



Integrated Specialist Services (Pty) Ltd

**PHASE 1 ARCHAEOLOGICAL AND HERITAGE
IMPACT ASSESSMENT FOR PROPOSED GA
RANKUWA UNIT 23 STAND 1719 AND UNIT 25
NUMBER 1427 RESIDENTIAL DEVELOPMENT
PROJECT IN THE CITY OF TSHWANE
METROPOLITAN MUNICIPALITY IN THE
GAUTENG PROVINCE.**

Trust Mlilo

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Proposed Ga Rankuwa Unit 23 Stand 1719 & Unit 25 Stand 1427 Residential development Project in, City of Tshwane Metropolitan Municipality in the Gauteng Province
Purpose of the study	The Phase 1 Archaeological Impact Assessment is for the Proposed Ga Rankuwa Unit 23 & 25 residential development project in the Gauteng Province
1:50 000 Topographic Map	
Municipalities	City of Tshwane Metropolitan Municipality
Predominant land use of surrounding area	Residential, powerlines and urban agriculture
Applicant	City of Tshwane Metropolitan Municipality
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Authors	Trust Mlilo
Date of Report	13 December 2022

This report serves to inform and guide the applicant and contractors about the possible impacts that the proposed residential development project may have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located within the proposed residential development project. This report is submitted in terms of Section 38 (8) of the National Heritage Resources Act 25 of 1999 as part of the Environmental authorisation for the proposed residential development project in the Gauteng Province. The purpose of this study is to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed residential development project. In compliance with these laws, Setala Environmental (Pty) Ltd requested Integrated Specialist Services (Pty) Ltd on behalf of City of Tshwane Metropolitan Municipality to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for proposed residential development project. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks within the proposed project site. The study site is not on pristine ground, having seen significant transformations owing to previous urban agricultural activities and residential developments (see Plate 1 to 10) including informal settlements. The general project area is known for occurrence of archaeological and historical sites. In terms of the built environment the structures were confirmed to be younger than 60 years old. This report must be submitted to the SAHRA for review in terms of Section 38 (4) of the NHRA.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed residential development project.
- Most sections of the proposed residential development project site are accessible.
- The immediate project area is predominantly urban agriculture fields and informal residential developments.
- Some sections on the proposed site are severely degraded from previous and current urban agriculture activities.
- The study did not record any archaeological site within the proposed project site.

The report sets out the potential impacts of the proposed residential development project on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate. The Report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements.
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed residential development project.
3. From a heritage perspective supported by the findings of this study, the project is supported. However, construction activities should be approved under observation that the dimensions do not extend beyond the area considered in this report.
4. Should chance archaeological materials or human remains be exposed during activities on any section of the proposed residential development project site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption of the project scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
5. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of this heritage report, there are no significant cultural heritage resources barriers to the proposed residential development project. SAHRA may approve the project as planned with special commendations to implement the recommendations here in made.

This report concludes that the impacts of the proposed residential development project on the cultural environmental values are not likely to be significant on the entire site if the EMP includes recommended safeguard and mitigation measures identified in this report.

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Mlilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.

Expertise:

Trust Mlilo, PhD *cand* (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom) and several private companies such as BHP Billiton and Rhino Minerals.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and the survey was carried out under Integrated Specialist Services (Pty) Ltd. The company has no business, personal, financial or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report.

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Integrated Specialist Services (Pty) Ltd reserves the right to modify the report in any

way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Integrated Specialist Services (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the approval of the proposed Ga Rankuwa Unit 23 & 25 residential development project being proposed by City of Tshwane Metropolitan Municipality.

Signed by



13/ 12/ 2022

ACKNOWLEDGEMENTS

The authors acknowledge Setala Environmental (Pty) Ltd staff for their assistance with the site visit and responding to technical queries related to the project.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
PHRA	Provincial Heritage Resource Agency of Free State
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

KEY CONCEPTS AND TERMS

Periodization

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different

dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below.

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires authorisation of permission by law, and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or '**project area**' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be exposed during construction activities, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6)). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Integrated Specialist Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

1 INTRODUCTION

Integrated Specialist Services (Pty) Ltd was requested by Setala Environmental (Pty) Ltd on behalf of City of Tshwane Metropolitan Municipality to carry out a Phase 1 AIA/ HIA for the Ga Rankuwa Unit 23 Stand 1719 & 25 Stand 1427 residential development project in the City of Tshwane Metropolitan Municipality, Municipality of Gauteng Province. This study was conducted in terms of Section 38 (8) of the NHRA as part of environmental authorisation for the proposed Ga Rankuwa residential development project. The purpose of this heritage study is to identify, assess any heritage resources that may be located within the proposed project site in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Late Iron Age (LIA) and historical sites. It should be noted that while heritage resources may have been located in the entire study area, previous agriculture activities and current informal settlements may have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during construction. The proposed residential development project may be approved subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings there is no archaeological and heritage reasons why the proposed residential development project cannot be approved, taking full cognizance of clear procedures to follow in the event of chance findings.

1.1 Terms of Reference (ToR)

The Integrated Specialist Services (Pty) Ltd was requested by Setala Environmental (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed residential development project including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the proposed residential development project.
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located along the proposed residential development project area;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the residential development project site on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources; and
- Review applicable legislative requirements.

1.2 Project Location

The proposed project is located on Erven 1719 Unit 23 and 1427 Unit 25 Ga-Rankuwa within the jurisdiction of the City of Tshwane Metropolitan Municipality, Gauteng Province. The site is located approximately 13 km west of Soshanguve and the R80, and 8km to the north of the N4 towards Brits. The site is in close proximity to the border between Gauteng and North West. The Surveyor-general reference numbers for these portions are T0JR0603000017190000 and T0JR0604000014270000.

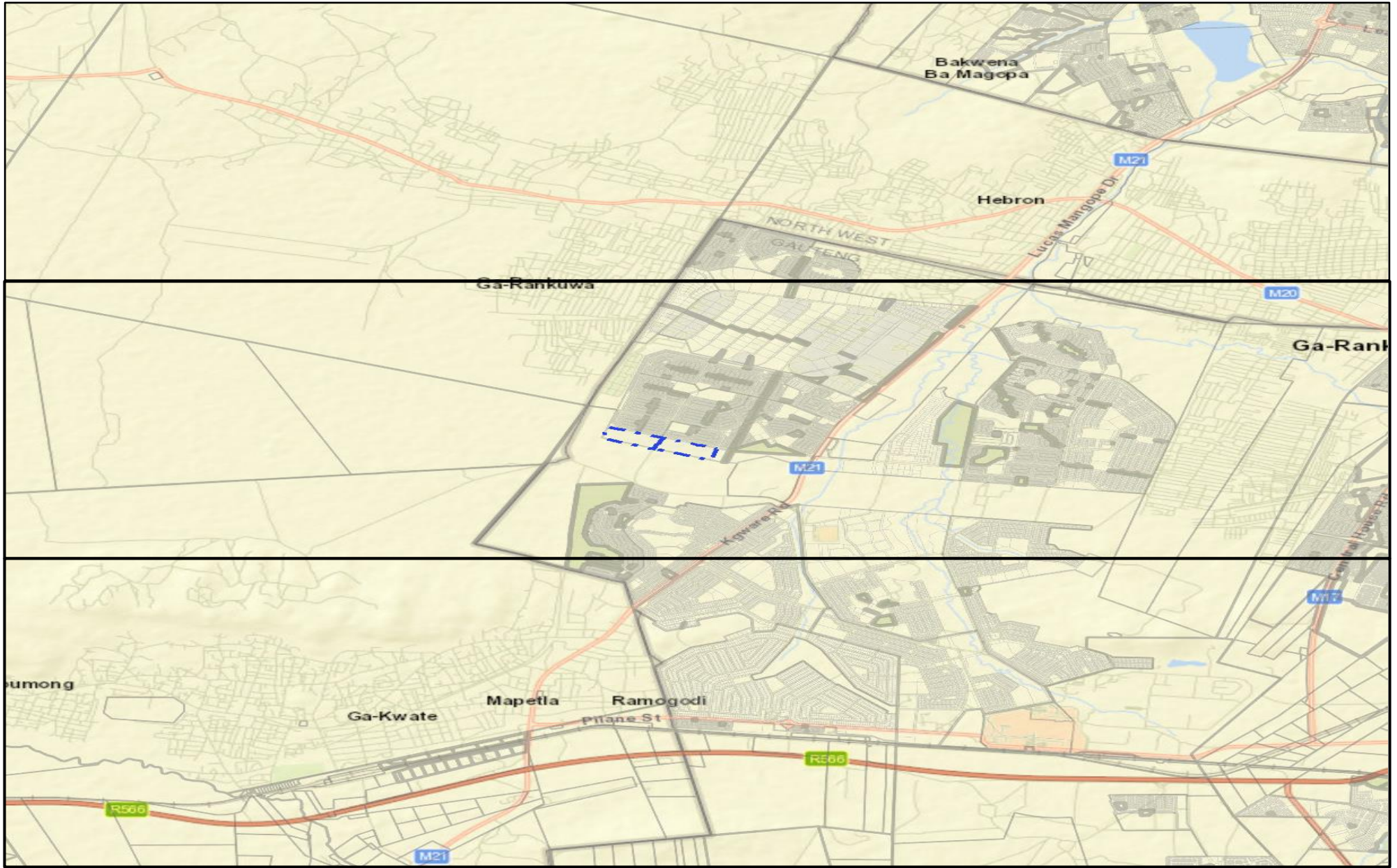


Figure 1: Map showing proposed development site



Figure 2: Location of the proposed project site (Pty)Ltd 2022)



Figure 3: Tracklogs for surveyed area (Pty) Ltd 2022)

1.3 Project description

This application for Environmental Authorisation (EA) is for the construction of a residential development and associated infrastructure on Unit 23 Erf 1719 Ga-Rankuwa (384 erven) measuring 11,1743 ha in extent; and on Unit 25 Erf 1427 Ga-Rankuwa (368 erven) measuring 10,8060 ha in extent. The total site is approximately 21.9803 ha in extent. Ga-Rankuwa Unit 23 & 25 is a City of Tshwane Metropolitan Municipality residential development project. The project consists of a subdivision and rezoning application situated on Erven 1427 and 1719 Ga-Rankuwa for the expansion of the Ga-Rankuwa Township to provide additional single-dwelling house opportunities for the informal settlement that is currently on site.

2 LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study. The proposed project is conducted in terms of the National Environmental Management Act, 1998 (NEMA). Therefore, this is in fulfilment of the assessment of the impact to heritage resources as required by section 24(4)(b)(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). An AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process. This study was conducted in terms of Section 38(8) as part of environmental authorisation. The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

Thus, any person undertaking any development in the above categories, 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 residential development project. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 m², then an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may alter, damage, destroy and relocate any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This

means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), 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. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed residential development project.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant, SAHRA/ PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed residential development project, and to recommend mitigation measures aimed at reducing the risks of any adverse impacts on these heritage resources.

Table 1: Evaluation of the proposed development as guided by the criteria in NHRA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38(8)	The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority regarding such developments have been taken into account prior to the granting of the consent	yes
NHRA Section 34	Impacts on buildings and structures older than 60 years	Non recorded
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	No, it is not a mining project

3 METHODOLOGY

This document aims at providing an informed heritage-related opinion about the proposed Erf 1719 Ga Rankuwa Unit 23 & Erf 1427 Unit 25 residential development project in the City of Tshwane Metropolitan Municipality, Gauteng Province. This is usually achieved through a combination of a review of any existing literature and a site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the development footprint. Initially a drive-through was undertaken around the project area as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey within the proposed project site, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed residential development project in order to make recommendations to the competent authority. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed Ga Rankuwa Unit 23 & Unit 25 residential development project.

3.1 The Fieldwork survey

The fieldwork survey was undertaken on the 13th of December 2022. The focus of the survey involved a pedestrian survey which was conducted within the proposed development site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence for building rubble, existing buildings and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern residential developments; the general area would have been a rewarding region to locate heritage resources related to Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by residential developments, agriculture and associated infrastructure developments (see Figure 1).

3.2 Visibility and Constraints

Most sections of the proposed project site are accessible although field assessment was partially impeded by the fact that some sections of the project area are built up. It was impossible to take field photos within an informal settlement as this could have invited unnecessary tension with residents. It is conceded that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

3.3 Consultations

The Environmental Impact Assessment (EIA) Public Participation process is conducted by the EAP. The study team consulted residents about the heritage character of the study area. The Participation Process will also invite and address comments from affected communities and any registered heritage bodies on any matter related to the proposed project including heritage concerns that may arise relating to construction activities. The heritage issues and concerns raised by the public will also be included in the Final Environmental Impact Assessment (EIA) Report.

The following photographs illuminate the nature and character of the Project Area.



Plate 1: showing proposed residential development project site



Plate 2: showing proposed residential development project site



Plate 3: showing proposed project site.



Plate 4: showing proposed development site



Plate 5: showing proposed residential development project site.



Plate 6: showing some of the informal dwellings earmarked for residential development.



Plate 7: showing some dwellings earmarked for residential development.



Plate 8: showing proposed development site



Plate 9: showing proposed development site

4 ARCHAEOLOGICAL CONTEXT

4.1 Stone Age Archaeology

In the larger geographical area, there is material manifestation of Stone Age people but generally, Highveld area did not attract much of habitation in these early times due to lack of rock-shelters and domination of exposed environments. Thus, it is mostly in the vicinity of large watercourses and lower parts of mountains that some ESA (~ 2.6 million to 250 000 years ago) materials (crude chopper and other unifacial tools of the Oldowan industry and the characteristic Acheulian hand axes and cleavers) and MSA (~ 250 000 to 40-25 000 years ago) materials are generally found. The MSA is a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology. More technological and behavioural changes than those witnessed in the MSA, occurred during the LSA (~ 40-25 000, to recently, 100 years ago), which is also associated with *Homo Sapiens* (Barham and Mitchell 2008). For the first time we get evidence of people's activities derived from material other than stone tools (ostrich eggshell beads, ground bone arrowheads, small, bored stones and wood fragments) (Deacon and Deacon 1999). The LSA people are also credited with the production of rock art (engravings and paintings), which is an expression of their complex social and spiritual beliefs (Parkington *et al.* 2008). However, it is important to note that no Stone Age material was recorded during the limited field walking, perhaps due to the presence of tall grass. Nonetheless, it is possible to encounter isolated finds of these objects in the study area, even though these would most likely be out of context due to the modern disturbances.

4.2 Iron Age Archaeology

Metal using communities entered southern Africa from West and East Africa around AD 200 and brought with them settled agriculture, metal working, animal husbandry, pottery making and social stratification (Huffman 2007). The movement and spread of these EIA (~ AD200-1000) people within southern Africa seem to have been restricted to the summer rainfall (because of sorghum and millet farming) and they did not occupy much of the central interior Highveld area in South Africa. Ecologically, they preferred to settle on the alluvial soils near rivers for agricultural purposes and access to water. Thus, it was not until the mid-second millennium AD that serious Iron Age occupation began in the larger geographical area (including the study area) of the South African Highveld. The study area falls within the known distribution of LIA (~ AD1100-1840) people who made Uitkomst facies (AD1650-1820 and associated with a mixture of the Ntsuanatsatsi facies (ancestral Nguni speakers) and Olifantspoort facies (ancestral Sotho-Tswana speakers) (Huffman 2007: 173). Olifantspoort facies (AD1500-1700) represents the second phase of the Moloko sequence and settlements with people that made this type of ceramics are known in the area between the Vaal River and Pretoria. The people, just like the markers of Buispoort facies (third phase of the Moloko sequence AD1700-1840), settled in aggregated clusters where space was also demarcated by extensive stone walling. The distribution of Buispoort facies also covers the Tshwane

area. The post 1600s coincided with dry spells that saw an incursion of the Tshwane area by Nguni-speaking groups such as the Manala and Ndzundza Ndebeles from KwaZulu Natal (Huffman 2007: 448).

The early 19th century also saw another invasion of the Tshwane area by Nguni-speakers who were running away from the widespread upheaval perpetuated by the reign of the Zulu king, Shaka. One of the fleers was Mzilikazi, the Ndebele king briefly settled northwest of Pretoria, extensively raided the plateau between 1825 and 1837 and displaced various Sotho-Tswana groups (Bergh 1999: 109-119). Mzilikazi was the cause of much of the destruction of the smaller tribes in the area across the Vaal. Mzilikazi decimated the Bakwena tribe, who had peacefully occupied the area. He also wiped out the Ba-Hurutsi for hundreds of miles around him. Mzilikazi wielded a path of destruction as far as the Orange River, annihilating all earlier inhabitants of the area. The men from these tribes were killed while the young boys and girls were incorporated into the Matabele fold. Mzilikazi made Pretoria his home by building two military kraals on the Apies River: "enDinaneni" was situated north-west of Pretoria on the road to Hartebeespoort Dam and "enKungweni" was built along the Daspoort range of hills. His main residence was on the south side of Meintjieskop, but he later moved to the north of the Magaliesberg range, to a place named "emHlahandlela". However, in 1836 it was reported to Mzilikazi that thousands of White people were moving southwards to invade his land. Feeling threatened, Mzilikazi launched a devastating attack on the Voortrekkers, led by General Hendrik Potgieter. The Voortrekkers managed to ward off their attackers after suffering great loss of life and livestock. Shortly after this, Mzilikazi launched a second attack on the Voortrekkers, and this time his men carried off all the livestock owned by the Whites. Potgieter, determined to succeed, launched a counterattack on the Matabele at Mosega and managed to recover a considerable number of their livestock. In December 1837, Potgieter launched another attack on Mzilikazi and his tribe. This battle, together with the one waged by Dingane a few months earlier, was enough to send Mzilikazi fleeing across the Limpopo. With Mzilikazi out of the way, it was easy for Potgieter to drive the rest of the Matabele stragglers to the north over Silkaatsnek.

Some 100 years earlier, African farmers in the Fokeng cluster built stonewalled settlements in the Tshwane area that emphasised the centre/side axis. From the air, these earlier settlements resemble a 'fried egg'; that is, a smooth outer ring about 60 metres across enclosed in a central cattle byre about 20 metres in diameter. This type has its origins among BaFokeng living near the hill Ntsuanatsatsi in the Free State (see pre- history of Bloemfontein). When these early BaFokeng people moved north across the Vaal River. 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 and the Magaliesberg to the north (Horn 1996). Most of the LIA sites also tend to cluster around the hills and ridges as well as on the more open flatlands, especially in areas where outcrops (dolerite, etc.) occur. All the same, none of these LIA sites were identified in the study area. If any of these sites were available, they have since been destroyed by subsequent modern developments that took place since the mid-20th century.

The project area falls within a well-documented cultural landscape. Many Iron Age Sites around Ga Rankuwa to Zeerust have been recorded previously (Berg 1999:7-8). The general project area was previously inhabited by Tswana speaking communities from around AD1600. The ceramic sequence for the Sotho Tswana is referred to as Moloko and consists of different facies with origins in either the Icon facies or a different branch associated with Nguni speakers. Several sites belonging to the Madikwe and Olifantspoort facies (from Icon) have been recorded in the project area. These sites date to between AD 1500 and 1700 and predate stone walling ascribed to Sotho-Tswana speakers. Thousands of stone walled sites built along the bases of hills and mountain ranges in the project area (Pistorius 2012). Several LIA stone walled sites were recorded along the Swartkoppies mountain range which is located to the north of the project area. A detailed survey of the mountain range on the farm Hoekfontein recorded more than 470 individual archaeological sites (Kusel 2003) covering an area of about 1000 hectares (Pelser 2007). However, due to extensive residential and mining developments on the mountain range more than 110 of these sites were destroyed for example Mmakau LIA site was rescued after threats by mining (SAHRIS Case ID 3464 & 5686) (Kusel 2005, 2006).

Thirty-seven previously recorded sites are on record in the 2527 DB Topographic Map at Wits database (Van der Walt 2012). These include MSA, LSA, Rock Art and LIA Moloko Stone walled sites. The Medunsa LIA stone walled complex is located within the proposed project area. Mike Taylor (1979) classified the Mmakau sites and the Medunsa sites fell within the group 2, particularly group 2a dating between AD 1650 and AD 1840. Sotho Tswana stonewalled sites with Uitkomst pottery have been recorded in the project area and dates to the seventeenth to nineteenth centuries. The most important heritage site near Ga-Rankuwa and Mabopane area is the Tswaing Meteorite Crater. The crater is 1.13 kilometre in diameter and originally was 200 meter deep. The crater was formed 200 000 years ago by a meteorite. The sediments in the crater contain salt which has been utilized by Stone Age people as far back as 100 000 years

4.3 Historical (~ AD 1840 to 1950) Archaeology

During the 17th century isolated migrations of white travellers, missionaries and adventurers from the Cape who passed through Pretoria occurred. Notable amongst them include the Scottish travellers Robert Scoon and William McLuckie, Robert Moffat, James Archbell, Andrew Smith and Captain William Cornwallis Harris (Bergh 1999: 12-13). Some of these missionaries and explorers kept diaries that today form part of invaluable history about indigenous communities which these travellers encountered during missionary and exploration journeys. However, permanent and mass-movement of white settlers occurred in the 1830s with the arrival of Voortrekkers escaping British rule in the Cape Colony (Ross 2002: 39). Because these first white colonists who settled on the Highveld were farmers, they were also interested in water and grazing for cattle, water for crop-farming, trees, thatching grass, clay for making bricks and pots, mild climate, wildlife and the presence of the mountains as shelter and protection. This resulted in fierce clashes with African communities were also farmers and iron workers. For example, the area claimed by the Voortrekkers after the conquest of Mzilikazi was declared at a

public meeting on 16 October 1840 held in Potchefstroom and initially included the Suikerbosrant (Heidelberg), Schoonspruit (Klerksdorp), Mooirivier (Potchefstroom) and Magaliesberg but by 1855 settlements had been established beyond the originally claimed area. It is within this early expansion that Pretoria was founded in 1855 and became the capital of South Africa, then known as the Zuid-Afrikaanse Republiek (ZAR), in 1860 (Theron 1984: 1-3).

In recent colonial history, the area played host to different competing local settler communities. The area was a scene of series of colonial wars. By the end of the 19th century, the region was placed under British rule and the local people displaced. This part of North West and Gauteng was scene of the most recorded colonial war, the Anglo-Boer War 1899-1902. At the end of these wars, the colonial era of the Union of South Africa and the subsequent apartheid regimes on the Republic of South Africa, some areas were reserved for African settlements often referred to as Bantu homelands such as the Bophuthatswana (Tswana Home land).

4.4 Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage remains because no historically known groups occupied the study area and most of the original settler descendants moved away from the area.

4.5 SAHRIS Data Base and Impact Assessment Reports in the project area

Several AIA/HIA studies were conducted in the project area. The studies include powerline, substation and mining projects completed by Pelser (2007), Van Sschalkwyk (2007, 2008, 2013, 2014), Pistorius, J.C.C. & Miller, S. (2011), Tomose (2015), Kusel (2005, 2006, 2008, 2011, 2012), Birkholtz (2007) and Mliilo 2018a, 2018b. The studies confirm the occurrence of several stone walled Late Iron Age sites in the project area. A search on the SAHRIS data base confirmed that several sites have been rescued or destroyed by infrastructure developments residential and urban agriculture. The reports also mention the existence of structures older than 60 years and traditional burial sites in the project area, but none will be affected by the proposed development project.

5 RESULTS OF THE FIELD STUDY

5.1 Archaeology

The site was assessed for archaeological remains and no remains were identified during the survey. Based on the field study results and field observations, the receiving environment for the proposed residential development project site is low to medium potential to yield previously unidentified archaeological remains during construction. Literature review also revealed that no Stone Age sites are not shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

5.2 Burial grounds and Graves

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and concealed by dense vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities and construction. In some instances, packed stones or bricks may indicate the presence of informal burials. If any human bones are found during the course of construction, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or Department of Health for graves younger than 60 years.

The field survey did not record any burial site within the proposed project site. The project area is built up and it is less likely to encounter unknown graves within the project site. It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Wherever they exist or not, they may not be tampered with or interfered with without a permit from SAHRA. The possibility of encountering human remains during subsurface earth moving activities anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low within project site, should such sites be identified during construction, they are still protected by applicable legislations, and they should be protected. The proposed residential development project may be approved without any further investigation and mitigation in terms of Section 36 of the NHRA read together with the Human Tissue Act of 1983 and SAHRA Regulations of 2020.

5.3 Public Monuments and Memorials

The study did not record any public memorials and monuments within the proposed project site that require protection during construction. As such the proposed residential development project may be approved without any further investigation and mitigation in terms of Section 27 & 9 of the NHRA.

5.4 Buildings and Structures

The study did not record any buildings or structures that older than 60 years and protected in terms of Section 34 of the NHRA. As such, the proposed residential development project may be approved without any further investigation and mitigation in terms of Section 34 of the NHRA.

5.5 Impact Statement

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and digging of house foundations, indirect impacts may occur during movement of heavy construction vehicles and machinery during construction. Any additional clearance of access roads will result in the relocation or destruction of all existing surface heritage material (if any are present).

Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to construction. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed residential development project site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed residential development project by means of mitigation measures (see appended Chance Find Procedure). It is the considered opinion of the author that the chances of recovering significant archaeological materials is very low within the proposed residential development project site.

Table 2: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None recorded within the proposed project site
Areas to which oral traditions are attached or which are associated with intangible heritage	None exist
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	None recorded within the proposed project site
Graves and burial grounds	None recorded within the proposed project site
Movable objects	None
Overall comment	The surveyed area has no confirmable archaeological remains. The proposed development project is supported from a heritage perspective.

5.6 Assessment of development impacts

An impact can be defined as any change in the physical-chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be assessed considering the following descriptors:

Table 3: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).

Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.

Table 4: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts

Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

Table 5: Construction Phase

Impacts and Mitigation measures relating to the proposed project during Construction Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Impact before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Impact after mitigation
Clearing and construction	Destruction of archaeological remains	Cultural heritage	-	2	1	1	2	8	<ul style="list-style-type: none"> Use chance find procedure to cater for accidental finds 	2	1	1	2	8
	Disturbance of graves	Cultural heritage	-	2	2	2	2	12	<ul style="list-style-type: none"> Use appended Chance find procedure to cater for accidental finds. 	2	1	1	1	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Construction management and workers must be educated about the value of historical buildings and structures. 	2	1	1	1	4
Haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no public monuments within the project site 	2	1	1	1	4

5.7 Cumulative Impacts

Cumulative impacts as are defined as Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed residential development project is considered the total impact associated with the site when combined with other past, present, and reasonably foreseeable future development projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this site was undertaken during the preparation of this report. The total impact arising from the proposed residential development project (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated.

The impacts of the proposed residential development project were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation, this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments, including residential, road networks, commercial infrastructure where baselines have already been affected, the proposed development will add to the existing impacts in the project area. As such increased development in the project area will have cumulative impacts on heritage resource whether known or covered in the ground. For example, during construction phase there will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the proposed development project site given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of this project and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil which could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves, archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. Furthermore, many heritage resources in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when grass cover is dense. As such, workers may not see these resources, which results in increased risk of resource damage and/or loss.

Earth moving and extraction of gravel have the potential to interact with archaeology, architectural and cultural heritage.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed residential development project has the potential to impact on possible paleontological resources in the area. Sites of archaeological, paleontological, or architectural significance were not specifically identified, and cumulative effects are not applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of clearances, digging pole foundations, access roads and impacts to buried heritage resources. Allowing the impact of the proposed residential development project to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially construction vehicles at the site. Movement of heavy construction machinery must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process.

5.8 Mitigation

Heritage mitigation is not required for the proposed residential development project because the proposed residential development project site did not yield any confirmable heritage resources during the survey.

6 ASSESSING SIGNIFICANCE

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

6.1 Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture, and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

6.2 Historic Value

Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have historic value as the site of an important event. For any given place, the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

6.3 Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

6.4 Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national, or other cultural sentiment to a majority or minority group. Social value also extends to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

7 DISCUSSION

Several archaeological and heritage studies were conducted within the project area and its vicinity since 2001 and these presents the nature and heritage character of the area. The HIA conducted in the area also provide some predictive evidence regarding the types and ranges of heritage resources to be expected in the proposed project area: (see reference list for HIA reports). The studies include residential, road, water pipeline and powerline projects completed by Pelsler (2007), Van Sschalkwyk (2007, 2008, 2013, 2014), Pistorius, J.C.C. & Miller, S. (2011), Tomose (2015), Kusel (2005, 2006, 2008, 2011, 2012), Birkholtz (2007) and Mlilo 2018a, 2018b. The studies confirm the occurrence of several stone walled Late Iron Age sites in the project area. A search on the SAHRIS data base confirmed that several sites have been

rescued or destroyed by infrastructure developments residential and agriculture. The reports also mention the existence of structures older than 60 years and traditional burial sites in the project area, but none will be affected by the proposed residential development project. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of two primary interrelated factors:

1. That proposed residential development project is located within a degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical, or burial sites, due to previous destructive land use activities.
2. Limited ground surface visibility on sections of the proposed residential development project site was impeded by built up informal settlement. It should be borne in mind that the absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites do not exist within the proposed residential development project.

Based on the significance assessment criterion employed for this report, the proposed residential project site was rated **low** from an archaeological perspective, However, it should be noted that significance of the sites of Interest is not limited to presence or absence of physical archaeological sites. Significant archaeological remains may be unearthed during construction. (See appended chance find procedure).

8 RECOMMENDATIONS

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed residential development project.
3. From a heritage perspective supported by the findings of this study, the proposed residential development project is supported. However, it should be approved under observation that the project dimensions do not extend beyond the area considered in this report.
4. Should chance archaeological materials or human remains be exposed during construction on any section of the proposed residential development project site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in project scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.

5. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed residential development project. The Heritage authority may approve the proposed residential development project as planned without investigation and mitigation.

9 CONCLUSIONS

Integrated Specialist Services (Pty) Ltd was requested by Setala Environmental (Pty) Ltd on behalf of City of Tshwane Metropolitan Municipality to carry out HIA for the proposed Ga Rankuwa Unit 23 Stand 1719 & Unit 25 Stand 1427 residential development project located in the City of Tshwane Metropolitan Municipality of Gauteng Province. Desktop research revealed that the project area is rich in Late Iron Age and historical sites, however, the field study did not identify any sites within the proposed development site. In terms of the archaeology, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, remains and the applicant and contractors are urged to lookout for chance finds during construction. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the proposed residential development project cannot be approved.

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APPENDIX 1: CHANCE FIND PROCEDURE FOR PROPOSED GA RANKUWA UNIT 23 & 25 RESIDENTIAL DEVELOPMENT PROJECT IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY OF THE GAUTENG PROVINCE

13 DECEMBER 2022

ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organisation

10.1 CHANCE FIND PROCEDURE

10.1.1 Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction. The main purpose of a CFP is to raise awareness of all construction workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of construction monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed project site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during construction.

10.1.2 Definitions

In short, the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

10.1.3 Background

The proposed residential development project is located in the City of Tshwane Metropolitan Municipality of Gauteng Province is subject to heritage survey and assessment at planning stage in accordance with Section 38(8) of NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are often accidentally exposed in the course of construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by Mlilo (2022) on the proposed

project site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2022) did not record any significant archaeological or heritage resources within the proposed project site.

10.1.4 Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the proposed project site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during construction and movement of construction equipment. The proposed residential development project has the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Integrated Specialist Services (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during construction. This ensures that appropriate treatment of chance finds while also minimizing disruption of the construction schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of construction scheduling. It is recommended that due to the low to moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during construction.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

10.2 GENERAL CHANCE FIND PROCEDURE

10.2.1 General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 30m buffer zone from all sides of the find.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ*.
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- **Finds rescue strategy:** All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition, to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeological will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the permit application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when construction activities can resume.

10.2.2 Management of chance finds

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Integrated Specialist Services (Pty) Ltd will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which ISS will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or ISS Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

- a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:
- b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.
- c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.
- d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.
- e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42.
- f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to SAHRA Burial Ground and Graves Unit.

- g. As soon as the project archaeologist receives the rescue permit from SAHRA he will in collaboration with the company/contractor arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.
- h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.
- i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the client.

Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

11 APPENDIX 2: HERITAGE MANAGEMENT PLAN FOR PROPOSED GA RANKUWA UNIT 23&25 RESIDENTIAL DEVELOPMENT PROJECT

EMP

Objective	<ul style="list-style-type: none"> Protection of archaeological sites and land considered to be of cultural value. Protection of known physical cultural property sites against vandalism, destruction and theft; and The preservation and appropriate management of new archaeological finds should these be discovered during construction. 							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform Gauteng PHRA		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the Gauteng PHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						
Operational Phase								
		Same as construction phase.						

12 APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans.

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must

(a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be

developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must

(a) take account of all relevant cultural values and indigenous knowledge systems;

(b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;

(c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;

(d) contribute to social and economic development;

(e) safeguard the options of present and future generations; and

(f) be fully researched, documented and recorded.

12.1 Burial grounds and graves

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

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

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

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

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

responsible heritage resources
authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

12.2 General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.

