

**HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED CLOVER HILL DEVELOPMENT,
BRONKHORSTSPRUIT DAM, GAUTENG PROVINCE**

For:

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NATIONAL CULTURAL HISTORY MUSEUM
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SUMMARY

Heritage impact assessment for the proposed Clover Hill development, Bronkhorstspuit Dam, Gauteng Province

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to develop the housing estate and its infrastructure.

Some archaeological sites occur in the area and will be negatively impacted on by any development. None of these sites are judged to be of such high significance that development would not be allowed. However, according to current legislation, mitigation measures should be applied. Therefore, based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

- The various identified sites should be mapped, photographically recorded and small test excavations should be done on each of the identified structures by a qualified archaeologist.
- The developer must undertake that once development starts, to have an archaeologist at hand as further archaeological sites might be exposed during the construction work. This should then be investigated and recorded properly and according to minimum standards acceptable by the archaeologist.

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HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED CLOVER HILL DEVELOPMENT, BRONKHORSTSPRUIT DAM, GAUTENG PROVINCE

1. THE SURVEY

The National Cultural History Museum was contracted by Strategic Environmental Focus to survey an area in which it is proposed to develop a housing estate. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area that is to be impacted by the developed.

2. TERMS OF REFERENCE

The scope of work for this study was to conduct a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This would include:

- Conducting a desk-top investigation of the area
- A site visit to the proposed development area

The objectives would be to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- 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.

3. DEFINITIONS AND ASSUMPTIONS

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

- X **Cultural resources** are all nonphysical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.
- X The **significance** of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their 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.

- X Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- X The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not be disclosed to members of the public.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are mainly dealt within two acts. These are the South Africa Heritage Resources Act (Act 25 of 1999) and the Environmental Conservation Act (Act 73 of 1989).

4.1 South African Heritage Resources Act

Archaeology, palaeontology and meteorites

In terms of Section 35(4) of this act, no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; 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.

Structures:

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

“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 other decoration or any other means.

Human remains:

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

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

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

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

Human remains that are less than 60 years old is 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 (ie where the graves are located and where they are to be relocated) before exhumation can take place.

4.2 Environmental Conservation Act

This act states that a survey and an evaluation of cultural resources should be undertaken in areas where development, which will change the face of the environment, is to be made. The impact of the development on the cultural resources should also be determined and proposals to mitigate this impact is to be formulated.

5. METHODOLOGY

5.1 Preliminary investigation

5.1.1 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 and historical sources were consulted - see the list of references below. Nothing pertaining to the archaeology of this particular area was found.

5.1.2 Data bases

The **Archaeological Data Recording Centre (ADRC)**, housed at the National Cultural History Museum, Pretoria, was consulted. The **Environmental Potential Atlas** was also consulted.

5.1.3 Other sources

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

5.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by Strategic Environmental Focus on maps. The landowner/developer assisted with the survey by indicating the borders of the proposed development area.

The area was investigated by walking across it. Special attention was given to unnatural topographical occurrences such as trenches, holes, outcrops and clusters of trees were investigated.

5.3 Documentation

All sites, objects and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual

localities were determined by means of the **Global Positioning System (GPS)**¹¹ and plotted on a map. This information was added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

6. DESCRIPTION OF THE AREA

The area that was surveyed is located on a narrow strip of land on the northern side of the Bronkhorstspuit Dam on the farm Tweefontein 541JR in the Bronkhorstspuit district of Gauteng (see Fig. 1). It is bounded on the rear (northern side) by a steep outcrop, and on the front (southern side) by a similar outcrop. The latter, however, forms a sharp drop down to the lower laying area on which the dam is located.

The geology of the area is made up of quartzite and the vegetation is classified as Moist Sandy Highveld Grassland.

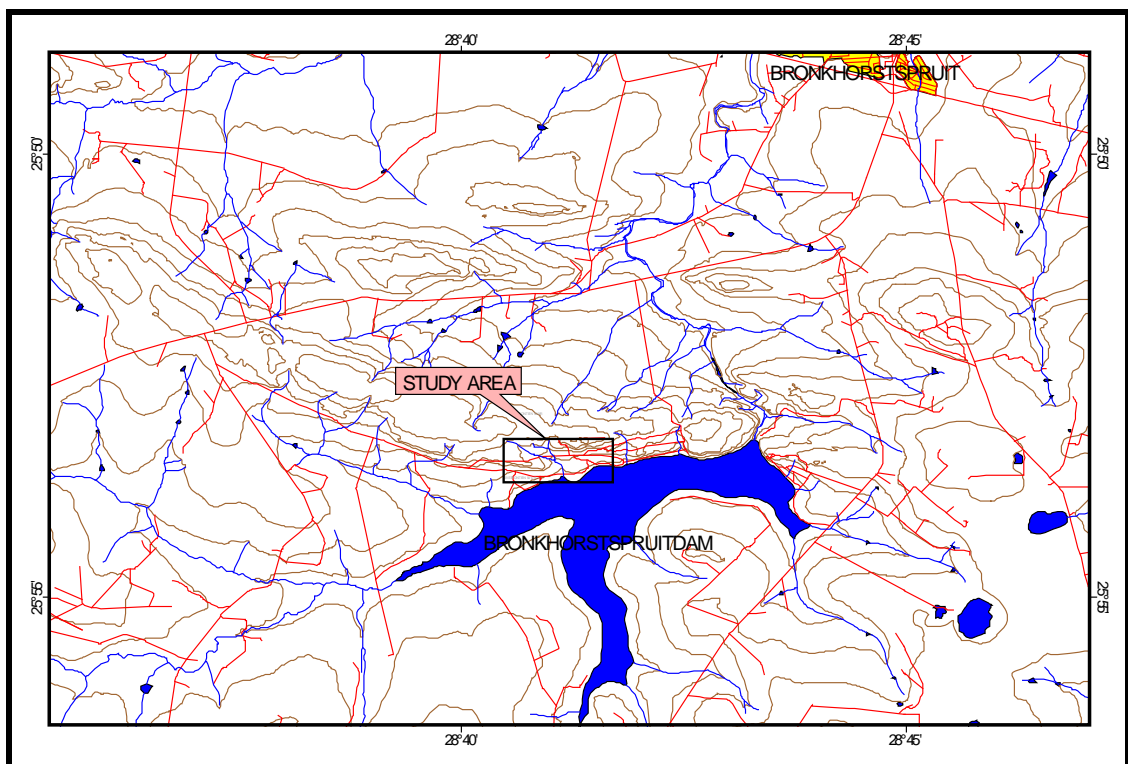


Figure 1. Location of the study area.

¹¹ According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then correlate it with reference to the physical environment before plotting it on the map.

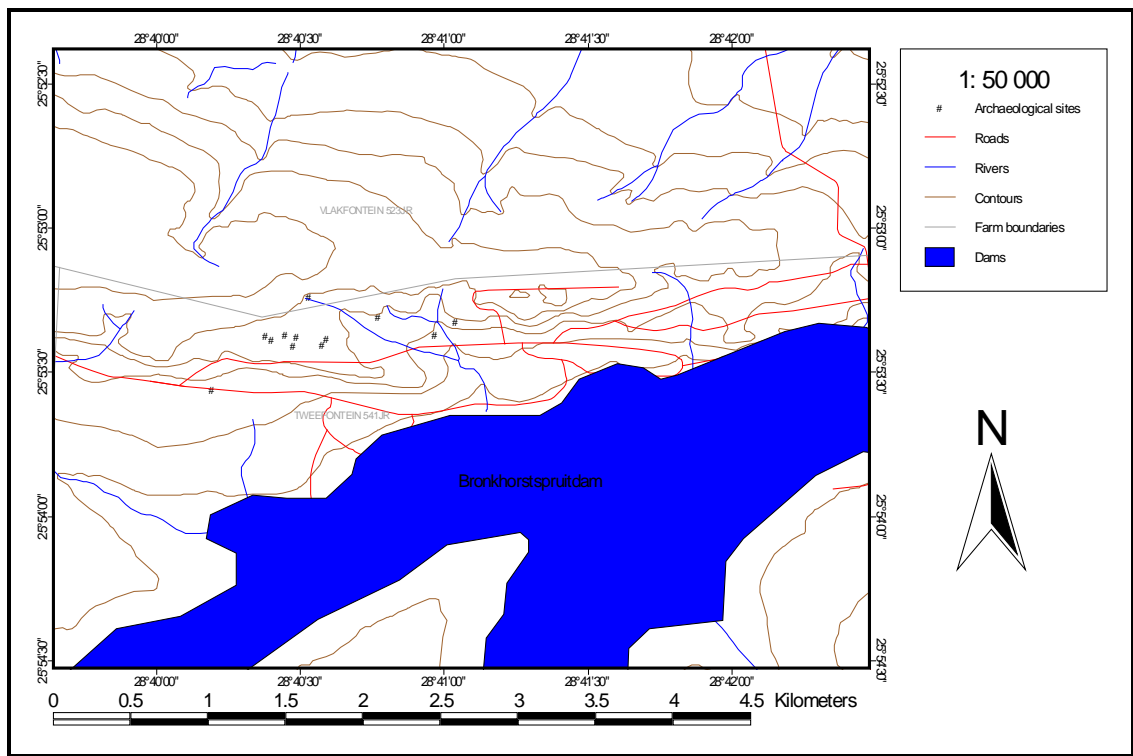


Figure 2. Location of the identified sites.

7. DISCUSSION

A number of sites were identified. The current landowner/developer, who has occupied the land for the past 20 years or more, claimed to have resettled his labourers away from the area under consideration many years ago. However, based on the layout, building techniques and associated finds, it is possible to identify at least three different phases of settlement in area.

7.1 Stone Age

No stone tools were noticed and no sites likely to be inhabited by Stone Age people occur in the area.

7.2 Iron Age

A number of sites dating to the Late Iron Age were identified (see Appendix 2; Fig. 3). These are stone walled sites, showing the typical “scalloped” layout, where each semi-circle had a different use, all linked together to form a single homestead. Large amounts of pottery occur in the middens associated with these structures, whereas other material, of more recent, origin are lacking.

There seems to be two phases involved. An older one (Fig. 3) in which the settlement is laterally more spread out, with little associated cultural material. This, in all probability is the result of the practice these communities had whereby refuse was buried in pits.

The second phase is characterized by a more complex and compact layout, with a lot of refuse found in big middens located outside the homestead.

7.3 Historical period

These structures have a square layout, are built from brick and have a lot of tin, glass and other material associated with them. Considering the landowner's statement, these are possibly not more than 60 years old (as stipulated by the National Heritage Resources Act) and therefore do not present a problem during construction.

8. RECOMMENDATIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to develop the housing estate and its infrastructure.

Some archaeological sites occur in the area and will be negatively impacted on by any development. None of these sites are judged to be of such high significance that development would not be allowed. However, according to current legislation, mitigation measures should be applied. Therefore, based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

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- The developer must undertake that once development starts, to have an archaeologist at hand as further archaeological sites might be exposed during the construction work. This should then be investigated and recorded properly and according to minimum standards acceptable by the archaeologist.

9. REFERENCES

9.1 Data bases

Archaeological Data Recording Centre, National Cultural History Museum, Pretoria.
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

9.2 Literature

Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik.

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Richardson, D. 2001. *Historic sites of South Africa*. Cape Town: Struik Publishers.

Van Riet Lowe, C. n.d. *The distribution of Prehistoric rock engravings and paintings in South Africa*. Archaeological Survey, Archaeological Series No. 7.

Van Warmelo, N.J. 1935. *A Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

Van Warmelo, N.J. 1977. *Anthropology of Southern Africa in Periodicals to 1950*. Pretoria: Government Printer.

9.3 Maps

1: 50 000 Topocadastral maps – 2528DC

10. PROJECT TEAM

J van Schalkwyk

APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES

Significance of impact:

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

APPENDIX 2: SURVEY RESULTS²

[Previous site numbers relate to other known sites on a particular ¼ degree sheet already documented in the ADRC, and does not necessarily refer to sites occurring on or close to the specific area of development.]

1. Site number: 2528DC6

Location: Tweefontein 541JR: S 25.89274; E 28.66988

Description: Informal cemetery with approximately 20 graves, most marked with stone and without names and dates. Just to the north of this, there are the remains of a number of old farm labourer homesteads

Discussion: This site falls outside the area of the proposed development

Significance of impact: Low

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

2. Site number: 2528DC7

Location: Tweefontein 541JR: S 25.88961; E 28.67299

Description: Old farm labourer homestead, square in form and built with clay bricks

Discussion: This structure is probably younger than 60 years and need not be conserved.

Significance of impact: High

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

3. Site number: 2528DC8

Location: Tweefontein 541JR: S 25.88984; E 28.67336

Description: Stone walled structure showing different elements of the homestead as “scalops”.

Discussion: This feature shows a more traditional layout as well as construction method. It is probably older than 60 years and as a result should be documented by an archaeologist before development takes place.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

4. Site number: 2528DC9

Location: Tweefontein 541JR: S 25.88957; E 28.67412

Description: Stone walled structure showing different elements of the homestead as “scalops”.

Discussion: This feature shows a more traditional layout as well as construction method. It is probably older than 60 years and as a result should be documented by an archaeologist before development takes place.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

²² See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.

5. Site number: 2528DC10

Location: Tweefontein 541JR: S 25.88967; E 28.67475

Description: Stone walled structure showing different elements of the homestead as “scallops”.

Discussion: This feature shows a more traditional layout as well as construction method. It is probably older than 60 years and as a result should be documented by an archaeologist before development takes place.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

6. Site number: 2528DC11

Location: Tweefontein 541JR: S 25.89024; E 28.67462

Description: Stone walled structure showing different elements of the homestead as “scallops”.

Discussion: This feature shows a more traditional layout as well as construction method. It is probably older than 60 years and as a result should be documented by an archaeologist before development takes place.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

7. Site number: 2528DC12

Location: Tweefontein 541JR: S 25.89013; E 28.67626

Description: Stone walled structure showing different elements of the homestead as “scallops”.

Discussion: This feature shows a more traditional layout as well as construction method. It is probably older than 60 years and as a result should be documented by an archaeologist before development takes place.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

8. Site number: 2528DC13

Location: Tweefontein 541JR: S 25.88980; E 28.67649

Description: Old farm labourer homestead, square in form and built with clay bricks

Discussion: This structure is probably younger than 60 years and need not be conserved.

Significance of impact: High

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

9. Site number: 2528DC14

Location: Vlakfontein 523JR: S 25.88735; E 28.67548

Description: Stone walled site, probably even older than the other category of stone walled sites in the area.

Discussion: Outside area of development

Significance of impact: Low

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

10. Site number: 2528DC15

Location: Tweefontein 541JR: S 25.88852; E 28.67952

Description: Stone walled site, very typical of Late Iron Age sites, showing different features as “scallops”.

Discussion: This is possibly more typical than the other sites in the area.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

11. Site number: 2528DC16

Location: Tweefontein 541JR: S 25.88958; E 28.68281

Description: Short sections of stone walling, very rudimentary.

Discussion: It is difficult to establish the significance of these walls, and they should be interpreted within the context of the larger area.

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

APPENDIX 3: GLOSSARY AND ABBREVIATIONS

This section is included to give the reader some necessary background. It must be kept in mind, however, that these dates are all relative and serve only to give a very broad framework for interpretation.

STONE AGE

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

IRON AGE

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

HISTORICAL PERIOD

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

ADRC - Archaeological Data Recording Centre

core - a piece of stone from which flakes were removed to be used or made into tools

SAHRA - South African Heritage Resources Agency



Figure 3. Typical Late Iron Age stone walling in the area.



Figure 4. Pottery eroding out in one of the middens associated with one of the hoemsteads.