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CK 2006/014630/23 **VAT NO.: 4360226270**

**A PHASE 1 HERITAGE IMPACT ASSESSMENT & REPORT FOR RESIDENTIAL DEVELOPMENT
ON PORTION 350 OF THE FARM THE WILLOWS 350JR
TSHWANE METROPOLITAN AREA, GAUTENG**

For:

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REPORT: **APAC021/71**

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September 2021

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SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Pierre Joubert Professional Landscape Architect & Environmental Planner to conduct a Phase 1 Heritage Impact Assessment for proposed Residential Development on Portion 350 of the farm The Willows 340JR. The study area is located in the Tshwane Metropolitan Municipality of Gauteng.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, as well as on land parcels adjacent to the study area. No sites, features or material of cultural heritage significance were found on the specific portion earmarked for development. This report discusses the results of both the background research and physical assessment and provides recommendations on the way forward at the end.

It is recommended that the proposed Residential Development on Portion 350 of The Willows 340JR be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

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1. INTRODUCTION

A. Pelser Archaeological Consulting (APAC) was appointed by Pierre Joubert Professional Landscape Architect & Environmental Planner to conduct a Phase 1 Heritage Impact Assessment for proposed Residential Development on Portion 350 of the farm The Willows 340JR. The study area is located in the Tshwane Metropolitan Municipality of Gauteng.

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

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 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 paleontological importance**
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, 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. A 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 000m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34(1) of the 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 the 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 paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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 was 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 the study was conducted according to generally accepted HIA practices and aimed 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 & PROPOSED DEVELOPMENT

The proposed Residential Development is situated on Portion/Erf 350 of the farm The Willows 340JR. The study & development area is located in the Tshwane Metropolitan Municipality of Gauteng in Pretoria East and north-west of Solomon Mahlangu Drive.

The topography of the area is relatively flat in sections, although rocky ridges and outcrops are present and to the north part of the *Bronberge* range dominate the landscape. Dense vegetation in part limited visibility on the ground. The study area and development footprint was however easily accessible. Some earlier developments on adjacent properties and in the study area have had some impact on the original natural & historical landscape and if any significant archaeological and/or historical sites did exist here it would have been extensively altered or destroyed as a result. However, some Late Iron Age stone-walling is known to exist on adjacent portions and this needs to be taken into consideration in the proposed development. This aspect will be discussed in the next section.



Figure 1: General location of the study area & proposed development (Google Earth 2021).



Figure 2: Closer view of study area & development footprint (Google Earth 2021).

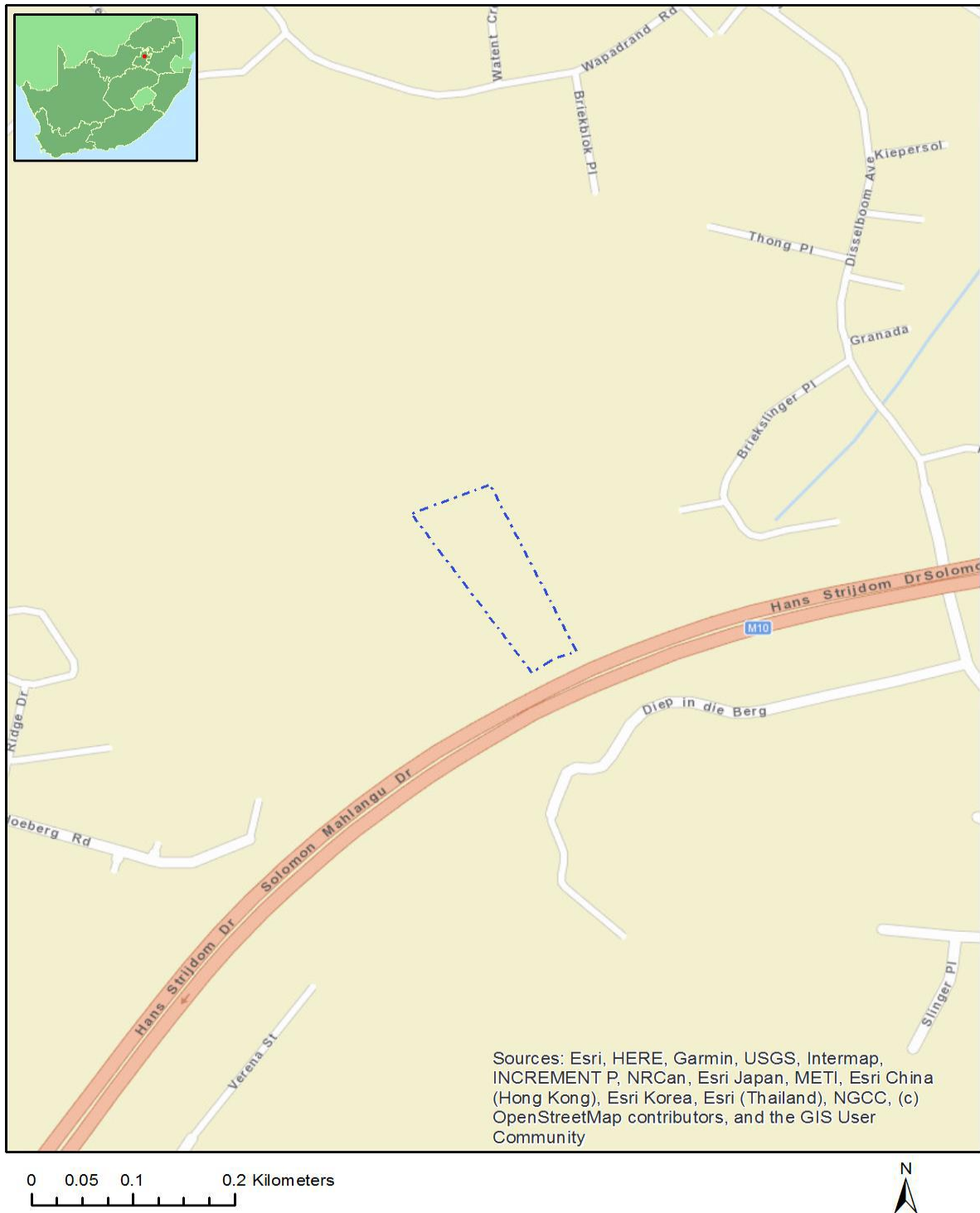
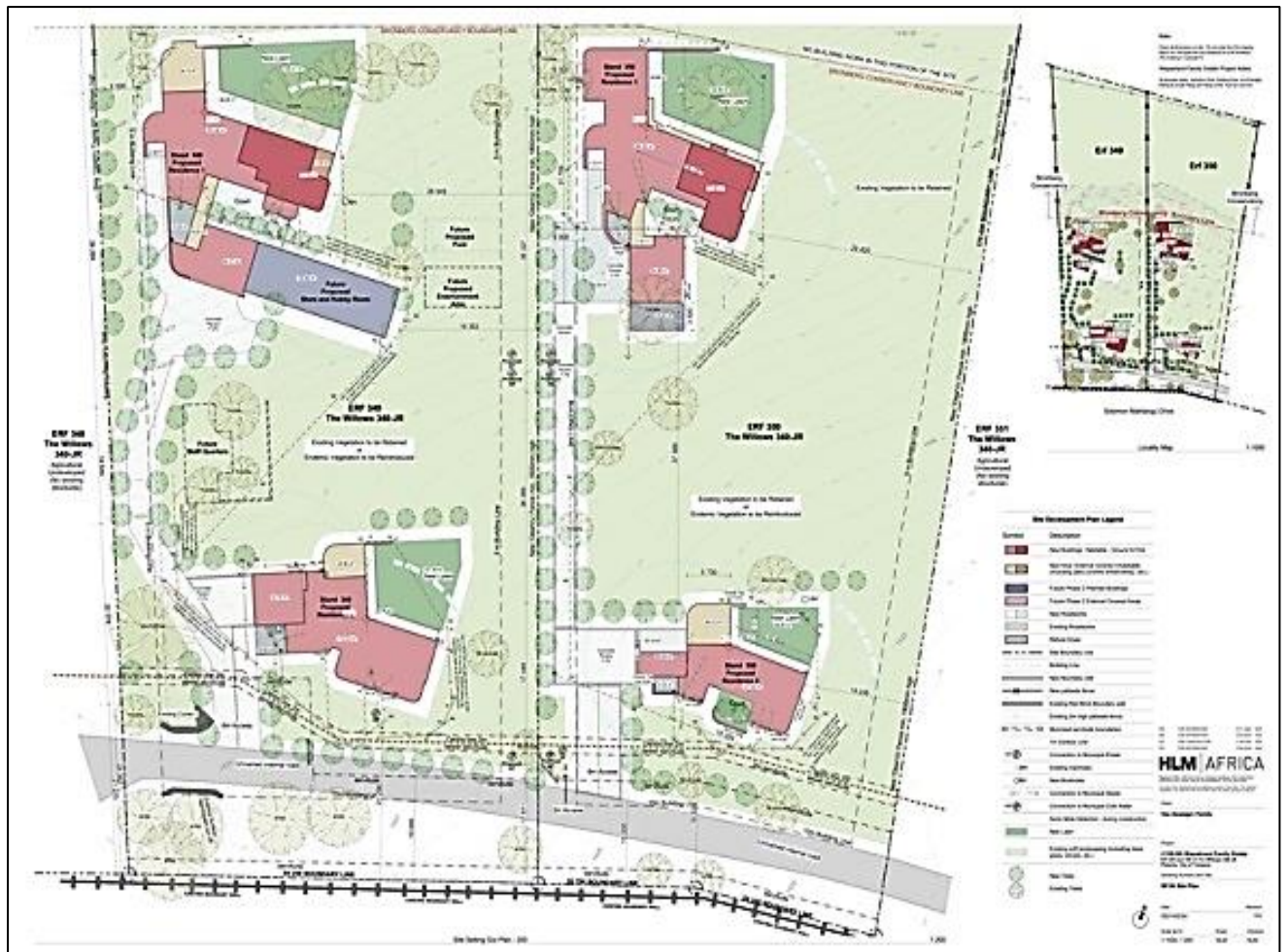


Figure 3: Study area location (courtesy Pierre Joubert Professional Landscape Architect & Environmental Planner).



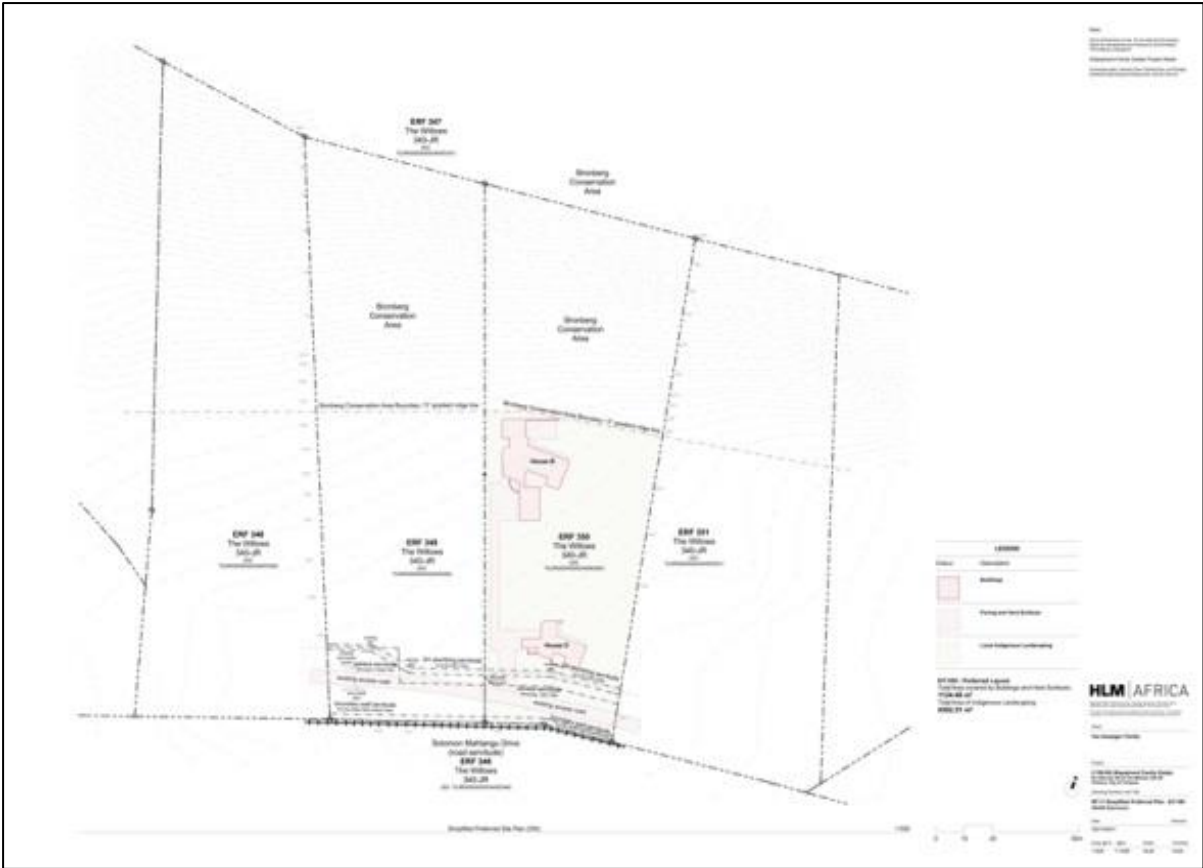


Figure 5: Preferred Proposal Layout Plan (Courtesy of HLM AFRICA Architects).



Figure 6: Alternative 1 Layout Plan (Courtesy of HLM AFRICA Architects).

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 in 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 study area. The closest known Stone Age sites are those of the well-known Early Stone Age site at Wonderboompoort, a Later Stone Age site known as Fort Troje near Cullinan and a number of sites in the Magaliesberg area (Bergh 1999: 4). Stone Age people occupied the larger area since earliest times. Middle Stone Age material has also been identified at Erasmusrand and the Groenkloof Nature Reserve (Van Vollenhoven 2006: 183). At the Erasmusrand cave some Late Stone Age tools were also identified as well as at Groenkloof (Van Vollenhoven 2006: 184). LSA material was also found at Zwartkops and Hennops River (Bergh 1999: 4). This last phase of the Stone Age is associated with the San people.

No Stone Age sites or objects (such as stone tools) were identified in the area. 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.

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal 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) however indicates that a Middle Iron Age should be included. His dates, which now seem to be 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 larger geographical area of Pretoria, while Later Iron Age sites do occur in the Pretoria area (Bergh 1999: 7). The closest known LIA sites are at Silver Lakes and near Mamelodi on the farm Hatherley (Van Schalkwyk et.al 1996). These sites

are related to the Manala Ndebele (Bergh 1999: 10) who was present in the area at the time when the first Europeans arrived here during the mid-19th century.

Iron Age occupation of the area did not start much before the 1500s. By that time, groups of Tswana and Ndebele speaking people were moving into the area, occupying the different hills and outcrops, using the ample resources such as grazing, game and metal ores. During the early decades of the 19th century, the Tswana- and Ndebele-speakers were dislodged by the Matabele of Mzilikazi. Internal strife caused Mzilikazi, a general of King Shaka, and his followers to move away from the area between the Thukela and Mfolozi River (KwaZulu-Natal). Eventually, after a sojourn in the Sekhukhuneland area, followed by a short stay in the middle reaches of the Vaal River, they settled north of the Magaliesberg. One of three main settlements established by them, eKungwini, was on the banks of the Apies River, just north of Wonderboompoort. However, no remains of this settlement have ever been identified. It was during the Matabele's stay along the Apies River that the first white people entered the area: travelers and hunters such as Cornwallis Harris and Andrew Smith, traders Robert Schoon and Andrew McLuckie, and missionaries James Archbell and Robert Moffat. It is known from oral history the Robert Schoon sent Mzilikazi huge quantities of glass trade beads, rather than the guns that the latter coveted so much.

It is a well-established fact that the stone walled sites on various farms in the larger area around the east of Pretoria and the Bronberge were inhabited mainly by the southern Ndebele. The former were most probably among the earliest Nguni-speaking people in the immediate area north of the Magaliesberg range north of Pretoria. During the rule of a chief named Musi, they split into five separate migrating groups, namely the Manala, Ndzundza, Kekana, Mhwaduba and Sibasa sections (Van Schalkwyk et.al 1996:47-48).

The Manala settled over a wide area towards the east of present-day Pretoria. This is roughly north and north east of the Bronberg range (from Wapadrand in the west towards Tiegerpoort and Bapsfontein in the south east), south of the Magaliesberg and Pienaarspoort range (known to the Manala as Ko- or KwaQobongo) and from Mamelodi in the west towards the Cullinan intersection on the N4 in the east.

According to oral traditions this area was geo-politically divided into three regions. It is unclear whether these divisions denoted tribal sub regions, wards or headmanships, whether they were chronologically occupied and deserted, and exactly which rulers or chiefs were linked to these areas. The oral traditions also revealed that since the almost complete destruction of the Manala chiefdom by Mzilikazi in around 1825, remnants of the Manala regrouped in scattered settlements or clusters of settlements up to recent times. Many Manala became labour tenants on European owned farms in the area. As a result of the destruction caused by Mzilikazi, the Manala underwent a three-fold split, which was further aggravated by internal strife.

The pre-colonial threefold regional divisions, consisted of Ezotshaneni, Embilaneni and KoNonduna. According to oral records, KoNonduna was occupied between circa 1747 and 1825 at the time of Mzilikazi's destruction of the Manala. The dates are speculative and based on a complex dating system, which combines the notion of regimentation, generation and

duration of rule. In terms of Manala Royal Genealogy, the names of all 33 rulers (amakosi), from around 1642 to the present, are known. Of these, Mdibane (11th ruler and founder of KoNonduna), Matshaba (14th ruler and linked to Hatherley or Emakopana) and Sibindi (18th ruler attacked by Mzilikazi) are the most relevant in terms of the work on Hatherley (Van Schalkwyk et.al 1996:48-49).

The exact geographical boundaries of the KoNonduna sub-region are not known. It might have overlapped with the adjacent Embilaneni. Oral traditions does however provide the names of farms which formed part of this region, namely Klipkop 396 JR, a section of Zwartkoppies 364 JR, Hatherley 331 JR, a section of Mooiplaats 367 JR and Zwavelpoort 373 JR. It appears that the KoNonduna ward was established at the time of the reign of Mdibane and lasted until the time of the attack by Mzilikazi during Sibindi's reign (Van Schalkwyk et.al 1996:49-50). Some of the stone-walled remains located on Portion 407 of Mooiplaats 367JR are therefore more than likely related to the Manala Ndebele and KoNonduna.

Some Iron Age sites, features or cultural material are known to occur in the area and on the land parcel adjacent to the proposed development (identified during a 2004 assessment by Kusel – See further down in discussion & References).

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 groups of Schoon and McLuckie and the missionaries Archbell and Moffat in 1829 (Bergh 1999: 12). They were followed by others such as Andrew Smith (1835), Cornwallis Harris (1836) and David Livingstone in 1847 (Bergh 1999: 13). These groups were closely followed by the Voortrekkers after 1844 and Pretoria was established in 1855 (Bergh 1999: 14-17). White settlers started to occupy huge tracts of land, claiming it as farms after the late 1840s. Of these, some of the earliest were Lucas Bronkhorst (Groenkloof), David Botha (Hartebeestpoort – Silverton) and Doors Erasmus (Wonderboom). With the establishment of Pretoria (1850) services such as roads, started to develop. The larger area within which the study area is located also played a role during the Anglo-Boer War (1899-1902) and specifically during the Battle of Donkerhoek/Diamond Hill in June 1900 (Bergh 1999: 53-54).

No historical sites, features or material were identified in the study area during the recent 2021 assessment.

The oldest map for the farm The Willows 340JR (for Portion 1) that could be obtained from the database of the Chief Surveyor General dates to 1923 (www.csg.dla.gov.za – **CSG Document 10H7EK01**). This map shows that the farm was then known as The Willows 23 and was situated in the District of Pretoria and Aapiesrivier Ward of the Province of Transvaal. Portion 1 was officially surveyed in July 1923, but it was originally granted by Deed of Transfer to one M.L. Cole on the 27th of November 1867. The map for Portion 350 (**CSG Document 10MF401**) dates to 1996 showing that this portion was surveyed between December 1995 & January 1996.

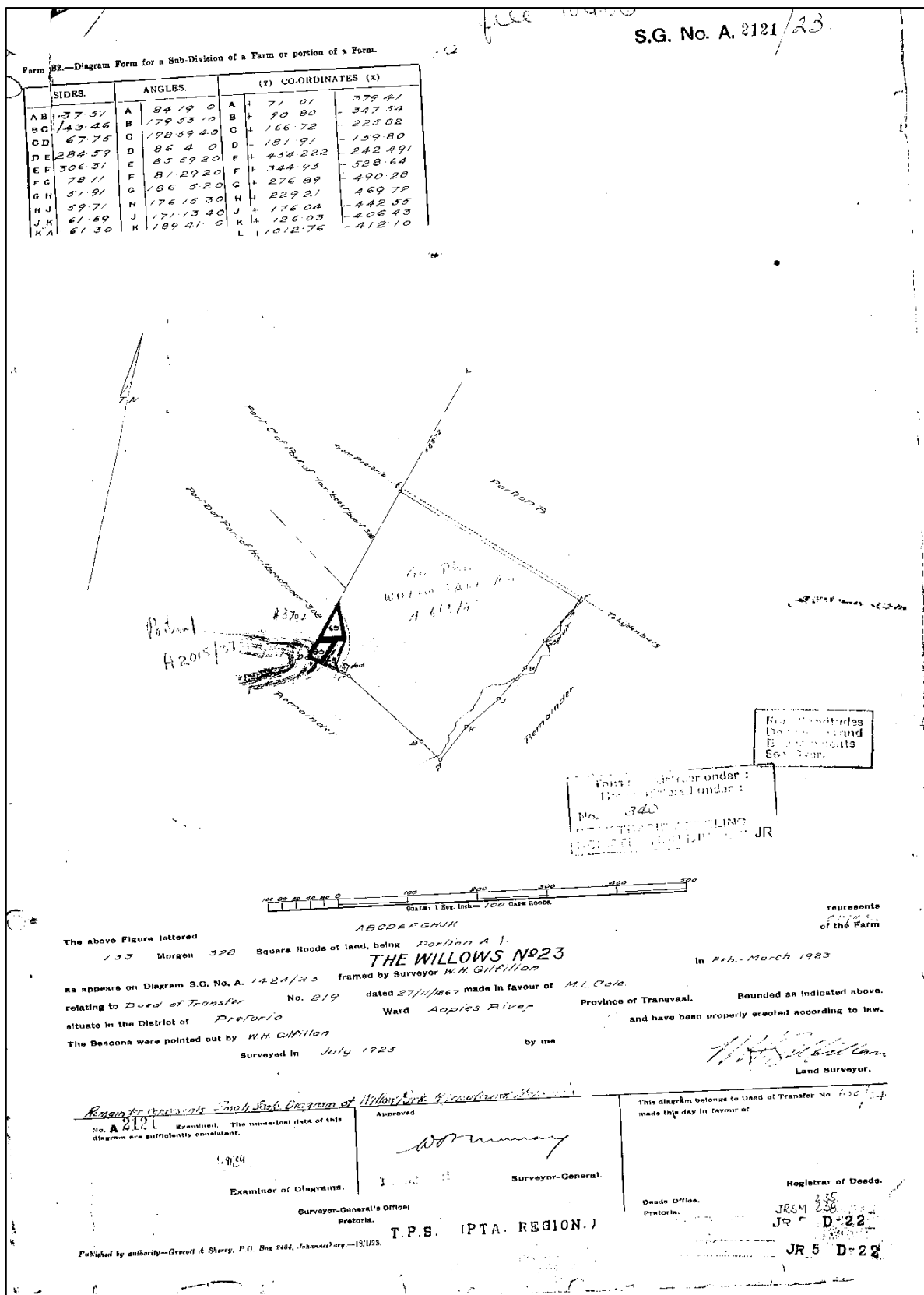


Figure 7: 1923 map of Portion 1 of The Willows 340JR (www.csg.dla.gov.za).

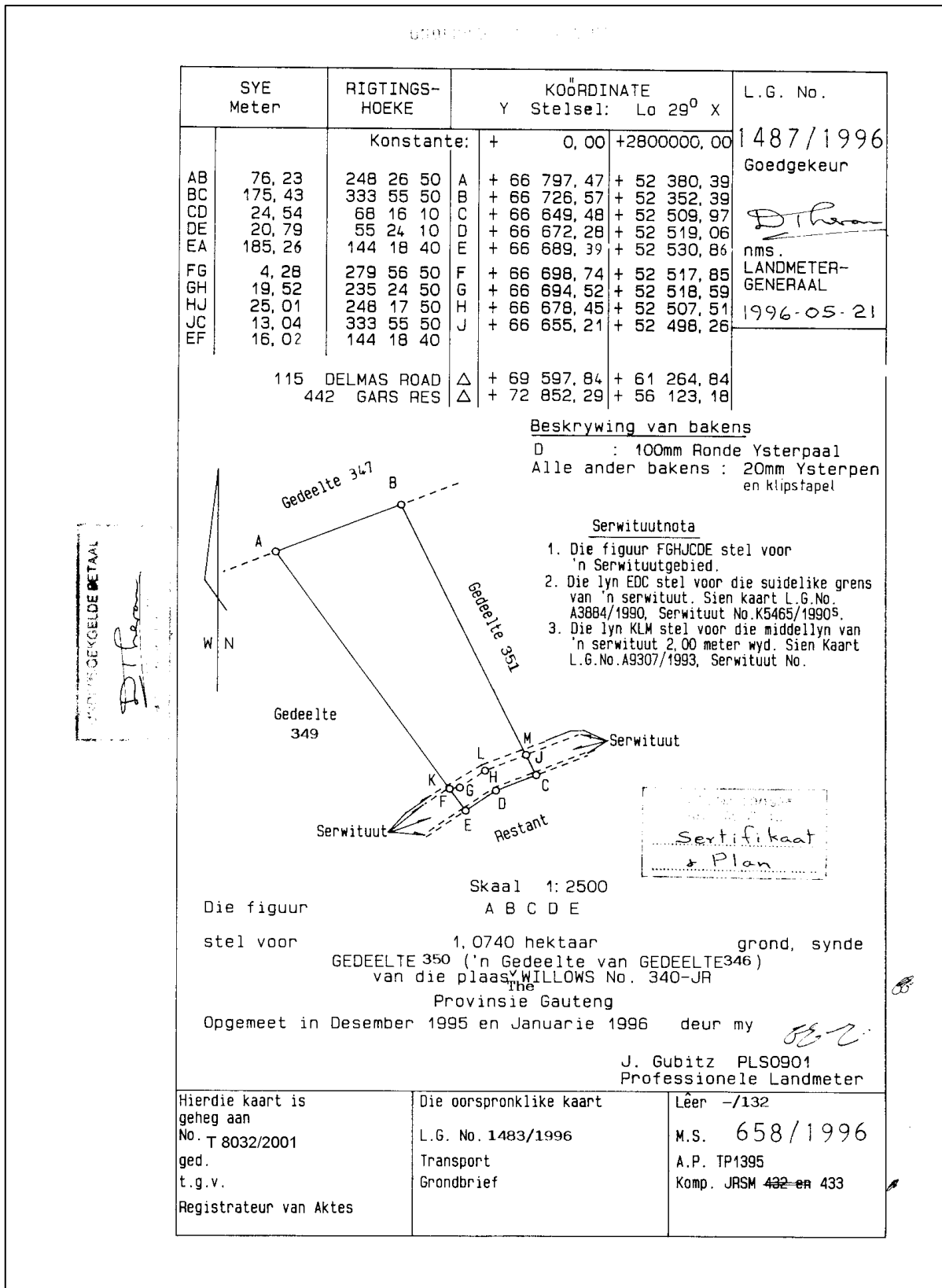


Figure 8: 1996 map of Portion 350 of The Willows 340JR (www.csg.dla.gov.za).

Results of the study area assessment

No sites, features or cultural material of archaeological and/or historical nature were identified on the proposed development area (Portion 350). The study and development footprint area has been recently impacted by the erection of temporary structures, a water reservoir and pipeline, while it had also been partially cleared. Dense grass cover hampered visibility on the ground to some extent. The larger area around the proposed development has also been recently impacted by residential & related developments that have increasingly encroached into to area. This is clearly visible on aerial images (Google Earth) of the area dating to between 2001 & 2021.



Figure 9 Aerial image of the area dating to 2001. The study & development footprint has not been impacted except for a dirt road through it (Google Earth 2021).



Figure 10: By 2021 the study area and adjacent properties have been increasingly impacted by residential development (Google Earth 2021).



Figure 11: A general view of the Portion 350 study & development area.



Figure 12: A view of the area with the temporary structures visible.



Figure 13: A view of the Water reservoir & impact of site clearance on Portion 350.



Figure 14: Another general view of Portion 350.

A number of Late Iron Age features were identified in the area (adjacent property) during a 2004 assessment by Dr. Udo Kusel. According to him these features (stone-walling) were related to a settlement site or sites associated with the known Manala Ndebele occupation and settlement throughout the Bronberge region. During the 2004 assessment the dense vegetation made determining the full extent of the stone-walling difficult, and the site could have been substantially larger than that recorded. He indicated that the site could have housed a single family unit based on the size of the circular enclosures (Kusel 2004: 2).

GPS Coordinates for the 2004 recorded sites: **S25 46 50.00 E28 20 05.90 (1); S25 46 50.90 E28 20 06.40 (2).**

Dr. Kusel also indicated that these features were situated in an area where residential development will take place and recommended that the site be cleared from vegetation to facilitate its detailed recording and that a small portion be excavated for the retrieval of cultural material and dating purposes (p.2).

During the recent 2021 fieldwork the author of this report re-assessed these sites and found that the stone-walled features had been impacted to some degree in recent years through site clearance and that the stone-walling is not as clearly defined. However, these features are still in existence. Cultural material deposits (ash and pottery), as well as an upper grinding stone was also recorded here.

GPS coordinate for upper grinding stone: **S25 46 51.40 E28 20 05.80.**



Figure 15: A general view of the area where Kusel identified LIA stone-walled features.



Figure 16: Some stone walling visible on the site.



Figure 17: Fragment of undecorated pottery on the site.



Figure 18: Ashy deposit on the site close to some sections of stone walling.



Figure 19: More stonewalling remnants in the area.



Figure 20: Fairly well-preserved stonewalling.



Figure 21: The upper grinding stone recorded in the area.



Figure 22: Foundations of stone wall on the site.



Figure 23: The location of the known LIA sites & finds in the area (Google Earth 2021).

Although the sites recorded in 2004 and during 2021 falls outside the Portion 350 study and development footprint area, they are located in close proximity to it and the boundary of the development. Dense vegetation on sections of Portion 350 did limit visibility to some extent and it is also possible that more sections of walling and cultural material could be present. Furthermore, even though these features are ephemeral and not well defined and of lesser significance as a result, there is a possibility that there will be indirect impacts on it as a result of the proposed Residential development on Portion 350. The following is therefore recommended:

1. that the area be cleared of vegetation under guidance from an archaeologist to determine the extent of the stonewalling in the area
2. that once this has been done that the stone-walling be mapped and drawn and that limited archaeological excavations be carried out in order to recover cultural material and to date the sites
3. a Phase 2 archaeological mitigation permit from SAHRA be obtained for this investigation

Two Development Layout proposals have been provided (a Preferred and Alternative Layout – See Figures 5 & 6). Although the impacts on the heritage or both these alternatives will be fairly similar, the 'Preferred Proposal Layout Plan' in the Heritage Specialists opinion would be better as the number of buildings and paved surfaces would be less than that of the

'Alternative 1 Layout Plan'. The Preferred Proposal Layout Plan and its associated structures and features will also be further away from the identified LIA sites on the adjacent property.

Based on the fieldwork and desktop research it is recommended that the proposed residential development on Portion 350 of The Willows 340JR be allowed to continue with the condition that the above recommendations are adhered to and included as part of the approvals to continue.

Table 1 – EIA Criteria for Assessment of Impacts

<p><u>Extent of the Impact:</u></p> <p>(1) Site (i.e. extending only as far as the development boundary of the site area),</p> <p>(2) Local/Surrounds (i.e. the area and its immediate surroundings within 5km of the site),</p> <p>(3) Municipal (i.e. Local Municipality),</p> <p>(4) Provincial (i.e. the relevant province - Gauteng/Limpopo/North-West/Western Cape/KZN/Free State/Eastern Cape/Mpumalanga/Northern Cape),</p> <p>(5) National (i.e. South Africa), or</p> <p>(6) International (i.e. Africa, Europe, USA etc).</p>	<p><u>Duration of the Impact:</u></p> <p>(1) Immediate (>1year),</p> <p>(2) Short term (1-5 years),</p> <p>(3) Medium term (6-15 years),</p> <p>(4) Long term (16-30 years and/or the impact will cease after the operational life span of the project), or</p> <p>(5) Permanent (no mitigation measure of natural process will reduce the impact after construction).</p>
<p><u>Magnitude/Intensity:</u></p> <p>(0) None (where the aspect will have no impact on the environment,</p> <p>(2) Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),</p> <p>(4) Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),</p> <p>(6) Moderate/Medium (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),</p> <p>(8) High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or</p> <p>(10) Very High / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease.</p>	<p><u>Probability of occurrence:</u></p> <p>(0) None (the impact will not occur),</p> <p>(1) Improbable (low likelihood – the possibility of the impact materializing is very low as a result of design, historic experience, or implementation of adequate corrective actions),</p> <p>(2) Low Probability (there is a possibility that the impact will occur),</p> <p>(3) Medium Probability (distinct possibility – the impact may occur),</p> <p>(4) High Probability (it is most likely that the impact will occur), or</p> <p>(5) Definite / I don't know (the impact will occur regardless of the implementation of any prevention measures and/or corrective actions, or you don't know what the probability will be based on too little published information).</p>
<p><u>Status of the Impact:</u></p>	<p><u>Degree of confidence in predictions:</u></p>

<ul style="list-style-type: none"> • Negative Effect (i.e. at a “cost” of the environment), • Positive Effect, (i.e. a “benefit” to the environment), or • Neutral effect on the environment. <p>The impacts are to be assessed in terms of their effect on the project and the environment.</p>	<p>The environmental consultant &/or any relevant specialists should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.</p>
<p><u>Significance of the Impact:</u></p> <p>Based on the information contained in the points above, the potential impacts are assigned as significance weighting (S). This weighting is formulated by adding the sum of the numbers assigned to extent (E), duration (D) and Magnitude (M) and multiplying this sum by the probability (P) of the Impact.</p> <p>S = (E+D+M) P</p> <ul style="list-style-type: none"> • (0) <u>No significance:</u> (The impacts do not influence the proposed development and/or environment in any way), • (<30) <u>Low:</u> (The impacts will have a minor influence on the proposed development and/or environment i.e. where this impact would not have a direct influence on the decision to develop in the area. These impacts could possibly require some attention to modification of the project design where possible, or alternative mitigation. • (30-60) <u>Moderate/Medium:</u> (The impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated). <p>(>60) <u>High:</u> (i.e where the impact must have an influence on the decision process to develop in the area. The impacts will be likely to have the “no-go” implication on the development or portions of the development regardless of any mitigation measures that could be implemented. This level of significance must be well motivated.</p>	

Table 2 – PROPOSAL: Preferred Layout Plan for the Proposed Residential Development to be situated on Portion 350 of the farm The Willows 340JR (City of Tshwane Metropolitan Municipality, Gauteng): Heritage Impacts.

PROPOSAL: Preferred Layout Plan for the Proposed Residential Development to be situated on Portion 350 of the farm The Willows 340JR (City of Tshwane Metropolitan Municipality, Gauteng)

POTENTIAL IMPACTS on the HERITAGE ENVIRONMENT:

1. Potential Direct & Indirect Heritage Impacts

In this section the impact of the proposed development on the sites will be assessed. From the overlay of the identified heritage sites over the proposed development footprints depicted, it is clear that the LIA sites may be impacted on by the proposed development. An archival and historical desktop study was therefore undertaken to provide a historic framework for the project area and surrounding landscape. This was augmented by a study of available maps and an assessment of previous archaeological and heritage studies completed for the area. The study area itself was assessed in the field by way of a walkthrough undertaken by one archaeologist (Anton Pelser). The fieldwork resulted in the identification of some Later Iron Age stone-walled sites (some which have been identified during earlier assessments) and associated cultural material including undecorated pottery and an upper grinder.

Table 1: Summarized List of Heritage Sites Identified during the Fieldwork

Site	Description	Significance	S	E	Mitigation
Site 1	LIA Stone Walling	Low to Medium	\$25 46 50.00	E28 20 05.90	Mapping and Limited archaeological excavations should the sites be impacted by the proposed development actions
Site 2	LIA Stone Walling	Low to Medium	\$25 46 50.90	E28 20 06.40	
Site 3	Upper Grinder	Low to Medium	\$25 46 51.40	E28 20 05.80	

The impact of the proposed development on the located heritage sites was assessed, and it was established that the proposed development might impact on the Late Iron Age stone-walled sites located on the land parcel adjacent to the development site. Should these and other unknown related sites be impacted then the Impact will be Low to Medium. As a result, some mitigation measures will be required for these sites. This will include site clearance, mapping and drawing of the sites and features and archaeological excavations. A permit from SAHRA will be required for this.

Based on the fieldwork and desktop research it is however recommended that the proposed residential development on Portion 350 of The Willows 340JR be allowed to continue with the condition that the recommendations (i.e. mitigation measures underneath) are adhered to and included as part of the approvals to continue i.e. on the condition that the recommendations made in this report are adhered to, no heritage reasons can be given for the development not to continue.

Nature:

CONSTRUCTION PHASE:

- The construction phase may potentially result in the loss of cultural heritage resources and artifacts buried beneath the surface.
- In this section the impact of the proposed development on the sites will be assessed. From the overlay of the identified heritage sites over the proposed development footprint it is clear that the sites fall outside of the proposed development footprint, but that there is a possibility that these and related sites could potentially be impacted.

	Without mitigation		With mitigation	
PLANNING & DESIGN PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	None		None	
CONSTRUCTION PHASE				
Probability	Low	2	Low	2
Duration	Immediate	1	Immediate	1
Extent	Limited to Site	1	Limited to Site	1
Magnitude	Moderate/Medium	6	Moderate/Medium	6
Significance	Low	16	Low	16
Status (positive or negative)	Negative		Negative	
OPERATIONAL PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	n.a.		n.a.	
DECOMMISSIONING & CLOSURE PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	n.a.		n.a.	
Reversibility	?		?	
Irreplaceable loss of resources?	Low		Low	

Can impacts be mitigated?	Yes
Mitigation: The following mitigation measures are required to be implemented as part of the ENVIRONMENTAL MANAGEMENT PROGRAM (EMPr) i.e: 1.that the area be cleared of vegetation under guidance from an archaeologist to determine to extent of the stonewalling in the area 2.that once this has been done that the stonewalling be mapped and drawn and that limited archaeological excavations be carried out in order to recover cultural material and to date the sites 3. A Phase 2 archaeological mitigation permit from SAHRA be obtained for this investigation 4. An archaeological watching brief must be implemented during the construction phase. This watching brief is aimed at monitoring the construction and excavation work for any subterranean archaeological deposits and features which may be exposed during these development activities. The subterranean nature of cultural heritage 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. 5. 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.	
Cumulative impacts: None.	
Residual Risks: None.	

Table 3 – Alternative#1: Layout Plan (not preferred) for the Proposed Residential Development to be situated on Portion 350 of the farm The Willows 340JR (City of Tshwane Metropolitan Municipality, Gauteng) - Heritage Impact Assessment:

ALTERNATIVE#1: LAYOUT PLAN (not preferred) for the Proposed Residential Development to be situated on Portion 350 of the farm The Willows 340JR (City of Tshwane Metropolitan Municipality, Gauteng):	
POTENTIAL IMPACTS on the HERITAGE ENVIRONMENT:	
1. Potential Direct & Indirect Heritage Impacts An archival and historical desktop study was undertaken to provide a historic framework for the project area and surrounding landscape. This was augmented by a study of available maps and an assessment of previous archaeological and heritage studies completed for the area. The study area itself was assessed in the field by way of a walkthrough undertaken by one archaeologist (Anton Pelser). The fieldwork resulted in the identification of some Later Iron Age stone-walled sites (some which have been identified during earlier assessments) and associated cultural material including undecorated pottery and an upper grinder. Table 2: Summarized List of Heritage Sites Identified during the Fieldwork	

Site	Description	Significance	S	E	Mitigation
Site 1	LIA Stone Walling	Low to Medium	\$25 46 50.00	E28 20 05.90	Mapping and Limited archaeological excavations should the sites be impacted by the proposed development actions
Site 2	LIA Stone Walling	Low to Medium	\$25 46 50.90	E28 20 06.40	
Site 3	Upper Grinder	Low to Medium	\$25 46 51.40	E28 20 05.80	

The impact of the proposed development on the located heritage sites was assessed, and it was established that the proposed development might impact on the Late Iron Age stone-walled sites located on the land parcel adjacent to the development site. Should these and other unknown related sites be impacted then the Impact will be Low to Medium. As a result, some mitigation measures will be required for these sites. This will include site clearance, mapping and drawing of the sites and features and archaeological excavations. A permit from SAHRA will be required for this.

Based on the fieldwork and desktop research it is however recommended that this specific 'ALTERNATIVE#1 LAYOUT PLAN' proposed residential development on Portion 350 of The Willows 340JR not be allowed to continue due to the reasons as stated in SECTION 6: DISCUSSION) i.e: 'Two Development Layout proposals have been provided (a Preferred and Alternative Layout). Although the impacts on the heritage for both these alternatives will be fairly similar, the 'Preferred Proposal Layout Plan' in the Heritage Specialists opinion would be better as the number of buildings and paved surfaces would be less than that of the 'Alternative 1 Layout Plan'. The Preferred Proposal Layout Plan and its associated structures and features will also be further away from the identified LIA sites on the adjacent property'.

Nature:

CONSTRUCTION PHASE:

- The construction phase may potentially result in the loss of cultural heritage resources and artifacts buried beneath the surface.
- In this section the impact of the proposed development on the sites will be assessed. From the overlay of the identified heritage sites over the proposed development footprint it is clear that the sites fall outside of the proposed development footprint, but that there is a possibility that these and related sites could potentially be impacted.

	Without mitigation		With mitigation	
PLANNING & DESIGN PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	None		None	
CONSTRUCTION PHASE				
Probability	Low	2	Low	2

Duration	Immediate	1	Immediate	1
Extent	Limited to Site	1	Limited to Site	1
Magnitude	Moderate/Medium	6	Moderate/Medium	6
Significance	Low	16	Low	16
Status (positive or negative)	Negative		Negative	
OPERATIONAL PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	n.a.		n.a.	
DECOMMISSIONING & CLOSURE PHASE				
Probability	n.a.		n.a.	
Duration	n.a.		n.a.	
Extent	n.a.		n.a.	
Magnitude	n.a.		n.a.	
Significance	n.a.		n.a.	
Status (positive or negative)	n.a.		n.a.	
Reversibility	?		?	
Irreplaceable loss of resources?	Low		Low	
Can impacts be mitigated?	Yes			
Mitigation: The following mitigation measures are required to be implemented as part of the ENVIRONMENTAL MANAGEMENT PROGRAM (EMPr) i.e: 1.that the area be cleared of vegetation under guidance from an archaeologist to determine to extent of the stonewalling in the area 2.that once this has been done that the stonewalling be mapped and drawn and that limited archaeological excavations be carried out in order to recover cultural material and to date the sites 3. A Phase 2 archaeological mitigation permit from SAHRA be obtained for this investigation 4. An archaeological watching brief must be implemented during the construction phase. This watching brief is aimed at monitoring the construction and excavation work for any subterranean archaeological deposits and features which may be exposed during these development activities. The subterranean nature of cultural heritage 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. 5. 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.

Cumulative impacts: None.

Residual Risks: None.

7. CONCLUSIONS AND RECOMMENDATIONS

A. Pelser Archaeological Consulting (APAC) was appointed by Pierre Joubert Professional Landscape Architect & Environmental Planner to conduct a Phase 1 Heritage Impact Assessment for proposed Residential Development on Portion 350 of the farm The Willows 340JR. The study area is located in the Tshwane Metropolitan Municipality of Gauteng.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, as well as on land parcels adjacent to the study area. No sites, features or cultural material of archaeological and/or historical nature were identified on the proposed development area (Portion 350). The study and development footprint area has been recently impacted by the erection of temporary structures, a water reservoir and pipeline, while it had also been partially cleared. Dense grass cover hampered visibility on the ground to some extent.

A number of Late Iron Age features were identified in the area (adjacent property) during a 2004 assessment by Dr. Udo Kusel. According to him these features (stone-walling) were related to a settlement site or sites associated with the known Manala Ndebele occupation and settlement throughout the Bronberge region. During the 2004 assessment the dense vegetation made determining the full extent of the stone-walling difficult, and the site could have been substantially larger than that recorded. He indicated that the site could have housed a single family unit based on the size of the circular enclosures. Dr. Kusel also indicated that these features were situated in an area where residential development will take place and recommended that the site be cleared from vegetation to facilitate its detailed recording and that a small portion be excavated for the retrieval of cultural material and dating purposes.

During the recent 2021 fieldwork the author of this report re-assessed these sites and found that the stone-walled features had been impacted to some degree in recent years through site clearance and that the stone-walling is not as clearly defined. However, these features are still in existence. Cultural material deposits (ash and pottery), as well as an upper grinding stone was also recorded here. Although the sites recorded in 2004 and during 2021 falls outside the Portion 350 study and development footprint area, they are located in close proximity to it and the boundary of the development. Dense vegetation on sections of Portion 350 did limit visibility to some extent and it is also possible that more sections of walling and cultural material could be present. Furthermore, even though these features are ephemeral and not well defined and of lesser significance as a result, there is a possibility that there will be indirect impacts on it as a result of the proposed Residential development on Portion 350. The following is therefore recommended:

1. that the area be cleared of vegetation under guidance from an archaeologist to determine to extent of the stone-walling in the area
2. that once this has been done that the stone-walling be mapped and drawn and that limited archaeological excavations be carried out in order to recover cultural material and to date the sites
3. a Phase 2 archaeological mitigation permit from SAHRA be obtained for this investigation

It is important to note that SAHRA will only provide Final Comments on the report and the recommendations made, as well as issue a Permit for the archaeological mitigation work, once Environmental Authorization for the development has been provided.

It should be noted that 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.

To conclude, it is recommended that the proposed residential development on Portion 350 of The Willows 340JR be allowed to continue with the condition that the above mitigation measures are adhered to and included as part of the approvals to continue. It is however recommended that the 'ALTERNATIVE#1 LAYOUT PLAN' proposed residential development on Portion 350 of The Willows 340JR not be allowed. Although the impacts on the heritage for both these alternatives will be fairly similar, the 'Preferred Proposal Layout Plan' in the Heritage Specialists opinion would be better as the number of buildings and paved surfaces would be less than that of the 'Alternative 1 Layout Plan'. The Preferred Proposal Layout Plan and its associated structures and features will also be further away from the identified LIA sites on the adjacent property.

8. REFERENCES

General and Closer views of study area location & development footprint: Google Earth 2021.

Location of archaeological sites: Google Earth 2021.

Study Area Location Map: Provided by Pierre Joubert Professional Landscape Architect & Environmental Planner

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Van Vollenhoven, A.C. 2006. Die prehistoriese en vroeë historiese tydvak in Pretoria. **Suid-Afrikaanse Tydskrif vir Kultuurgeskiedenis**, 20 (2).

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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.