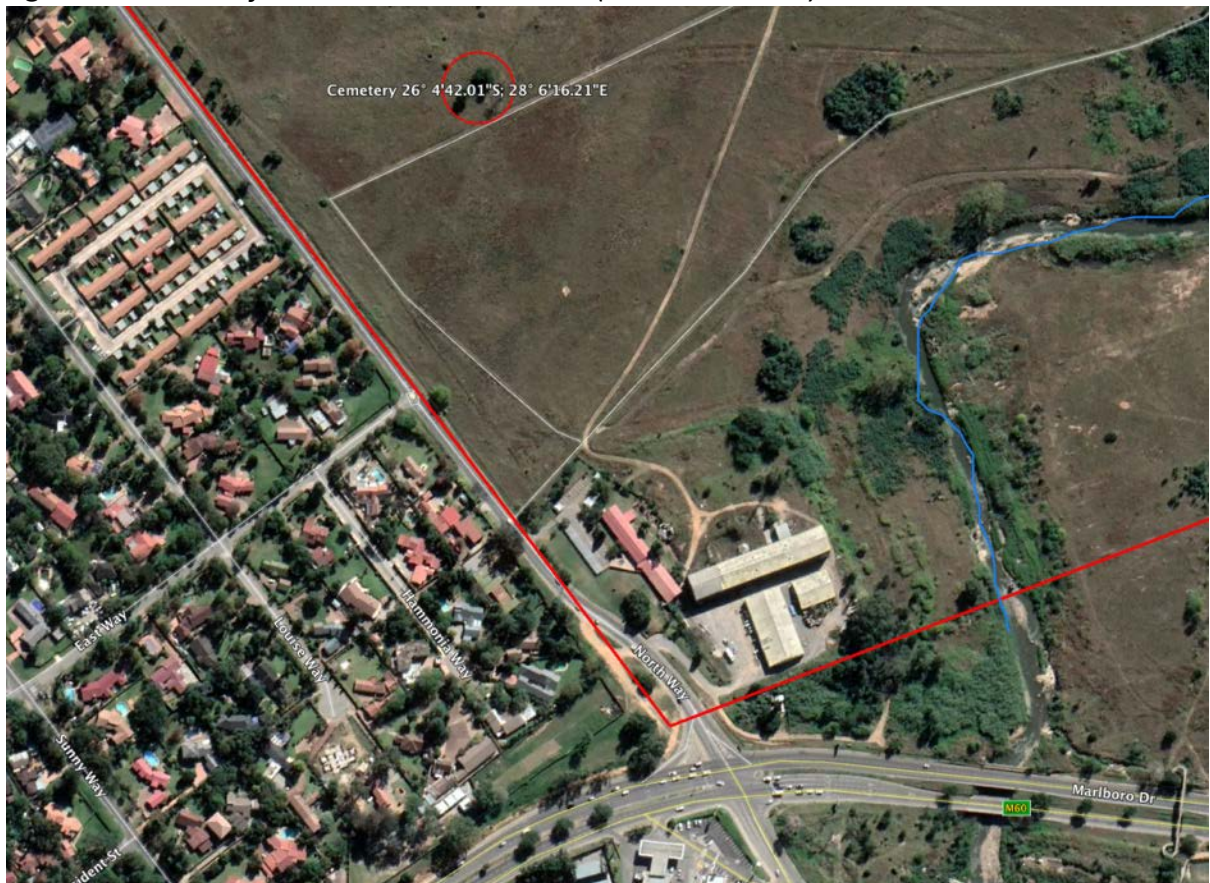


Figure 36. Location of the cemetery on Frankenwald depicted by the circle with a 25m radius relative to North Way Drive.

11 Assumptions and limitations

The field study surveyed the surface only, a procedure that cannot locate buried archaeological and/or palaeontological sites. While not detracting by any means from the extensiveness of the fieldwork undertaken by the authors, it is necessary to point out that heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors may account for this, such as ephemeral indications of graves, dense vegetation cover in some parts of the surveyed area, and the subterranean nature of certain archaeological sites that are buried through sediment accumulations.

12 Conclusions and Recommendations

12.1 Recommendations

Despite the long and rich past of the property, very little of the historical Frankenwald remains. It is recommended that in the development of the site the history is acknowledged and incorporated through the development of a memorial park where the story of Frankenwald and the area can be told through multiple narratives and from multiple perspectives. Some of the historical fabric and materials that still remain on the property can be incorporated as part of such a project.

The existing cemetery located at **26° 4'42.01"S; 28° 6'16.21"E** is deemed to be of **Medium significance** at the local scale. It is recommended that the site must be cleaned documented/recorded and appropriate mitigation proposed.

The mitigation may include the exhumation and relocation of the graves to an existing cemetery or alternatively incorporated into the existing development where it can be incorporated into an open space or similar use.

The resource is assigned a **Field Rating/Grade IIIB Local Resource**.

From a heritage perspective it is subsequently recommended that the proposed Frankenwald Mixed Use be approved subject to the mitigation of the cemetery.

12.2 Possible finds emanating from the development

There is a medium probability of finding/exposing heritage resources during the construction phase given the rich historical landscape of this context.

- In the event that any sub-surface heritage resources or graves are unearthed all work has to be stopped until an assessment as to the significance of the site (or material) in question has been made by a heritage practitioner. Note that no archaeological material that has been uncovered may be removed. This applies to graves and cemeteries as well. In the event that any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply. If human remains are uncovered, or previously unknown graves are discovered, a qualified archaeologist needs to be contacted and an evaluation of the finds made. If the remains are to be exhumed and relocated, the relocation procedures as accepted by SAHRA need to be followed. This includes an extensive social consultation process.
- If any archaeological material is uncovered during the course of development, then work in the immediate area should cease. The find will need to be reported to SAHRA or an archaeologist.

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14 Annexure A

The following table provides an overview of the southern African chronological sequence, the main attributes associated with a particular period, and cultural groups associated with each of the periods.

The southern African chronological sequence		
Cultural period and approximate ages	Cultural groups	Technological attributes and tool types
Earlier Stone Age (ESA) >2 m—>200 000 ya ²	Early hominins Australopithecines <i>Homo habilis</i> <i>Homo erectus</i> archaic <i>Homo sapiens</i>	Large cutting tools (LCTs), scrapers and flaked forms. Some use of flaked bone as tools.
Middle Stone Age (MSA) <300 000 —>20 000 ya	Archaic and fully modern <i>Homo sapiens</i>	A reduction in tool size. Blades, convergent points and awls made on prepared core types to produce uniform tool forms, also scrapers and other tool types. Flaked products were often further shaped through secondary retouch to produce a range of formal tool types. Decorative items, body ornaments and ochre use become apparent. Rare engravings and rock art.
Later Stone Age (LSA) <40/20 000 ya up to historical times	<i>Homo sapiens</i> San hunter-gatherers Khoekhoe herders	An extended range of microlithic tool types, often used as inserts for bow-and-arrow hunting. Characteristic tools include scrapers, borers, and arrow heads. Ostrich eggshell (OES) beads and flasks — sometimes decorated— are prolific. Trade/barter items include glass, iron and copper beads, and pigments. Leather working, basketry, bone implements and armatures for arrows are common. Bow-and-arrow hunting and snaring. San and herder ceramics. Domestic animals: sheep, goats, cattle and dogs. Rock art. Polished stone tools and grooved stones used to shape different bone implements.
Early Iron Age (EIA) c. AD 200—c. AD 900	Bantu-speaking African farming communities	Distinct pottery styles for the various pottery expressions, metal working, subsistence agriculture, domestic animals, trade and barter. Upper and lower grinding stones.
Middle Iron Age	Bantu-speaking	Distinct pottery for the various ethnic

² Ya = years ago

c. AD 900—c. AD 1300	African farming communities	groups, metal working, subsistence agriculture, domestic animals, trade and barter.
Late Iron Age (LIA) c. AD 1300 – c. AD 1840 Stone-walled LIA sites: c. AD 1640—c. AD 1840	Bantu-speaking African farming groups and Europeans	Characteristic pottery traditions associated with each of the main divisions, metal working, subsistence agriculture, domestic animals, trade and barter. Upper and lower grinding stones and other stone implements. Farmer rock art. Stone-walled settlements.
Colonial Period c. 1650	Bantu-speaking African farming groups and Europeans	Historical structures, industrial metals, glass, porcelain and ceramics.
Historical Period c. 1850	Various African groups, groups of mixed origin and Europeans	Historical structures, industrial metals, glass, porcelain and ceramics.

The following section provides a synthesis of the cultural succession of settlements within the southern African archaeological context.

14.1.1 Stone Age

Archaeological traces in the form of mostly stone tools suggest a widespread presence for tool-producing Plio-Pleistocene hominins in southern Africa. The South African Stone Age sequence is chronologically divided into the Earlier Stone Age (ESA), the Middle Stone Age (MSA) and the Later Stone Age (LSA) based on the concept of techno- or industrial complexes. Each of the subdivisions is formed by a group of industries where the assemblages share attributes or common traditions (Deacon 1972; Deacon & Deacon 1999; Lombard *et al.* 2012).

The australopithecines were gradually displaced by *Homo habilis*, a genus that evolved into the more advanced *Homo ergaster/erectus* by 1.8 million years BP. The large stone cutting tools (LCTs) associated with these hominins form part of the Oldowan and Acheulean industries of the ESA. Most ESA localities with stone tools in South Africa are associated with the hominin species known as *Homo erectus*, and the more recent ESA assemblages with archaic *Homo sapiens* (Barham & Mitchell 2008).³

³ ESA stone tools were found in the Kloofendal Nature Reserve.

By >250 000 years BP, the large cleavers and handaxes of the ESA were discontinued and replaced by a larger variety of smaller tools and weapons of diverse shapes and sizes and made by using different techniques. The MSA typologies following on the ESA represent greater specialization in the production of stone tools, in particular flake, blade and scraper tools and also in a more extended range of specialized, formal lithic tool types. These changes in technology mark the beginning of the MSA.

The MSA is known for typically prepared centripetal cores that delivered specific convergent/pointed flakes and a range of flake blades. Flaked products often retain the characteristic faceted striking platform that derives from this technique. Several other core types were also used to produce blank forms. Many of these were shaped by secondary trimming to produce a range of formal tool types. This period is moreover characterized by regional lithic variability, evidence for symbolic signalling, polished bone tools, portable art and decorative items.

The main developments during the MSA are cognitive, cultural and physical modernity (Wadley 2013a, 2013b, 2015, 2016). The MSA, which lasted almost half a million years, is associated with early modern humans with complex cognition, novel behaviours and transformative technologies. During the MSA early humans still settled in the open near water sources but also in caves and shelter localities. The MSA marks the transition from the more archaic *Homo* species to anatomically modern humans, *Homo sapiens sapiens* (Jurmain *et al.* 2013).

It is now generally accepted that the MSA was fully replaced by a mostly microlithic LSA marked by a series of new technological developments and cultural innovations (Wadley 2013a, 2013b). The LSA is marked by a series of technological innovations, social transformations and also noticeable demographic changes (Mitchell 2002a). The transition from the MSA to the LSA is vague. Dates proposed for the transitional period range from around 60/40 000 – 20 000 years ago based on a series of dates obtained through diverse dating methods, palaeoclimatic inferences as well as lithic technologies and diagnostic tool types as artefactual markers of a particular period.

The major changes comprise the replacement of MSA lithic technologies by LSA microlithic stone-working traditions and more widespread signs of symbolic and ritual activity in the form of art and decorative items, specifically objects made for personal adornment, such as pendants and the ubiquitous ostrich (*Struthio camelus*) eggshell (OES) beads (Mitchell 2002a). During the LSA small (microlithic) tools, bone tools and weapon armatures and a range of decorative items as well as rock art were produced.

Hunter-gatherer societies (and the later San) relied to a large extent on bow-and-arrow hunting with poisoned tips, and also snaring. Veld foods and medicinal plants were gathered. Ceramics were used and/or produced by hunter-gatherers and Khoekhoe herders towards the terminal phases of the LSA over a period of around 2000 years. Many of these stone tools and other material cultural items were still manufactured and used when the first Europeans settled in southern Africa in the 17th century AD. Information recorded about the lifestyles of the Khoekhoe herders and the San (Bushmen) at the time of the arrival of Europeans provides some insight into the immediate past history of these indigenous people.

Evidence for Stone Age communities on the Highveld comprises the complete sequence of the southern African Stone Age (Mason 1962, 1988).

14.1.2 Rock Art

Thousands of painted and engraved sites dating from the LSA have been recorded throughout Southern Africa and many more are still being found every year. Paintings and engravings were also executed on loose slabs of stone and some were used as markers for storage pits and in burials. Rock art in the form of paintings, but in particular the many and diverse categories of engravings on the highveld, are well-documented, for example at Maanhaarrand and Olifantspoort in the Rustenburg region (Mason 1986; RARI Wits Database).

14.1.3 Settlement by African farmers

The migrations into southern Africa and the expansion of Early Iron Age (EIA) African farming societies are apparent from AD 400 onwards. Pioneer Sotho-Tswana and other ethnic groups settled in semi-permanent villages, cultivated a range of crops, raised livestock, made ceramic

containers, mined ore and smelted metals and engaged in trade or barter. The Late Iron Age (LIA) was accompanied by aggregations of large numbers of communities that were often marked by extensive stonewalled settlements, or enclosures demarcated with poles and brushwood.

It was only during the second millennium at around AD 1600 that African communities settled the study region more densely, and these were mainly Tswana groups. The Highveld in general contains a great many Sotho-Tswana stone-walled structures from settlements that date to the Iron Age and the historical period (Mason 1986; Huffman 2007; African Heritage Consultants 2016). The more recent histories of groups such as the Tlokwa, Kgatla, Fokeng, Kwena, Po and others have been documented through ethnographic reports and oral histories (Boeyens & Hall 2009; Boeyens 2012; Hall 2012).

The greater Klipriviersberg area is located within the municipal areas of Johannesburg, Ekurhuleni and Midvaal. The prehistory of the Klipriviersberg begins with the Stone Age (Cousins *et al.* 2014). The area contains numerous stone-walled Iron Age Tswana settlements that date from c. 1500 (Mason 1968; Sadr 2012). The African farmer ceramics at most of the Klipriviersberg settlements of the study region are representative of the Uitkoms facies — a merger of Ntsuanatsatsi and Olifantspoort ceramics (Huffman 2007: 431). Klipriviersberg walling and the Uitkoms facies pottery that characterise most of the Highveld sites, date from the 17th to the 19th centuries. Huffman (2007: 433) puts a final date to Klipriviersberg walling at around 1823 with the arrival of Mzilikazi and his Nguni people in the area. The subsequent unrest in the interior resulted in clashes between the different Sotho-Tswana and the incoming Nguni that caused widespread displacements during the so-called the *difaqane* (Bergh 1999).



Figure 37. *Klipriviersberg-type settlements (after Huffman 2007: African Heritage 2016: 21).*

14.1.4 Broader historical context for Frankenwald

The first white settlers to move into the region from the early 18th century onwards were frontiersmen, hunters, traders, missionaries and farmers. White hunters explored the general region from the 1800s (Bergh 1999). The area was settled in the early 1900s by white farming colonists. Whereas pockets of agricultural land still remain, the bulk of these farms were subsequently industrialized through mining activities or rezoned for towns and residential suburbs.

Historical sites, formal cemeteries and informal graves associated with farming practices and mining ventures occur in the general area. The discovery of mineral resources and the associated developments contributed significantly to the struggle for supremacy that culminated in the Anglo Boer War of 1899-1902. The research area was the scene for several battles and skirmishes during this war (<http://angloboerwar.com/forum/11-research/10384-books-on-the-boer-war>). The war cemetery from World War II is also an attraction. Several coloured soldiers have been buried at this locality (<http://www.sahistory.org.za/places/springs>).

The discovery of the rich gold fields of the region resulted in conflict and transformation of traditional political and economic systems. The first white farms on the Witwatersrand, an

area known then as the Overvaalsche (later the Transvaal), were established by the 1840s (Venter 1950). Localities and suburbs such as Doornfontein, Klipriviersberg, Langlaagte, Braamfontein and Turffontein reference some of these early farms.

South Africa has produced more than a third of the total gold mined throughout history (Viljoen 2009). The Witwatersrand Basin is known as 'The World's Greatest Goldfield' (Tucker et al. 2016). As early as 1855 a report was submitted to the government on gold discovered by P.J. Marais on the Witwatersrand, but there was no follow-up (Venter 1950). The story of gold on the Witwatersrand began shortly after the discovery of gold at various localities from 1884 onwards.

The main reef was found on Langlaagte in the Kliprivier area in 1886 by George Harrison and George Walker (Venter 1950). The farm Langlaagte (formerly Langeleegte) was originally owned by Johannes Matthys Smit in 1853 and comprised 2260 morgen (Venter 1950). The main reef continued for almost 100 miles. Harry Struben put nine claims along the reef, which he named Crown Reef. Some excavations on the claims of the discoverers of the Main Reef Group of Conglomerates of the Witwatersrand can be seen in a memorial park adjoining the Main Reef Road (SAHRIS accessed May 2020). This set in motion a tremendous gold rush and the establishment of camps. After the surface loads were mined, the sinking of shafts to extract the deeper deposits and the associated infrastructure necessitated the formation of large mining houses with the ability and finances to establish industrialised mines.

The development of deep-level mining on the Witwatersrand in the mid-1880s led to the establishment of a dynamite factory at Modderfontein, northeast of Johannesburg, in 1895. Houses and infrastructure had to be provided and various villages were established for the town of Modderfontein. To gain more data on the various dwellings and compounds at Modderfontein, surface collections of archaeological material were made and several middens associated with residential and industrial localities excavated to gain a better understanding of the life and material culture of the inhabitants of Modderfontein (see Behrens 1999, 2004, 2005 for detail on the developments at Modderfontein).

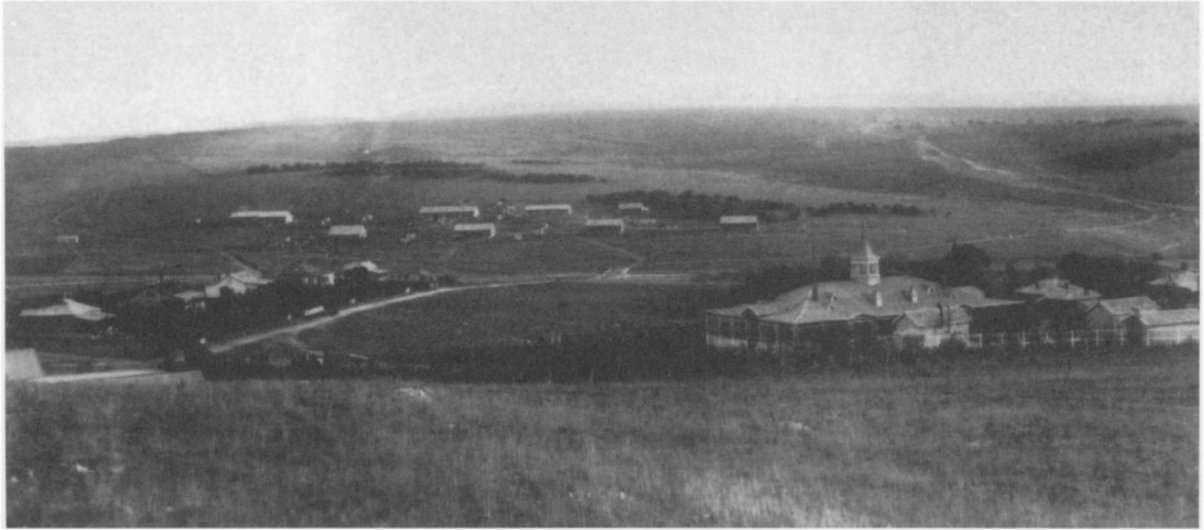


Figure 38. *View towards one of the Modderfontein villages, Hamburg c. 1897 (Behrens 2005: 63).*



Figure 39. *Worker compound Modderfontein c. 1897 (Behrens 2005: 64).*