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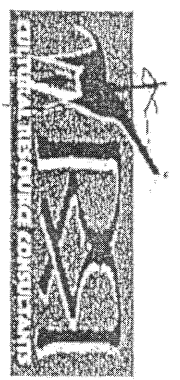
PHASE 1
ARCHAEOLOGICAL IMPACT
ASSESSMENT

PROPOSED TOWNSHIP DEVELOPMENT
LOTUS GARDENS, PRETORIA
GAUTENG

PREPARED FOR:
BOHLWEKI ENVIRONMENTAL (PT) LTD
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February 2002

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SYNOPSIS

Only two sites with significant heritage resource were located on the demarcated terrain. One of them, Site 4, warrants protection status, whereas the other, Site 5, requires mitigation measures.

INTRODUCTION

The **Project Proposal** constitutes an activity that is listed in terms of the Environmental Conservation Act (Act No. 73 of 1989), for which an Environmental Impact Assessment is required to satisfy the requirements of the List of Activities and Regulation for EIA's – Government Gazette of 5 September 1997 - provided for in terms of sections 21, 22 and 26. In terms of the above mentioned Act, and the National Heritage Resources Act (Act No. 25 of 1999, Section 38), a Phase 1 Archaeological Impact Assessment (scoping) was undertaken.

AIM

The aim was to undertake a *Phase 1 Archaeological Impact Assessment* of the proposed township development at Lotus Gardens, in order to assess the impact of the proposed project on archaeological and historical sites and features; and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

METHOD

A thorough survey of the demarcated area was undertaken on foot. Standard archaeological practises for observation were followed. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion.

Locations of archaeological material were recorded by means of a GPS (Garmin 12). Archaeological material and the general conditions on the terrain were photographed with a KODAK DC120 Digital camera.

LOCATION AND DISCRPTION

Refer to map, South Africa 1:50 000 2528 CA & CC. The proposed development is located west of Pretoria, north the Atridgeville Township on the N4 Toll Road.

Topographically the demarcated area has a ridge running roughly east-west parallel to the Magalies Berg, and the dominant veld type is grass veld with an Acacia karroo corridor on a area of turf soil stretching in a north-south direction, approximately in the centre of the terrain below the ridge.

ARCHAEOLOGICAL AND HISTORICAL REMAINS

A limited number of sites and feature were detected on the terrain, ranging from Late Iron Age stone walled sites to modern stone heaps and a single Stone Age find. All of the features occur on the ridge mentioned above.

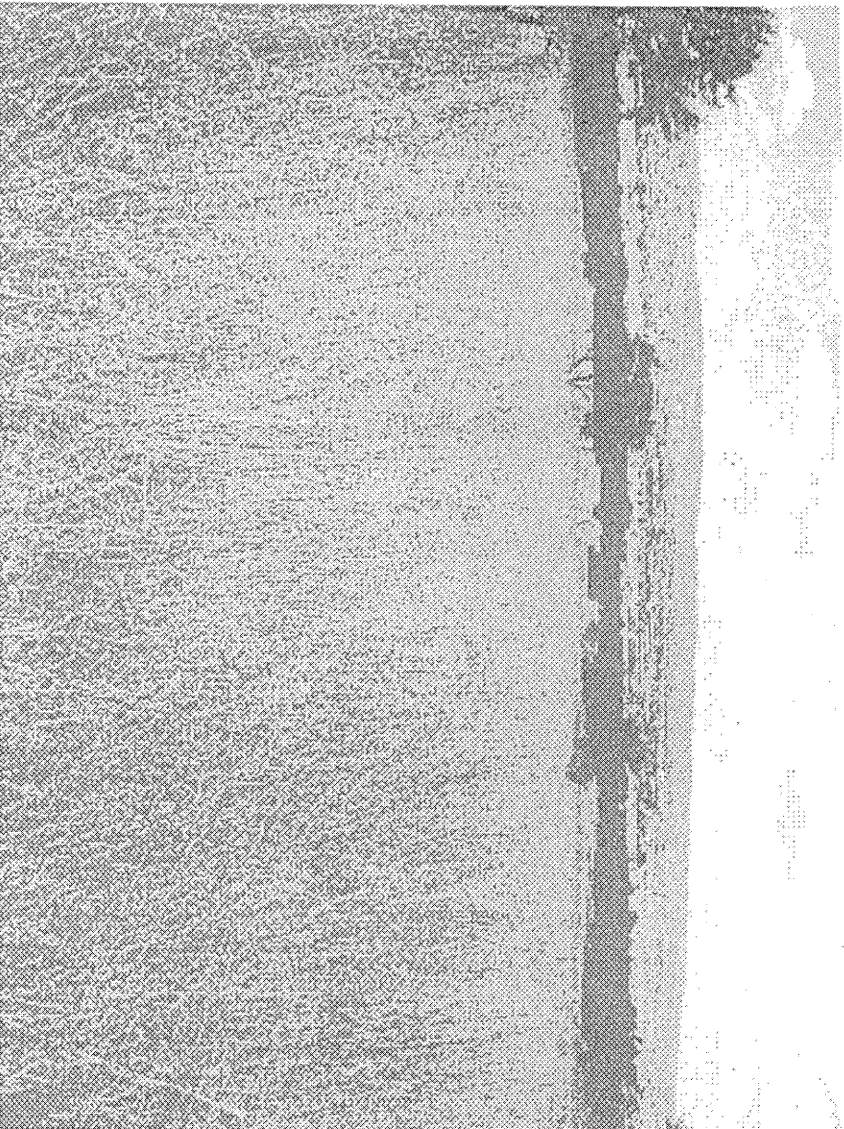


Figure 1. View of terrain with Alteridgeville in background. Note the grassland and *Acacia karroo* patch

SITE 1: *Co-ordinates:* S25°44'50.5" E28°04'10.8"

This area had been fenced off some time in the past and is of historical origin. No cultural remains were located here, but dense vegetation grows at this spot. It is presumed that this feature may be a dried up fountain that was protected by the fence.

Significance: None

SITE 2: *Co-ordinates:* S25°45'09.1" E28°03'55.3"

This is the location of an Acheulian stone tool. Road grading activities had removed the topsoil here, and the stone tool itself had been broken. No other Stone Age material was found here.

Significance: None

SITE 3: *Co-ordinates:* S25°44'41.2" E28°04'07.5"

This is the location of a stone heap. Many such heaps occur on the terrain in the vicinity of the ridge, although most are smaller. No explanation can be given other than the clearing of the veld of stones and piling them in such heaps, while the smaller ones could also have been used as beacons of some sort.

Significance: None

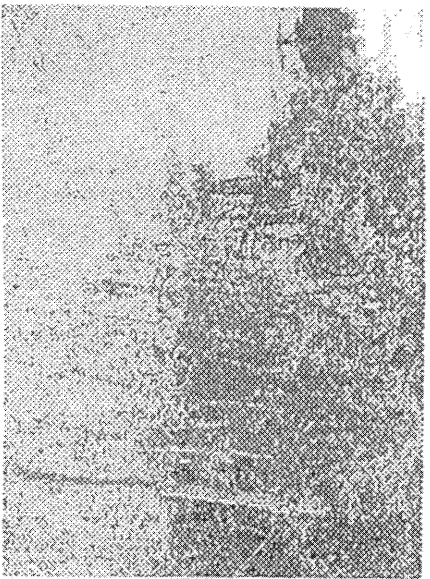


Figure 2. Fenced-off area -- probable fountain



Figure 3. Stone pile -- probable field clearing

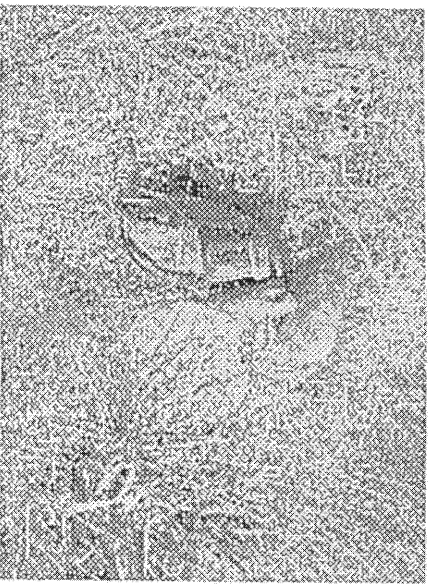


Figure 4. Stone pile -- probably a beacon



Figure 5. Stone piles-- probably markers or beacons

SITE 4: Co-ordinates: S25°44'41.4" E28°04'28.7"

This is the location of a stone walled archaeological site. It is made up of the typical circular stone enclosures and has a stone platform next to one of the enclosures. Further investigation is required to associate the site with a specific *Moloko* (Sotho-Tswana) Phase and facies, but the nature of the stone walling suggests that it may be a Group I settlement of a single homestead. No diagnostic pottery remains were found on the surface, but a preliminary conclusion is that the site is probably related to the "*Uitkomst*" Sotho / Tswana tradition dating from the 16th to 17th centuries AD.

Significance: High



Figure 6 & 7. Site 4 - stone walls



SITE 5: Co-ordinates: S25°44'36.6" E28°04'48.4"

This area has been cordoned off and is currently being used for keeping beehives by someone in the local community. It consists of a bush thicket, which covers archaeological stone wall remains. The extent of the archaeological remains could not be determined, but the wall remains were robbed and damaged extensively. A number of non-diagnostic pottery sherds were found here. This site probably relates to Site 4 and is probably of the same "Uitkomst" tradition.

Significance: Medium

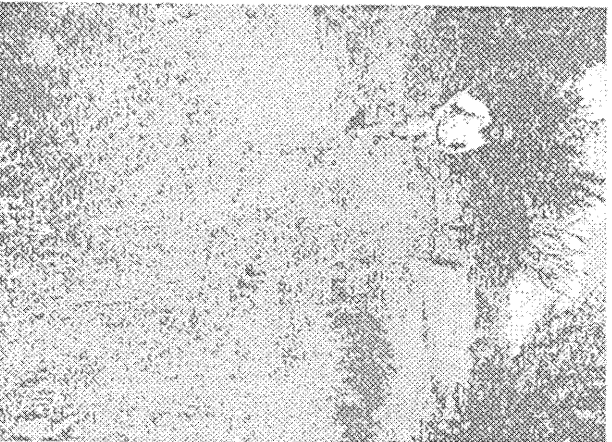


Figure 8. Site 5 - view adjacent to thicket



Figure 9. Site 5 - stone wall remains

EVALUATION

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweighs the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be *assessed and mitigated* in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

Only two sites recorded here are of significance and require cultural resources management measures.

Site 4 is evaluated as of high significance giving it protection status. This heritage resource should be protected and maintained as a community heritage resource.

Site 5 is of medium significance and does not warrant protection status, but mitigation for a phase 2 archaeological impact assessment should be secured before it is destroyed by the proposed development. A phase 2 archaeological assessment is essential in order to extract sufficient and adequate data from this site.

RECOMMENDATIONS

In view of the above it is recommended that:

1. Site 4 be protected and developed as a cultural resource for the community.
2. A phase 2 archaeological assessment be mitigated for Site 5.

Notwithstanding the above, note must however be taken of Sections 35 & 36 of the National Heritage Resources Act, of which an extract is given below

Extracts from:
The National Heritage Resources Act (Act No. 25 of 1999).
Archaeology, palaeontology and meteorites

Subsection 35. (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 or museum, which must immediately notify such heritage resources authority.

Subsection 35. (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.

Burial grounds and graves

Subsection 36. (6) Subject to the provision of any law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority-

- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
- (b) If such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

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- Huffman, NT. 2000. *Regionality in the Iron Age: The Case of the Sotho-Tswana*. *Unpublished paper*. Conference of the Southern African Association of Archaeologists. University of the Witwatersrand.
- Meyer, A. 1994. *Naworsingsmetodiek: Inligtingsformate vir Argeologiese Veldwerk*. Dept Antropologie en Argeologie, U.P

FRANS ROODT (BA Hons, MA Archaeology, UP)
For: R & R Cultural Resource Consultants)

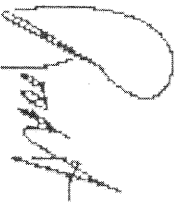
**SCOPING ASSESSMENT OF THE FARM HOUSE AT
LOTUS GARDENS**
Annexure to the Phase 1 Archaeological Report

The existing farm house appears to be older than 60 years, as it reflects architectural and culture historical characteristics and features of that era. Section 34 of the National Heritage Resources Act (1999) provides for the protection of any structure or part of a structure older than 60 years (see photograph on page 2).

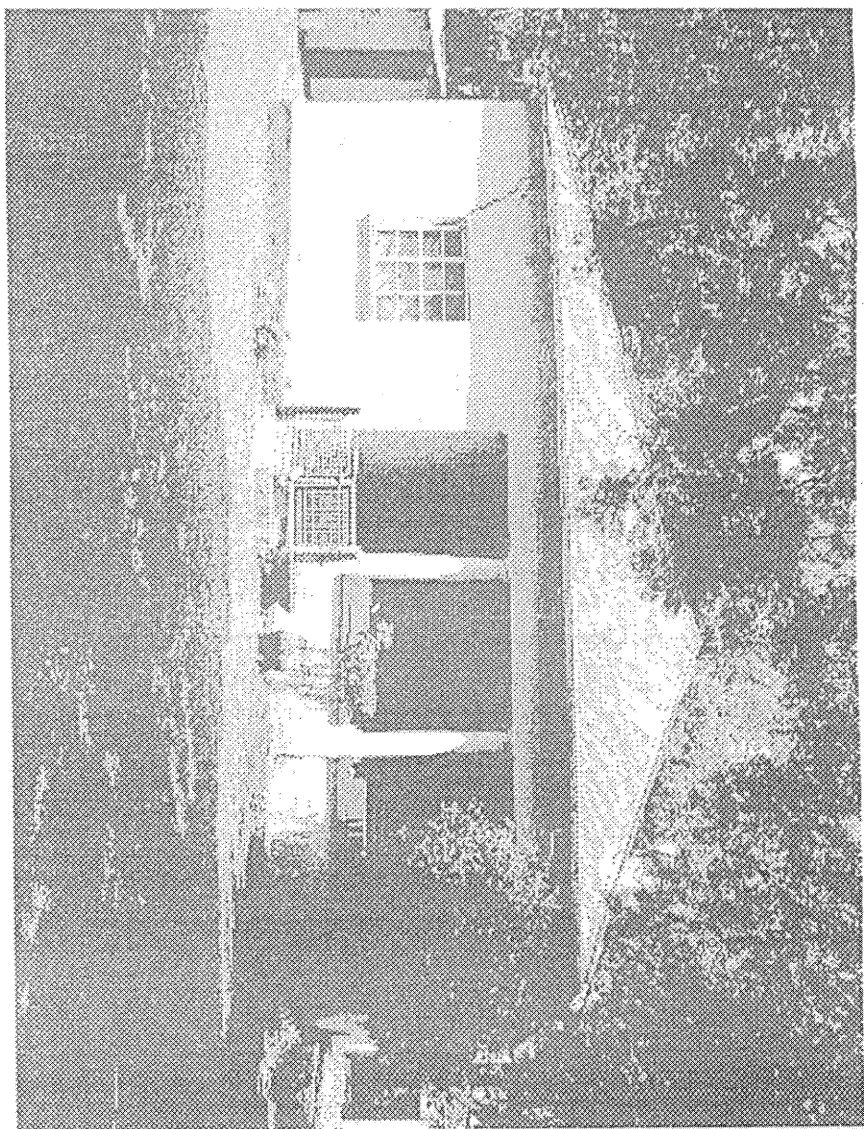
Should it be the intention to demolish or alter the house as part of the proposed development, a permit must be obtained from the South African Heritage Resources Agency (SAHRA) for such demolition or alteration. SAHRA will most likely require a full heritage impact assessment of the house in terms of Section 38 of the Act before the issuing of such a permit will be considered.

The Provincial office of SAHRA in Gauteng can be contacted at telephone number (011) 482 8365, or write to the Provincial Manager, SAHRA, P.O. Box 87552, HOUGHTON, 2041, for further information. Dr Johan Bruwer is the Provincial Manager.

For your consideration.



FRANS ROODT (BA Hons, MA Archaeology, Post Grad Dipl. in Museology, UP)
For: R & R Cultural Resource Consultants



APPENDIX 8

PRELIMINARY GEOTECHNICAL REPORT

- The southern half of the site is characterised by highly to completely weathered Andesitic Lava formations.
- No groundwater was encountered at any of the test pits.
- No instabilities were encountered at any of the test pit excavations.
- The weathered Andesitic Lava formations are expected to be Low/Medium and Medium/High in potential expansiveness in the northern and southern portions of the site respectively.

4. PRELIMINARY SITE CLASS DESIGNATION

The site class designations given here are solely based on visual assessment during the field investigation as none of the laboratory test results have been received at the time of writing of this document. Site classes are according to 'Code of Practice - Foundations and Superstructures for Single Storey Residential Buildings of Masonry Construction' - Joint Structural Division 1995 - hereafter called 'Code of Practice'.

Northern portion of site - Site Class H to H1.

Southern portion of site - Site Class H1 to H2.

From 'Code of Practice' Table 2.1:

SITE CLASS	CHARACTER OF FOUNDING MATERIAL	EXPECTED RANGE OF TOTAL SOIL MOVEMENT	ASSUMED DIFFERENTIAL MOVEMENT (% OF TOTAL)
H	Expansive	< 7,5mm	50%
H1	Expansive	7,5 - 15,0mm	50%
H2	Expansive	15 - 30 mm	50%

5. PROPOSED FOUNDATION SYSTEMS

From 'Code of Practice' Table 4.1 for the site classes given above:

SITE CLASS	CONSTRUCTION TYPE	FOUNDATION DESIGN AND BUILDING PROCEDURE
H	Normal	<ul style="list-style-type: none"> • Normal construction (strip footings or slab on the ground foundations) • Site drainage and service/plumbing precautions.
H1	Modified Normal	<ul style="list-style-type: none"> • Lightly reinforced strip footings • Articulation joints at all internal/external doors and openings. • Light reinforcement in masonry. • Site drainage and plumbing /service precautions.
	Soil raft	<ul style="list-style-type: none"> • Remove all or part of expansive horizon to 1,0m beyond perimeter of structure and replace with inert backfill compacted to 93% Mod. AASHTO at -1% to +2% of OMC. • Normal construction with lightly reinforced strip footings and light reinforcement in masonry if residual movements are < 7,5mm, of construction type appropriate to residual movements. • Site drainage and plumbing/service precautions.

Our reference: 1940/5844

15 March 2002

BIGEN AFRICA
P.O. Box 40193
ARCADIA
0007

For the attention of: Willem Ehlers / Ian Bettesworth

LOTUS GARDENS GEOTECHNICAL INVESTIGATION

Dear Sirs

1. INTRODUCTION

At the request of Bigen Africa, this office undertook a geotechnical investigation of the proposed extensions to the east of the existing Citron Drive, Lotus Gardens, Pretoria. The investigation comprised the excavation of backactor test pits, profiling of test pits and collection of samples for laboratory testing. The investigation was undertaken during the period 19 to 22 February 2002. A total of 61 test pits were excavated and profiled according to a method advocated by Jennings et al. 1973. As no laboratory test results have as yet been received, this document is based solely on visual observations made during the field investigation and may alter after receiving the laboratory test results.

2. THE STUDY AREA - GEOLOGICAL

The study area has a Weinert's Climatic N-value of around 2,4 indicating deeply weathered rock and pronounced decomposition. Smectite minerals, notably montmorillonite, are the principal products of the decomposition of basic crystalline rocks, except in the upper half metre or so of the residual soil, where smectite minerals have changed into kaolinite. (Brink 1983).

According to the geological maps consulted, the study area is largely underlain by 'Andesitic Lava locally with interbedded Agglomerate, Shale and Tuff' of the Daspoort Stage, Pretoria Series, Transvaal System. The southern extremities of the site (just to the north of the N4 highway), is underlain by thin bands of WSW / ENE trending Shale and Quartzite formations.

No faults, dykes or other prominent geological features are indicated in the study area.

3. GEOTECHNICAL EVALUATION

Visual assessments during the field investigation suggest the following:

- The total area is underlain by Andesitic Lava in various stages of weathering.
- Rock outcrop and sub outcrop of Andesitic Lava and boulders are encountered in the northern half of the site.

Stiffened or cellular raft	<ul style="list-style-type: none"> • Stiffened or cellular raft with articulation joints or solid lightly reinforced masonry. • Site drainage and plumbing precautions. • Combination of reinforced brickwork/blockwork and full movement joints. • Suspended floors or fabric reinforced ground slabs acting independently from structure. • Site drainage and plumbing /service precautions.
Split construction	As for H1.
Soil raft	

6. AREA TO THE WEST OF CITRON DRIVE

At the time of this writing, a field investigation of the demarcated areas to the west of Citron Drive has not yet been undertaken. However, according to the geological maps consulted and a preliminary walk-over survey of this area, we are of the opinion that geotechnical/geological conditions will largely coincide with the assessments, conclusions and recommendations made in this report.

Yours faithfully

Pieter Oosthuizen Pr. Eng
for ARQ Consulting Engineers (Pty) Ltd.

ENVIRONMENTAL SCOPING REPORT FOR THE PROPOSED
LOTUS GARDENS FOCUS AREA HOUSING PROJECT

Road for Watercure
9/2/258/5/17
F118 N...

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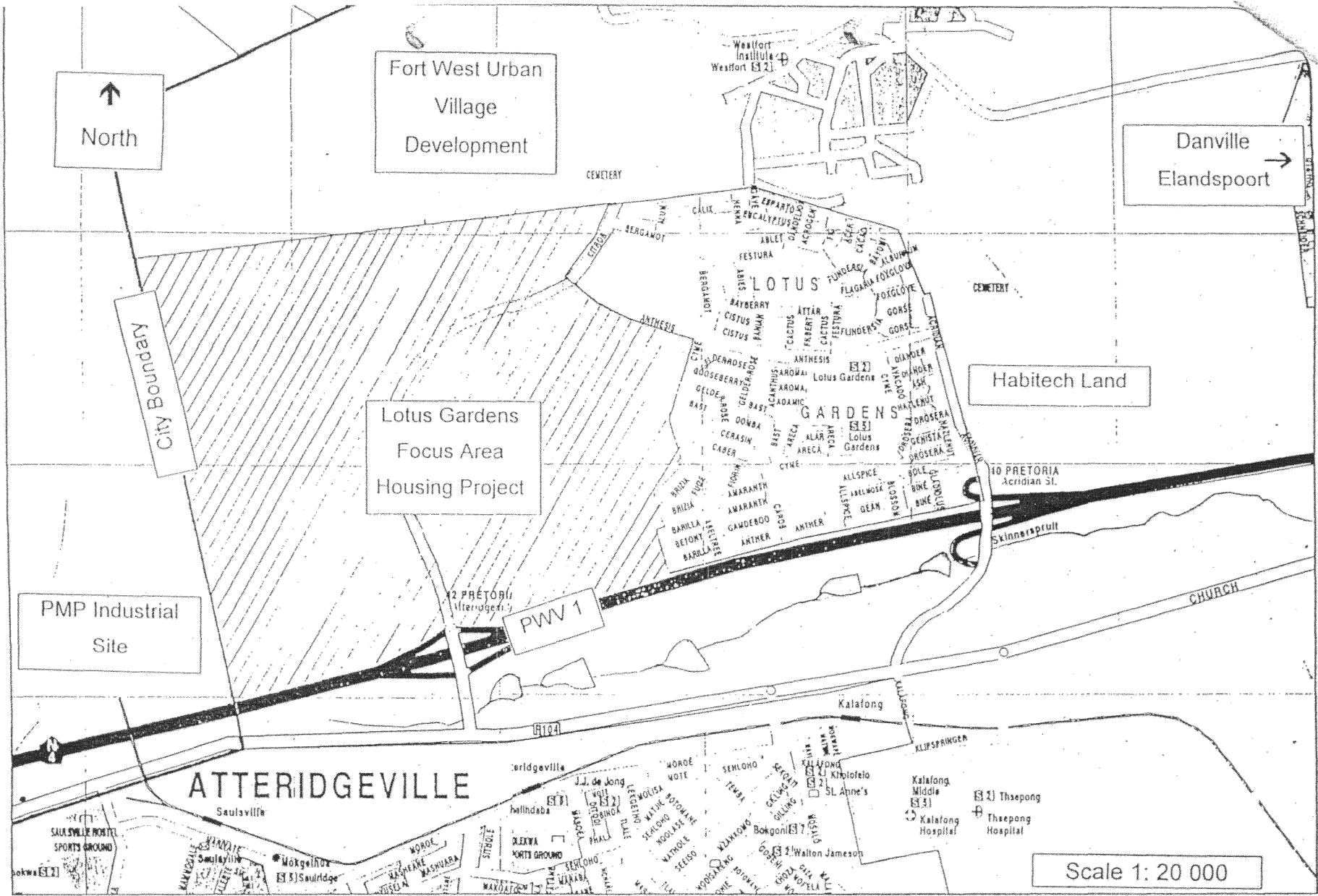


Figure 1.1 Locality Map for the Lotus Gardens Focus Area Housing Project

4.2.3.1. Evaluation

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweighs the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be *assessed and mitigated* in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

Only two sites recorded here are of significance and require cultural resources management measures.

Site 4 is evaluated as of high significance giving it protection status. This heritage resource should be protected and maintained as a community heritage resource.

Site 5 is of medium significance and does not warrant protection status, but mitigation for a phase 2 archaeological impact assessment should be secured before it is destroyed by the proposed development. A phase 2 archaeological assessment is essential in order to extract sufficient and adequate data from this site.

The "Ellenwood" farmhouse and associated buildings are located in the lower, southeastern part of the study area. According to all indications, this building is older than 60 years. Should it be the intention to demolish or alter the house as part of the proposed development, a permit must be obtained from the South African Heritage Resources Agency (SAHRA) for such demolition or alteration. SAHRA will most likely require a full heritage impact assessment of the house in terms of Section 38 of the Act before the issuing of such a permit will be considered.

OUR REF: 9/2/258/5/17

YOUR REF:

ENQUIRIES: Ms J Kitto

DATE: 12 December 2003

Bohlweki Environmental (Pty) Ltd
PO Box 11784
Vorna Valley
MIDRAND
1686

BY FAX: (011) 805-0226

Attention: Ashley Strong

Dear Ms Strong

ENVIRONMENTAL SCOPING REPORT (INCLUDING HERITAGE IMPACT ASSESSMENT): LOTUS GARDENS X2 DEVELOPMENT, PRETORIA WEST, GAUTENG

1. The above report document, dated April 2002, regarding the above, refer. Please accept our sincere apologies for the inordinate delay in responding.
2. It is noted that a Heritage Impact Assessment (HIA) was undertaken for the proposed study and that the findings included the following:
 - 2.1 two sites of significant archaeological resources:
 - site 4, a stone-walled enclosure dating to probably the 16th or 17th century AD;
 - site 5, an area of stone-wall remains which may be related to site 4. The remains have been robbed and damaged extensively.
 - 2.2 three sites of limited to no significance:
 - site 1, a fenced off area with dense vegetation, possibly a now dried-up fountain;
 - site 2, an isolated Acheulian stone tool that had been broken;
 - site 3, example of various stone heaps, possibly beacons or the result of veld clearing.

*The report address 2 sites on site 1
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The report address 2 sites on site 1
The report address 2 sites on site 1*

*Please refer this report to the
by a an archaeological
will include a site plan
of the South African Heritage Resources
Assessment*

2.3 an existing farmhouse which appears to be older than 60 years (and thus protected in the National Heritage Resources Act, 25 of 1999, from alteration or demolition without a permit).

3. It is further noted that the component of the Environmental Scoping Report titled Identification of Impacts and Recommendations, recommends the following (summarised):

3.1 stone walled structures:

- site 4 (being evaluated as of high significance) should be protected and conserved in total. In addition, it should be developed as an open air, cultural/historical heritage museum for the local community. During construction the site should be fenced off properly to prevent any damage.
- site 5, (being evaluated as of medium significance) should be mitigated by a phase 2 archaeological assessment but can be destroyed for the proposed development.

3.2 historical farm building and structures:

- as the farm building and various associated structures are likely to be older than 60 years, and if there is any intention to alter or demolish them, a permit must be obtained from the South African Heritage Resources Agency. SAHRA will most likely require a full heritage impact assessment of the house in terms of section 34 of the National Heritage Resources Act.

4. SAHRA further notes that a Record of Decision (ROD) was issued in October 2002 by the Gauteng Department of Agriculture, Conservation, Environment and Land Affairs (GDACEL) with respect to the proposed development which contains various conditions. The conditions relevant to SAHRA's comment are summarised below:

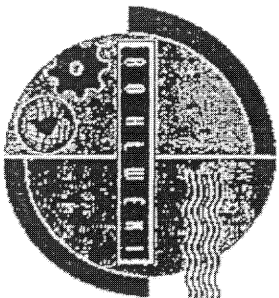
- the identified heritage site must be fenced off prior to any construction activities taking place on the application site. No construction related activities would be allowed inside these fenced off areas. Permanent fencing must be erected prior to the adjacent properties being occupied.
- Maintenance and further rehabilitation/development of the identified heritage sites ("kraal" structure and farm buildings) will be the responsibility of the City of Tshwane Metropolitan Municipality ... The sites must be protected from all impacts and maintenance measures must included all recommendations and requirements of SAHRA.

5. After consideration of the above information, SAHRA's comment is as follows:

The recommendations as contained in the Environmental Scoping Report, together with the conditions regarding the identified heritage sites in the ROD, are supported by SAHRA, with the following provisos:

5.1 stone wall structures:

- an application for a permit will be required for any work regarding the protection and conservation and development of site 4;
- an application for a permit will also be required for the proposed mitigation of site 5, which will involve excavation, and a permit application for the proposed destruction of this site will also be required.



S.A.H.R.A
17 FEB 2004
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From: Ms Ashlea Strong
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Fax : 011 466 3849
Date : 17 February 2004

No. of pages (including cover page): 1
Subject: Comment on Archaeologist Report for Lotus Gardens ext 2

FAX COVER SHEET

Dear Ms Kitto

I refer to the Lotus Gardens ext 2 Housing project and the archaeology study for this development.

We are still in need of a letter of comment from SAHRA regarding the archaeology study for this project. I am aware that you are very busy, but I kindly request you to urgently advise me as to when this letter can be expected.

Thank you for your co-operation and I look forward to hearing from you soon. Please do not hesitate to contact me if you have any queries

Kind Regards

Ashlea Strong
Junior Environmental Scientist