

Phase 1 Cultural Heritage Impact Assessment:

**POTENTIAL HOUSING DEVELOPMENT ON THE REMAINDER OF PORTION 44 OF THE  
FARM FINAALSPAN 114 IR, EKURHULENI METROPOLITAN MUNICIPALITY,  
GAUTENG PROVINCE**

**Prepared for:**

Delta BEC (Mr G Schoeman)

- Postal Address: 320 The Hillside Road, Rynlal Building, Lynnwood, 0180; Tel: 012 358 1850, E-mail: gerhards@deltabec.com

**Prepared by:**

J A van Schalkwyk (D Litt et Phil)

- Heritage Consultant: ASAPA Registration No.: 164 - Principal Investigator: Iron Age, Colonial Period, Industrial Heritage.
- Postal Address: 62 Coetzer Avenue, Monument Park, 0181; Tel: 076 790 6777; E-mail: jvschalkwyk@mweb.co.za

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**Declaration:**

I, J.A. van Schalkwyk, declare that:

- I am suitably qualified and accredited to act as independent specialist in this application.
- I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services, for which a fair numeration is charged.
- The work was conducted in an objective manner and any circumstances that might have compromised this have been reported.



J A van Schalkwyk  
Heritage Consultant  
February 2017



## EXECUTIVE SUMMARY

### Phase 1 Cultural Heritage Impact Assessment: POTENTIAL HOUSING DEVELOPMENT ON THE REMAINDER OF PORTION 44 OF THE FARM FINAALSPAN 114 IR, EKURHULENI METROPOLITAN MUNICIPALITY, GAUTENG PROVINCE

The Ekurhuleni Metropolitan Municipality Department of Human Settlements appointed Delta BEC to undertake a Basic Assessment process for activities listed in GNR. 983 and GNR. 985 as per the National Environmental Management Act, 1998 (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014, for a potential housing development on the Remainder of Portion 44 of the farm Finaalspan 114IR.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by the Delta BEC to conduct a cultural heritage assessment to determine if the proposed housing development would have an impact on any sites, features or objects of cultural heritage significance.

The cultural landscape qualities of the region is made up of a pre-colonial element consisting of very limited Stone Age and Iron Age occupation, as well as a much later colonial (farmer) component, which eventually gave rise to an urban and industrial (mining) component.

However, due to the unseasonal high rainfall in January and early February the area, which is largely a wetland, was difficult to access, being waterlogged for large areas. In addition, the vegetation cover was very dense, seriously limiting archaeological visibility.

Therefore, based on information from contiguous areas (Gaigher 2015; Huffman 2005; SRK Consulting 2003; Van Schalkwyk 2009, 2011), which indicates that this is an area of low heritage potential, I completed a **controlled-exclusive surface survey**, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource and] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978).

#### Identified heritage sites

- No sites, features or objects of cultural heritage significance were identified in the study area.

#### Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

- As no sites, features or objects of cultural significance are known to exist in the development area, there would be no impact as a result of the proposed development.

Heritage sites	Significance of impact	Mitigation measures
<b>Finaalspan Housing Development: Construction Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a
<b>Finaalspan Housing Development: Operation Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a

Alternatives considered

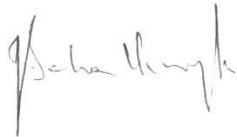
No alternative was considered. However, in terms of knowledge and understanding of the heritage landscape, sites and features in the region the potential sources of risk would be the same as for the preferred site.

Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue on acceptance of the proposed mitigation measures.

Conditions for inclusion in the environmental authorisation:

- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk  
Heritage Consultant  
February 2017

<b>TECHNICAL SUMMARY</b>
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<b>Project description</b>	
Description	Development of a housing estate
Project name	Finaalspan

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Project name	Finaalspan

<b>Applicant</b>
Ekurhuleni Metropolitan Municipality Department of Human Settlement

Ekurhuleni Metropolitan Municipality Department of Human Settlement
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<b>Environmental assessors</b>
Delta BEC
Mr G Schoeman

Delta BEC
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Mr G Schoeman
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<b>Property details</b>													
Province	Gauteng												
Magisterial district	Boksburg												
Local municipality	Ekurhuleni												
Topo-cadastral map	2628AB												
Farm name	Finaalspan 114IR												
Closest town	Boksburg												
Coordinates	Centre point												
	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>No</th> <th>Latitude</th> <th>Longitude</th> <th>No</th> <th>Latitude</th> <th>Longitude</th> </tr> <tr> <td>1</td> <td>-26.27402</td> <td>28.29077</td> <td></td> <td></td> <td></td> </tr> </table>	No	Latitude	Longitude	No	Latitude	Longitude	1	-26.27402	28.29077			
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Province	Gauteng
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Magisterial district	Boksburg
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Local municipality	Ekurhuleni
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Topo-cadastral map	2628AB
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Farm name	Finaalspan 114IR
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Closest town	Boksburg
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Coordinates	Centre point
-------------	--------------

No	Latitude	Longitude	No	Latitude	Longitude
1	-26.27402	28.29077			

<b>Development criteria in terms of Section 38(1) of the NHR Act</b>	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 sq m	No
Any other development category, public open space, squares, parks, recreation grounds	No

Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
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Construction of bridge or similar structure exceeding 50m in length	No
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Development exceeding 5000 sq m	Yes
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Development involving three or more existing erven or subdivisions	No
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Development involving three or more erven or divisions that have been consolidated within past five years	No
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Rezoning of site exceeding 10 000 sq m	No
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Any other development category, public open space, squares, parks, recreation grounds	No
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<b>Land use</b>	
Previous land use	Farming
Current land use	Vacant

Previous land use	Farming
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Current land use	Vacant
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## GLOSSARY OF TERMS AND ABBREVIATIONS

### TERMS

**Stone Age:** The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Later Stone Age	30 000 - until c. AD 200

**Iron Age:** Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. As they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Later Iron Age	AD 1300 - AD 1830

**Historical Period:** Since the arrival of the white settlers - c. AD 1840 - in this part of the country.

**Cumulative impacts:** "Cumulative Impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to existing and reasonably foreseeable impacts eventuating from similar or diverse activities.

**Mitigation,** means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.

### ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

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## **1. INTRODUCTION**

The Ekurhuleni Metropolitan Municipality Department of Human Settlements appointed Delta BEC to undertake a Basic Assessment process for activities listed in GNR. 983 and GNR. 985 as per the National Environmental Management Act, 1998 (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014, for a potential housing development on the Remainder of Portion 44 of the farm Finaalspan 114IR.

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. However, according to Section 27(18) of the National Heritage Resources Act (NHRA), No. 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by the Delta BEC to conduct a cultural heritage assessment to determine if the proposed housing development would have an impact on any sites, features or objects of cultural heritage significance.

This report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended and is intended for submission to the South African Heritage Resources Agency (SAHRA).

## **2. TERMS OF REFERENCE**

The aim of a full HIA investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives are to identify heritage resources (involving site inspections, existing heritage data and additional heritage specialists if necessary); assess their significances; assess alternatives in order to promote heritage conservation issues; and to assess the acceptability of the proposed development from a heritage perspective.

The result of this investigation is a heritage impact assessment report indicating the presence/ absence of heritage resources and how to manage them in the context of the proposed development.

Depending on SAHRA's acceptance of this report, the developer will receive permission to proceed with the proposed development, on condition of successful implementation of proposed mitigation measures.

### **2.1 Scope of work**

The aim of this study is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where the housing development is to take place. This includes:

- Conducting a desk-top investigation of the area;



- A visit to the proposed development site.

The objectives were to:

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

## 2.2 Limitations

The investigation has been influenced by the following factors:

- It is assumed that the description of the proposed project, provided by the client, is accurate.
- No subsurface investigation (i.e. excavations or sampling) were undertaken, since a permit from SAHRA is required for such activities.
- It is assumed that the public consultation process undertaken as part of the Environmental Impact Assessment (EIA) is sufficient and that it does not have to be repeated as part of the heritage impact assessment.
- The unpredictability of buried archaeological remains.
- This report does not consider the palaeontological potential of the site.

## 3. LEGISLATIVE FRAMEWORK

The HIA is governed by national legislation and standards and International Best Practise. These include:

- South African Legislation
  - National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) – see Appendix 4 for more detail on this Act
  - Mineral and Petroleum Resources Development Act, 2002 (Act No. 22 of 2002) (MPRDA);
  - National Environmental Management Act 1998 (Act No. 107 of 1998) (NEMA); and
  - National Water Act, 1998 (Act No. 36 of 1998) (NWA).
- Standards and Regulations
  - South African Heritage Resources Agency (SAHRA) Minimum Standards;
  - Association of Southern African Professional Archaeologists (ASAPA) Constitution and Code of Ethics;
  - Anthropological Association of Southern Africa Constitution and Code of Ethics.
- International Best Practise and Guidelines
  - ICOMOS Standards (Guidance on Heritage Impact Assessments for Cultural World Heritage Properties); and
  - The UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (1972).

## 4. HERITAGE RESOURCES

### 4.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
  - ancestral graves;
  - royal graves and graves of traditional leaders;
  - graves of victims of conflict;
  - graves of individuals designated by the Minister by notice in the Gazette;
  - historical graves and cemeteries; and
  - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
  - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - objects to which oral traditions are attached or which are associated with living heritage;
  - ethnographic art and objects;
  - military objects;
  - objects of decorative or fine art;
  - objects of scientific or technological interest; and
  - 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).

#### 4.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in 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; and
- sites of significance relating to the history of slavery in South Africa.

A matrix was developed whereby the above criteria were applied for the determination of the significance of each identified site (see Appendix 3). This allowed some form of control over the application of similar values for similar identified sites.

## 5. STUDY APPROACH AND METHODOLOGY

### 5.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 7 below and illustrated in Figure 2 & 3.

### 5.2 Methodology

#### 5.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted – see list of references in Section 11.

- Information on events, sites and features in the larger region were obtained from these sources.

#### 5.2.1.2 Data bases

The *Heritage Atlas Database*, various SAHRA databases, the *Environmental Potential Atlas*, the *Chief Surveyor General* and the *National Archives of South Africa* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development.

#### 5.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature were obtained from these sources

#### 5.2.1.4 Interviews

- None possible.

*The results of the above investigation are summarised in Table 1 below – see list of references in Section 11.*

**Table 1: Pre-Feasibility Assessment**

Category	Period	Probability	Reference
Early hominin	Pliocene – Lower Pleistocene		
	Early hominin	None	
Stone Age	Lower Pleistocene – Holocene		
	Early Stone Age	Low	Harcus (1945)
	Middle Stone Age	Low	Huffman (2005)

	Later Stone Age	Low	
	Rock Art	None	
Iron Age	Holocene		
	Early Iron Age	None	
	Middle Iron Age	None	
	Later Iron Age	Low	Huffman (2006/2007)
Colonial period	Holocene		
	Contact period/Early history	Low	Praagh (1906)
	Recent history	Medium	Praagh (1906); SRK Consulting (2003); Van Schalkwyk (2009b, 2011)
	Industrial heritage	Low	SRK Consulting (2003)

5.2.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by the Delta BEC by means of maps and .kml files indicating the development area. This was loaded onto a HP device and used in Google Earth during the field survey to access the areas.

The site was visited on 24 February 2017. The site was investigated by a combination of accessing it by means of a vehicle and walking transects across it – see Fig. 1 below. However, due to the unseasonal high rainfall in January and early February the area, which is largely a wetland, was difficult to access, being waterlogged for large areas. In addition, the vegetation cover was very dense, seriously limiting archaeological visibility.

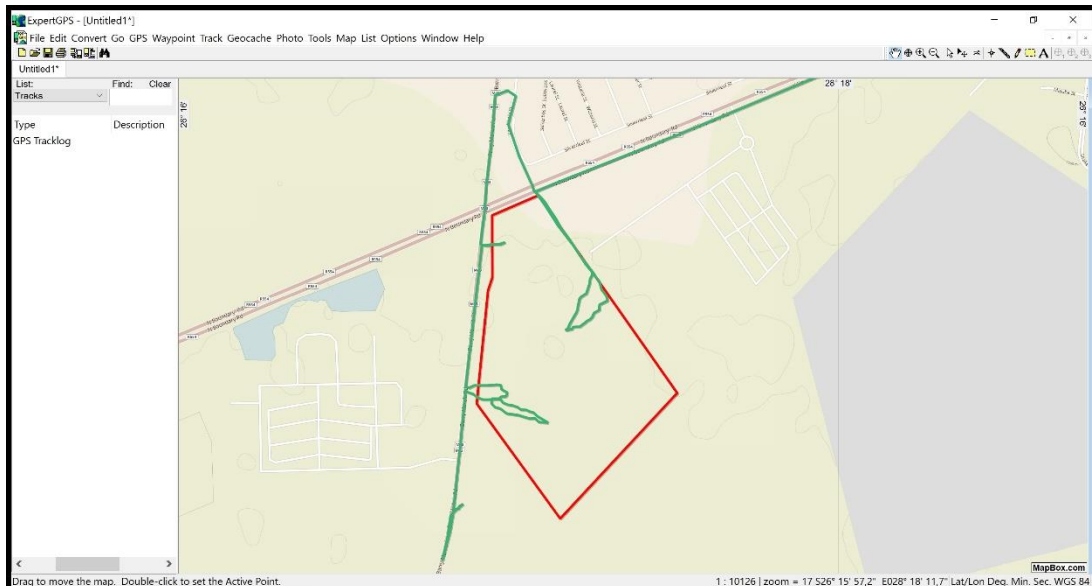


Fig. 1. Map indicating the track log of the field survey.

Therefore, based on information from contiguous areas (Gaigher 2015; Huffman 2005; SRK Consulting 2003; Van Schalkwyk 2009, 2011), which indicates that this is an area of low heritage potential, I completed a **controlled-exclusive surface survey**, where ‘sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource and] sites may and may not be’ and ‘an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to

clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978).

### 5.2.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS) and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

The track log and identified sites were recorded by means of a Garmin Oregon 550 handheld GPS device. Photographic recording was done by means of a Canon EOS 550D digital camera.

Map datum used: Hartebeeshoek 94 (WGS84).

## 6. SITE SIGNIFICANCE AND ASSESSMENT

### 6.1 Heritage assessment criteria and grading

The National Heritage Resources Act, Act no. 25 of 1999, stipulates the assessment criteria and grading of heritage sites. The following grading categories are distinguished in Section 7 of the Act:

**Table 2: Site Grading System.**

SAHRA Cultural Heritage Site Significance			
Field Rating	Grade	Significance	Recommended Mitigation
National Significance	Grade I	High significance	Conservation by SAHRA, national site nomination, mention any relevant international ranking. No alteration whatsoever without permit from SAHRA
Provincial Significance	Grade II	High significance	Conservation by provincial heritage authority, provincial site nomination. No alteration whatsoever without permit from provincial heritage authority.
Local Significance	Grade III-A	High significance	Conservation by local authority, no alteration whatsoever without permit from provincial heritage authority. Mitigation as part of development process not advised.
Local Significance	Grade III-B	High significance	Conservation by local authority, no external alteration without permit from provincial heritage authority. Could be mitigated and (part) retained as heritage register site.
Generally Protected A	Grade IV-A	High/medium significance	Conservation by local authority. Site should be mitigated before destruction. Destruction permit required from provincial heritage authority.
Generally Protected B	Grade IV-B	Medium significance	Conservation by local authority. Site should be recorded before destruction. Destruction permit required from provincial heritage authority.
Generally Protected C	Grade IV-C	Low significance	Conservation by local authority. Site has been sufficiently recorded in the Phase 1 HIA. It requires no further recording before destruction. Destruction permit required from provincial heritage authority.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II,

III and IV sites, the application of mitigation measures would allow the development activities to continue.

## 6.2 Methodology for the assessment of potential impacts

All impacts identified during the EIA stage of the study will be classified in terms of their significance. Issues were assessed in terms of the following criteria:

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

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

$S = (E+D+M) \times P$ ; where  
 S = Significance weighting  
 E = Extent  
 D = Duration  
 M = Magnitude  
 P = Probability

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

**Table 3: Significance Ranking**

Significance of impact					
Extent	Duration	Magnitude	Probability	Significance	Weight
-	-	-	-	-	-
Points	Significant Weighting	Discussion			
< 30 points	Low	Where this impact would not have a direct influence on the decision to develop in the area.			
31-60 points	Medium	Where the impact could influence the decision to develop in the area unless it is effectively mitigated.			
> 60 points	High	Where the impact must have an influence on the decision process to develop in the area.			

**7. PROJECT DESCRIPTION**

**7.1 Site location**

The site is 39,5614ha in extent and is situated in the southern part of the Ekurhuleni municipal area on the south-eastern quadrant of the Barry Marias / North Boundary Road intersection, south of Van Dyk Park and approximately 3km west of Carnival City Casino (Fig. 2). For more information, see the Technical Summary on p. iv above.

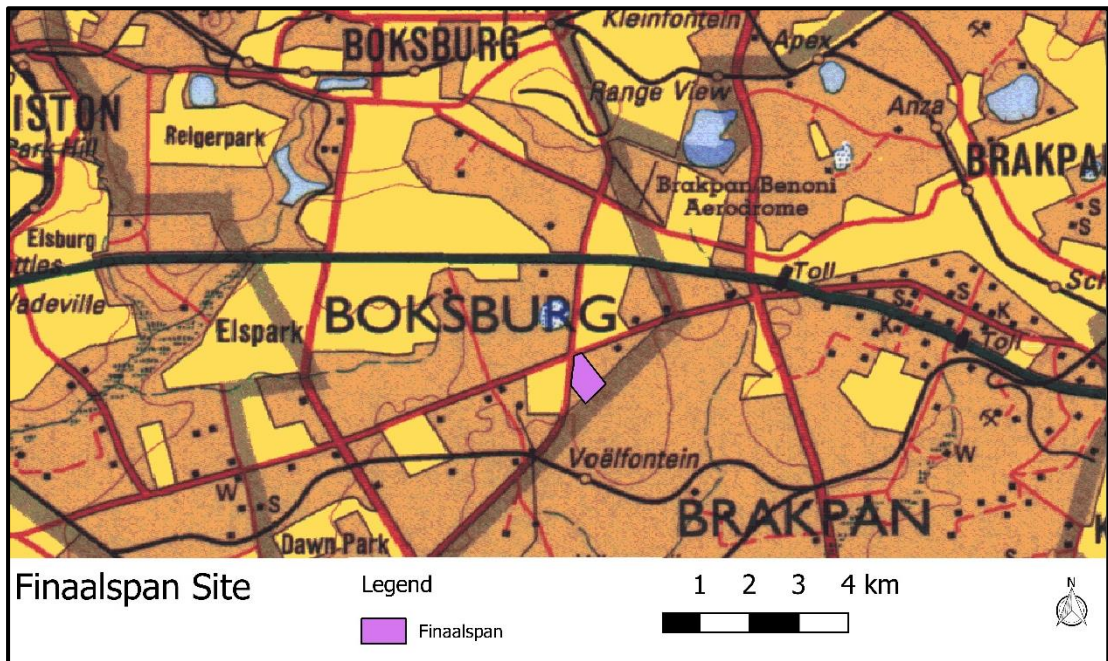


Fig. 2. Location of the study area in regional context.

**7.2 Development proposal**

Apart from the site location and proposed land-use, no information on the development of the site was available (Fig. 3). However, the supplied information was sufficient to evaluate the impact of the proposed development. From this it was also deduced that large sections of the area is basically a wetland, which is usually avoided by human for settling on.

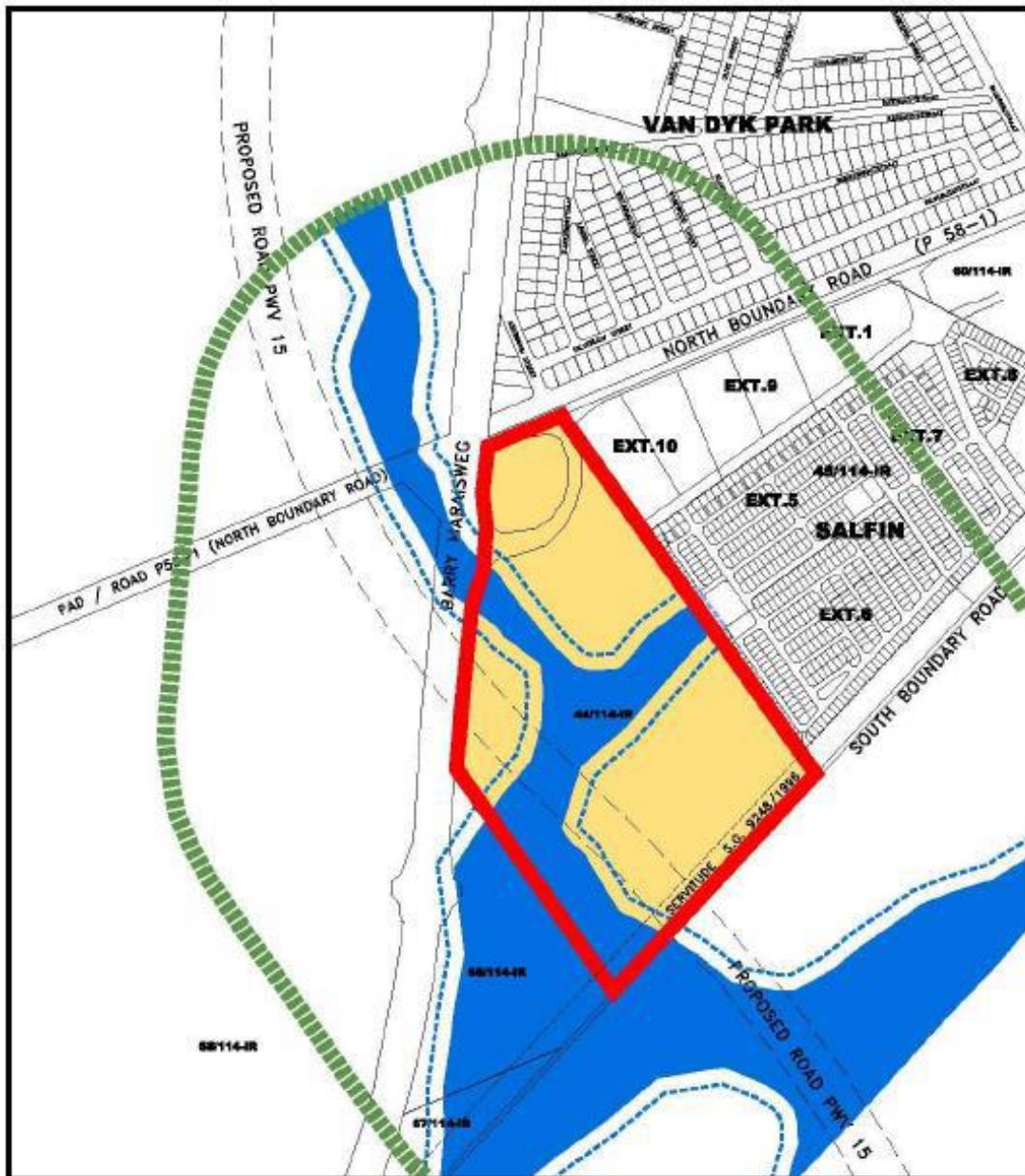


Fig. 3. Layout of the proposed development.  
(Map supplied by Delta BEC)

## 8. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 8.1 Site description

The geology is made up of shale and the topography is described as plain and pans. The original vegetation is classified as Dry Sandy Highveld Grassland.

#### *Current land use*

Currently the area under consideration is vacant and no obvious use of the site is evident.





Fig. 4. Views over the study area.  
(Not the tall, dense vegetation encountered during the site visit)

## 8.2 Overview of the region

The aim of this section is to present an overview of the history of the larger region in order to eventually determine the significance of heritage sites identified in the study area, within the context of their historic, aesthetic, scientific and social value, rarity and representivity – see Section 4.2 and Appendix 3 for more information.

The cultural landscape qualities of the region is made up of a pre-colonial element consisting of very limited Stone Age and Iron Age occupation, as well as a much later colonial (farmer) component, which eventually gave rise to an urban and industrial (mining) component. Recently, the mining activities went into decline, with a concurrent expansion of the urban environment.

### *Stone Age*

Records indicate that stone tools dating to the Early and Middle Stone Age occurred all over, for example in the Primrose Ridge area in adjacent Germiston (Harcus 1945), as well as to the south at Henly-On-Klip. Tools dating to this period are mostly found in the vicinity of watercourses, and no sealed, stratified sites (i.e. rock shelter or cave) are known from the region. Closer to the study area, a thin scatter of stone tools dating to the Middle Stone Age was identified by Huffman (2005).

### *Iron Age*

Iron Age people started to settle in southern Africa c. AD 300, with one of the oldest known site at Silver Leaves south east of Tzaneen dating to AD 270. One of the better-known sites, Broederstroom, is located on the southern side of the Hartebeestpoort Dam. Here archaeological excavations have revealed that early farmer people were living here by AD 470, growing a range of different crops and that they were smelting iron.

Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior highveld area. Because of their specific technology and economy, Iron Age people preferred to settle on the alluvial soils near rivers for agricultural purposes, but also for firewood and water.

The occupation of the larger geographical area (including the study area) did not start much before the 1500s. By the 16th century things changed, with the climate becoming warmer and wetter, creating condition that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable, for example the Witwatersrand in the region of Klipriviersberg. Here, large numbers of settlements dating to the Later Iron Age occur and, according to Huffman *et al* (2006/2007) these sites can be related to the Bafokeng people.

### *Historic period*

White settlers moved into the area during the first half of the 19<sup>th</sup> century. They were largely self-sufficient, basing their survival on cattle/sheep farming and hunting. Few towns were established and it remained an undeveloped area until the discovery of gold and later of coal. From early days this region was subjected to intense gold mining activities (Praagh 1906). The result is that most sites and features of heritage significance in the larger region derive from this development.

On 15 October 1886 Pieter J.J.D. Kilian informed the Transvaal State Secretary that he had discovered a profitable gold-reef on the farm Vogelfontein (which was state property) and on 9 February 1887 it was declared public diggings together with the adjoining farm Leeuwpoort. The proclamation came into force on 21 March 1887, which can be regarded as the founding day of Boksburg, named after the then State Secretary, WE Bok. Prospectors poured in as seekers after gold began crowding in tents. In 1887 the first 547 building plots were sold. After Johannesburg Boksburg is the oldest town on the Witwatersrand.

Soon after, coal deposits was found in the region. The railway between Johannesburg and Boksburg was opened in October 1890 and used to transport coal to Johannesburg for used on the mines. Towards the end of the 1890s, coal mining began around Witbank and the mines at Springs gradually closed down.

The Health Management Board, which was established initially, became a municipality in October 1903. The numerous gold-mining companies that came into existence were later amalgamated into the East Rand Proprietary Mines Ltd (ERPM) that used to be the largest gold mine in the world. It was all brought together by George Farrar, who later also became involved in local politics.

Over time Boksburg also became home to numerous industries, which gave it a second life as mining activities went into decline.

Popular pleasure resorts include Boksburg Lake and Cinderella Dam. The former was built in 1888 by Montagu White, mining commissioner until 1892, and was nicknamed White's Folly because it was empty for more than a year after being completed, until it filled up in a single night.

From the image and maps below, it can be seen that no development existed on the location of the development site.

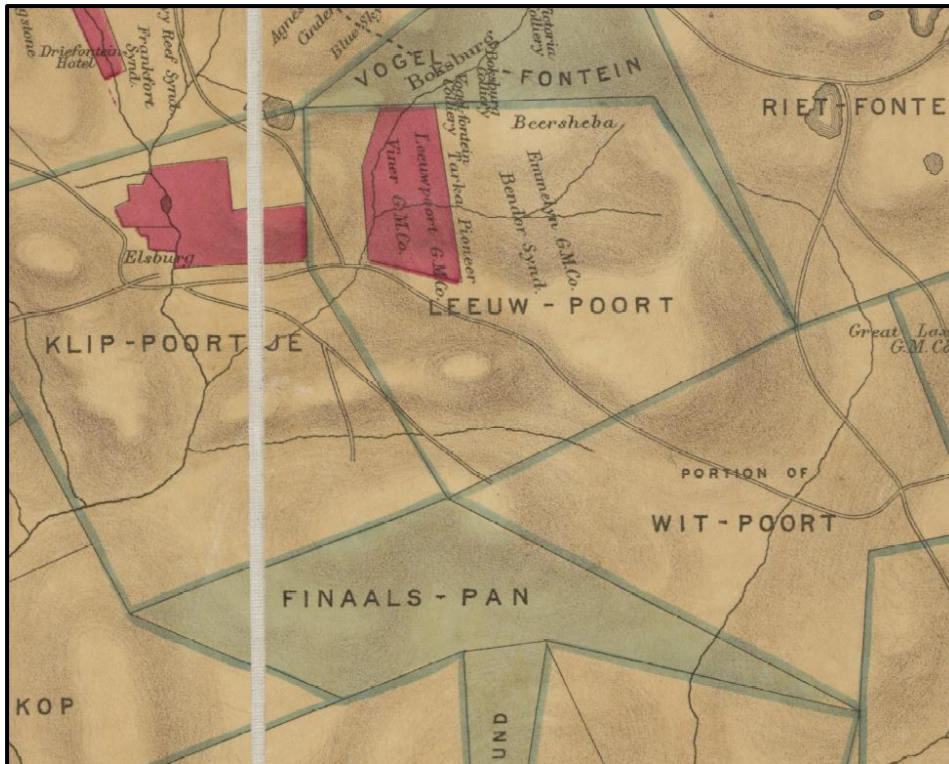


Fig. 5. Map indicating mines in the region.  
(Troy's Map of the Witwatersrand Goldfields, 1890)



Fig. 6. Aerial view of the study area.  
(Image: Google Earth)

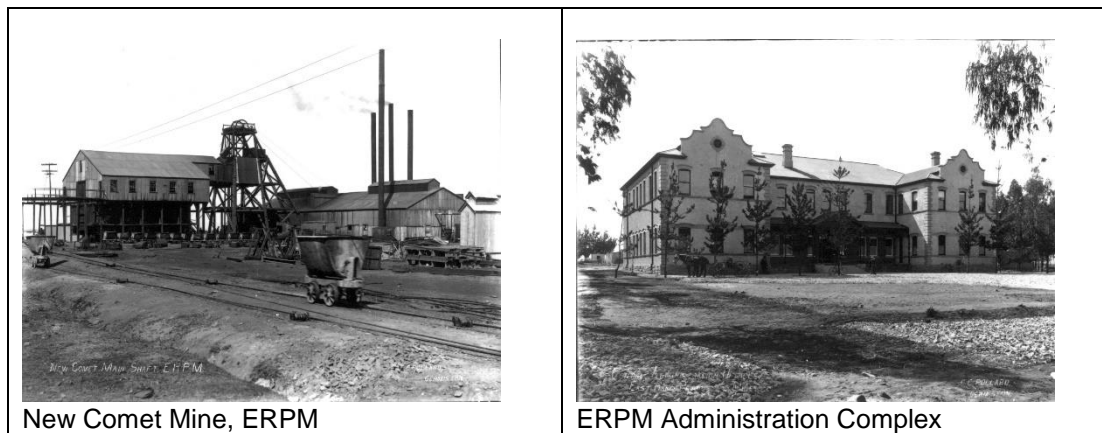


Fig. 7. Historic image of mining related features in the Boksburg region, c. 1902. (McDade Photographic Collection)

### 8.3 Identified sites

The following sites, features and objects of cultural significance were identified in the study area – see Appendix 6 for a discussion of each individual site.

In terms of Section 7 of the NHRA, all the sites currently known or which are expected to occur in the study area are evaluated to have a grading as identified in the table below.

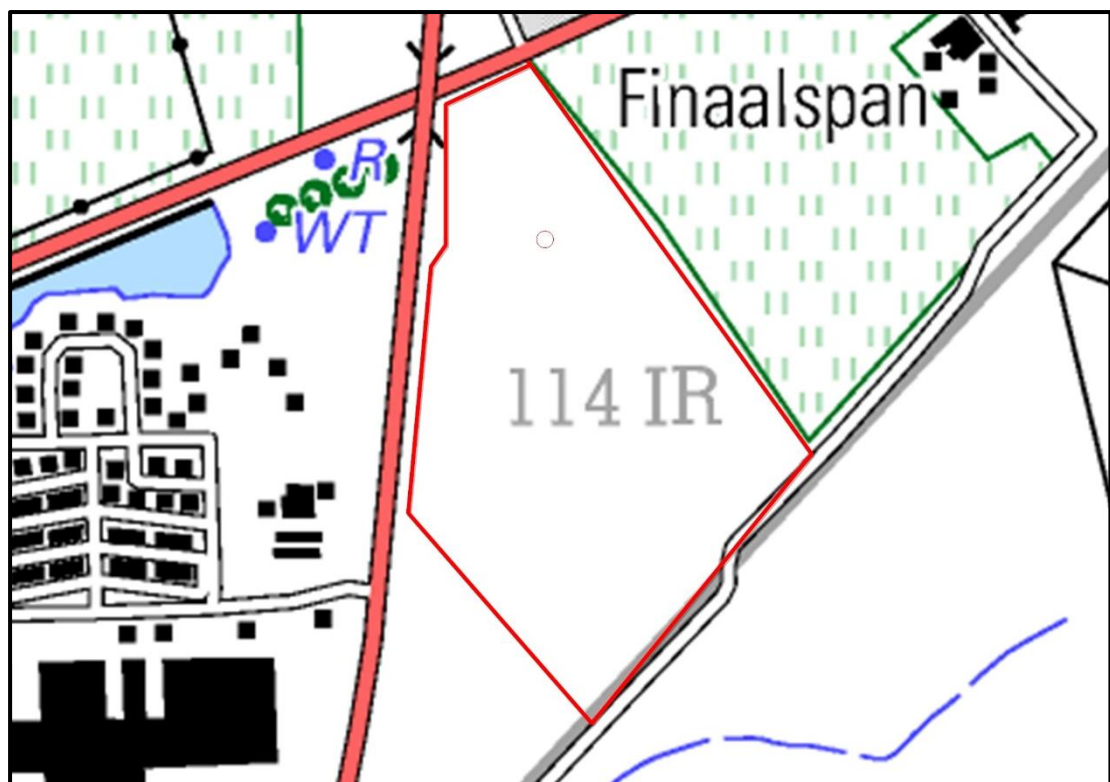


Fig. 8. Location of the identified sites. (Map 2628AD: Chief Surveyor-General)

### 8.3.1.1 Stone Age

- No sites, features or objects dating to the Stone Age were identified in the study area.

### 8.3.1.2 Iron Age

- No sites, features or objects dating to the Iron Age were identified in the study area.

### 8.3.1.3 Historic period

- No sites, features or objects dating to the historic period were identified in the study area.

**Table 4. Summary of Identified Heritage Resources in the Study Area.**

IDENTIFIED HERITAGE RESOURCES			
NHRA category	Number	Coordinates	Impact rating
<i>Formal protections (NHRA)</i>			
National heritage site (Section 27)	None	-	-
Provincial heritage site (Section 27)	None	-	-
Provisional protection (Section 29)	None	-	-
Listed in heritage register (Section 30)	None	-	-
<i>General protections (NHRA)</i>			
Structures older than 60 years (Section 34)	None	-	-
Archaeological site or material (Section 35)	None	-	-
Palaeontological site or material (Section 35)	None	-	-
Graves or burial grounds (Section 36)	None	-	-
Public monuments or memorials (Section 37)	None	-	-
<i>Other</i>			
Any other heritage resources (describe)	None	-	-

## 8.4 Impact assessment

Heritage impacts are categorised as:

- Direct or physical impacts, implying alteration or destruction of heritage features within the project boundaries;
- Indirect impacts, e.g. restriction of access or visual intrusion concerning the broader environment;
- Cumulative impacts that are combinations of the above.

Impacts can be managed through one or a combination of the following measures:

- Mitigation
- Avoidance
- Compensation
- Enhancement (positive impacts)
- Rehabilitation
- Interpretation
- Memorialisation

Sources of risk were considered with regards to development activities defined in Section 2(viii) of the NHRA that may be triggered and are summarised in Table 5 below. These issues formed the basis of the impact assessment described. The potential risks are discussed according to the various phases of the project below.

**Table 5. Potential Risk Sources.**

	Activity	Description	Risk
Issue 1	Removal of Vegetation	Vegetation removal for site preparation and the installation of required infrastructure, e.g. access roads and water pipelines.	The identified risk is damage or changes to resources that are generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 of the NHRA that may occur in the proposed project area.
Issue 2	Construction of required infrastructure, e.g. access roads, water pipelines	Construction machinery and vehicles will be utilised to construct the required infrastructure, e.g. access roads and water pipelines.	The identified risk is damage or changes to resources that are generally protected in terms of Sections 27, 28, 31, 32, 34, 35, 36 and 37 of the NHRA that may occur in the proposed project area.

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development and is presented in Appendix 7 and summarised in Table 6 below:

- As no sites, features or objects of cultural significance are known to exist in the development area, there would be no impact as a result of the proposed development.

**Table 6: Impacts on identified Heritage Sites**

Heritage sites	Significance of impact	Mitigation measures
<b>Finaalspan Housing Development: Construction Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a
<b>Finaalspan Housing Development: Operation Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a

### 8.5 Alternatives considered

No alternative was considered. However, in terms of knowledge and understanding of the heritage landscape, sites and features in the region the potential sources of risk would be the same as for the development site.

## 9. MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

### 9.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities.

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

### 9.2 Control

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

## 10. RECOMMENDATIONS

The Ekurhuleni Metropolitan Municipality Department of Human Settlements appointed Delta BEC to undertake a Basic Assessment process for activities listed in GNR. 983 and GNR. 985 as per the National Environmental Management Act, 1998 (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014, for a potential housing development on the Remainder of Portion 44 of the farm Finaalspan 114IR.

The cultural landscape qualities of the region is made up of a pre-colonial element consisting of very limited Stone Age and Iron Age occupation, as well as a much later colonial (farmer) component, which eventually gave rise to an urban and industrial (mining) component.

#### Identified heritage sites

- No sites, features or objects of cultural heritage significance were identified in the study area.

#### Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

- As no sites, features or objects of cultural significance are known to exist in the development area, there would be no impact as a result of the proposed development.

Heritage sites	Significance of impact	Mitigation measures
<b>Finaalspan Housing Development: Construction Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a
<b>Finaalspan Housing Development: Operation Phase</b>		
Without mitigation	n/a	n/a
With mitigation	n/a	n/a

#### Alternatives considered

No alternative was considered. However, in terms of knowledge and understanding of the heritage landscape, sites and features in the region the potential sources of risk would be the same as for the preferred site.

#### Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue on acceptance of the proposed mitigation measures.

#### Conditions for inclusion in the environmental authorisation:

- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.



## 11. REFERENCES

### 11.1 Data bases

Chief Surveyor General  
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.  
Heritage Atlas Database, Pretoria  
National Archives of South Africa  
SAHRA Archaeology and Palaeontology Report Mapping Project (2009)  
SAHRIS Database

### 11.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

Gaigher, S. 2015. *Heritage Impact Assessment for the Proposed Helderwyk Township Development*. Unpublished report: Louis Trichardt

Harcus, J. 1945. A Middle Stone Age Industry from Primrose Ridge, District Germiston, Transvaal. *South African Journal of Science* XLI: 459-464.

Huffman, T.N. 2005. *Archaeological Assessment of the Thubelisha Project, Boksburg*. Unpublished report: University of the Witwatersrand.

Huffman, T.N. et al. 2006/7. Stone walling in the Klipriviersberg: archaeological mitigation for the Aspen Hills development project. *Southern African Field Archaeology* 15 & 16:42-56.

King, T.F. 1978. *The Archaeological Survey: Its Methods and Uses*. Interagency Archaeological Services, Department of the Interior, Washington, D.C.

Praagh, L.V. (ed.) 1906. *The Transvaal and its mines*. London: Praagh & Lloyd.

Richardson, D. 2001. *Historic sites of South Africa*. Cape Town: Struik Publishers.

SRK Consulting, 2003. *State of the environment report: Ekurhuleni Metropolitan Municipality*.

Van Schalkwyk, J.A. 2004. *Heritage impact assessment for Reiger Park Extensions 8-11, Boksburg district, Gauteng*. Unpublished report 2004KH05. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2009a. *Heritage impact survey report for the proposed urban development on portions of the farm Driefontein 85IR, Boksburg magisterial district, Gauteng*. Unpublished report 2009JvS016.

Van Schalkwyk, J.A. 2009b. *Heritage impact assessment for the proposed Beyerspark Extension 110 development, Boksburg magisterial district, Gauteng Province*. Unpublished report 2009JvS074.

Van Schalkwyk, J.A. 2011. *Heritage impact assessment for the proposed commercial development, Holding 30, Bartlett Agricultural Holdings, Boksburg, Gauteng Province*. Unpublished Report 2011/JvS/003.

### 11.3 Maps and aerial photographs

1: 50 000 Topocadastral maps  
Google Earth

**APPENDIX 1. INDEMNITY AND TERMS OF USE OF THIS REPORT**

The findings, results, 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 the author reserve the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.

Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. The author of this report will not be held liable for such oversights or for costs incurred as a result of such oversights.

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

**APPENDIX 2. SPECIALIST COMPETENCY**Johan (Johnny) van Schalkwyk

J A van Schalkwyk, D Litt et Phil, heritage consultant, has been working in the field of heritage management for more than 40 years. Originally based at the National Museum of Cultural History, Pretoria, he has actively done research in the fields of anthropology, archaeology, museology, tourism and impact assessment. This work was done in Limpopo Province, Gauteng, Mpumalanga, North West Province, Eastern Cape, Northern Cape, Botswana, Zimbabwe, Malawi, Lesotho and Swaziland. Based on this work, he has curated various exhibitions at different museums and has published more than 70 papers, most in scientifically accredited journals. During this period he has done more than 2000 impact assessments (archaeological, anthropological, historical and social) for various government departments and developers. Projects include environmental management frameworks, roads, pipeline-, and power line developments, dams, mining, water purification works, historical landscapes, refuse dumps and urban developments.

A complete *curriculum vitae* can be supplied on request.

**APPENDIX 3. CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE RESOURCES**

A system for site grading was established by the NHRA and further developed by the South African Heritage Resources Agency (SAHRA 2007) and has been approved by ASAPA for use in southern Africa and was utilised during this assessment.

**Significance**

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

**Matrix used for assessing the significance of each identified site/feature**

<b>1. SITE EVALUATION</b>				
<b>1.1 Historic value</b>				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
<b>1.2 Aesthetic value</b>				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
<b>1.3 Scientific value</b>				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
<b>1.4 Social value</b>				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
<b>1.5 Rarity</b>				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
<b>1.6 Representivity</b>				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.				
<b>2. Sphere of Significance</b>		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
<b>3. Field Register Rating</b>				
1.	National/Grade 1: High significance - No alteration whatsoever without permit from SAHRA			
2.	Provincial/Grade 2: High significance - No alteration whatsoever without permit from provincial heritage authority.			

3.	Local/Grade 3A: High significance - Mitigation as part of development process not advised.	
4.	Local/Grade 3B: High significance - Could be mitigated and (part) retained as heritage register site	
5.	Generally protected A: High/medium significance - Should be mitigated before destruction	
6.	Generally protected B: Medium significance - Should be recorded before destruction	
7.	Generally protected C: Low significance - Requires no further recording before destruction	

**APPENDIX 4. RELEVANT LEGISLATION**

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

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

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

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

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education, research and tourism, including-

- (a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
- (b) the training and provision of guides;
- (c) the mounting of exhibitions;
- (d) the erection of memorials; and
- (e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.

## APPENDIX 5. RELOCATION OF GRAVES

If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.

If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.
- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave.

### Information needed for the SAHRA permit application

- The permit application needs to be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- If graves have not been identified and there are no headstones to indicate the grave, these are then unknown graves and should be handled as if they are older than 60 years. This information also needs to be given to SAHRA.
- A letter from the landowner giving permission to the developer to exhume and relocate the graves.
- A letter from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.



**APPENDIX 6. INVENTORY OF IDENTIFIED CULTURAL HERITAGE SITES**

Nil

<b>APPENDIX 7. IMPACT TABLES</b>
----------------------------------

<b>Nature:</b> As no sites, features or objects of cultural significance are known to exist in the development area, there would be no impact as a result of the proposed development.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Construction Phase</b>		
<i>Probability</i>	Definite (1)	Definite (1)
<i>Duration</i>	Permanent (5)	Permanent (5)
<i>Extent</i>	Limited to the site (1)	Limited to the site (1)
<i>Magnitude</i>	Minor (2)	Minor (2)
<b>Significance</b>	<b>14 (low)</b>	<b>14 (low)</b>
<i>Status (positive or negative)</i>	Negative	Negative
<b>Operational Phase</b>		
<i>Probability</i>	Definite (1)	Definite (1)
<i>Duration</i>	Permanent (5)	Permanent (5)
<i>Extent</i>	Limited to the site (1)	Limited to the site (1)
<i>Magnitude</i>	Minor (2)	Low (2)
<b>Significance</b>	<b>14 (low)</b>	<b>14 (low)</b>
<i>Status (positive or negative)</i>	Negative	Negative
<b>Reversibility</b>	Low	Moderate
<i>Irreplaceable loss of resources?</i>	Moderate	Low
<i>Can impacts be mitigated?</i>	Yes	