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**PHASE 1 HIA REPORT FOR THE
PROPOSED BRAKPAN EXTENSION 12 HOUSING DEVELOPMENT
ON PORTION 51 OF MODDERFONTEIN 76IR
IN THE CITY OF EKURHULENI OF GAUTENG**

For:

K2M Environmental (Pty) Ltd

REPORT: APAC020/101

by:

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November 2020

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A handwritten signature in black ink, appearing to be 'A. Pelser', is centered below the disclaimer text.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by K2M Environmental (Pty) Ltd to conduct a Phase 1 HIA for the Proposed Brakpan Extension 12 Housing Development. The study and development area is located in the Brakpan area of the City of Ekurhuleni Municipality of Gauteng, and comprises the Remaining Extent of Portion 51 of the farm Modderfontein 76IR.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. The assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance. This report discusses the results of both the background research and physical assessment.

From a Cultural Heritage perspective it is recommended that the proposed development be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

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1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by K2M Environmental (Pty) Ltd to conduct a Phase 1 HIA for the Proposed Brakpan Extension 12 Housing Development. The study and development area is located in the Brakpan area of the City of Ekurhuleni Municipality of Gauteng, and comprises the Remaining Extent of Portion 51 of the farm Modderfontein 76IR.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. The assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance.

The client indicated the location and boundaries of the study area and the assessment concentrated on this area.

Phumaf Holdings was appointed by the Department of Human Settlements to assist with all preplanning, planning, design and construction of the Brakpan Extension 12 Housing Development. Phumaf subsequently appointed K2M Environmental to undertake the Environmental Impact Assessment process for the Brakpan Extension 12 Housing Development. The property forms part of the Gauteng Rapid Land Release Programme which is aimed at fast tracking the release of State-owned land for development.

The proposed housing development is aimed at providing suitable housing to beneficiaries within the City Ekurhuleni Municipality. The property was initially classified as mining land, however with the promulgation of the new Town Planning Scheme of 2014, the property is zoned as "Agriculture". The proposed development will entail the construction of:

- Approximately 564 residential units.
- Internal water reticulation. The pipe sizes, materials, and class will be Type PE 100, PN 12.5. The water mains will be installed 1.5m from the erf boundary forming a loop. Isolating valves will be placed at the reticulation nodes to provide effective isolation of loops.
- Internal sewer reticulation. The pipes will be 160mm diameter Type PE 100 or higher PN 10, SDR, and the manholes will be 1000mm to 1500mm diameter HDPE manhole/pre-cast concrete rings with concrete covers.
- Construction and redesign of internal roads and stormwater infrastructure.
- An internal MV reticulation to supply the proposed development with electricity.

The proposed development may entail the removal of more than 1 hectare of indigenous vegetation and will take place on land that is zoned for agricultural purposes.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1. The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance

- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- 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 that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant 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 or 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, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to

the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2. The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4. METHODOLOGY

4.1. Survey of literature

A survey of available literature is undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2. Field survey

The field assessment section of any study is conducted according to generally accepted HIA practices and aims at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3. Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4. Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The study and development area is located in the Brakpan area of the City of Ekurhuleni Municipality of Gauteng, and comprises the Remaining Extent of Portion 51 of the farm Modderfontein 76IR.

The total extent of the site is approximately 18.44Ha and is located within Ward 97 of the City of Ekurhuleni Metropolitan Municipality. The project area is bordered by a residential complex to the north, vacant land to the west, wetlands to the east and informal residential dwellings to the south. The project area is currently vacant. It should be noted that the site is fenced/walled off and internal roads have previously been constructed.

The topography of the study area is in general flat and open, with no rocky ridges or outcrops present. Visibility during the assessment was fairly good, although in some sections grass, shrub, weeds/alien plant and tree cover made visibility and access difficult. The dumping of building rubble and other household refuse also occurs in the area. The general area has been developed in the recent past through urban residential developments such as housing, roads and related infrastructure as well as industrial and mining development. The study and proposed development area itself has been impacted by recent developments and if any sites of archaeological and/or historical significance did occur here in the past it would have been disturbed or destroyed as a result of these recent activities to a large degree.

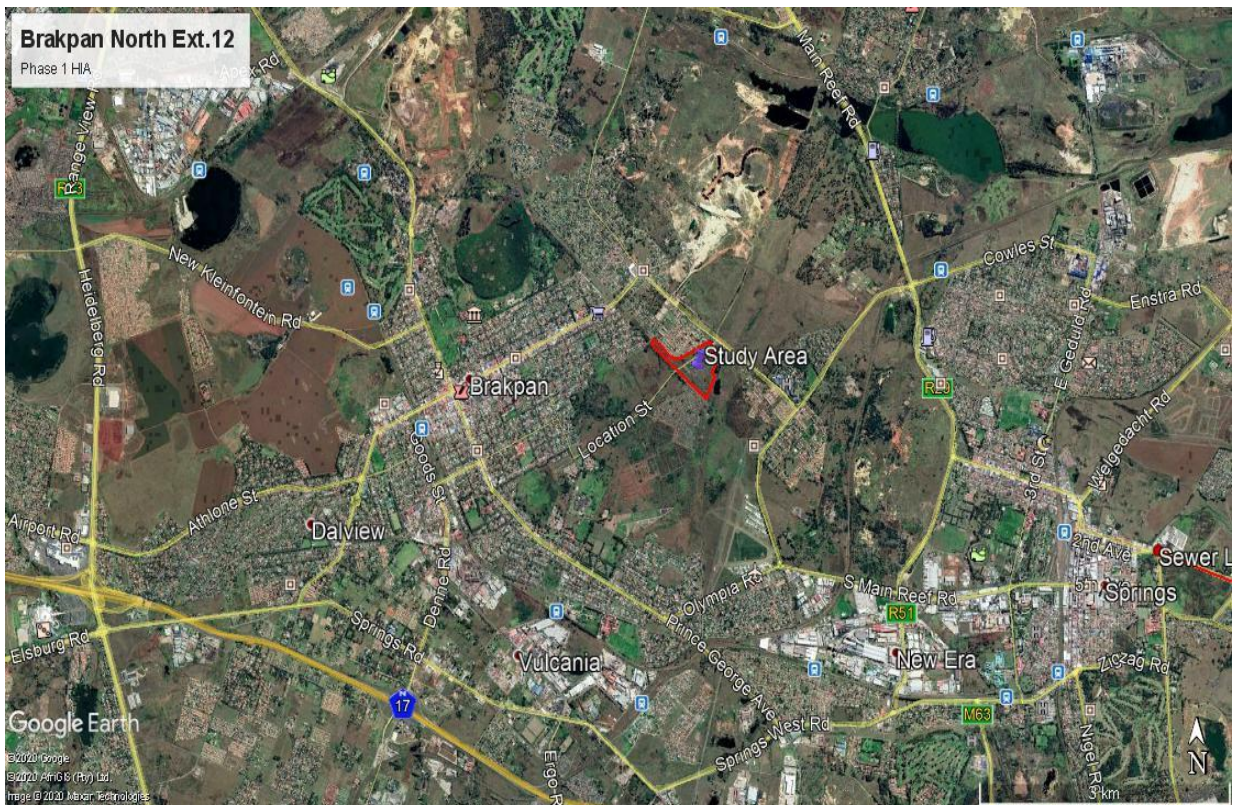


Figure 1: General location of study and proposed development area (Google Earth 2020).



Figure 2: Closer view of study area and development footprint (Google Earth 2020).

6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

No known Stone Age sites or artifacts are present in the area. The closest known Stone Age sites are those at Aasvoelkop, Melvillekoppies, Linksfield and Primrose (Bergh 1999: 4). 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, as well as to the south at Henley-On-Klip (Van Schalkwyk 2014: 9). Fourie (2006) reported on a large Earlier (ESA) and Middle Stone Age (MSA) deposit at Albertsdal, Palmietfontein, while Huffman (2000) commented on the widespread presence of surface MSA occurrences at Roodekop, Germiston, with at least 1 significant MSA site with fairly substantial stratigraphic depth recorded. In addition the Roodekop survey yielded 2 ESA sites as well as mixed MSA / Later Stone Age (LSA) occurrences. MSA and LSA lithic occurrences were also reported on from the Klipriviersberg Nature Reserve (Van Ryneveld 2015: 14). If any Stone Age artifacts are to be found in the area then it would more than likely be single, out of context, stone tools.

No Stone Age sites or material (stone tools) were identified in the study area during the November 2020 field work.

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

No Early Iron Age sites are known in the area (Bergh 1999: 6). The closest known LIA sites are at Melvillekoppies and Bruma Lake (Bergh 1999: 7). 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, a large number 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 (Van Schalkwyk 2014: 10).

No Iron Age occurrences were identified in the study area during the assessment.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. The first Europeans to move through and into the area were the group of Cornwallis Harris in 1836 (Bergh 1999: 13). These groups were closely followed by the Voortrekkers after 1844 (Bergh 1999: 14). White settlers moved into the area during the first half of the 19th 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. The result is that most sites and features of heritage significance in the larger region derive from this development (Van Schalkwyk 2014: 10).

Information from Wikipedia

The name Brakpan comes from a small pan on a farm called Weltevreden, which was filled with very brackish water and was probably referred to as the "brakpan" and it was near this pan that the first settlement started. In 1888, a coal seam was discovered and a coal mine under the name of Brakpan Collieries was started. When a railway line was constructed from Germiston to Springs, Brakpan became one of the stations along the route.

With gold fever running high on the Witwatersrand in the early years of the twentieth century, it was not long before gold was discovered. In 1905, Brakpan Mines Company sunk its first two gold mining shafts. One of its claims to fame was that it had the highest mine dump in the world at that time, 120 meters (390 feet) above ground level. This was higher than any of the pyramids of Egypt except the Pyramid of Cheops.

From 1905 the village began to grow rapidly, remaining a suburb of Benoni until 1912 when it was granted the status of a municipality and proclaimed as a town. Brakpan's central position makes it a good distribution center for industry, especially engineering works and foundries. In the late 1990s the municipality approved the construction of a huge casino and entertainment complex, Carnival City, which opened the town to tourists and provided much-needed jobs for the people.

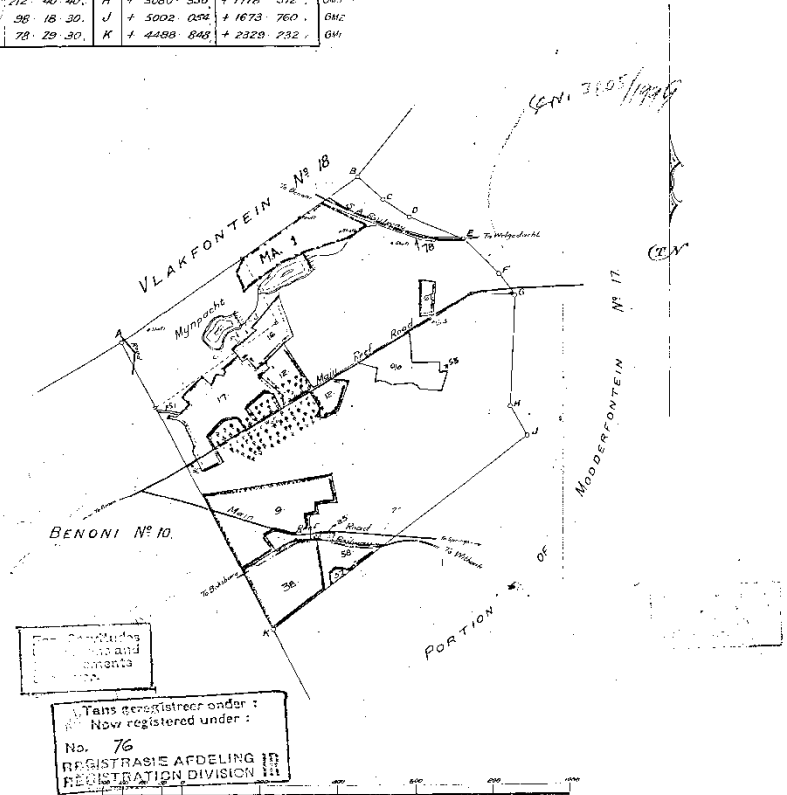
The first activity which drew people to the area was the British coal mining in 1888 and the large coal powered power station also built by the British. A tram line to Johannesburg was built at this time to service the power station. The Main Reef Road (today part of the R29)

linked Brakpan to all the other mining towns in the Witwatersrand. Brakpan was a suburb of Benoni from 1914-1919] when it was granted municipal status. The Brakpan miners were involved in the miners' strike of 1922. The town has gradually lost its importance as a gold mining area as the surrounding mines became low yield/high cost. Many British residents emigrated during the apartheid era leaving a vacuum in the town which was filled by mostly Afrikaner farmers who had lost interest in farming.

The oldest map for Modderfontein 76IR that could be found on the Chief Surveyor General's database (www.csg.dla.gov.za) is for Portion 1 and dates to 1916 (CSG Document 10547601). It shows that the farm was then numbered as No.6 and was situated in the District of Benoni in the Province of Transvaal. It also indicates that the whole of the farm was originally granted by deed to one H.P. van der Walt on the 11th of May 1869. For Portion 51 the map dates to 1972. This portion was surveyed (for a servitude) between July 1970 & April 1972 (CSG Document 10315644).

No historical sites, structures or remains were identified during the November 2020 assessment in the study & development area.

ST. DRS.	ANGLES.	(Y)	CO-ORDINATES. (X)	
AB 726.302	A 99.19.10.	A + 5253.029	+ 2711.092	BYH
BC 872.469	B 100.40.20.	B + 5690.318	+ 2106.323	VWG
CD 87.561	C 169.35.20.	C + 5630.144	+ 2042.816	GM7
DE 152.241	D 130.30.10.	D + 5564.691	+ 1975.097	GM7
EF 129.870	E 157.57.0.	E + 5524.207	+ 1835.342	GM6
FG 70.072	F 170.57.10.	F + 5431.810	+ 1714.101	GMS
GH 20.823	G 141.32.10.	G + 5374.769	+ 1703.459	GM2
HJ 90.102	H 212.40.40.	H + 5080.350	+ 1718.512	GM3
JK 832.469	J 98.18.30.	J + 5002.092	+ 1673.760	GM2
KA 654.268	K 78.29.30.	K + 4488.848	+ 2328.232	GM1



The above Figure lettered **ABCDEFGHIJK** represents portion of the Farm **Modderfontein N° 76** in extent **1200 Morgen 366** Square Rods of Land, situate in the District of **Benoni** Transvaal Province, and bounded as indicated above.

The whole Farm was originally granted to **H.P. van der Walt** by Deed of Grant No. 2463 dated the **11th** day of **May 1869**.

The Beacons were Pointed out by **Surveyor C.F. Tompkins** in **April 1916**.

Due notice of this Survey has been given to all adjoining land owners and the beacons have been properly erected according to law.

Surveyed on behalf of **New Modderfontein G.M.C. L^{td}** by me **W.K. de Klerk** Government Land Surveyor.

No. **A 1241** Examined. The numerical data of this Diagram are sufficiently consistent.

J. L. ...
Surveyor-General's Office, Pretoria.

No protest confirmed.

W. ...
Surveyor-General's Office, Pretoria.
Published in Government Gazette No. 1253 dated ...

Figure 3: 1916 map of Portion 1 of Modderfontein 76IR (www.csg.dla.gov.za).

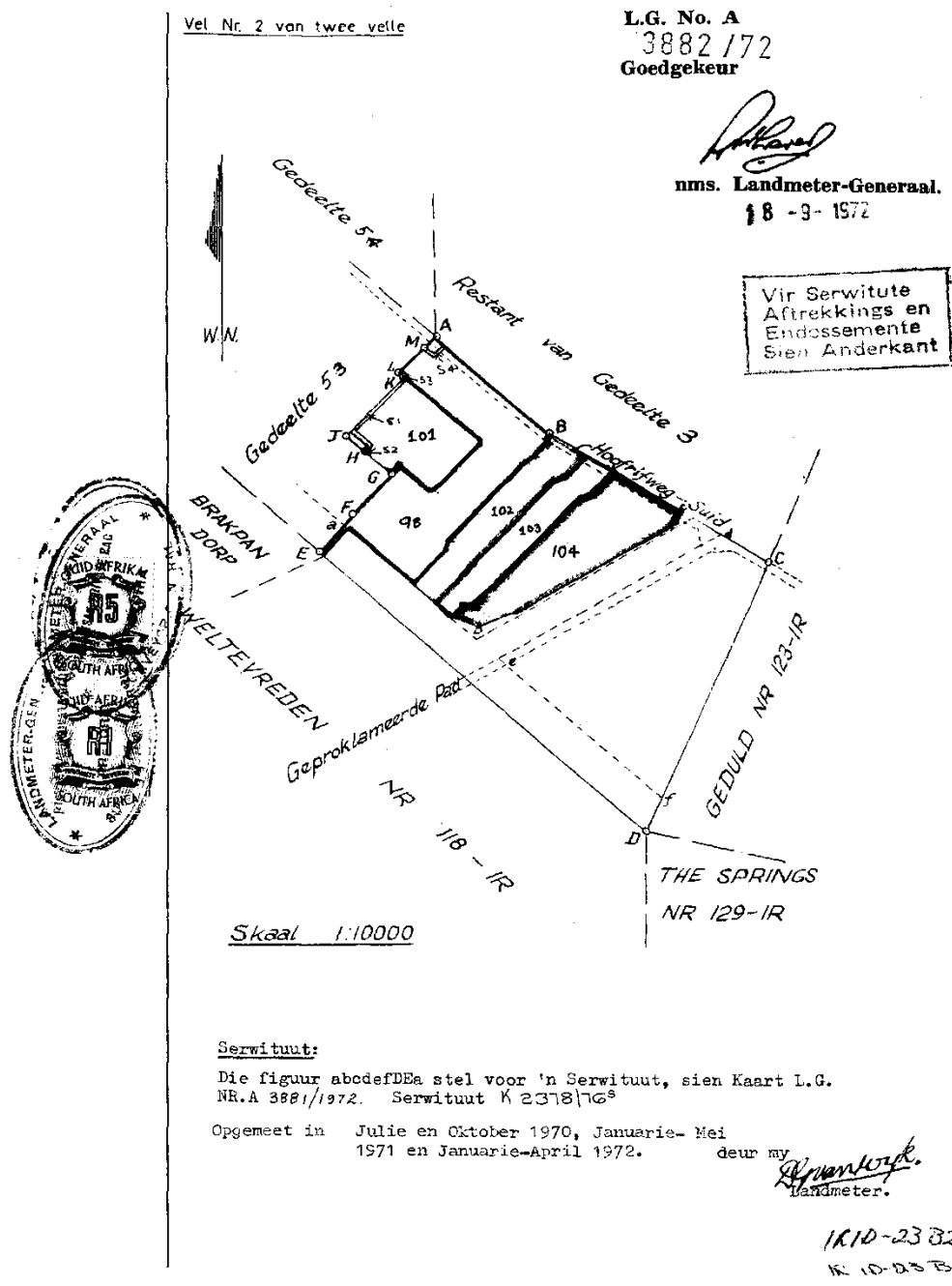


Figure 4: A 1972 map of Portion 51 of the farm Modderfontein 761R (www.csg.dla.gov.za).

Results of the study area assessment

The field assessment was undertaken during November 2020. Access to and visibility in some sections was made difficult due to dense vegetation (tree and grass cover), while the dumping of building rubble and other refuse also obscured visibility to some degree in some parts.

The general and specific study area has been impacted in the recent past through various developments, including historical agricultural activities and urban related developments. Recent (abandoned) development in the study & proposed new development area has also had major impacts and the original natural and historical landscape has been nearly completely altered. As a result, if any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance did exist here it would have been extensively disturbed or destroyed. Aerial images (Google Earth) of the study and larger area dating to between 2002 and 2020 are evidence of the impact of these development activities.



Figure 5: A view of a section of Location Street that runs through the area, as well as the neighbouring urban developments.



Figure 6: A view of the general area showing the dense vegetation (trees and grass) in some parts.



Figure 7: Another general view of the area.



Figure 8: A view of the development area close to the Fourie street entry point. The boundary wall of the previous abandoned development is visible, as well the dumping of residential refuse & building rubble.



Figure 9: Some parts are more open.



Figure 10: A 2002 aerial view of the study and development area (Google Earth 2020).



Figure 11: The same area in 2011. Note the developments that had taken place after 2002 (Google Earth 2020).



Figure 12: The area in 2018 (Google Earth 2020).

Based on the field assessment and aerial images of the study area it is recommended that the proposed housing development should be allowed to continue.

Finally, it should be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when development work commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

7. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Phase 1 HIA for the Proposed Brakpan Extension 12 Housing Development was conducted successfully. The study area is located in the Boksburg area of the Ekurhuleni Metropolitan Municipality of Gauteng. The study and development area is located in the Brakpan area of the City of Ekurhuleni Municipality of Gauteng, and comprises the Remaining Extent of Portion 51 of the farm Modderfontein 76IR.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. The assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance.

The general and specific study area has been impacted in the recent past through various developments, including historical agricultural activities and urban related developments. Recent (abandoned) development in the study & proposed new development area has also had major impacts and the original natural and historical landscape has been nearly completely altered. As a result, if any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance did exist here it would have been extensively disturbed or destroyed.

Although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Finally, from a Cultural Heritage point of view it is recommended that the proposed housing development should be allowed to continue taking into consideration the recommended measures above.

8. REFERENCES

General and Closer Views of Study Area Location: Google Earth 2020.

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies**. Pretoria: J.L. van Schaik.

Huffman, T.N. 2007. Handbook to the Iron Age: **The Archaeology of Pre-Colonial Farming Societies in Southern Africa**. Scottsville: University of KwaZulu-Natal Press.

Knudson, S.J. 1978. **Culture in retrospect**. Chicago: Rand McNally College Publishing Company.

Lombard, M., L. Wadley, J. Deacon, S. Wurz, I. Parsons, M. Mohapi, J. Swart & P. Mitchell. 2012. **South African and Lesotho Stone Age Sequence Updated (I)**. South African Archaeological Bulletin 67 (195): 120–144, 2012.

Republic of South Africa. 1999. **National Heritage Resources Act (No 25 of 1999)**. Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act (no 107 of 1998)**. Pretoria: The Government Printer.

Van Ryneveld, K. 2015. **Phase 1 Archaeological Impact Assessment – Proposed Mixed Use Development (Jupiter Extension 9), on Farms Elandsfontein 90-IR and 108-IR, Germiston, Ekurhuleni Metropolitan Municipality, Gauteng, South Africa**. Unpublished Report

ArchaeoMaps Archaeological Consultancy. For: SEF. January 2015.

Van Schalkwyk, J.A. 2014. **Cultural heritage impact assessment for the proposed Residential development, Portion 57, Benoni 77IR, Ekurhuleni, Gauteng Province.** Unpublished Report 2014/JvS/029. For: Ms. A.El Mohamadi. May 2014.

Wikipedia: www.wikipedia.org.

Chief Surveyor General Database (www.csg.dla.gov.za): Documents (1) 1054760 & (2) 10315644

APPENDIX A: DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or 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.

APPENDIX C: SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D: PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.