



Archaetnos Culture & Cultural  
Resource Consultants  
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**A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR  
THE REHABILITATION OF THE LIBRADENE WETLAND  
IN BOKSBURG, GAUTENG PROVINCE**

For:

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**REPORT: AE11120**

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## SUMMARY

Archaetnos cc was requested by DWV Environmental Consulting cc, on behalf of Land Resources International, to conduct a Phase 1 Archaeological Impact Assessment (AIA) for the proposed rehabilitation of the Libradene Wetland in Boksburg.

The aims were to determine if there are any archaeological sites, features or objects in the area that need be taken into consideration when rehabilitation work commences. A desktop study formed part of the work.

No archaeological sites, features and objects were identified and recorded during the fieldwork in the area. The area has been extensively disturbed in the recent past through various residential developments and activities, and if any sites did exist here it might have been completely disturbed or destroyed.

The report discusses the results of the study while a number of recommendations are put forward at the end of the report. Should these be implemented there would be no objection from an archaeological point of view to the proposed development.

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## **1. INTRODUCTION**

Archaetnos cc was requested by DWV Environmental Consulting cc, on behalf of Land Resources International, to conduct a Phase 1 Archaeological Impact Assessment (AIA) for the proposed rehabilitation of the Libradene Wetland in Boksburg.

No archaeological sites, features and objects were identified and recorded during the fieldwork in the area. The area has been extensively disturbed in the recent past through various residential developments and activities, and if any sites did exist here it might have been completely disturbed or destroyed.

The report discusses the results of the study while a number of recommendations are put forward at the end of the report. The client indicated the location of and extent of the area that had to be investigated.

## **2. TERMS OF REFERENCE**

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological located in the area of the Libradene Wetland near Boksburg.
2. Assess the significance of the archaeological finds.
3. Describe the possible impact of the proposed development on these archaeological remains, according to a standard set of conventions.
4. Propose suitable mitigation measures to minimize possible negative impacts on the archaeological finds.
5. Review applicable legislative requirements.

## **3. CONDITIONS & ASSUMPTIONS**

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources (including Archaeological sites, features or objects) are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity. These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are

not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see **Appendix B**).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might be found.

#### **4. LEGISLATIVE REQUIREMENTS**

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

##### **4.1 The National Heritage Resources Act**

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

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

The national estate (see **Appendix D**) includes the following:

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

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

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

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority.

### **Structures**

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

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

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

### **Archaeology, palaeontology and meteorites**

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

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

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

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

### **Human remains**

Graves and burial grounds are divided into the following:

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

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.



## 4.2 The National Environmental Management Act

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

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

## 5. METHODOLOGY

### 5.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the archaeology and history of the area. Sources consulted in this regard are indicated in the bibliography.

### 5.2 Field survey

The survey was conducted according to generally accepted AIA practices and was aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed wetland rehabilitation. If required, the location/position of any site is determined by means of a Global Positioning System (GPS), while photographs are also taken where needed.

The survey was conducted partially on foot, although certain portions were travelled by vehicle. Visibility was not good, with dense grass cover and other vegetation in certain portions.

### 5.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography. **In this case no oral histories were recorded or interviews undertaken.**

### 5.4 Documentation

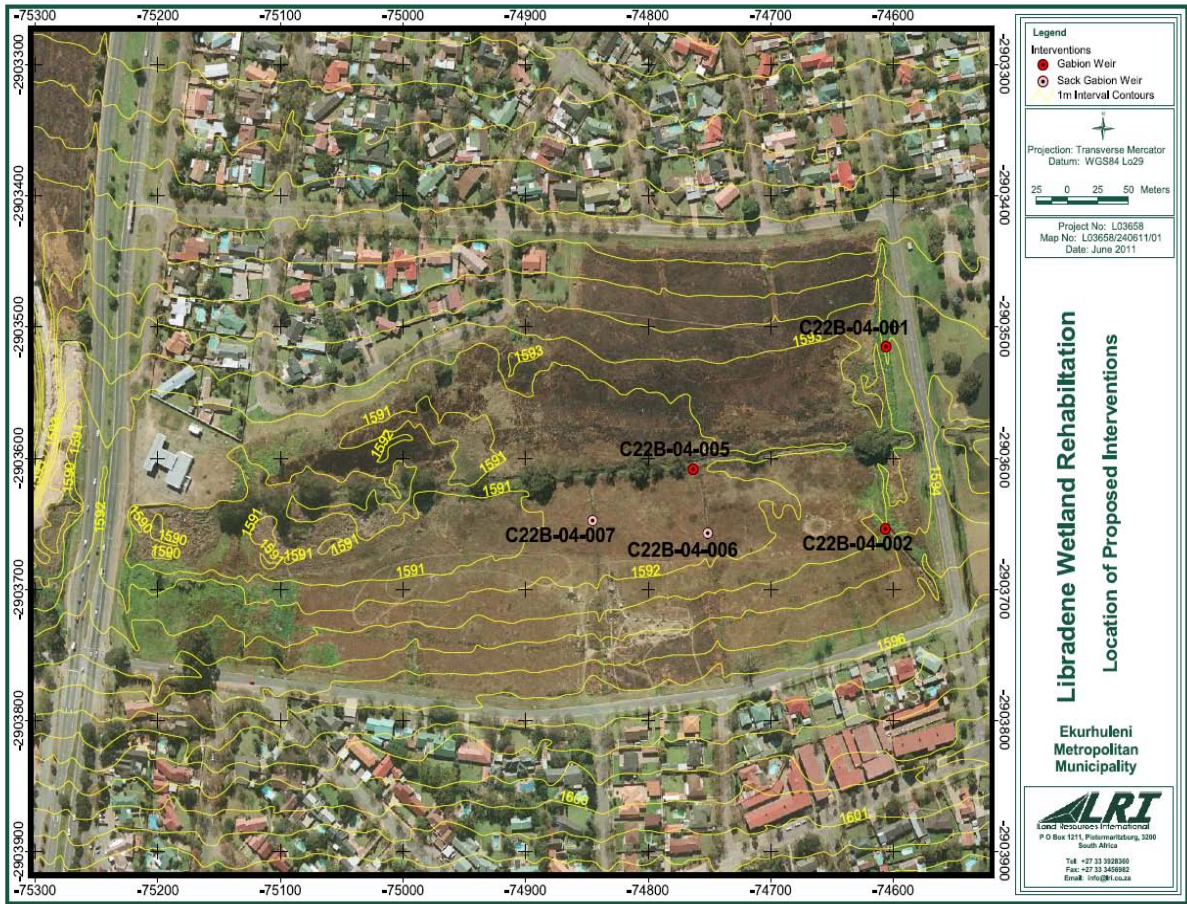
All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description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

## **6. DESCRIPTION OF THE AREA**

The Libradene Wetland falls within the Natalspruit quaternary catchment (C22B) on the upper reaches of the Elsburgspruit, a tributary of Natalspruit, within the Upper Vaal Water Management Area. The site is located in Boksburg, in the East Rand of Gauteng. It is located west of Rondebult Road.

The Libradene Wetland system is currently driven primarily by the overtopping of water from the channel and excessive urban return flow in the form of storm water discharges. The majority of the wetland's catchment is characterized by urban development (houses) and associated infrastructures, including road crossings. This has resulted in channel incision because of an increase in peak flows resulting from storm water and hardening of the surfaces within the catchment area. Overall, the wetland area is experiencing sediment loss, channel incision and marginal alien vegetation invasion, and is exposed to housing developments, domestic and vegetation litter (debris), and infilling and dumping of building rubble, all of which have resulted in the uneven distribution of water across the wetland (areas previously permanently wet are now only marginally wet). These impacts have resulted in a change in morphology and structural diversity within the wetland area on site.

Based on the above the Ekurhuleni Metropolitan Municipality has identified the need for a rehabilitation plan for the Libradene Wetland system. Before this plan can be implemented an environmental application is required.



**Figure 1: Location of Libradene Wetland area (Image courtesy Land Resources International).**



**Figure 2: Topographic location of area (Map Source 2010).**



**Figure 3: General view of the area.**



**Figure 4: Another view of the area. Note the building rubble/sand.**



**Figure 5: Another view of the area. Note the section of wetland.**

## **7. DISCUSSION**

Before the results of the survey are discussed, a general background to archaeology and the archaeology and history of the development area (and its broader geographical context) is given to provide a context for the findings made during the fieldwork.

### **7.1 Stone Age**

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago  
Middle Stone Age (MSA) 150 000 – 30 000 years ago  
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

No known Stone Age sites are located close to the study area. The closest sites are those known at Glenferness, Pietkloof, Zevenfontein, Aasvoelkop, Melvillekoppies, Linksfield and Primrose (Bergh 1999: 4). No Stone Age sites or objects were identified during the survey.

### **7.2 Iron Age**

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.

Late Iron Age (LIA) 1000 – 1850 A.D.

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

Early Iron Age (EIA) 250 – 900 A.D.

Middle Iron Age (MIA) 900 – 1300 A.D.

Late Iron Age (LIA) 1300 – 1840 A.D.

No Iron Age sites are known to occur in the area, with the closest sites (Late Iron Age) located at Bruma Lake and at Melville Koppies (Bergh 1999: 6-7). No Iron Age sites or objects were recorded during the assessment. If any did exist they might have been extensively disturbed or destroyed by various activities during the recent past.

### **7.3 Historical Age**

The historical age started with the first recorded oral histories in the area. It includes the moving into an area by people that were able to read and write.

The first Europeans who moved in the larger geographical area were the group of hunter and adventurer Cornwallis Harris in 1836 and others such as David Livingstone in 1847 (Berg 1999: 13). They were closely followed by the Voortrekkers from 1844 onwards (p.14). The first stands for sale in the Boksburg area occurred on 22 August 1887, while the municipality was formed in 1903 (Praagh 2006: 371-381).

No sites, features (buildings/structures, graves) or objects of any historical-archaeological nature were identified during the survey. If any did exist here in the past it might have been destroyed by past activities.

## **8. CONCLUSIONS AND RECOMMENDATIONS**

It can be concluded that the Phase 1 Archaeological Impact Assessment for the Libradene Wetland rehabilitation in Boksburg was conducted successfully. The area has been extensively disturbed over the years through various activities such as residential development and it is more than likely that if any sites, features or objects of archaeological nature did exist in the past these would have been disturbed or destroyed. No sites, features or objects of any archaeological origin were identified during the assessment of the area.

**It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken during any development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate. Low, stone packed or unmarked graves should be included in this.**

From an archaeological point of view the rehabilitation should be allowed to take place, taking cognizance of the facts mentioned above.

## 9. REFERENCES

Location of Libradene Wetland Rehabilitation area – Image courtesy Land Resources International

Topographical Location Map – Map Source 2010

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## APPENDIX A

### Definition of terms:

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

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

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).



## **APPENDIX B**

### Cultural significance:

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

## APPENDIX C

### **Heritage significance:**

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

## APPENDIX D

### Protection of heritage resources:

#### - Formal protection

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

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

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

#### - General protection

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials