



**PROPOSED ESTABLISHMENT OF A NEW INDUSTRIAL TOWNSHIP
ON PORTIONS 38 AND 39 OF THE FARM BULTFONTEIN NO. 533-
JQ, LANSERIA, CITY OF JOHANNESBURG METROPOLITAN
MUNICIPALITY, GAUTENG PROVINCE**

Heritage Impact Assessment Report

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Report Title	<i>Heritage Impact Assessment for the Proposed Establishment of a New Industrial Township on Portions 38 and 39 of the Farm Bultfontein No. 533-JQ, City of Johannesburg Metropolitan Municipality, Gauteng Province</i>		
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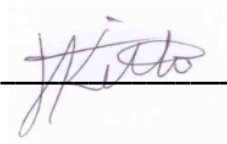
Declaration of Independence

The report has been compiled by PGS Heritage, an appointed Heritage Specialist for Singisa Environmental cc. The views stipulated in this report are purely objective and no other interests are displayed during the decision making processes discussed in the Heritage Impact Assessment Process.

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EXECUTIVE SUMMARY

PGS Heritage was appointed by Singisa Environmental cc to undertake a Heritage Impact Assessment (HIA) that forms part of the Environmental Impact Assessment (EIA) for the proposed establishment of a new industrial township on portions 38 and 39 of the farm Bultfontein No. 533-JQ, City of Johannesburg Metropolitan Municipality, Gauteng Province.

Utilising the archival study completed for the desktop study as a guide, the field work identified a total of **three significant cultural-heritage sites**, and two structures which are of modern-recent date and have no cultural heritage significance.

Graves

The three graves identified at site **LAN 03** are located inside the proposed western access road for the proposed development (Portion 38 of Bultfontein No. 533-JQ). Therefore, any fence to be constructed will need to include a buffer zone of 5-10m from the graves to avoid any negative impact. In addition, the site plan provided indicates that a new access road is planned in this position which will probably affect these graves negatively. If the proposed road cannot avoid the graves then they will have to be relocated.

The grave relocation process must include:

- A detailed social consultation process, that will trace the next-of-kin and obtain their consent for the relocation of the graves, which will be at least 60 days in length;
- Site notices indicating the intent of the relocation;
- Newspaper Notice indicating the intent of the relocation;
- A permit from the local authority;
- A permit from the Provincial Department of Health;
- A permit from the South African Heritage Resources Agency, if the graves are older than 60 years, or unidentified and thus presumed older than 60 years;
- An exhumation process that keeps the dignity of the remains and family intact;
- The whole process must be done by a reputable company that is well versed in relocations;
- The exhumation process must be conducted in such a manner as to safeguard the legal rights of the families as well as that of the development company.

Structures

- Both of the recent structures (dwellings) (**LAN1** and **LAN2**) can be demolished with no further mitigation, as they are all less than 60 years old, in some cases have been extensively vandalised and are of no cultural heritage significance.

Identified historical foundations

The foundations identified at **LAN4** and **LAN5** can be associated with the school buildings indicated on the 1943 topographical map of the area. These two sites are situated on the boundary of the proposed development and will most probably be affected by the proposed development of **Stand 6**.

- It is recommended that further archival research on the school be done to determine the extent of its significance.
- The structures are protected under Section 34 of the National Heritage Resources Act (NHRA) and will require a destruction permit from the Gauteng Provincial Heritage Authority (GPHRA).

The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels.

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1 INTRODUCTION

PGS Heritage was appointed by Singisa Environmental cc to undertake a Heritage Impact Assessment (HIA) that forms part of the Environmental Impact Assessment (EIA) for the proposed establishment of a new industrial township on portions 38 and 39 of the farm Bultfontein No. 533-JQ, City of Johannesburg Metropolitan Municipality, Gauteng Province.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development area. The HIA aims to inform the EIA in the development of a comprehensive Environmental Management Programme (EMPr) to assist the developer in managing the identified heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 Specialist Qualifications

This Heritage Impact Report was compiled by PGS Heritage (PGS).

The staff at PGS has a combined experience of nearly 40 years in the heritage consulting industry. PGS's staff has extensive experience in managing HIA processes. PGS will only undertake heritage assessment work where their staff has the relevant expertise and experience to undertake that work competently. Jennifer Kitto, Heritage Specialist and Project Coordinator for this project, has 15 years' experience in the heritage sector, a large part of which involved working for a government department responsible for administering the National Heritage Resources Act, No 25 of 1999. She is therefore well-versed in the legislative requirements of heritage management. She holds a BA in Archaeology and Social Anthropology and a BA (Hons) in Social Anthropology.

Wouter Fourie, the Principal Heritage Specialist, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a Professional Archaeologist and is accredited as a Principal Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).

1.3 Assumptions and Limitations

Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must be contacted immediately.

Such observed or located heritage features and/or objects may not be disturbed or removed in any way, until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. 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, as set out below.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- i. National Environmental Management Act (NEMA) Act 107 of 1998
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
- iv. Development Facilitation Act (DFA) Act 67 of 1995

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- i. National Environmental Management Act (NEMA) Act 107 of 1998
 - a. Basic Environmental Assessment (BEA) – Section (23)(2)(d)
 - b. Environmental Scoping Report (ESR) – Section (29)(1)(d)
 - c. Environmental Impacts Assessment (EIA) – Section (32)(2)(d)
 - d. EMP (EMP) – Section (34)(b)
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
 - a. Protection of Heritage resources – Sections 34 to 36; and
 - b. Heritage Resources Management – Section 38
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
 - a. Section 39(3)

- iv. Development Facilitation Act (DFA) Act 67 of 1995
 - a. The GNR.1 of 7 January 2000: Regulations and rules in terms of the Development Facilitation Act, 1995. Section 31.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Among others, Section 34 (1) of the NHRA states that, “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...” The NEMA (No 107 of 1998) states that an integrated EMP should (23:2 (b)), “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. In accordance with legislative requirements and EIA rating criteria, the regulations of SAHRA and ASAPA have also been incorporated to ensure that a comprehensive and legally compatible HIA report is compiled.

1.5 Terminology and Abbreviations

Terminology

The following definitions are taken from the National Heritage Resources Act, No 25 of 1999 (Section 2. Definitions):

Archaeological resources

This includes:

- i. material remains resulting from human activity, which are in a state of disuse and are in or on land, and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- ii. rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- iii. wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- iv. features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- ii. carrying out any works on or over or under a place;
- iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- iv. constructing or putting up for display signs or boards;
- v. any change to the natural or existing condition or topography of land; and
- vi. any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 400 000 and 2500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and which forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years, associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's associated with iron working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Table 1 - Abbreviations

<i>Abbreviations</i>	<i>Description</i>
ASAPA	Association of Southern African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
ROD	Record of Decision
SAHRA	South African Heritage Resources Agency

Refer to **Appendix A** for further discussions on heritage management and legislative frameworks.

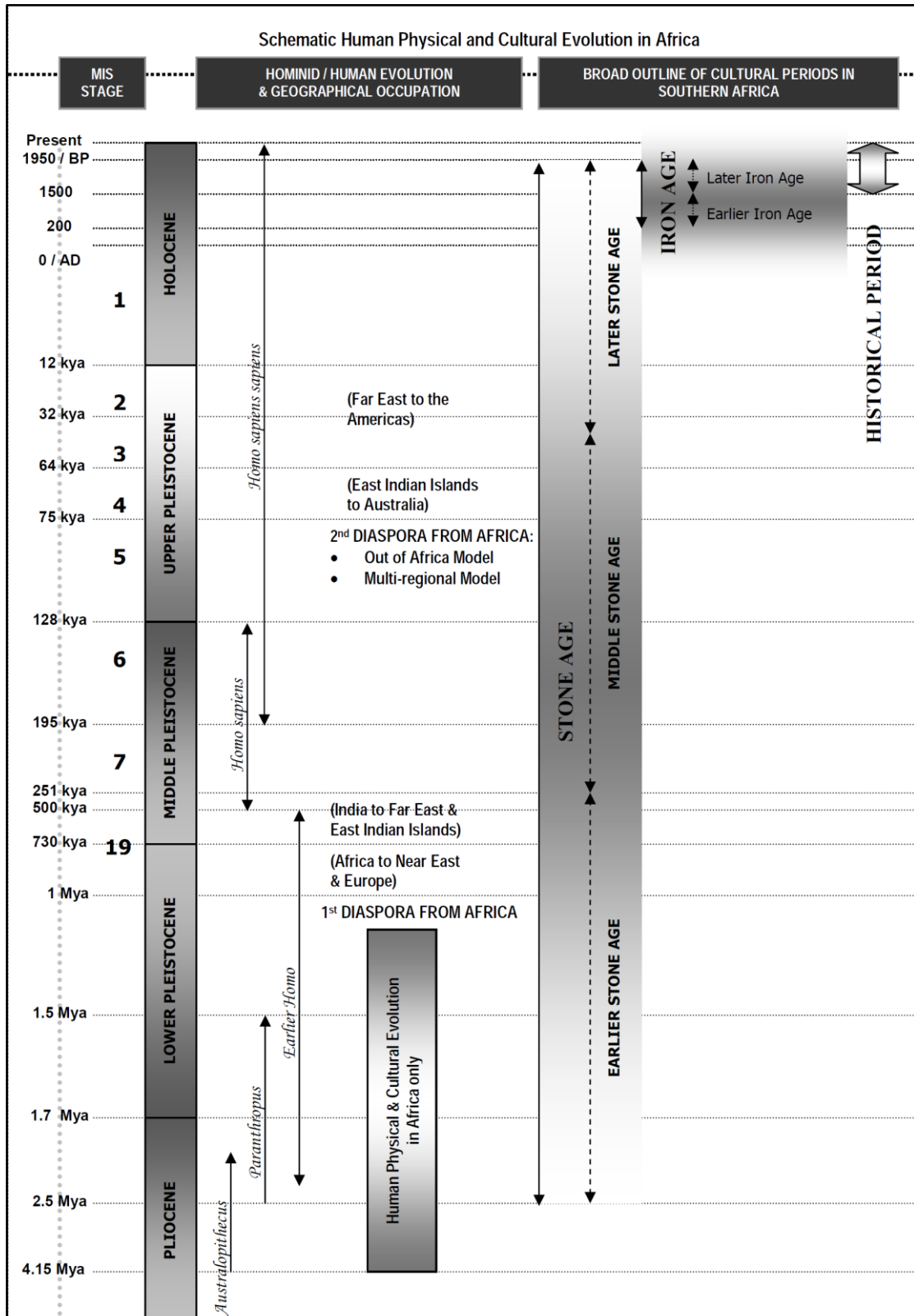


Figure 1 – Human and Cultural Time line in Africa (Morris, 2008)

2 TECHNICAL DETAILS OF THE PROJECT

2.1 Site Location and Description

Location	GPS: S25°57.3962' E027°55.2724' The proposed development site is situated on Portions 38 and 39 of the Farm Bultfontein No. 533-JQ, located immediately south of and adjacent to Lanseria International Airport, in the City of Johannesburg Metropolitan Municipality, Gauteng Province.
Land	22 Hectares of land under option
Land Description	The land is not utilised currently and consists of fairly flat terrain that was previously used partly as a residence and partly for mining sand and is now covered with secondary grassland.

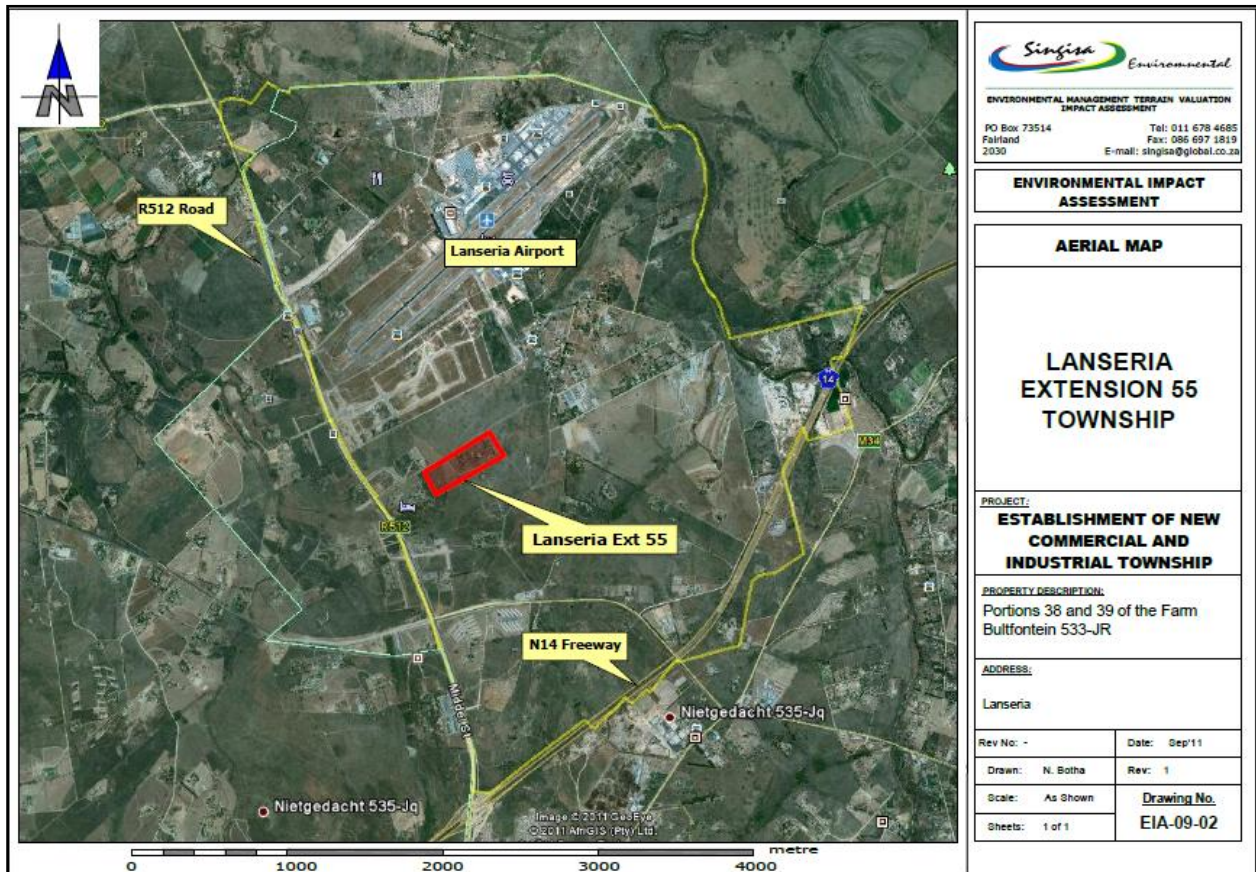


Figure 2 – Study Area Locality (red polygon)

2.2 Technical Project Description

The client proposes to establish a new industrial township on the property. The development will include industrial land uses with a park erf to accommodate the man-made wetland basin. The

development will take place on Portions 38 and 39 of the Farm Bultfontein 533-JQ (see **Figure 4**). The proposed new township comprises 6 'Industrial 2' erven and one 'Public Open Space' erf. There are five larger erven of 1.8 to 2 hectare in size, one erf of 6.9 ha and one erf (P.O.S) of 3.4ha. The total area of the proposed new industrial erven will be approximately 16 hectares. An erf zoned Public Open Space has been provided to accommodate the man-made wetland pond. The numbers and sizes may change as a result of inputs and comments during the township application process. Access to the development will be from the R512 main road, which is also the main access route to the Lanseria Airport. Township roads will provide access to the individual industrial erven. The existing right of way along the northern boundary will be upgraded to a formal local road during the township proclamation process.



Figure 3 – Study area, Google Earth image

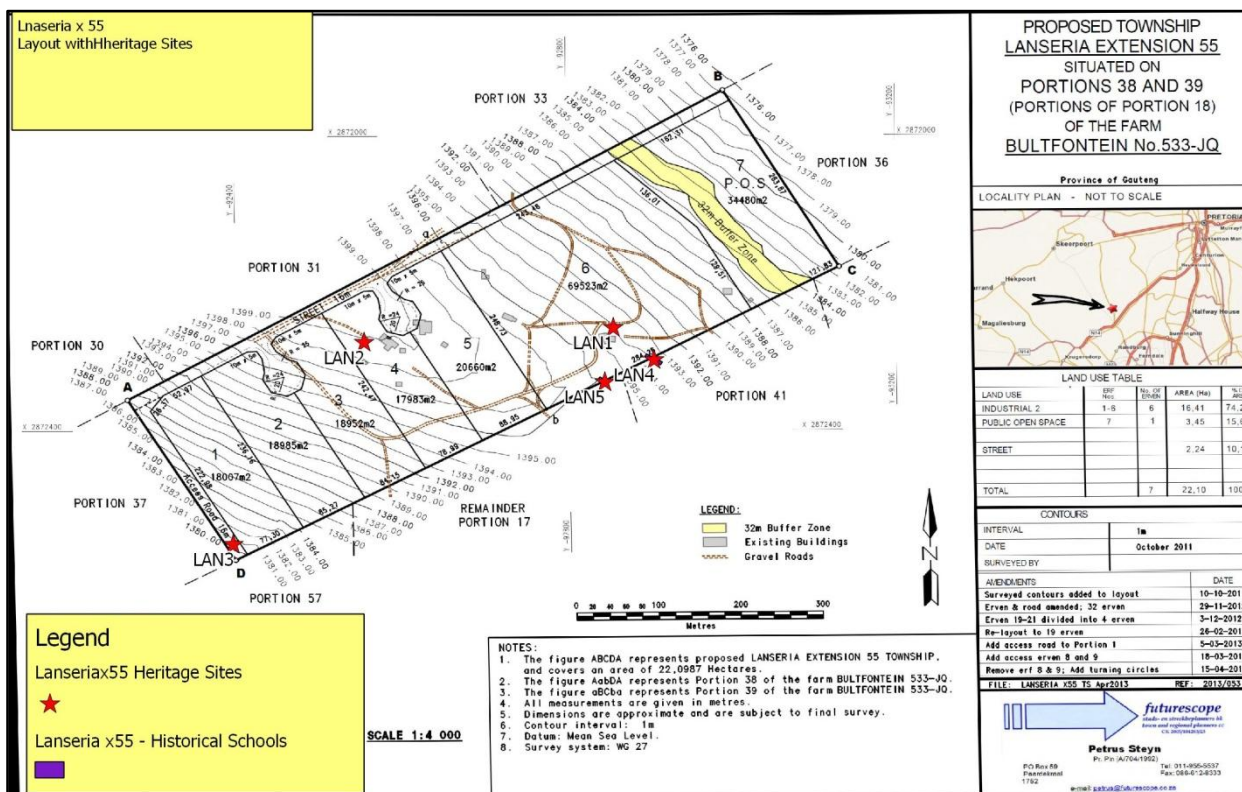


Figure 4 – Proposed Township Site Plan with heritage sites (provided by Singisa Environmental cc)

2.3 Site Description

The proposed development will be known as Lanseria Extension 55 Township, and is located on Portions 38 and 39 of the Farm Bultfontein 533-JQ, City of Johannesburg Metropolitan Municipality. The land is located between the N14 freeway and the Lanseria Airport. Although the area is predominantly rural, several light and service industries have been established in the area. Commercial and shopping centres have also been established in the area.

The R512, which is the main access route, has recently been upgraded. The demand for housing in this area has resulted in several low cost housing projects around the airport and close to the industries. The proximity of the Cradle of Humankind supports a number of tourist facilities and attractions along the main transportation routes.

The study area is located on fairly flat terrain that was previously used partly as a residence and partly for mining sand and is now covered with secondary grassland. Current structures on the property consist of several ruined dwelling structures all of recent/modern date (one of which was completely demolished), as well as existing workers housing that is currently occupied. The area in close proximity to the buildings has been landscaped with plants and trees, most of which are not indigenous. The site

has a gentle gradient from a high point in the middle where the buildings are located towards the eastern and western sides (**Figure 5-Figure 8**).



Figure 5 - General view of study area to north-east



Figure 6 – General view from south-west corner



Figure 7 – General view along west boundary



Figure 8 – View of demolished structure

3 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study.

3.1 Methodology for Assessing Heritage Site Significance

This Heritage Impact Assessment (HIA) report was compiled by PGS Heritage (PGS) for the proposed establishment of a new industrial township on portions 38 and 39 of the farm Bultfontein No. 533-JQ, City of Johannesburg Metropolitan Municipality, Gauteng Province. The applicable maps, tables and

figures are included, as stipulated in the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (no 107 of 1998). The HIA process consisted of three steps:

Step I – Literature Review: The background information to the field survey relies greatly on the Heritage Background Research.

Step II – Physical Survey: A physical survey was conducted on foot through the proposed project area by a qualified archaeologist and two staff members, which aimed at locating and documenting sites falling within and adjacent to the proposed development footprint.

Step III – The final step involved the recording and documentation of relevant archaeological resources, the assessment of resources in terms of the HIA criteria and report writing, as well as mapping and constructive recommendations.

The significance of identified heritage sites was based on four main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
 - Low - <10/50m²
 - Medium - 10-50/50m²
 - High - >50/50m²
- Uniqueness; and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;

B - Mapping of the site and controlled sampling required;

C - No-go or relocate development activity position;

D - Preserve site, or extensive data collection and mapping of the site; and

E - Preserve site.

Impacts on these sites by the development will be evaluated as follows:

Site Significance

Site significance classification standards prescribed by the SAHRA (2006) and approved by the ASAPA for the Southern African Development Community (SADC) region, were used for the purpose of this report.

Table 2 - Site significance classification standards as prescribed by SAHRA.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1		Conservation; National Site nomination
Provincial Significance (PS)	Grade 2		Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.A)	Grade 4C	Low Significance	Destruction

3.2 Methodology for Impact Assessment

3.2.1 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or social) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with a VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and/or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (in this case people growing crops on the soil) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are real but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary change in the water table of a wetland habitat, as these systems is adapted to fluctuating water levels.

Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people who live some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a particular formation may be regarded as severe from a geological perspective, but is of NO significance in the overall context.

3.2.2 Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exists to verify the assessment.

PROBABLE: Over 70% certainty of a particular fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% certainty of a particular fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% certainty of a particular fact, or of the likelihood of an impact occurring.

3.2.3 Duration

SHORT TERM: 0 to 5 years

MEDIUM: 6 to 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

An example of a ratings table:

Impact Grading

Impact	Impact Significance	Heritage Significance	Certainty	Duration	Mitigation
Negative	Moderate	Grade GP.C	Possible	Permanent	C

4 CURRENT STATUS QUO

4.1 Archival findings

The aim of the archival background research is to identify possible heritage resources that could be encountered during the field work. The archival research focused on available information sources, which were used to compile a background history of the study area and surrounds, as summarised in **Table 3**. This data then informed the possible heritage resources to be expected during field surveying.

4.1.1 Cartographic Analysis

Major Jackson Series – Pretoria Map (1902)

The Major Jackson Series Map of Pretoria was surveyed and drawn between 1900 and 1902. **Figure 9** shows the position of the development area (green block) in relation to the farm Bultfontein. The original farm house is indicated just to the west of the farm name (red circle). No structures are indicated on the study area.

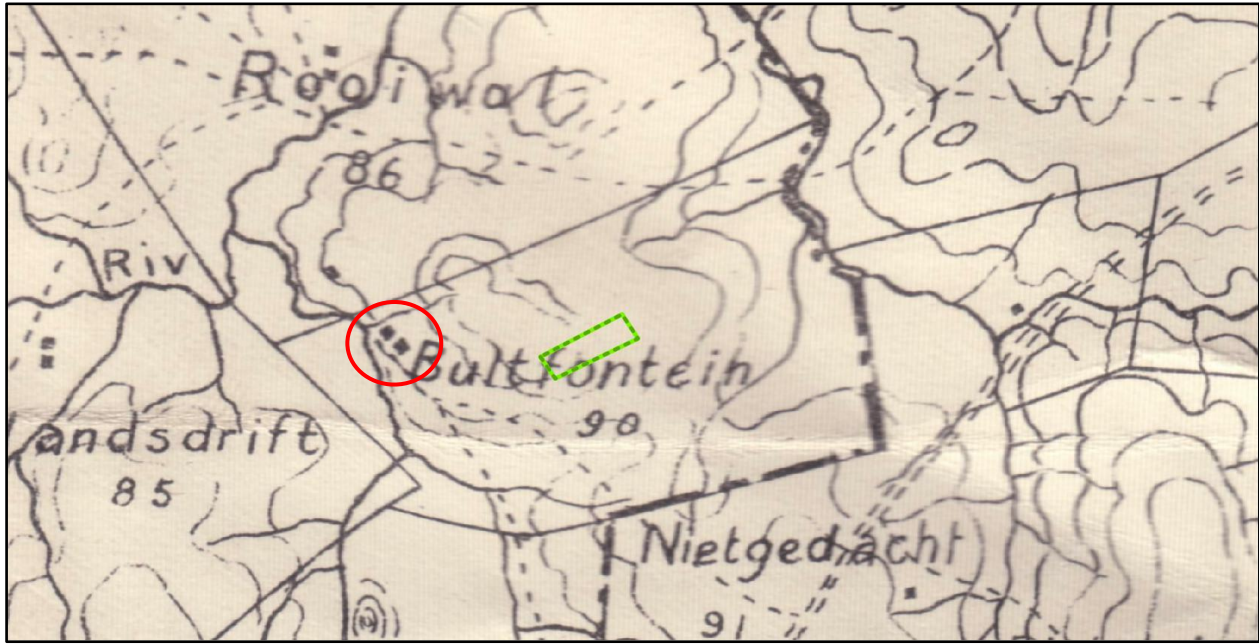


Figure 9 – Major Jackson series map of Pretoria dated 1902

First Edition topo-cadastral 1:50 000 – 2527DD Pelindaba (1943)

A section of the First Edition of the 2527DD Topo-cadastral Sheet is depicted in **Figure 10**. The aerial photography on which the map was based dates to 1941 and it was drawn in 1943 by the Trigonometrical Survey Office.

These maps were utilised to identify structures that could possibly be older than 60 years and thus protected under Section 34 of the NHRA. In the analysis of the 1943 map (**Figure 10**), two sets of structures (red circles in **Figure 10**) are identified as school buildings.

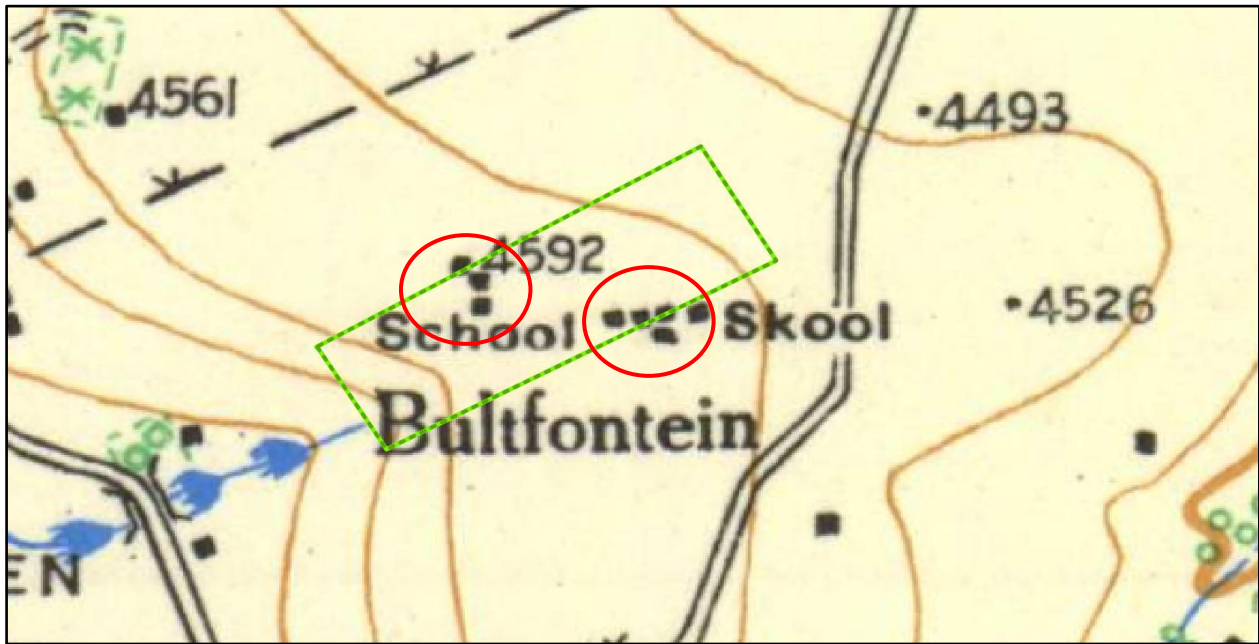


Figure 10 – Topo-cadastral map 2527DD dated 1943

Second Edition Topo-cadastral 1:50 000 – 2527DD Pelindaba (1969)

A section of the Second Edition of the 2527DD Topo-cadastral Sheet is depicted in **Figure 101**. The aerial photography on which the map was based dates to 1969 and it was drawn in 1969 by the Trigonometrical Survey Office. The only structures marked on this map are located just outside the southern boundary of the study area. This indicates that the structures comprising the two schools were probably no longer extant by 1969.



Figure 11 – Topo-cadastral map 2527DD dated 1969

4.1.2 Archival Information

Table 3 - Overview of Significant Sites and Events in the Study Area and Surrounding Landscape.

DATE	DESCRIPTION
2.5 million to 250 000 years ago	<p>The Earlier Stone Age is the first and oldest phase identified in South Africa’s archaeological history and comprises two technological phases. The earliest of these technological phases is known as Oldowan, which is associated with crude flakes and hammer stones and dates to approximately 2 million years ago. Examples of such tools have been excavated from the sites of Sterkfontein and Coopers D in the ‘Cradle of Humankind’. The second technological phase is known as the Acheulian and comprises more refined and better made stone artefacts, such as hand axes and cleavers. The Acheulian dates back to approximately 1.5 million years ago and examples of this phase have been found at Swartkrans and in the river gravels of the ‘Cradle of Humankind’ (Hilton-Barber & Berger, 2002).</p>
250 000 to 40 000 years ago	<p>The Middle Stone Age is the second oldest phase identified in South Africa’s archaeological history. This phase is associated with flakes, points and blades manufactured by means of the so-called ‘prepared core’ technique. Examples of such artefacts have been found in the ‘Cradle of Humankind’ at Swartkrans (Hilton-Barber & Berger, 2002).</p> <p>At least two sites with material associated with the Middle Stone Age are known from the wider vicinity of the study area. The first of these is the site known as Boulders, Midrand. Here Mason excavated Middle Stone Age artefacts which he associated with similar material from the Cave of Hearths at Makapan and from Olieboompoort (Mason, 2000). The second example is the intact Middle Stone Age sealed cave context at Pietkloof Cave, located a short distance north of the Skurweberge. This cave is located roughly 18 km northeast of the study area (Mason, 1951).</p>
40 000 years ago to the historic past	<p>The Later Stone Age is the third oldest phase identified in South Africa’s archaeological history. This phase in human history is associated with an abundance of very small stone artefacts known as microliths. A large number of Later Stone Age sites are known from the ‘Cradle of Humankind’ (Hilton-Barber & Berger, 2002) and the general surroundings of the study area. Some of the latter sites include Boulders, Glenferness Cave, Pietkloof Cave and Hennops River Cave. Glenferness is a cave situated above the</p>

Jukskei River (**roughly 9 km southeast of the study area**), while Hennops River Cave is located above the Hennops River (and is **roughly 9 km northeast of the study area**) (Mason, 1951).

AD 450 – AD 750

The earliest Iron Age presence for which archaeological evidence has been found in the surroundings of the study area is a pottery style known as the Mzonjani facies of the Kwale Branch of the Urewe Ceramic Tradition. One of the well-known sites from this period in the direct surroundings of the study area is the site known as Broederstroom, located on a farm roughly **15km northwest** of the present study area (Huffman, 2007).

AD 1500 - AD1700

The next Iron Age period to be identified within the surroundings of the study area is associated with a pottery style known as the Olifantspoort facies of the Moloko Branch of the Urewe Ceramic Tradition. Some of the closest sites to the study area associated with this pottery include Broederstroom (see above) and Ifafi. The latter site is located some **18 km northwest of the study area** (Huffman, 2007).

AD 1650 - AD 1850

The third Iron Age period to be identified for the surroundings of the study area is represented by a pottery style known as the Uitkomst facies of the Blackburn Branch of the Urewe Ceramic Tradition. The type-site is Uitkomst Cave, located approximately **20 km west of the study area** (Huffman, 2007). Based on the available archaeological and oral evidence from this period, the sixteenth and seventeenth centuries saw the movement of Sotho/Tswana communities from the lower lying Bushveld habitats in the north (where they had been settled since AD 1500) toward the higher, predominantly grassland areas to the south. By AD 1650, these communities had successfully settled in these areas (Hall, 2007).

AD 1700 – AD 1840

The Buispoort facies of the Moloko branch of the Urewe Ceramic Tradition is the fourth Iron Age period to be identified within the surroundings of the study area (Huffman, 2007). A Late Iron Age stone-walled site was identified on the eastern portion of the farm Knoppieslaagte 385 JQ during a previous HIA survey and was subsequently documented and partially excavated (Boeyens, *et al*, 2005). The site consisted of four separate settlement units. The pottery excavated displays characteristics of what is referred to as the Olifantspoort facies of the Moloko Branch. Stone-walled sites like this tend to be associated with the Late Moloko and post-date AD 1600 (Boeyens, *et al*, 2005).

1827	During the so-called Difaqane, the Khumalo Ndebele (more commonly known as the Matabele) of Mzilikazi moved through the general vicinity of the study area in a northward direction toward the Magalies River and Commando Nek (Bergh, 1999).
1887	The discovery of gold along the Witwatersrand and the proclamation of public diggings on various farms in the area such as Paardekraal, Vogelstruisfontein, Luipaardsvlei, Klipplaat, Heuningklip and Wilgespruit led to the establishment of a stands township on the farm Paardekraal in 1887. On the request of Paardekraal's owner, the town was named after President Paul Kruger. The district town of Krugersdorp was proclaimed in November 1894 (Du Plooy, 2004).
1899 – 1902	<p>No evidence for battles or skirmishes in the direct vicinity of the study area during the South African War (1899-1902) could be found. However, two of the closest skirmishes and battles which could be identified during the desktop study will be discussed below.</p> <p>The first of these is the <i>Battle of Kalkheuvel Pass</i> on 3 June 1900. The battle can be described as forming part of the bigger onslaught on Pretoria. The pass is located on the farm Kalkheuvel 493 JR, roughly 14 km west of the study area. Arriving at Diepsloot with General Ian Hamilton, a British force under the command of General French established that the only suitable place to cross over the Jukskei River was at a place called Roodewal further to the west. French's force was subsequently attacked as they attempted to force their way through Kalkheuvel Pass. However, as darkness fell, the Boer force withdrew and the battle ended, leaving a number of dead and wounded on both sides (Copley, 1993).</p> <p>The second incident is the Battle of Nooitgedacht (13 December 1900). Here the Boer commandos of De La Rey, Beyers and Kemp and others attacked Major-General R.A.P. Clement's encampment of 1,500 men at the southern foot of the Magaliesburg mountain-cliffs on the farm Nooitgedacht. Although Clements had posted pickets and signalling corps on top of the mountain, these were easily overrun by the Boers. Although surprise was total, Clements showed good leadership and organised his men into an organised retreat to a nearby hill known as Vaalkop or Yeomanry Hill. Here</p>

he was able to defend the hill successfully from Boer attacks, resulting in his eventual withdrawal back to Pretoria (Carruthers, 2000).

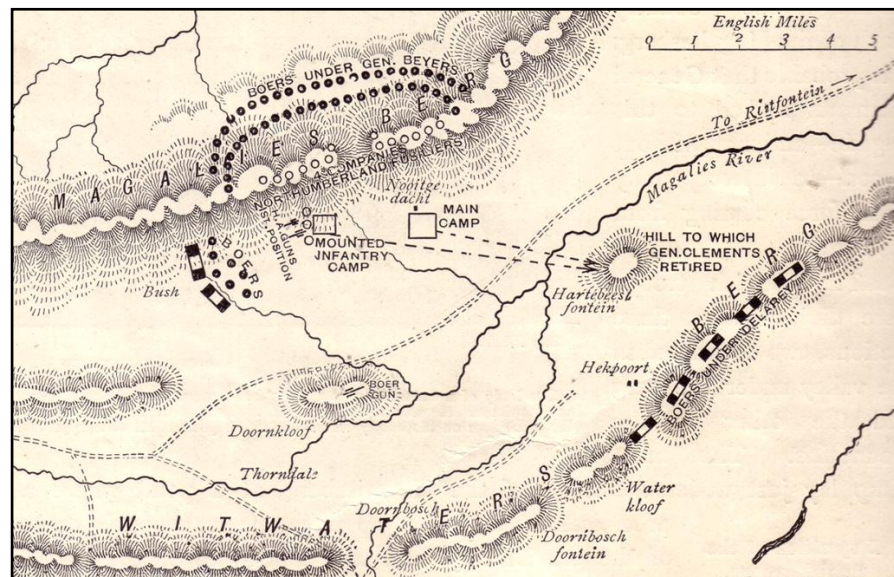


Figure 12 – Map of battle of Nooitgedacht (Carruthers, 2000)

1972

Lanseria Airport

In 1972, two Pretoria pilots, Fanie Haacke and Abe Sher, identified the ideal site for an airport in this area. Issues such as the proposed airport's location in relation to residential areas, land suited to long runways with good approaches, identification of smog and fog-free zones and a site in open surrounds in case of forced landings, were instrumental in ensuring Lanseria's enduring success.

The Krugersdorp and Roodepoort Municipalities as well as the Transvaal Peri-Urban Board purchased the land and contracted it to the newly formed Lanseria Management Company on a 99-year lease. Lanseria International Airport was opened to air traffic by, the then minister of transport, Hannes Rall, on 16 August 1974. On that day, a Learjet ZS-MTD became the first jet to land at Lanseria International Airport.

When former President, Nelson Mandela, was released from prison in May 1990, he was flown to Johannesburg and the first time he set foot on Gauteng soil after such a long time, was when he stepped off his aircraft onto the tarmac at Lanseria. (<http://www.lanseria.co.za/history>)

5 FINDINGS OF THE HERITAGE IMPACT ASSESSMENT SURVEY

5.1 Methodology

Two PGS staff members surveyed the study area over one day. This was followed by a second visit, which was undertaken to identify the sites of the two schools indicated on the 1943 topo-cadastral map. The staff traversed the area via vehicle and conducted a controlled-exclusive surface survey by foot. GPS co-ordinates were taken and the identified sites were recorded photographically.

The PGS staff members met up with Mr Lawrence Hood (the landowner) who showed them the boundaries of the study area and also identified the three graves located on the western boundary of the study area. During the survey, several vacant and ruined dwellings were identified, as well as existing worker housing. The foundations of several historical structures corresponding to the site of at least one of the two schools were also located.

5.2 Sites Identified from the Survey

5.2.1 LAN3

GPS Co-ordinates: S 25.95833; E 27.92249

This site consists of three informal graves of African workers. One of the graves was apparently exhumed several years ago (pers.com, Mr Hood). This was the grave of a South African who worked for the current landowner's family. The other two graves are believed to be of workers who came from Malawi or Zimbabwe. These three graves are located on the boundary/just outside the affected property. However, the site plan provided indicates that a new access road is planned which will almost certainly affect these graves. If the graves cannot be avoided, then they will have to be relocated. The relocation process will require a public participation process and permits from the relevant authorities.



Figure 13 – Site LAN3, View of three graves (arrows)



Figure 14 – View showing possible exhumed grave (red polygon)

Significance and Impact rating:

Impact	Impact Significance	Heritage Significance	Certainty	Duration	Mitigation
Negative	High	Grade 4A	Probable	Permanent	C

Recommendation:

1. Redesign the access road to accommodate the graves
2. In the event that the site cannot be excluded from the development footprint, a grave relocation process, such as that as described in **Section 6** of this report, needs to be implemented.
3. In addition, several permits are required to be obtained in terms of various pieces of legislation regarding human remains (see **Appendix B**).

5.2.2 LAN1

GPS Co-ordinates: S 25.95572; E 27.92707

The vandalised shell of a recent/modern dwelling was identified at this location. The materials utilised during construction indicate that this structure is not older than 60 years (**Figure 15**). This was verified by the landowner who indicated that the house was built in the 1970s. This is also verified by the absence of any structure on the 1969 maps (**Figure 11**).



Figure 15 – View of vandalised recent/modern building

Significance and Impact rating:

Impact	Impact Significance	Heritage Significance	Certainty	Duration	Mitigation
Negative	Low	Grade 4C	Probable	Permanent	A

Recommendation:

No mitigation required.

5.2.3 LAN2

GPS Co-ordinates: S 25.95589; E 27. 92406

The vacant shell of a recent/modern house and associated outbuildings were identified (**Figure 16**). The materials utilised during construction indicate that this structure is not older than 60 years. This was verified by the landowner, who indicated that the house was built in the 1970s.



Figure 16 – View of the vacant recent/modern dwelling

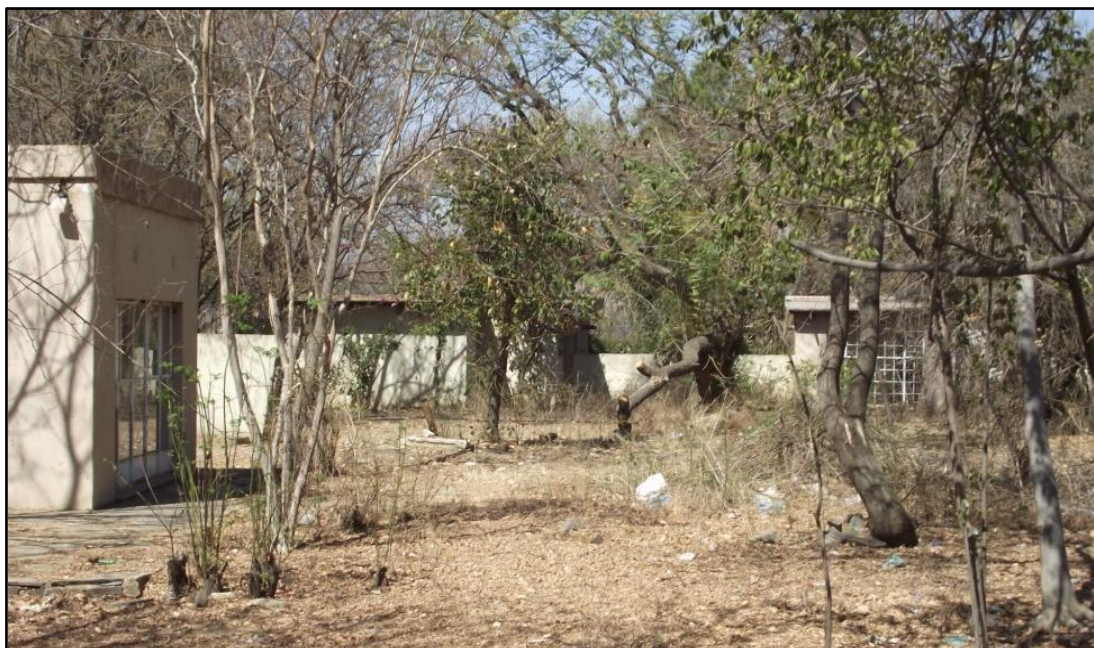


Figure 17 – View of the associated outbuildings

Significance and Impact rating:

Impact	Impact Significance	Heritage Significance	Certainty	Duration	Mitigation
Negative	Low	Grade 4C	Probable	Permanent	C

Recommendation:

No mitigation measures are required.

5.2.4 LAN4 and LAN5

GPS co-ordinates:

LAN4 - S25.95612, E27.92745

LAN5 - S25.95637, E27.92699

Site **LAN4 (Figure 20 to Figure 22)** consists of at least two discernible stone foundations measuring approximately 3x10 meters in extent each (**Figure 18**). The eastern structure (**at LAN4**) consists of a single foundation outline, while the western most foundation (**at LAN4**) has an additional room added to the south of the foundation.

Site **LAN5 (Figure 23)** is situated some 50 meters to the west of **LAN4**, and consists of a single discernible stone foundation measuring approximately 3x10 meters in extent.

The foundations identified at **LAN4** and **LAN5** can be associated with the school buildings indicated on the 1943 topographical map of the area. These two sites are situated on the boundary of the proposed development and will most probably be affected by the proposed development of **Stand 6 (Figure 19)**.

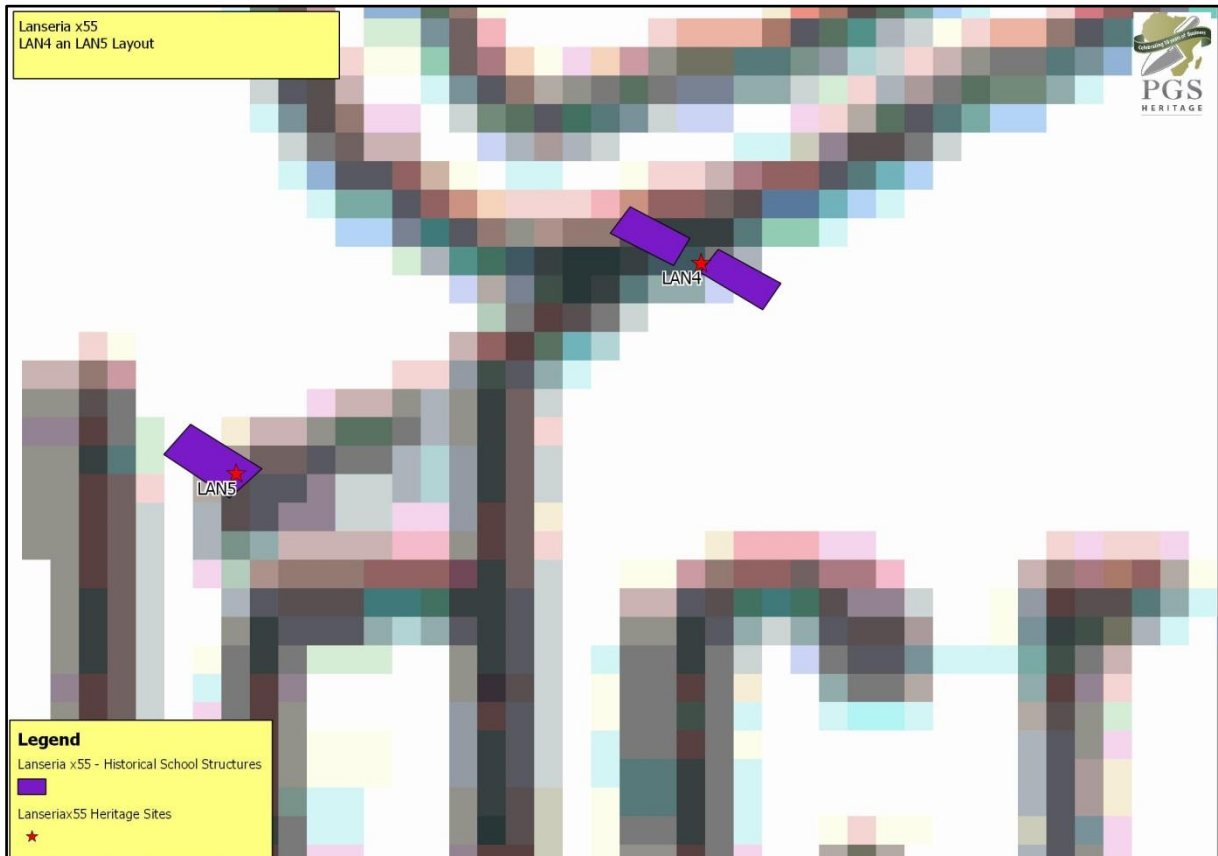


Figure 18 – Layout of LAN4 and LAN5

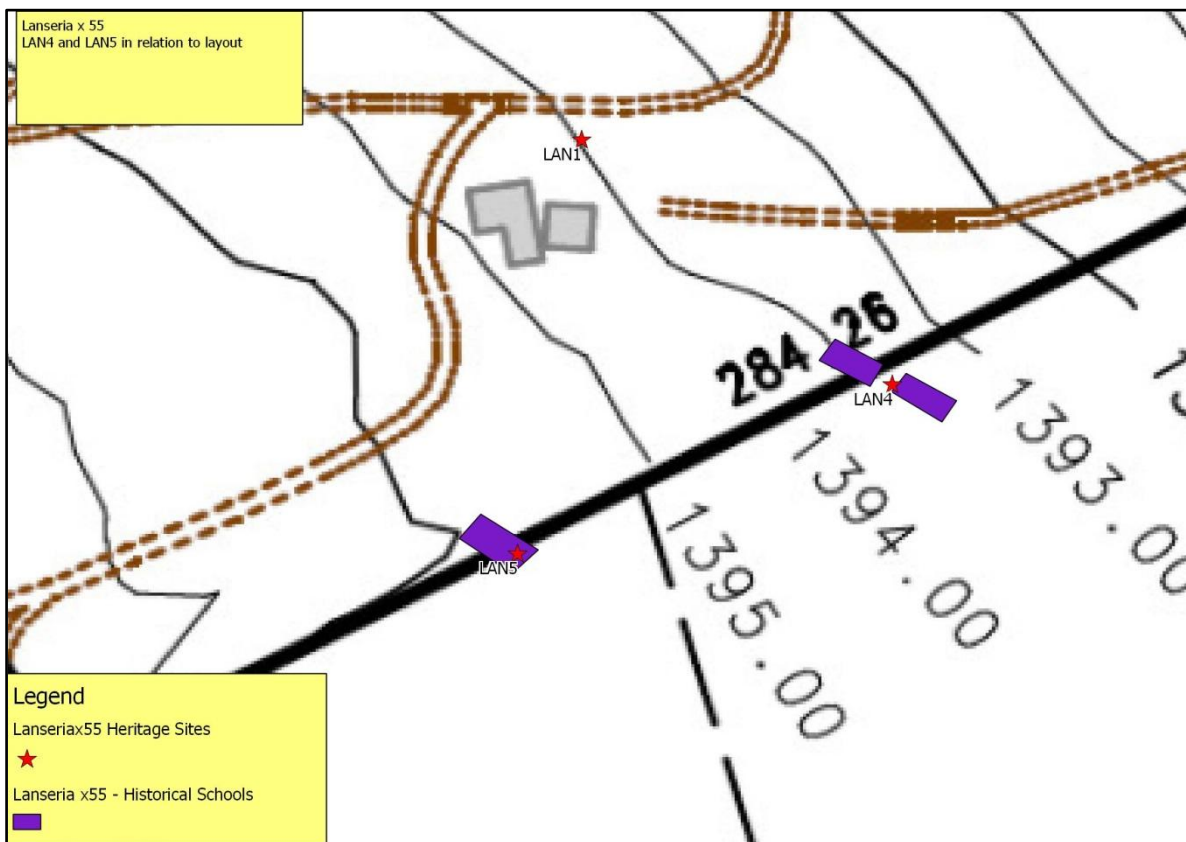


Figure 19 – Position of LAN4 and LAN5 in relation to the proposed development



Figure 20 – View of northern section of foundations (shaded in red) at LAN4



Figure 21 – Close-up of foundation at LAN4



Figure 22 – View of southern section of foundation (shaded in red) at LAN4



Figure 23 – View of the foundation (shaded in red) at LAN5

Significance and Impact rating:

Impact	Impact Significance	Heritage Significance	Certainty	Duration	Mitigation
Negative	Low -Medium	Grade 4B	Probable	Permanent	B

Recommendation:

1. It is recommended that further archival research be done on the school to determine the extent of its significance.
2. The structures are protected under Section 34 of the National Heritage Resources Act (NHRA) and will require a destruction permit from the Gauteng Provincial Heritage Resources Authority (PHRA-G).

An evaluation of the available information, together with the site visit data, enabled the development of a heritage site map (**Figure 24**).

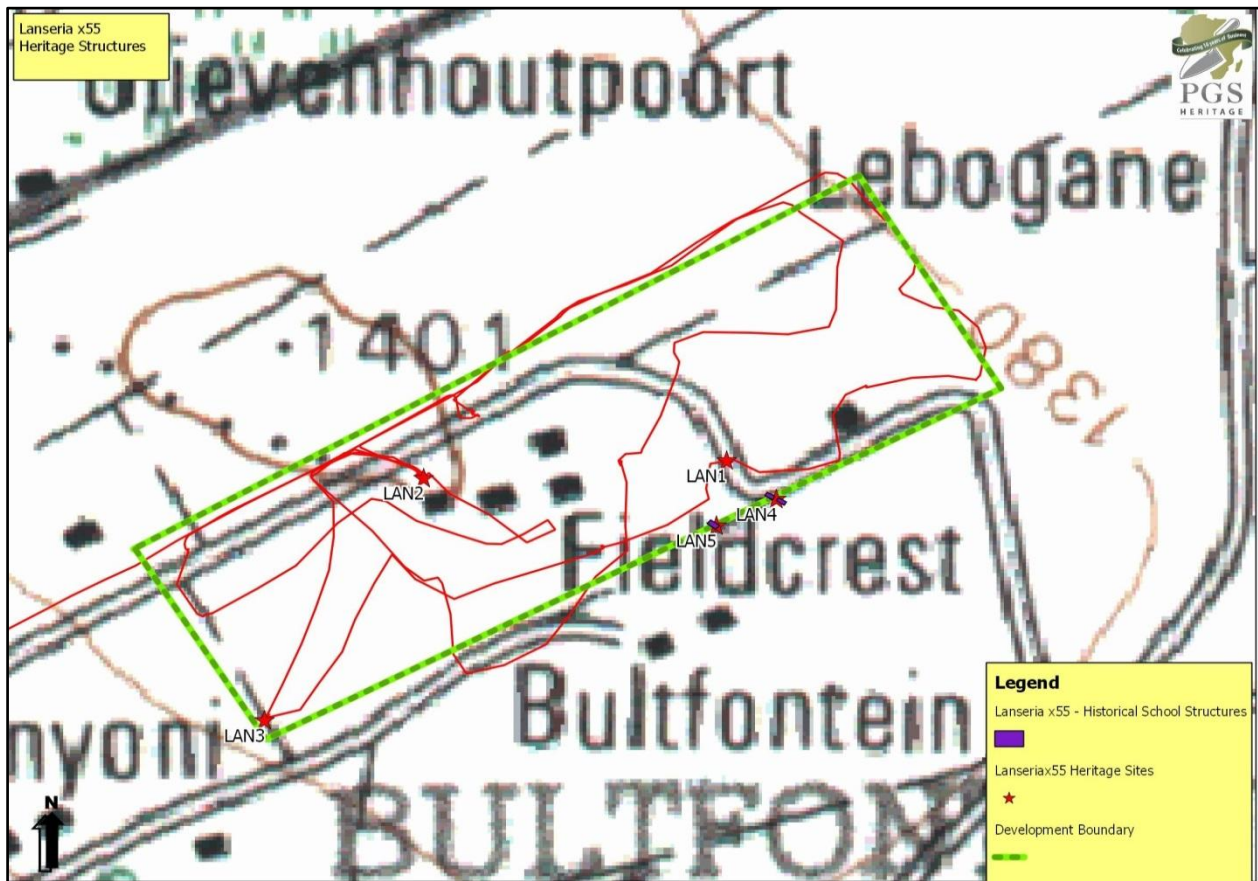


Figure 24 – Identified Sites, with track log

6 CONCLUSIONS AND RECOMMENDATIONS

Utilising the archival study completed for the desktop study as a guide, the field work identified a total of **three significant cultural-heritage sites**, and two structures which are of modern-recent date and have no cultural heritage significance.

Graves

The three graves identified at site **LAN 03** are located inside the proposed western access road for the proposed development (Portion 38 of Bultfontein No. 533-JQ). Therefore, any fence to be constructed will need to include a buffer zone of 5-10m from the graves to avoid any negative impact. If the proposed road cannot avoid the graves then they will have to be relocated.

The grave relocation process must include:

- A detailed social consultation process, that will trace the next-of-kin and obtain their consent for the relocation of the graves, which must be at least 60 days in length;

- Site notices indicating the intent of the relocation;
- Newspaper notices indicating the intent of the relocation;
- A permit from the local authority;
- A permit from the Provincial Department of Health;
- A permit from the South African Heritage Resources Agency, if the graves are older than 60 years, or unidentified and thus presumed older than 60 years;
- An exhumation process that keeps the dignity of the remains and family intact;
- The whole process must be done by a reputable company that is well versed in relocations;
- The exhumation process must be conducted in such a manner as to safeguard the legal rights of the families as well as that of the development company.

Structures

- All of the recent structures (dwellings)(**LAN1** and **LAN2**) can be demolished with no further mitigation as they are all less than 60 years old, in some cases have been extensively vandalised and are of no cultural heritage significance.

Identified historical foundations

The foundations identified at **LAN4** and **LAN5** can be associated with the school buildings indicated on the 1943 topographical map of the area. These two sites are situated on the boundary of the proposed development and will most probably be affected by the propose development of **Stand 6**.

- It is recommended that further archival research on the school be done to determine the extent of its significance.
- The structures are protected under Section 34 of the National Heritage Resources Act (NHRA) and will require a destruction permit from the Gauteng Provincial Heritage Resources Authority (PHRA-G).

The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels.

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<http://www.jstor.org>

<http://www.lanseria.co.za/history>

1 General Principles

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage, destroy, alter, or disturb them. People who already possess material are required to register it. The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the construction company's cost. Thus, the construction company will be able to proceed without uncertainty about whether work will have to be stopped if an archaeological or heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32), it is stated that:

An object or collection of objects, or a type of object or a list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including –

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

- books, records, documents, photographic positives and negatives, graphic material, film or video 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), or in a provincial law pertaining to records or archives; and
- any other prescribed category.

Under the National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection, to all historic and pre-historic cultural remains, including graves and human remains.

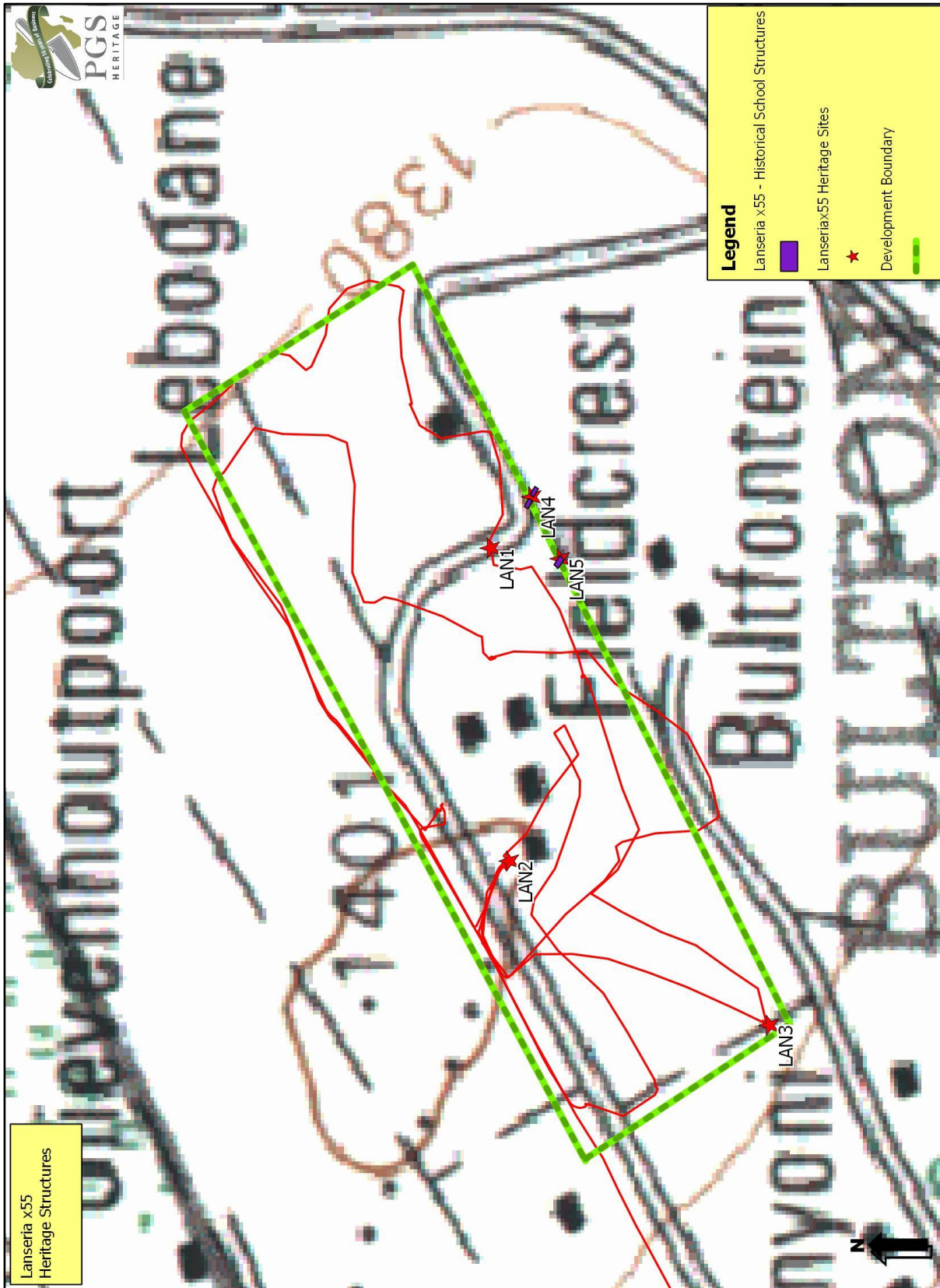
2 Graves and cemeteries

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

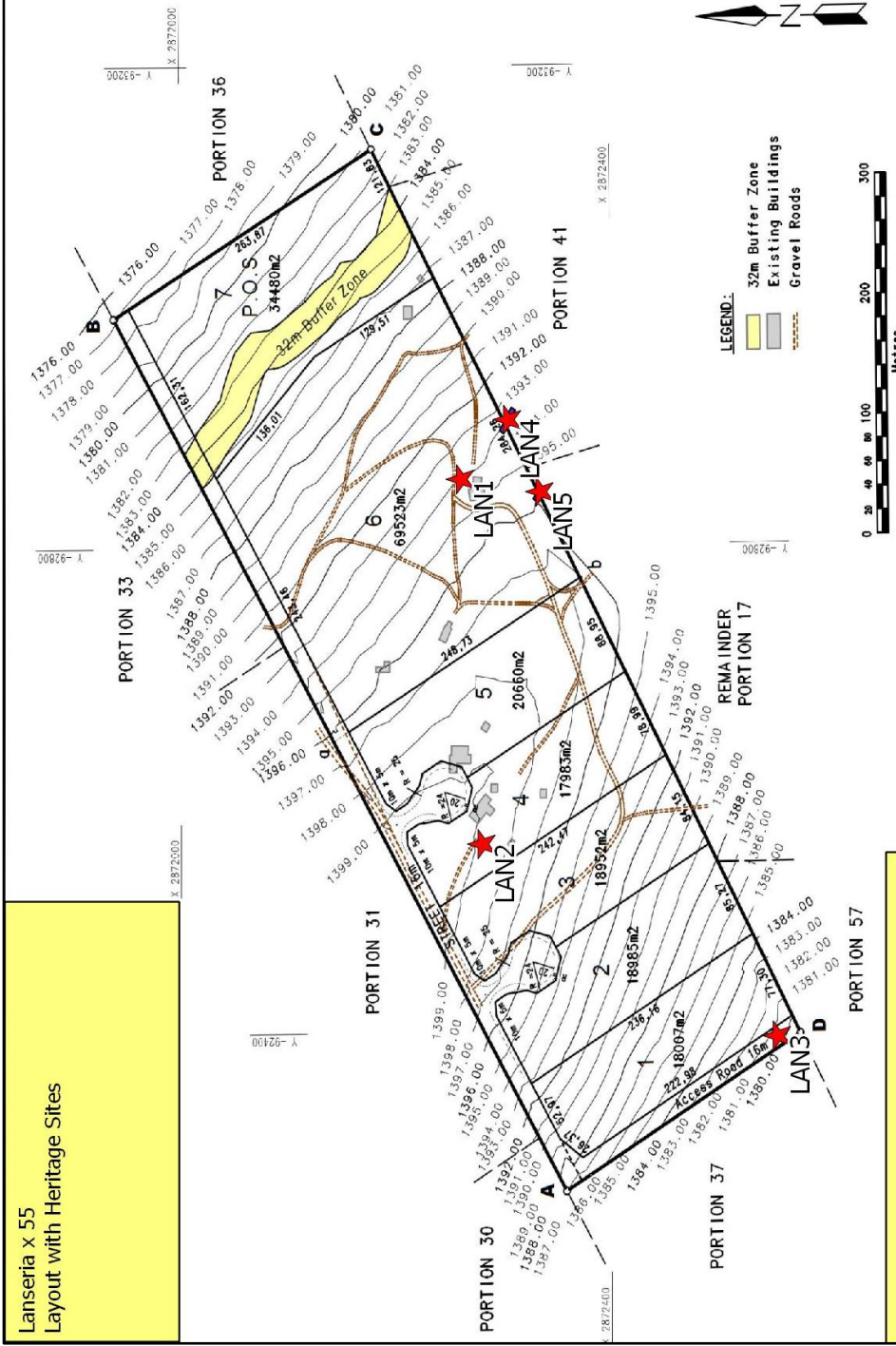
Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation.

If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

APPENDIX B
TRACKLOG AND SITE DISTRIBUTION MAP



Lanseria x 55
Layout with Heritage Sites



Legend
 Lanseriax55 Heritage Sites
 ★
 Lanseria x55 - Historical Schools
 ■

SCALE 1:4 000

NOTES:

- The figure ABCDA represents proposed LANSERIA EXTENSION 55 TOWNSHIP, and covers an area of 22,0967 Hectares.
- The figure AbBDA represents Portion 38 of the farm BULTFONTEIN 533-JQ.
- The figure aBcBa represents Portion 39 of the farm BULTFONTEIN 533-JQ.
- All measurements are given in metres.
- Dimensions are approximate and are subject to final survey.
- Contour interval: 1m
- Datum: Mean Sea Level.
- Survey system: WGS 27

**PROPOSED TOWNSHIP
LANSERIA EXTENSION 55**
SITUATED ON
**PORTIONS 38 AND 39
(PORTIONS OF PORTION 18)
OF THE FARM
BULTFONTEIN No.533-JQ**

Province of Gauteng
LOCALITY PLAN - NOT TO SCALE

LAND USE TABLE			
LAND USE	ESF Nos.	No. OF ERVEN	AREA (Ha)
INDUSTRIAL 2	1-6	6	16,41
PUBLIC OPEN SPACE	7	1	3,45
STREET			2,24
TOTAL		7	22,10
			100,0

CONTOURS
INTERVAL: 1m
DATE: October 2011

SURVEYED BY:

AMENDMENTS	DATE
Surveyed contours added to layout	10-10-2011
Erven & road amended; 32 erven	29-11-2012
Erven 19-21 divided into 4 erven	3-12-2012
Re-layout to 19 erven	26-02-2013
Add access road to Portion 1	5-03-2013
Add access erven 8 and 9	18-03-2013
Remove erf 8 & 9; Add turning circles	15-04-2013

FILE: LANSERIA X55 TS Apr2013 REF: 2013/053

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