

**PHASE 1 HERITAGE IMPACT ASSESSMENT
REPORT FOR THE PROPOSED POULTRY
BROILERY IN PORTION 6 OF THE FARM
KAFFERSKRAAL 475 JR IN CULLINAN**



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with environmental sustainability”*

REPORT INFORMATION

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EXECUTIVE SUMMARY

Zen Environmental Consultant, as an independent environmental and specialist consultant has been appointed by Jomela Consultant to undertake environmental specialist studies required as part of Environmental Impact Assessment for the proposed Poultry Boerdery/Breeder on Portions 6 and 37 of the farm Kafferskraal 475 JR in Cullinan, Gauteng Province.

Zen Consultant undertook a desktop research study that was then supported with the field visit or site screening conducted on the 28 February 2015. The screen visit findings show that except for the ridge wick is covered extensively on the Ecological Report conducted for this study; there are graves located outside the boundary of the proposed site. However, the observed graves are very close to the site. During the pedestrian survey on the demarcated section on the farm no sites of heritage importance were observed.

Due to no visible material remains pertaining to heritage resources on the demarcated section of the project site, it is proposed that a 50m buffer should be applied around the observed cemetery and the proposed project could be authorized.

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1. INTRODUCTION

The purpose of this study was to examine the proposed area in order to determine if any archaeological resources of heritage value will be impacted on by the proposed project which involves Poultry Broiler establishment as well as to archaeologically contextualise the general study area. The aim of this report is to provide the developer with information regarding the location of heritage resources on section to be developed.

No sites of heritage importance were located on the section demarcated for development. However, on the western side of the proposed project site boundary there is a demarcated cemetery that has modern graves with tombstones erected and those without. Few of these settlement sites were recorded via GPS location and photographic record to serve as evidence for the type of archaeological present in the study area. The report will highlight the implication for development on the demarcated section on the proposed section of the farm with regard to heritage resources observed.

2. LEGISLATION

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999) as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that, in all cases must include HIA's.

HIA's should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and paleontological sites that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

2.1.The EIA and HIA processes

Phase 1 Archaeological Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact development might have and relevant recommendations.

All Heritage Impact Assessment reports should include:

- Location of the sites that are found;
- Short description of the characteristics of each site;
- Short assessment of how important each site is, indicating which should be conserved and which mitigated;
- Assessment of the potential impact of the development on the site/s;

- In some cases, a shovel test, to establish the extent of a site, or collection of material might be required to identify the associations of the site. (A pre-arranged SAHRA permit is required); and
- Recommendations for conservation or mitigation.

This HIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential that it also provides the heritage authority with sufficient information about the sites to enable it to assess with confidence:

- ✓ Whether or not it has objections to a development;
- ✓ What the conditions are upon which such development might proceed;
- ✓ Which sites require permits for mitigation or destruction;
- ✓ Which sites require mitigation and what this should comprise;
- ✓ Whether sites must be conserved and what alternatives can be proposed that may re-locate the development in such a way as to conserve other sites; and
- ✓ What measures should/can be put in place to protect the sites that should be conserved.

When a Phase 1 HIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an HIA it will be necessary to ensure that the study addresses such issues and complies with section 38 of the National Heritage Resources Act.

2.2.Legislation regarding archaeology and heritage sites

2.2.1. National Resource Act of April 1999

According to Act No.25 of 1999 a historical site is “any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years.” This clause is commonly known as the “60-years clause”. Buildings are amongst the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. “Tell” refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts). The Act identifies heritage objects as:

- a) objects recovered from the soil or waters of South Africa including archaeological and paleontological objects, meteorites and rare geological specimens;

- b) visual art objects;
- c) military objects;
- d) numismatic objects;
- e) objects of cultural and historical significance;
- f) objects to which oral traditions are attached and which are associated with living heritage;
- g) objects of scientific or technological interest;
- h) any other prescribed category.

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

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

and

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

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;*
- *destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;*
- *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or*
- *bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58).”*

and

- *“No person may, without a permit issued by SAHRA or a provincial heritage resources agency-*
- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*

- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."*

On the development of any area the gazette states that:

"...any person who intends to undertake a development categorised as-

- (a) *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
 - *the construction of a bridge or similar structure exceeding 50m in length;*
 - *any development or other activity which will change the character of a site-*
- 1.1.1. *exceeding 5000m² in extent; or*
- 1.1.2. *involving three or more existing erven or subdivisions thereof; or*
- 1.1.3. *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
- 1.1.4. *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- 1.1.5. *the re-zoning of a site exceeding 10000m² in extent; or*
- 1.1.6. *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development (38. [1] 1999:62-64)."*

and

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

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

- 1.1.1. *an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- 1.1.2. *an assessment of the impact of the development on such heritage resources;*
- 1.1.3. *an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- 1.1.4. *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- 1.1.5. *if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- 1.1.6. *plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64).”*

2.2.2. Human Tissue Act and Ordinance 7 of 1925

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

3. STUDY AREA AND PROJECT DESCRIPTION

The proposed project will be undertaken on Portions 6 and 37 of the farm Kafferskraal 475 JR under the City of Tshwane Metropolitan Municipality in Gauteng Province (Figure 1). The study area is situated in Cullinan which is a small farming town 75km east of Pretoria, Gauteng, along the N4 highway towards Emalahleni. It lies on the border between the Gauteng and Mpumalanga provinces.

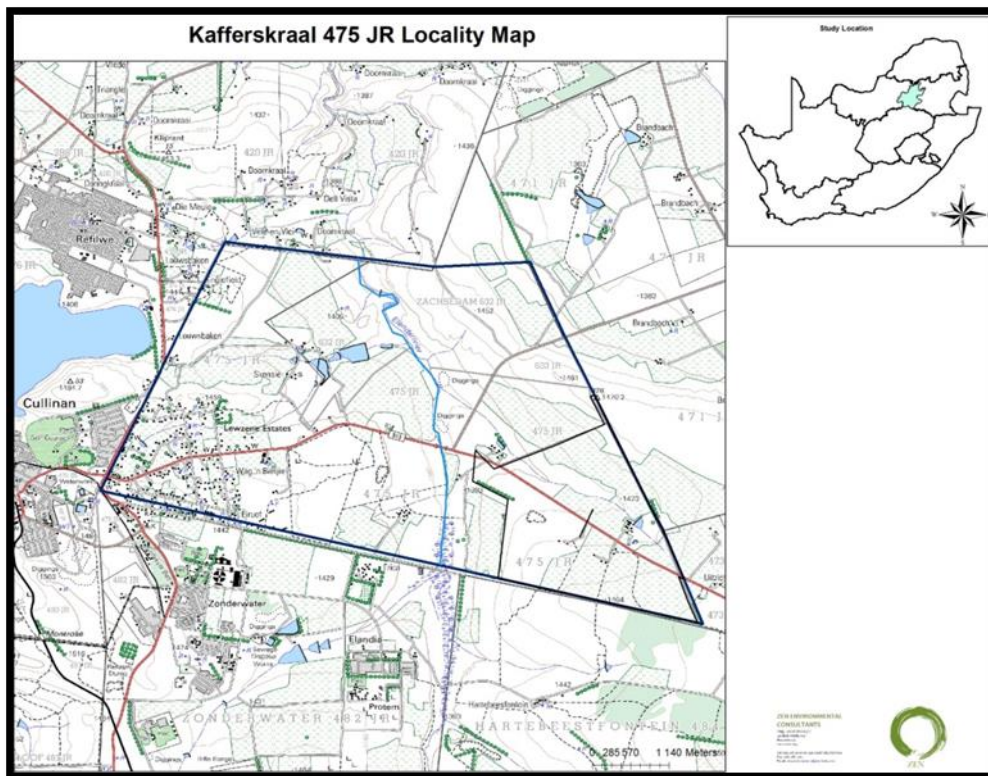


Figure 1: The study location (in Navy-Blue) and the study site (in Black).

4. ARCHAEOLOGICAL BACKGROUND

The southern African archaeology is broadly divided into the Earlier, Middle and Later Stone Age, Early and Later Iron Age, and Historical / Colonial Periods.

4.1. The Earlier Stone Age

The earliest stone tool industry, the Oldowan, was developed by the earliest members of the genus *Homo* such as *Homo habilis*, around 2.6 million years ago. It contained tools such as cobble cores and pebble choppers (Toth & Schick 2007). The oldest stone tools from the Sterkfontein cave are found in the Oldowan Infill and date to between 2 and 1.7 million years ago. As the name suggests these tools are similar to those found at Olduvai Gorge in Tanzania. These stone tools therefore suggest the earliest direct evidence for culture in southern Africa (Clarke & Kathleen 2000). It was completely replaced by the Acheulean industry, which was first conceived by *Homo ergaster* around 1.8 or 1.65 million years ago, which lasted until around 300 000 Kya. Evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. At about 1.5 million years ago the western side of the cave probably enlarged, since artefact-bearing breccias (coarse-grained sedimentary rock made of sharp fragments of rock and stone cemented together by finer material, produced by volcanic activity or erosion, including frost shattering) are more widely distributed. The most typical tools of the ESA are hand-axes, cleavers, choppers and spheroids. Although they appear to have used hand-axes often, there is disagreement about their use. There are no indications of hafting, and some artefacts are far too large for that. Choppers and scrapers were likely used for skinning and butchering scavenged animals and sharp ended sticks were often obtained for

digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals. Fire was used by the hominin *Homo erectus* and *Homo ergaster* as early as 300,000 or 1.5 million years ago and possibly even earlier. The invention of fire reduced mortality rates and provided protection against predators. Examples of sites from this time period include Kromdraai, Makapansgat and Sterkfontein and Swartkrans (Toth & Schick 2007).

4.2. The Middle Stone Age

Middle Stone Age artefacts started appearing about 250 000 years ago and replaced the larger Earlier Stone Age bifaces, hand-axes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were in some cases attached to handles, indicating a significant technical advance. Few other artefacts remain from this period. In some cases circular hearths were found which indicate the ability to make fire while animal and plant remains refer to a hunting and gathering lifestyle. It is also during this period that the first *Homo sapiens* species emerged. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999). The most recent deposit in the Sterkfontein cave dates to between 115 000 and 253 000 years ago and includes a few hominid fragments, fauna and Middle Stone Age artefacts (Clarke & Kuman 2000:10-13).

4.3. The Later Stone Age

This time period ranges from about 20 000 years ago to the present and saw the emergence of *Homo sapiens sapiens*. Stone tools from this period are generally smaller but were used to do the same job as those from previous periods, but in a different way. At the time of European contact in South Africa, some such as the Khoisan people were still making these tools. This greatly helped in understanding what these tools were used for. Some Later Stone Age associations are: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Some Later Stone Age sites include Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999).

4.4. Early Iron Age

The Early Iron Age marks the movement of farming communities into South Africa at around 200 A.D. These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Artefact evidence from Early Iron Age sites is mostly found in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Early Iron Age ceramic traditions are classified by some scholars into different “streams” or trends in pot types and decoration that, over time emerged in southern Africa. These “streams” are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued up to the end of the first millennium AD (Huffman 2007). Some well-known Early Farming Community sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province and Mzonjani in Kwa-Zulu Natal.

4.5.Later Iron Age and Historical Periods

From literary sources it can be derived that the study area appears not to have been directly influenced during the Later Iron Age and later times. One example of Later Iron Age activity in the area, although a considerable distance towards the east, was a Swazi attack on Kôpa forces in May of 1864 as well as Ndzundza, Ndebele and Pedi movements (Bergh 1999: 176). Voortrekker history in the general area is more readily available as a result of the Tregardt and Van Rensburg trek as well as the Battle of Bronkhorstspuit in 1880. Accordingly sometime after the Tregardt and Van Rensburg trek of 1836, some settled in the Bronkhorstspuit area.

5. METHODOLOGY

Archaeological reconnaissance of the area under investigation was mainly done through unsystematic site surveys and identifying possible heritage sites from satellite imagery. The sites that were located were then recorded via GPS and photo record. The reconnaissance of the area under investigation served a twofold purpose:

To obtain an indication of heritage material found in the general area as well as to identify/locate archaeological sites on the section of the portion that will be affected. This was done in order to establish a heritage context and to supplement background information that would benefit developers through identifying areas that are sensitive from a heritage perspective.

All archaeological and historical events have spatial definitions in addition to their cultural and chronological context. Where applicable, spatial recording of these definitions were done by means of a handheld GPS (Global Positioning System) during the site visit.

5.1.Sources of information

Standard archaeological procedures for the observation of heritage resources were followed at all times during the survey. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion. Locations of archaeological material remains were recorded by means of a Garmin Montana 650 GPS and archaeological features and general conditions on the terrain were photographed with the sme GPS as it has a digital camera embedded in it.

A literature study, which incorporated previous work done in the region, was conducted in order to place the study area into context from a heritage perspective. Historical maps dating to between 1902 and 1905 were also inspected for traces of past human activity, but no such indications were observed. It should be noted that an in depth literature study would be necessary should further studies be initiated on the whole farm area.

6. LIMITATIONS

The surrounding vegetation in the area under investigation was dominated by Bankenveld, however the northern section of the study farm is covered by a mixed bushveld vegetation unit. The general visibility of the investigated areas was not good at the time of surveying (28 February 2015) as the grass was tall which hinders visibility of the unmarked graves and any other heritage artefact that could be investigated within the demarcated area.

However, it should be noted that undetected heritage remains may be present in sub-surface deposits, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)).

7. ARCHAEOLOGICAL AND HISTORICAL REMAINS

7.1. Stone Age Remains

No Stone Age archaeological remains were found.

7.2. Iron Age Farmer Remains

With exception of the graves dating back to late 50's no Iron Age Farmer archaeological remains were identified in the study area.



Figure 2: Cemetery located on the western side of the study site outside the proposed project boundary.



Figure 3: Some of the graves within the cemetery had tombstone thus visible, whilst those without tombstone their visibility was hindered by the tall grass

7.3. Historical Remains

No Historical archaeological remains were identified on the section demarcated for development.

8. STATEMENT OF SIGNIFICANCE & RECOMMENDATIONS

8.1. Statement of significance

No archaeological material of heritage significance was observed on the section demarcated for development on the study site with exception of the graves that occur outside the study site boundary. It is therefore recommended that a buffer of 50 m should be applied around the cemetery to buffer the graves from the proposed development impacts.

Graves are protected by the National Heritage Resources Act (25 of 1999) and the Human Tissues Act (65 of 1983) which protect graves older than 60 years but younger than 100 years. Graves younger than 60 years, however, are protected under the Human Tissue Act (65 of 1983) and falls under Section 2 (1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925). The exhumation of graves falls under the jurisdiction of the National Department of Health as well as the relevant Provincial Department of Health. Exhumation permission must also be obtained from the relevant local or regional council where graves are located, as well as from the relevant regional and local council to where the grave will be relocated to.

No exhumation is anticipated with regards to the proposed project.

8.2. Recommendations

The following recommendations are made in terms with the National Heritage Resources Act (25 of 1999):

- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material and skeletal remains may be exposed during development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)).
- From a heritage point of view development may proceed subject to the abovementioned conditions and recommendations.

9. ADDENDUM: TERMINOLOGY

Archaeology:

The study of the human past through its material remains.

Artefact:

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

Assemblage:

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

Context:

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

Cultural Resource Management (CRM):

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

Excavation:

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

Feature:

An irremovable artefact; e.g. hearths or architectural elements.

Ground Reconnaissance:

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

Matrix:

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

Phase 1 Assessments:

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 Assessments:

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

Sensitive:

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

Site:

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

Surface survey:

Two basic kinds can be identified: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked systematically, thus making the recording of finds more accurate.

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