

**Cultural heritage impact assessment for the
PROPOSED 75 MEGA WATT SOLAR FARM DEVELOPMENT ON THE FARM WINDSOR
CASTLE 493LQ, LEPHALALE LOCAL MUNICIPALITY, LIMPOPO PROVINCE**

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED 75 MEGA WATT SOLAR FARM DEVELOPMENT ON THE FARM WINDSOR CASTLE 493LQ, LEPHALALE LOCAL MUNICIPALITY, LIMPOPO PROVINCE

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Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
November 2013

EXECUTIVE SUMMARY

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED 75 MEGA WATT SOLAR FARM DEVELOPMENT ON THE FARM WINDSOR CASTLE 493LQ, LEPHALALE LOCAL MUNICIPALITY, LIMPOPO PROVINCE

It is proposed to establish a 75 megawatt solar farm on a section of land 150 - 200 ha in size. The subject property is located in the Limpopo Province, within the Lephalale Local Municipality of the Waterberg District. The application property consists of the Farm Portion Windsor Castle 493LQ, which is approximately 942 ha in extent.

In accordance with Section 38 of the NHRA, an independent heritage consultant was therefore appointed by **Interdesign Landscape Architects** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the solar farm.

The cultural landscape qualities of the larger region essentially consist of a single component, which is a rural area in which the human occupation is made up of a pre-colonial (Stone Age and Iron Age) and a much later colonial (farmer) component.

The following sites, objects and structures of cultural heritage significance were identified:

- Four rock shelters containing rock art have been identified to occur in close proximity to each other. Of these only one contains a significant number of paintings, probably more than a hundred in total. The other shelters contain much less, with five to ten images as the average.
 - These sites are judged to have **Grade II significance**, i.e. high on a provincial level.
 - Any impact on the identified rock art sites should be avoided at all cost.

It is unlikely that the proposed development would have a direct result on the identified rock art sites. However, there might be a visual impact if the solar field is developed in the line of sight of the shelters containing the rock art. This should not be an insurmountable problem, especially if the layout and design of the solar field is done in sympathy with the sites.

A final decision on the impact of the proposed development on these features can only be given once the development plan is available.

- A single grave marked with a stone cairn. According to Mr Jan Mabula the grave is that of a women who was buried here in the late 1960s. They lived in the immediate vicinity, but the occupants of these homesteads moved away in the late 1960s.
 - These sites are judged to have **Grade III significance**, i.e. high on a local.
 - At present it is unknown if the proposed development would have an impact on this feature.

If it is required that the grave is retained in place, it should be formalised by fencing it off with a buffer of at least 10 metres from the outer edge of the grave, with access facility to descendants to visit grave. This will result in the development plan to be adapted to accommodate this feature.

If the grave has to be relocated, it can only be done after the necessary procedures have been followed – see Appendix 3 for more detailed information.

A final decision on the impact of the proposed development on this feature can only be given once the development plan is available.

Therefore, from a heritage point of view we recommend that the proposed development can continue, on condition of acceptance of the above mitigation measures. We request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk
Heritage Consultant
November 2013

TECHNICAL SUMMARY

Property details						
Province	Limpopo					
Magisterial district	Ellisras					
District municipality	Lephalale					
Topo-cadastral map	2327DB					
Closest town	Lephalale					
Farm name & no.	Windsor Castle 493LQ					
Coordinates	Polygon (approximate)					
	No	Latitude	Longitude	No	Latitude	Longitude
	1	-23.63515	27.91002	2	-23.66110	27.91512
	3	-23.65258	27.94558	4	-23.62532	27.94021

Development criteria in terms of Section 38(1) of the NHR Act	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	Yes
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 sq m	Yes
Any other development category, public open space, squares, parks, recreation grounds	No

Development	
Description	Development of a solar farm
Project name	Windsor Castle PV development

Land use	
Previous land use	Farming (grazing/agricultural fields)
Current land use	Farming (grazing)

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GLOSSARY OF TERMS AND ABBREVIATIONS

TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1 & 2.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

Iron Age: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. As they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

Historical Period: Since the arrival of the white settlers - c. AD 1840 - in this part of the country

ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
BP	Before Present
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED 75 MEGA WATT SOLAR FARM DEVELOPMENT ON THE FARM WINDSOR CASTLE 493LQ, LEPHALALE LOCAL MUNICIPALITY, LIMPOPO PROVINCE

1. INTRODUCTION

It is proposed to establish a 75 megawatt solar farm on a section of land 150 - 200 ha in size. The subject property is located in the Limpopo Province, within the Lephalale Local Municipality of the Waterberg District. The application property consists of the Farm Portion Windsor Castle 493LQ, which is approximately 942 ha in extent.

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. According to Section 27(18) of the National Heritage Resources Act (NHRA), Act 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was therefore appointed by **Interdesign Landscape Architects** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the solar farm.

This HIA report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and is intended for submission to the South African Heritage Resources Agency (SAHRA).

2. TERMS OF REFERENCE

This report does not deal with development projects outside of or even adjacent to the study area as is presented in Section 5 of this report. The same holds true for heritage sites, except in a generalised sense where it is used to create an overview of the heritage potential in the larger region.

2.1 Scope of work

The aim of this HIA, broadly speaking, is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the solar farm.

The scope of work for this study consisted of:

- Conducting of a desk-top investigation of the area, in which all available literature, reports, databases and maps were studied; and
- A visit to the proposed development area.

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development area;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

2.2 Limitations

The investigation has been influenced by the following factors:

- The unpredictability of buried archaeological remains.
- No information regarding the location of loop-in/loop-out lines, access roads, site offices and constructions camps were available during the initial survey.
- This report does not consider the palaeontological potential of the site.

3. HERITAGE RESOURCES

3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
 - ancestral graves;
 - royal graves and graves of traditional leaders;
 - graves of victims of conflict;
 - graves of individuals designated by the Minister by notice in the Gazette;
 - historical graves and cemeteries; and
 - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
 - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - objects to which oral traditions are attached or which are associated with living heritage;
 - ethnographic art and objects;
 - military objects;
 - objects of decorative or fine art;
 - objects of scientific or technological interest; and
 - books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as

defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- sites of significance relating to the history of slavery in South Africa.

A matrix was developed whereby the above criteria were applied for the determination of the significance of each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar identified sites.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figures 2 & 4.

4.2 Methodology

4.2.1 Preliminary investigation

4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various

anthropological, archaeological, historical sources and heritage impact assessment reports were consulted – see the list of reference in Section 8 below.

- Information on events, sites and features in the larger region were obtained from these sources.

4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor General (CS-G)* and the *National Archives of South Africa (NASA)* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development.

4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature was obtained from these sources.

4.2.2 Field survey

The site survey was done on 9 November 2013. The area that had to be investigated was identified by **Interdesign Landscape Architects** by means of maps. The study area was accessed by means of internal roads up to specific points, from where transects were walked. These internal access roads divide the farm in various blocks and it was therefore possible to assess each block separately – see the track log of the site survey presented in Fig. 1.

It was argued that the solar farm development would be limited to the flat areas on the western section of the property and that it would not encroach on the hills in the eastern area. However, areas with high potential were accessed to determine the potential of heritage resources in the eastern section.

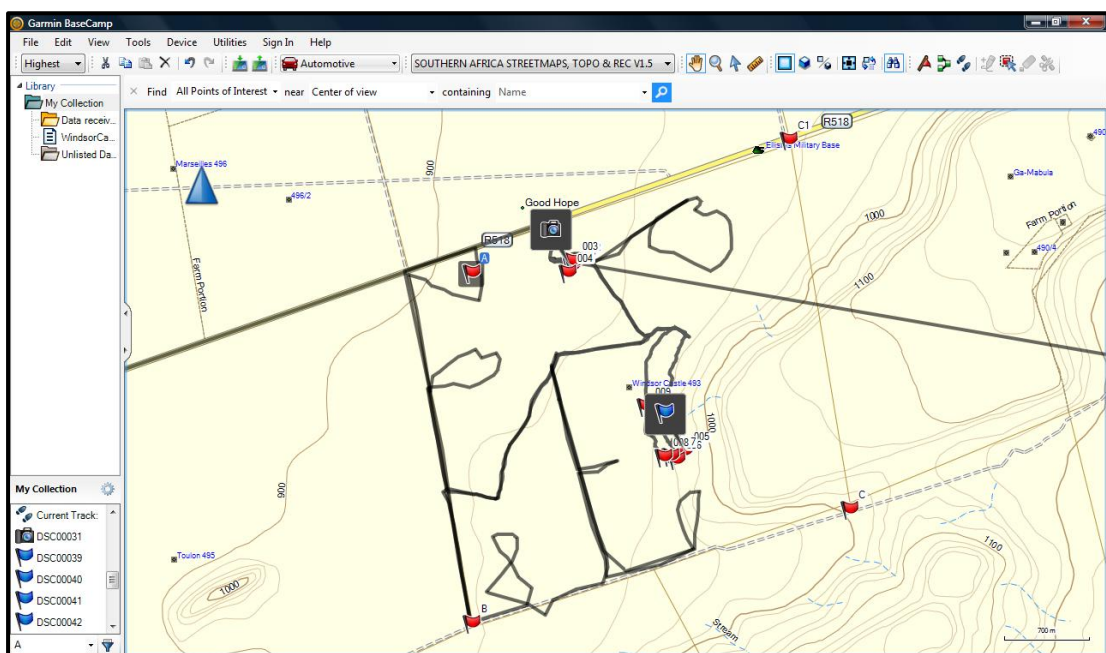


Fig. 1. Track log of the field survey.

During the field survey the heritage practitioner was accompanied by Mr Jan Mabula, a member of the Mabula Trust. They received the land as a result of a land claim that was awarded in their favour in 2005.

4.2.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS) and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

The track log and identified sites were recorded by means of a Garmin Oregon 550 handheld GPS device. Photographic recording was done by means of a Canon EOS 550D digital camera.

Map datum used: Hartebeeshoek 94 (WGS84).

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5.1 Site location and description

The application property consists of the Farm Portion Windsor Castle 493 LQ, which is approximately 942 ha in extent. The subject property is located in the Limpopo Province, within the Lephalale Local Municipality of the Waterberg District, along the R518, the towns of Lephalale to the west and Ga-Shongwane to the east (see Fig. 2). For more information, please see the Technical Summary presented above (p. iii).

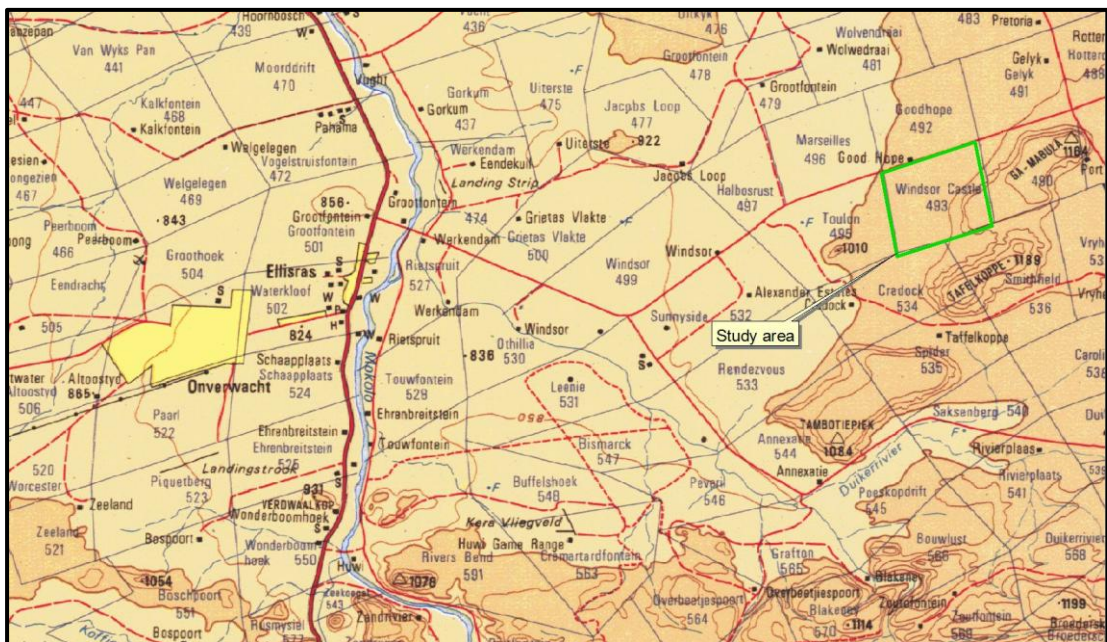


Fig. 2. The study area in regional context.
(Map 2326CB Chief Surveyor-General)

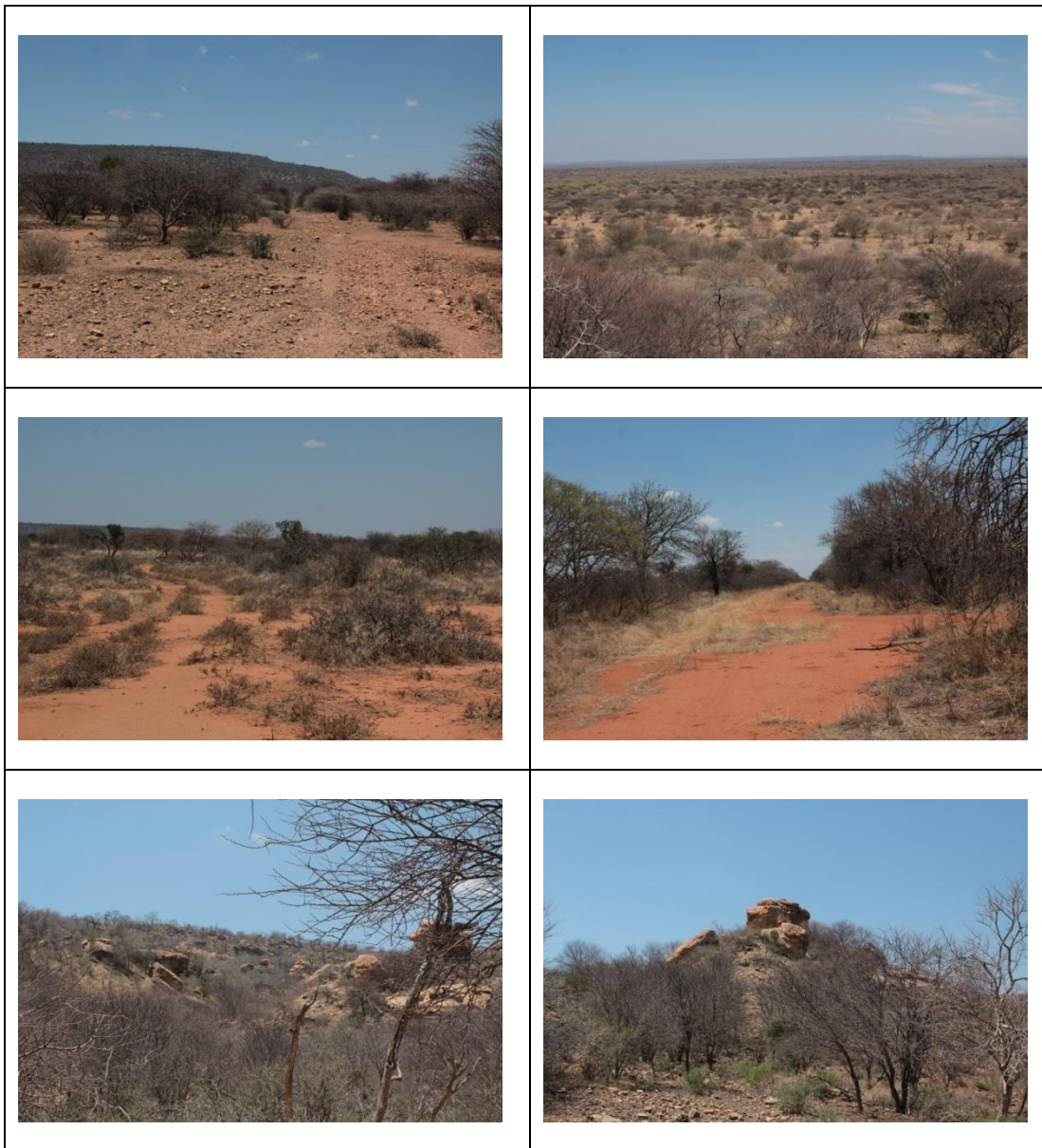


Fig. 3. Views over different sections of the study area.

The geology is made up of shale, with arenite occurring to the west and east of the study area. The topography is described as table lands, with plains occurring to the west and east of the study area. The original vegetation is classified as Mixed Bushveld. However, in the western section of the farm this has been impacted on by the making of agricultural fields. Large sections of the farm have been overtaken by *sekelbos*, an invader species, making walking or driving in the area very difficult.

A flattop mountain known as Ga-Mabula occurs partly on the eastern section of the farm. It is named after a Sotho-speaking community which used to live in the region. This same community was granted the farm in a successful land claim in 2005. This mountain presents a broken cliff approximately 200 m high, facing north and west across the farm.



Fig. 4. Location of the proposed development.
(Photo: Google Earth)

5.2 Project description

The application property consists of the Farm Portion Windsor Castle 493 LQ, which is approximately 942 ha in extent. The applicant wishes to establish a 75 megawatt solar farm on 150 - 200 ha of the property.

During the field survey, no information regarding the siting of the solar farm on the property was available, nor was any information regarding access roads, construction camps, loop-in/loop-out line, etc. available. Logic and past experience with solar farm developments point to the development taking place in the flat area on the western section of the farm.

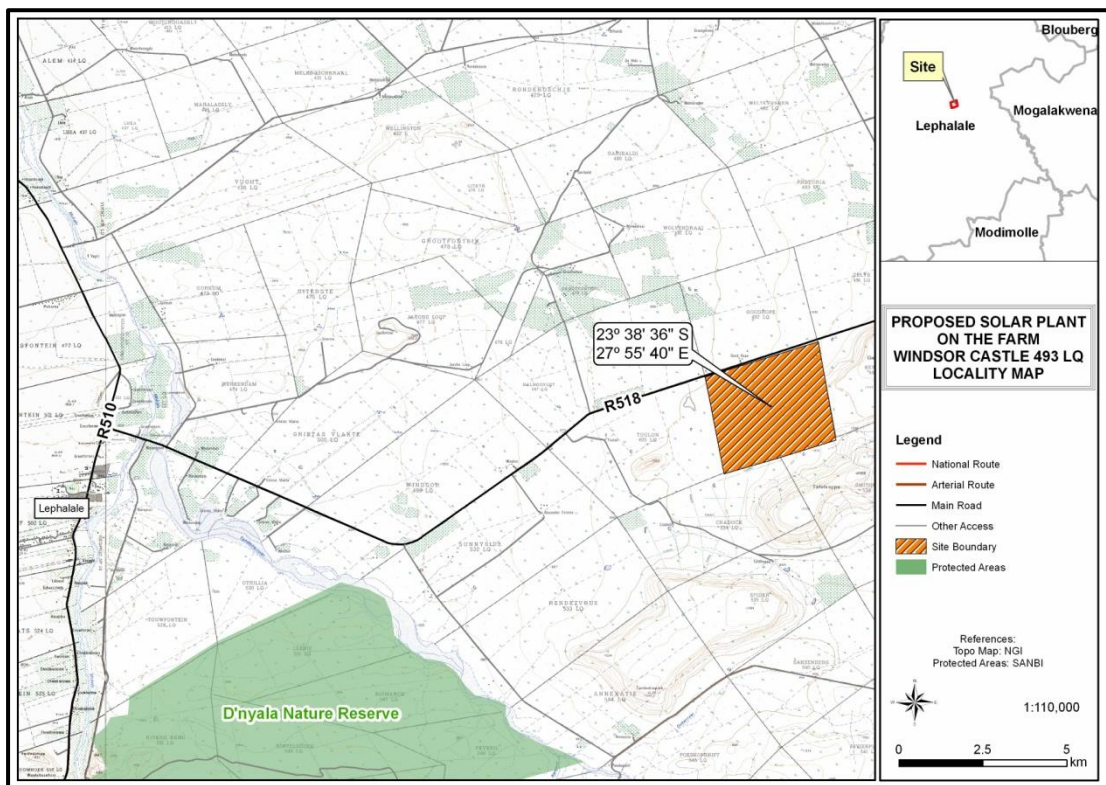


Fig. 5. Location of the study area in regional context.
(Map supplied by Interdesign)

5.3 Regional overview

The aim of this section is to present an overview of the history of the larger region in order to eventually determine the significance of heritage sites identified in the study area, within the context of their historic, aesthetic, scientific and social value, rarity and representivity – see Section 3.2 and Appendix 1 for more information.

The cultural landscape qualities of the larger region essentially consist of a single component, which is a rural area in which the human occupation is made up of a pre-colonial (Stone Age and Iron Age) and a much later colonial (farmer) component.

As this is an environment that presents very little resources such as hills and outcrops for settling in, poor grazing and a lack of open water, the habitation of the region by humans has always been very low. It was only with the arrival of drilling rigs that below surface water could be accessed, that the population density increased.

- **Stone Age**

Stone tools are known to occur in a low density on the banks of some of the rivers as well as the foot of outcrops and small hills. These mostly date to the Earlier Stone Age as well as to the Middle Stone Age and include typical points, blades and rectangular flakes. However, all

these objects were found on the surface and are therefore out of their original context. As result, they are viewed to have low significance. Some rock art dating to the Later Stone Age occur in a number of shelters to the north-west of Lephalale.

On the koppie named Koorn Kop some interesting engravings of animal spoors, cupules and cut marks were identified on the southern face of the hill. In addition, on top of the hill a number of small stone walled sites occur. A few non-diagnostic stone flakes and potsherds occur in the shelter.

From ethnographic sources it is known that hills or promontories, for example in the Karoo, are important features to the San because they offer vantage points in an otherwise remarkably flat landscape from which the springbok may be watched (Deacon 1988). This is probably the purpose of the stone circles on top of Nelson’s Kop, serving as lookout points. The fact that there is a big panel with a variety of engravings on it indicates that this is in all probability a site of potency, for the making of rain by the San and later Sotho-Tswana speaking people in the area (see Van der Ryst *et al* 2004).

- **Iron Age**

Early and Later Iron Age sites are similarly found to the south and the east, as well as to the north. As these people were agro-pastoralists (and did not have the technology to extract subterranean water), they preferred to settle in areas where such resources were readily available.

All the sites dating to the Later Iron Age known in the region are located on hills and steep cliffs in the table land areas indicate that this was a time of strife, when people were congregating on higher areas in search of protection.

- *Archaeological sites*

NHRA Category	Archaeological and palaeontological sites
Protection status	
	General Protection - Section 35: Archaeology, palaeontology and meteorites

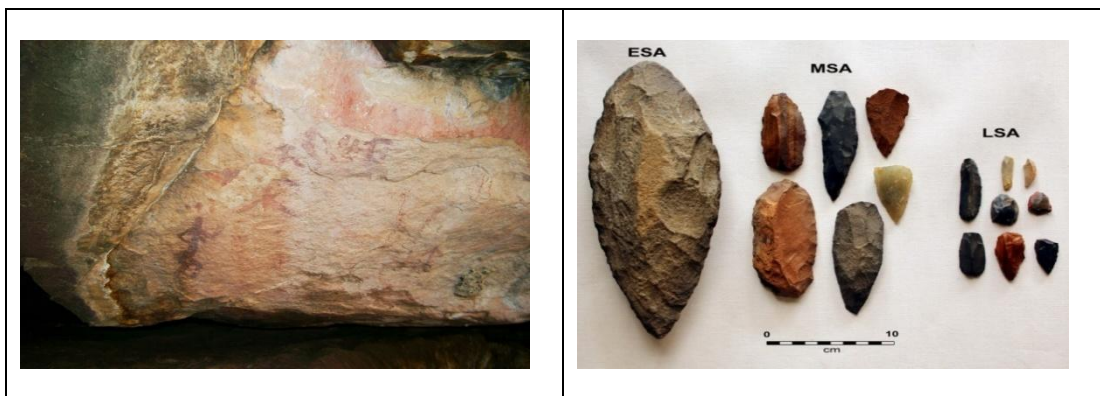


Fig. 6: Typical Later Stone Age rock art in the region. The stone tools in the picture to the right are not from the region and are only used to illustrate the difference between Early (left), Middle (middle) and Later Stone Age (right) technology.

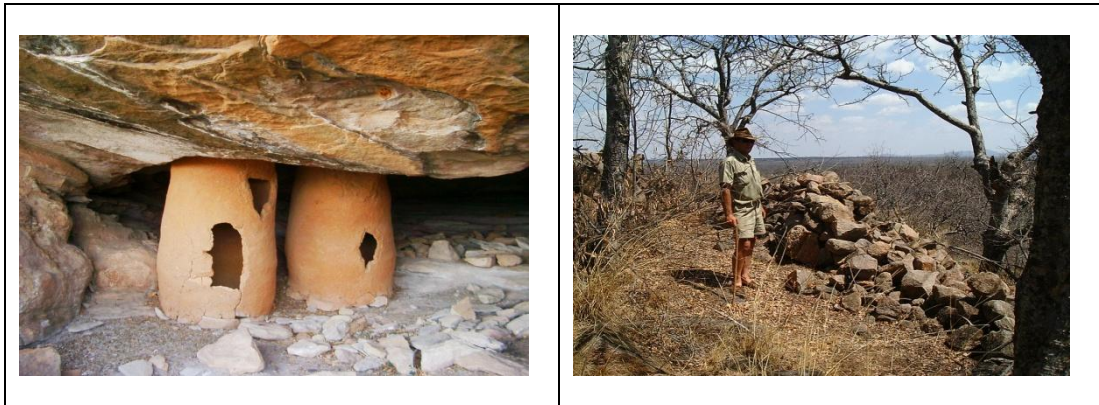


Fig. 7: Typical Late Iron Age sites located to the east and north of the study area.

- **Colonial history**

The historic period starts off quite late in this part of the country. Probably one of the earliest published sources that refer to the area, in a generalised sense, is that of the explorer Thomas Baines who passed through the area during the early 1870s. Although for other sections of his travels he gives detailed descriptions of the local population, he does not comment on anybody in this particular area. Although his rendering of the various rivers and other topographical features are quite accurate for the time, he seems to imply that there were no communities settled here (Baines 1877).

In the town of Lephalale (Ellisras) there is a cemetery containing the graves of some of the earliest white settlers in the area. The town of Ellisras was only laid out in December 1960, and was named after two of the pioneer families in the area, Ellis and Erasmus. In 2002, the name was changed to Lephalale. This latter name is taken from the Phalala River, which is derived from the Tswana verb 'to flow' or 'one which overflows' (Raper 2004: 86, 204).

With reference to both the study areas, some information has been obtained about the different farms. It seems as if they were part of government land until the early part of the 20th century and most were only surveyed in the period 1909-1910. Drilling activities undertaken by the "Irrigation Department" in 1920, apparently revealed more than water; the presence of coal and oil bearing shale was established on the farms Grootegeluk and Hooikraal. This prompted an individual by the name of F.F. Pienaar to peg 50 claims on each of the farms Kringatspruit, Hooikraal, Grootegeluk and Enkelbult (Reference MM1713/20, 1920; Reference MM2827/20, 1920).

Farmsteads are complex features in the landscape, being made up of different yet interconnected elements. Typically these consist of a main house, gardens, outbuildings, sheds and barns, with some distance from the labourer housing and various cemeteries. In addition, roads and tracks, stock pens and wind mills complete the setup. An impact on one element therefore impacts on the whole.

In many cases the infrastructural heritage is left out of surveys, largely due to the fact that it is taken for granted. However, the land and its resources could not be accessed and exploited without the development of features such as roads, bridges, railway lines, electricity lines and telephone lines, as well as industries that exploit locally available resources.

NHRA Category	Buildings, structures, places and equipment of cultural significance
Protection status	
General Protection - Section 34: Structures older than 60 years	



Fig. 8: An old farmstead and the head-gear of the first mine shaft sunk in the region.

- **Cemeteries**

Apart from the formal cemeteries that occur in municipal areas (towns or villages), a number of these, some quite informal, i.e. without fencing, are expected to occur sporadically all over, but probably in the vicinity of the various farmsteads. Many might also have been forgotten, making it very difficult to trace the descendants in a case where the graves are to be relocated.

Most of these cemeteries, irrespective of the fact that they are for land owners or farm labourers (with a few exceptions where they were integrated), are family orientated. They therefore, serve as important 'documents' linking people directly by name to the land.

NHRA Category	Graves, cemeteries and burial grounds
Protection status	
General Protection - Section 36: Graves or burial grounds	



Fig. 9. The oldest cemetery in Lephalale.

5.4 Identified heritage sites

Based on the above sources and the field visit, the following heritage sites, features and objects of cultural significance were identified in the proposed development area:

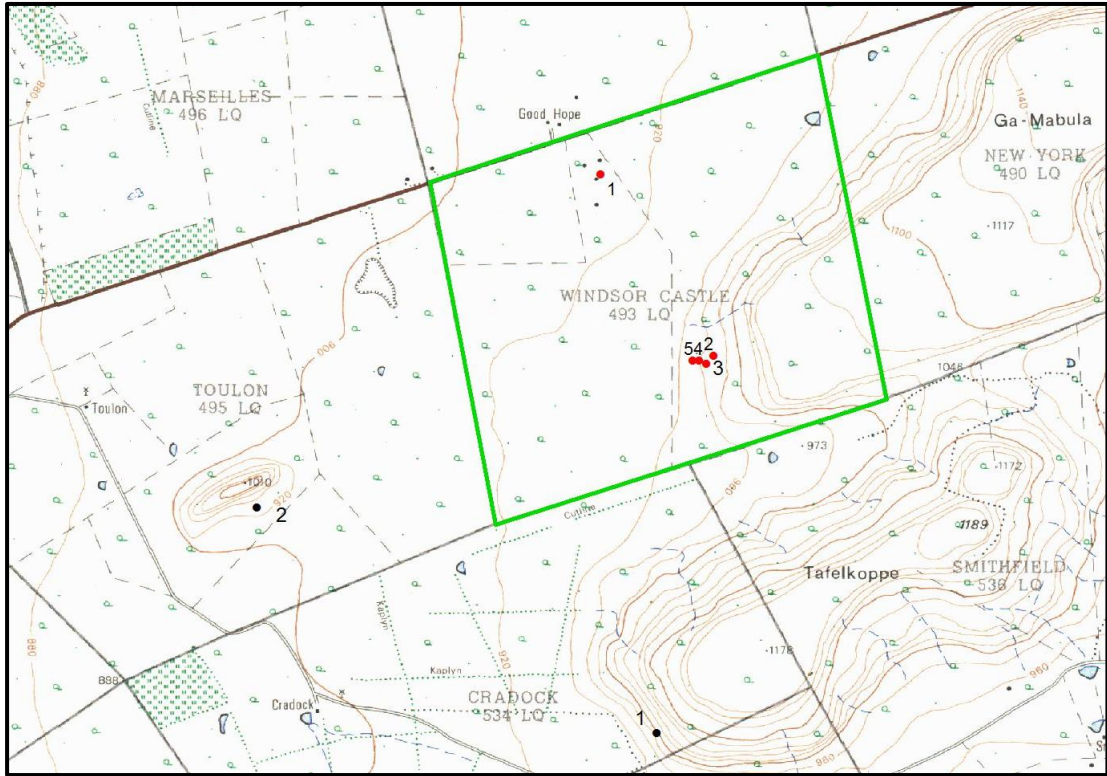


Fig. 10. Map indicating the location of the identified sites.

5.4.1 Stone Age

A number of rock shelters have been investigated on the slope of the western cliff of the mountain known as Ga-Mabula. In addition, rock shelters containing rock art are also known to occur on adjacent farms (indicated in black on Fig. 10), but these have not been visited. None of these sites were identified/mentioned by previous researchers who did HIA surveys in the region.

Location	No. 1	S 23.64843	E 27.93206
	No. 2	S 23.64903	E 27.93148
	No. 3	S 23.64878	E 27.93097
	No. 4	S 23.64881	E 27.93047
Description			
Four rock shelters containing rock art have been identified to occur in close proximity to each other. Of these only one contains a significant number of paintings, probably more than a hundred in total. The other shelters contain much less, with five to ten images as the average. At least three of these sites have multiple traditions, e.g. San, Khoi and Late White			
It is very likely that a more intensive survey of the cliff would reveal more painted shelters. It is also known that			

Significance	High on a regional level – Grade II
Mitigation	
It is unlikely that the proposed development would have a direct result on the identified rock art sites. However, there might be a visual impact if the solar field is developed in the line of sight of the shelters containing the rock art. This should not be an insurmountable problem, especially if the layout and design of the solar field is done in sympathy with the sites.	
Recommendation:	
Any impact on the identified rock art sites should be avoided at all cost.	
Requirements	
A final decision on the impact of the proposed development on these features can only be given once the development plan is available.	



Fig. 11. Images in the Later Stone Age sites.



Fig. 12. View from the main shelter westwards across the plains.

5.4.3 Historic period



Location	No. 2	S 25.52932	E 27.39390
Description			
A single grave marked with a stone cairn. According to Mr Jan Mabula the grave is that of a women who was buried here in the late 1960s. They lived in the immediate vicinity, probably in one of the structures similar to the one in the photograph below. The occupants of these homesteads moved away in the late 1960s.			
Significance	High on a local level – Grade III		
Mitigation			
At present it is unknown if the proposed development would have an impact on this feature.			
Recommendation:			
If it is required that the grave is retained in place, it should be formalised by fencing it off with a buffer of at least 10 metres from the outer edge of the grave, with access facility to descendants to visit grave. This will result in the development plan to be adapted to accommodate this feature.			
If the grave has to be relocated, it can only be done after the necessary procedures have been followed – see Appendix 3 for more detailed information.			
Requirements			
A final decision on the impact of the proposed development on this feature can only be given once the development plan is available.			
			

Fig. 13. The identified grave and the old homestead.

6. SITE SIGNIFICANCE AND ASSESSMENT

6.1 Heritage assessment criteria and grading

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable of mitigation measures would allow the development activities to continue.

6.2 Statement of significance

Based on current information regarding the identified sites as well as in the surrounding area

- All sites dating to the Later Stone Age are judged to have **Grade II significance** and therefore would not prevent the proposed development for continuing after the implementation of the proposed mitigation measures and its acceptance by SAHRA.
- All sites dating to the historic period are judged to have **Grade III significance** and therefore would not prevent the proposed development for continuing after the implementation of the proposed mitigation measures and its acceptance by SAHRA.

Table 2. Summary of identified heritage resources in the study area.

Identified heritage resources	
<i>Category, according to NHRA</i>	<i>Identification/Description</i>
Formal protections (NHRA)	
National heritage site (Section 27)	None
Provincial heritage site (Section 27)	None
Provisional protection (Section 29)	None
Place listed in heritage register (Section 30)	None
General protections (NHRA)	
structures older than 60 years (Section 34)	None
archaeological site or material (Section 35)	Yes
palaeontological site or material (Section 35)	None
graves or burial grounds (Section 36)	Yes
public monuments or memorials (Section 37)	None
Other	
Any other heritage resources (describe)	None

6.3 Impact assessment

Based on current knowledge and understanding of the area, one can evaluate the heritage sites in the area as follows:

- Four rock shelters containing rock art have been identified to occur in close proximity to each other. Of these only one contains a significant number of paintings, probably more than a hundred in total. The other shelters contain much less, with five to ten images as the average.
 - Any impact on the identified rock art sites should be avoided at all cost.

It is unlikely that the proposed development would have a direct result on the identified rock art sites. However, there might be a visual impact if the solar field is developed in the line of sight of the shelters containing the rock art. This should not be an insurmountable problem, especially if the layout and design of the solar field is done in sympathy with the sites.

A final decision on the impact of the proposed development on these features can only be given once the development plan is available.

- A single grave marked with a stone cairn. According to Mr Jan Mabula the grave is that of a woman who was buried here in the late 1960s. They lived in the immediate vicinity, but the occupants of these homesteads moved away in the late 1960s.
 - At present it is unknown if the proposed development would have an impact on this feature.

If it is required that the grave is retained in place, it should be formalised by fencing it off with a buffer of at least 10 metres from the outer edge of the grave, with access facility to descendants to visit grave. This will result in the development plan to be adapted to accommodate this feature.

If the grave has to be relocated, it can only be done after the necessary procedures have been followed – see Appendix 3 for more detailed information.

A final decision on the impact of the proposed development on this feature can only be given once the development plan is available.

7. CONCLUSIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop the solar farm.

The cultural landscape qualities of the larger region essentially consist of a single component, which is a rural area in which the human occupation is made up of a pre-colonial (Stone Age and Iron Age) and a much later colonial (farmer) component.

The following sites, objects and structures of cultural heritage significance were identified:

- Four rock shelters containing rock art have been identified to occur in close proximity to each other. Of these only one contains a significant number of paintings, probably more than a hundred in total. The other shelters contain much less, with five to ten images as the average.
 - These sites are judged to have **Grade II significance**, i.e. high on a provincial level.
 - Any impact on the identified rock art sites should be avoided at all cost.

It is unlikely that the proposed development would have a direct result on the identified rock art sites. However, there might be a visual impact if the solar field is developed in the line of sight of the shelters containing the rock art. This should

not be an insurmountable problem, especially if the layout and design of the solar field is done in sympathy with the sites.

A final decision on the impact of the proposed development on these features can only be given once the development plan is available.

- A single grave marked with a stone cairn. According to Mr Jan Mabula the grave is that of a woman who was buried here in the late 1960s. They lived in the immediate vicinity, but the occupants of these homesteads moved away in the late 1960s.
 - These sites are judged to have **Grade III significance**, i.e. high on a local.
 - At present it is unknown if the proposed development would have an impact on this feature.

If it is required that the grave is retained in place, it should be formalised by fencing it off with a buffer of at least 10 metres from the outer edge of the grave, with access facility to descendants to visit grave. This will result in the development plan to be adapted to accommodate this feature.

If the grave has to be relocated, it can only be done after the necessary procedures have been followed – see Appendix 3 for more detailed information.

A final decision on the impact of the proposed development on this feature can only be given once the development plan is available.

Therefore, from a heritage point of view we recommend that the proposed development can continue, on condition of acceptance of the above mitigation measures. We request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

8. REFERENCES

8.1 Data bases

Chief Surveyor General
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.
Heritage Atlas Database, Pretoria.
National Archives of South Africa

8.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

Gaigher, S. 2002. *Heritage Impact Assessment Scoping for the Proposed Matimba-Witkop Power Line*. Unpublished report by Archaeo-Info.

Mason, R.J. 1962. *Prehistory of the Transvaal*. Johannesburg: Witwatersrand University Press.

Roodt, F. 2007. *Phase 1 Heritage Impact Assessment (Scoping & Evaluation) Labonte 5 Mine Lephale, Limpopo*. Unpublished report by R & R Cultural Resource Consultants

8.3 Maps and aerial photographs

1: 50 000 Topocadastral maps: 2327DB
Google Earth

APPENDIX 1: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
2. Aesthetic value				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
3. Scientific value				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
4. Social value				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
5. Rarity				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
6. Representivity				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics 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.				
7. Sphere of Significance		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
8. Significance rating of feature				
1.	Low			
2.	Medium			
3.	High			

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 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) 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.

APPENDIX 3. RELOCATION OF GRAVES

If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.

If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.
- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave.

Information needed for the SAHRA permit application

- The permit application needs to be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- If graves have not been identified and there are no headstones to indicate the grave, these are then unknown graves and should be handled as if they are older than 60 years. This information also needs to be given to SAHRA.
- A letter from the landowner giving permission to the developer to exhume and relocate the graves.

- A letter from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district, and GPS coordinates of the gravesite.