

ENVIRONMENTAL IMPACT ASSESSMENT

for the proposed

Ladysmith Mixed Use Township Development,
Emnambithi/Ladysmith Local Municipality,
Uthukela District,
KwaZulu-Natal, South Africa

Heritage Impact Assessment Specialist Report

Prepared for

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On behalf of

EMNAMBITHI/LADYSMITH MUNICIPALITY

Date 5/12/2013

LADYSMITH MIXED USE TOWNSHIP DEVELOPMENT

KZNDAEA REF. NO. ???????????

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DECLARATION OF INDEPENDENCE

I, Elizabeth Jane Wahl as authorised representative of eThembeni Cultural Heritage hereby confirm my independence as a specialist and declare that neither I nor eThembeni Cultural Heritage have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which eThembeni Cultural Heritage was appointed as heritage impact specialist in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for work performed, specifically in connection with the heritage impact assessment for the Ladysmith Mixed Use Township Development Environmental Impact Assessment. I further declare that I am confident in the results of the studies undertaken and conclusions drawn as a result of it – as is described in my attached report.

Signed



Date 5 December 2013

EXECUTIVE SUMMARY

Introduction

eThembeni Cultural Heritage was appointed by Bapela Cave Klapwijk to undertake a Phase 1 Heritage Impact Assessment of the proposed Ladysmith Mixed Use Township Development in KwaZulu-Natal, as required by the National Environmental Management Act 107 of 1998 as amended, in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 as amended.

Observations

The only heritage resource present within the proposed development area is the marker of the place where Lieutenant-Colonel WH Dick Cunyngham VC, a popular commanding officer of 2nd Battalion, The Gordon Highlanders, was killed on 6 January 1900 during the South African War. A memorial cairn was erected on the spot where he was shot, which has high heritage significance at all levels for its historical significance.

Assessment of impacts

Mitigation measures	Nature	Extent	Duration	Intensity	Irreplaceable resource loss	Consequence	Probability	Significance of impact
Unmanaged	Negative	Low	High	High	High	High	Medium-High	High
Managed	Neutral-Positive	Low	High	Low	Low	Low	Medium	Low

Recommended mitigation measures

The memorial cairn may not be altered in any way without a permit from Amafa aKwaZulu-Natali, the Provincial Heritage Resources Agency.

We recommend that the memorial is incorporated into the development in an appropriate manner, subject to the layout of the development in the immediate vicinity of the memorial being approved by Amafa prior to the start of any development activities. It is imperative that public access to the memorial is retained without undue restrictions, including adequate provision for parking of tour buses.

Recommended monitoring

None at present, although Amafa may require monitoring of the heritage resource during the construction phase of the proposed development.

Conclusion

This report has been submitted to Amafa in fulfilment of the requirements of the NHRA. Ms Bernadet Pawandiwa may be contacted at Amafa's Pietermaritzburg office (telephone 033 3946 543) to ascertain the progress of the report review. If permission is granted for development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and follow the protocol in Section 10 should any heritage resources be discovered during the course of development activities.

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1 INTRODUCTION

eThembeni Cultural Heritage was appointed by Bapela Cave Klapwijk to undertake a Phase 1 Heritage Impact Assessment of the proposed Ladysmith Mixed Use Township Development in KwaZulu-Natal, as required by the National Environmental Management Act 107 of 1998 as amended (NEMA), in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 as amended (NHRA) (refer to Appendix A).

South Africa's heritage resources are both rich and widely diverse, encompassing sites from all periods of human history. Resources may be tangible, such as buildings and archaeological artefacts, or intangible, such as landscapes and living heritage. Their significance is based upon their aesthetic, architectural, historical, scientific, social, spiritual, linguistic, economic or technological values; their representation of a particular time period; their rarity; and their sphere of influence.

The integrity and significance of heritage resources can be jeopardized by natural processes (e.g. erosion) and human activities (e.g. development). In the case of human activities, a range of legislation exists to ensure the timeous identification and effective management of heritage resources for present and future generations.

This report represents a comprehensive Phase 1 HIA, excluding a specialist palaeontological assessment. The SAHRIS database Palaeontological Sensitivity Map indicates that the site is rated partly orange/yellow (high sensitivity), requiring a desktop study and probably fieldwork thereafter; and partly green (moderate sensitivity), requiring a desktop study. However, Amafa aKwaZulu-Natali (the Provincial Heritage Resources Agency) has indicated that this recommendation depends on the nature of the development and it is the responsibility of the heritage practitioner to assess the likelihood of impacts on palaeontological remains (J van Vuuren pers. comm.). We believe that the proposed development is unlikely to disturb such remains, since construction activities are likely to be restricted to deposits overlying potentially fossiliferous strata.

2 TERMS OF REFERENCE

A Phase 1 HIA must address the following key aspects:

- the identification and mapping of all heritage resources in the area affected;
- an assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
- an assessment of the impact of the development on heritage resources;
- an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

- if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- plans for mitigation of any adverse effects during and after completion of the proposed development.

Additional information requested by the client included the following:

- Details of the person who prepared the report; and the expertise of that person to carry out the specialist study or specialised process.
- A declaration that the person and company is independent.
- An introduction that presents a brief background to the study and an appreciation of the requirements stated in the specific terms of reference for the study.
- Details of the approach to the study, where activities performed and methods used are presented.
- A description of any assumptions made and any uncertainties or gaps in knowledge.
- A list and brief description of the key laws, policies, guidelines and planning documents that pertain to that particular specialist field and an explanation of the relevant implications and requirements for the project and/or project proponent.
- A description of the affected environment and the study area to provide a context to the study.
- Descriptions of proposed actions and alternatives of development and operation of the project that could affect the prevailing environment, and the risks that these actions and alternatives present.
- A description of the impacts of actions and alternatives, defined according to the specified criteria (Refer to Appendix C).
- A description of any consultation process that was undertaken during the course of carrying out the study.
- A summary and copies of any comments received during any consultation process.

3 PROJECT DESCRIPTION¹

The Emnambithi/Ladysmith Local Municipality wishes to establish a mixed use township development on a property located in Ladysmith in KwaZulu-Natal. The project will cater for a mixed use context that will comprise commercial, offices, retail, health facilities, medium to high density residential and ancillary uses.

The site is located on prime land that has become a focal point for development as it is located at the entrance of the town along a major provincial road. The project will tie in with the proposed aerodrome development to be located to the south, south-east and south-west of the project. The proposed aerodrome development consists of residential, light industrial and hospitality uses.

4 PROJECT LOCATION

The proposed project is situated at the southern entrance to the town of Ladysmith and the location details are summarized in Table 1.

Table 1 Location of the proposed development.

Local Municipality	Emnambithi–Ladysmith Local Municipality (KZN232)
District Municipality	UThukela District (DC23)
Surveyor General 1:50 000 map sheet	2829DB Ladysmith
Co-ordinates	28° 34' 12.6"S 29° 45' 58.4"E (centre)
Property description	Remainder of Erf 1 Ladysmith
Extent	61ha

Figures 1-4 illustrate the regional and local contexts of the proposed development and its layout.

The property is surrounded by the residential suburbs of Van Riebeeck Park, Rose Park, Acaciaville and the Ladysmith Central Business District. The site is bordered by the Klip River to the north, the N11 national road to the west, a proposed residential development to the south and derelict vacant land characterised by steep topography to the east. Access to the proposed development will probably be from the N11 and a current municipal road.

¹ Information provided by the client.

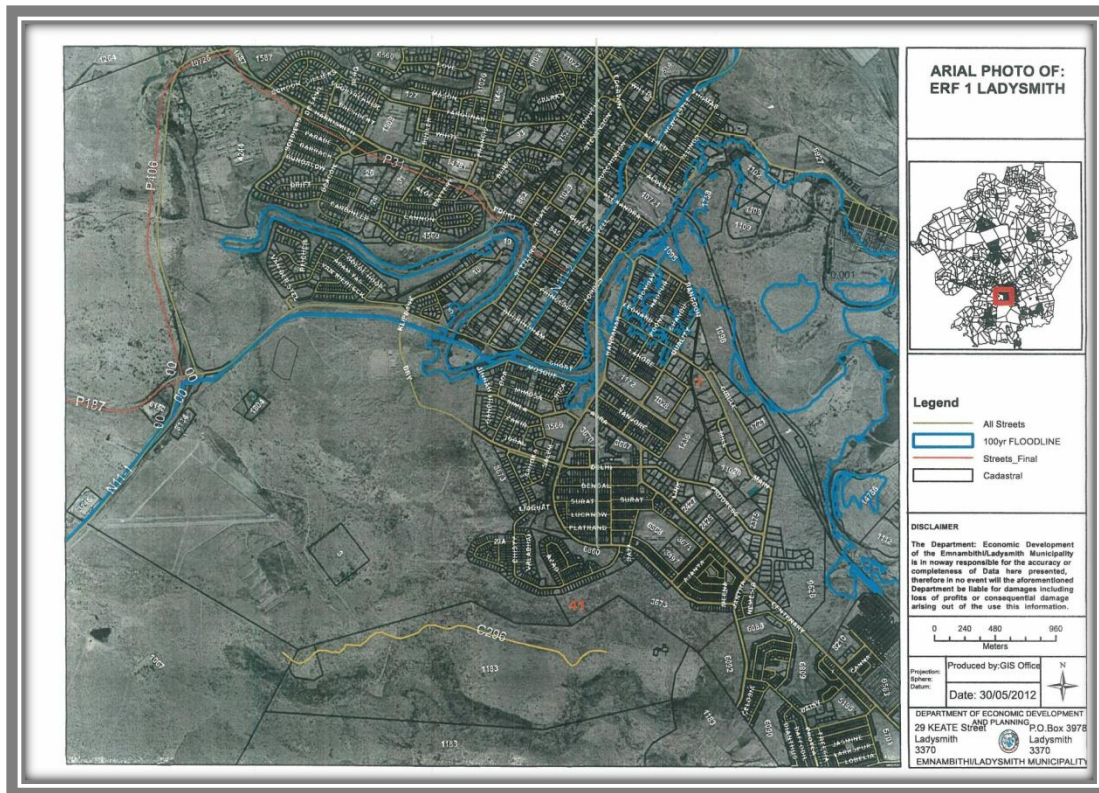


Figure 1 Aerial view of the proposed development site (source: Bapela Cave Klapwijk).

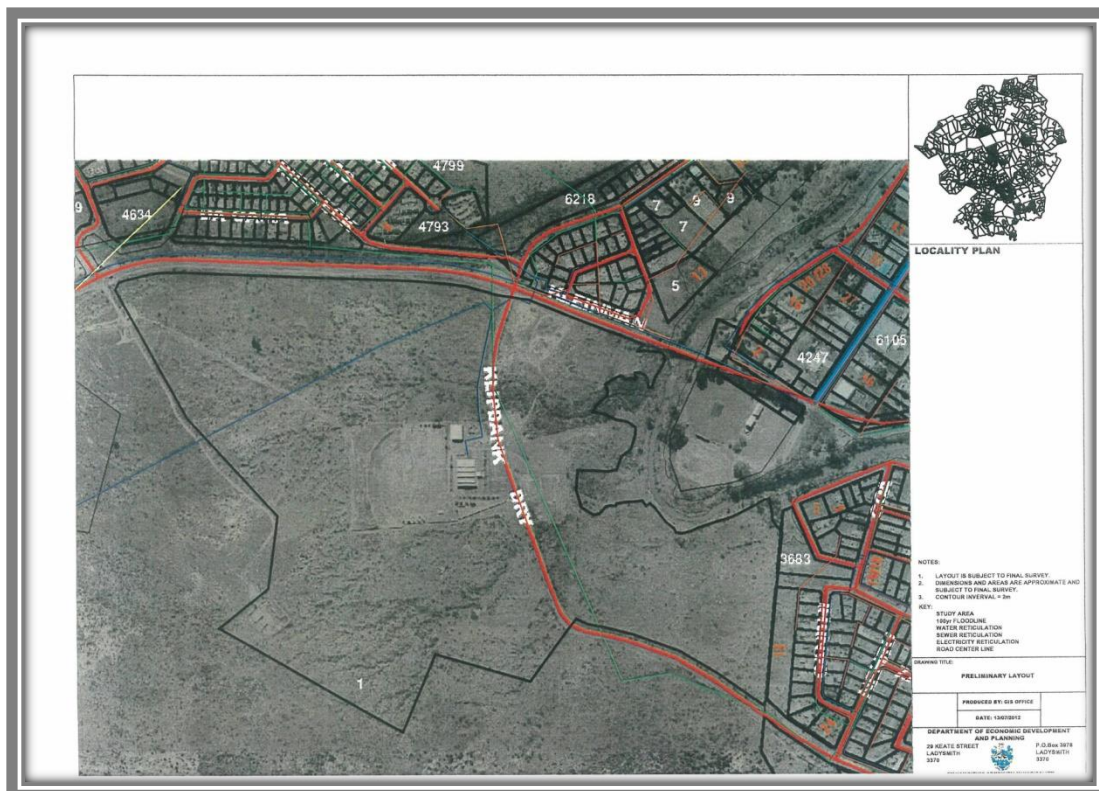


Figure 2 Boundaries of the proposed development site (source: Bapela Cave Klapwijk).

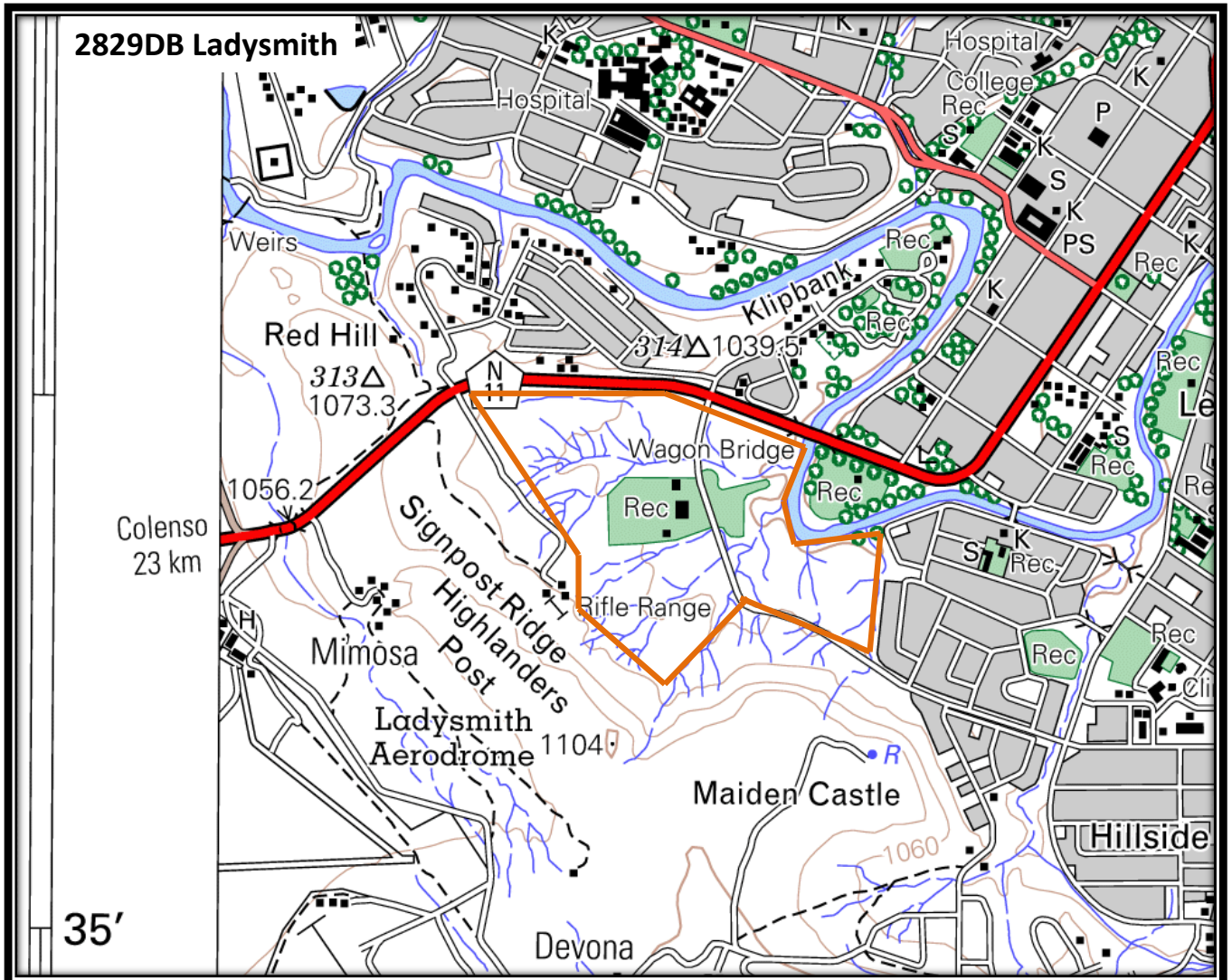


Figure 3 Extract from 1:50 000 map sheet indicating approximate boundaries of proposed development area.

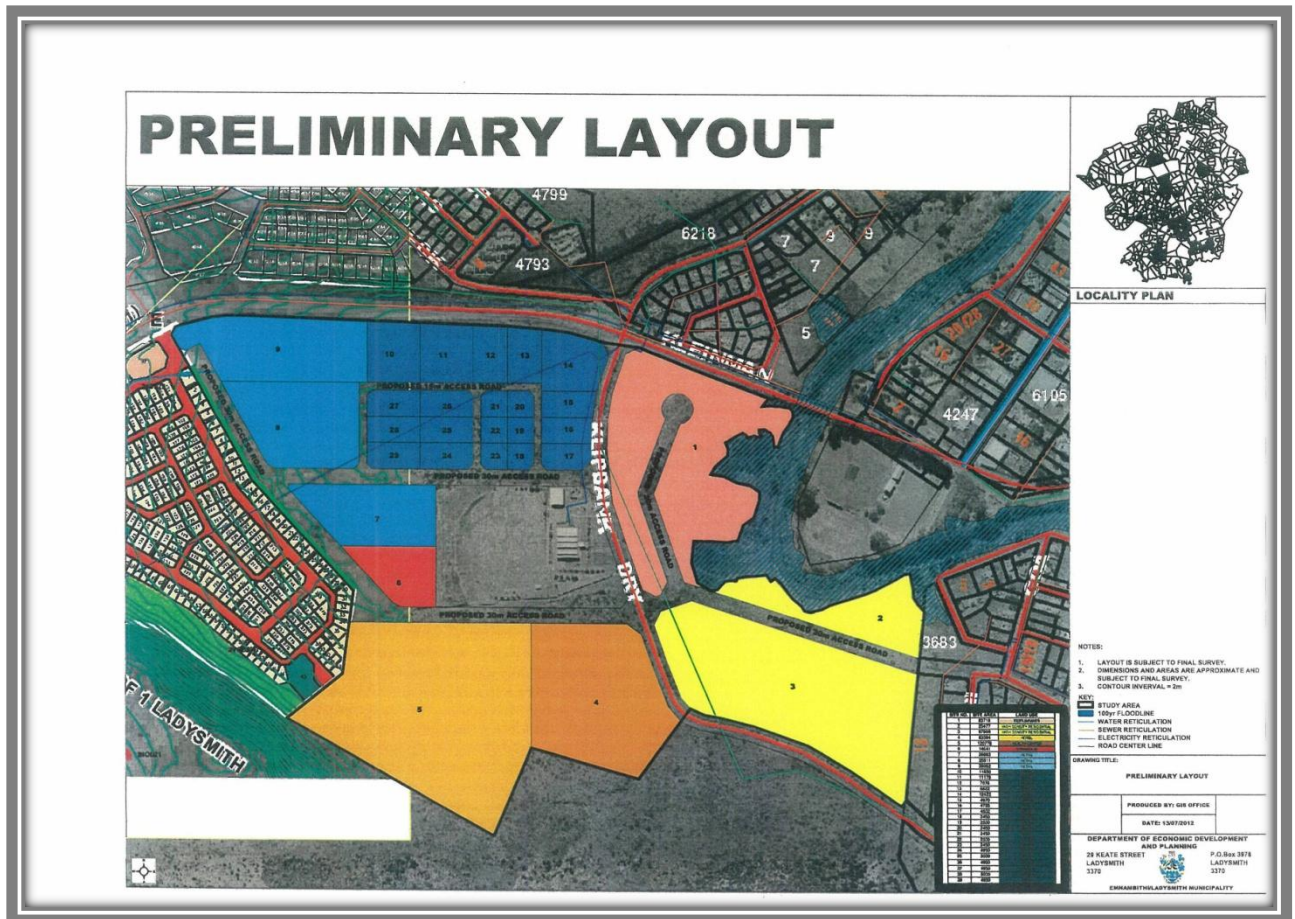


Figure 4 Preliminary layout of the proposed development (source: Bapela Cave Klapwijk).

5 CULTURAL CONTEXT OF THE STUDY AREA

This section summarises the recent history of the study area. Appendix B contains a review of the archaeological background of the area.

Ladysmith is the seat for both the Emnambithi-Ladysmith Local Municipality and the Uthukela District Municipality. In 1847 after buying land from the Zulu king Mpande, a number of Boers settled in the area and called it the Republic of Klip River with Andries Spies as their commandant². The republic was annexed by the British in the same year and on 20 June 1850 was proclaimed a township called Windsor. On 11 October 1850 the name was changed to Ladysmith after Juana Maria de los Dolores de Leon Smith also known as 'Lady Smith', the Spanish wife of Sir Harry Smith, the Governor of the Cape Colony and high commissioner in South Africa from 1847 to 1852.

During the Second Boer War British commander Lieutenant General Sir George White made Ladysmith his centre of operations for the protection of Natal against the Boer forces. Starting on 29 October 1899 a number of short lived battles were fought for control of the town, but after suffering heavy casualties the British forces retreated to Ladysmith and the Boer forces did not make use of the opportunity to follow up the attack and take control of the town.

The Siege of Ladysmith was a protracted engagement in the Second Boer War, taking place between 2 November 1899 and 28 February 1900. As war with the Boer republics appeared likely in June 1899, the War Office in Britain dispatched a total of 15,000 troops to Natal, expecting that if war broke out they would be capable of defending the colony until reinforcements could be mobilized and sent to South Africa by steamship. Some of these troops were diverted while returning to Britain from India, others were sent from garrisons in the Mediterranean and elsewhere. Lieutenant General Sir George White was appointed to command this enlarged force. White was 64 years old and suffered from a leg injury incurred in a riding accident. Having served mainly in India, he had little previous experience of South Africa.

Contrary to the advice of several British officials such as Sir Alfred Milner, the High Commissioner for Southern Africa, the Boer governments were not over-awed by the despatch of British troops to Natal. Instead, they regarded it as evidence of Britain's determination to seize control of the Boer republics. The Transvaal government under President Paul Kruger considered launching an attack in September, but President Steyn of the Orange Free State, who would later become the spiritual heart of the Boer resistance, dissuaded them for several weeks while he tried to act as intermediary. With the complete breakdown in negotiations, both republics declared war and attacked on 12 October.

A total of 21 000 Boers advanced into Natal from all sides. White had been advised to deploy his force far back, well clear of the area of northern Natal known as the Natal Triangle, a wedge of land lying between the two Boer republics. Instead, White deployed his forces around the garrison town of Ladysmith, with a detachment even further forward at Dundee. The entire British force could concentrate only after fighting two battles at Talana Hill and Elandsplaagte. As the Boers surrounded Ladysmith, White

² http://en.wikipedia.org/wiki/Ladysmith,_KwaZulu-Natal; http://en.wikipedia.org/wiki/Siege_of_Ladysmith
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ordered a sortie by his entire force to capture the Boer artillery. The result was the disastrous Battle of Ladysmith, in which the British were driven back into the town having lost 1 200 men killed, wounded or captured.

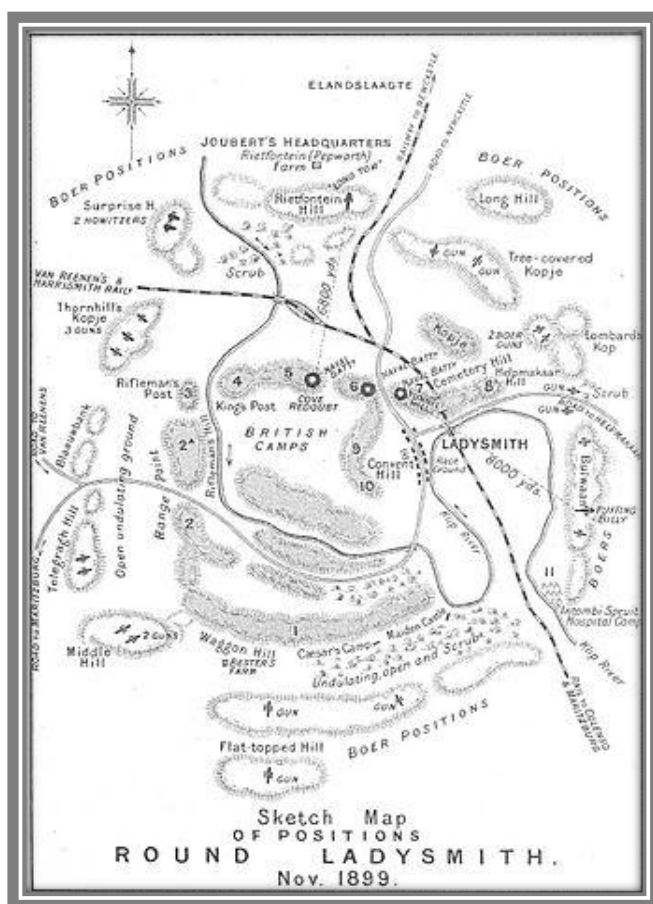


Figure 5 Sketch map of the positions in November 1899.

The Boers then proceeded to surround Ladysmith and cut the railway link to Durban. Major General French and his Chief of Staff, Major Douglas Haig escaped on the last train to leave, which was riddled with bullets.

This town was then besieged for 118 days. White knew that large reinforcements were arriving, and could communicate with British units south of the Tugela River by searchlight and heliograph. He expected relief soon. Meanwhile, his troops carried out several raids and sorties to sabotage Boer artillery.

Louis Botha commanded the Boer detachment which first raided Southern Natal, and then dug in north of the Tugela to hold off the relief force. On 15 December, the first relief attempt was defeated at the Battle of Colenso. Temporarily unnerved, the relief force commander, General Buller, suggested that White either break out or destroy his stores and ammunition and surrender. White could not break out because his horses and draught animals were weak from lack of grazing and forage, but also refused to surrender.

The Boers around Ladysmith were also growing weak from lack of food. With little action, many fighters took unauthorised leave or brought their families into the siege

encampments. Eventually, with the Tugela in flood, preventing Buller from giving any support, some younger leaders persuaded Joubert to order a storming attempt on the night of 5 January 1900, before another relief attempt could be made.

The British line south of Ladysmith ran along a ridge known as the Platrand. The occupying British troops had named its features Wagon Point, Wagon Ridge and Caesar's Camp (after features near Aldershot, well known to much of the British army). Under Ian Hamilton, they had constructed a line of forts, sangars and entrenchments on the reverse slope of the Platrand, of which the Boers were unaware.

In the early hours of 6 January, Boer storming parties under General C.J. de Villiers began climbing Wagon Ridge and Caesar's Camp. They were spotted and engaged by British working parties who were emplacing some guns. The Boers captured the edge of both features, but could not advance further. British counter-attacks also failed.

At noon, de Villiers made another attack on Wagon Point. Some exhausted defenders panicked and fled, but Hamilton led reserves to the spot and recaptured some empty gun pits. Late in the afternoon, a terrific rainstorm broke, and the Boers withdrew under cover of it.

The British suffered 175 killed and 249 wounded. 52 dead Boers were left in the British positions, but their total casualties were not recorded.

While Buller made repeated attempts to fight his way across the Tugela, the defenders of Ladysmith suffered increasingly from shortage of food and other supplies, and from disease, mainly enteric fever or typhoid, which claimed among many others, the life of noted war correspondent G.W. Steevens. The Boers had long before captured Ladysmith's water supply, and the defenders could use only the muddy Klip River.

Eventually, Buller broke through the Boer positions on 27 February. Following their succession of reverses, his troops had developed effective tactics based on close cooperation between the infantry and artillery. After the protracted struggle, the morale of Botha's men at last broke and they and the besiegers retreated, covered by another huge thunderstorm. Buller did not pursue, and White's men were too weak to do so.

The first party of the relief column, under Major Hubert Gough and of which Churchill was a part, rode in on the evening of 28 February. White reportedly greeted them saying, "Thank God we kept the flag flying". The relief was widely celebrated, followed by much larger celebrations after the Siege of Mafeking.

6 OBSERVATIONS

No development activities associated with the proposed project had begun at the time of our field visit, in accordance with heritage legislation. We assessed the following heritage resource types:

- Places, buildings and structures older than 60 years
- Historical settlements and townscapes
- Landscapes and natural features
- Geological sites of scientific or cultural importance
- Palaeontological sites
- Archaeological sites
- Traditional burial places
- Battlefields

Figures 6 and 7 illustrate typical views across the proposed development site to the north and south, respectively. The only buildings present are located in the middle of the proposed development site and comprise an indoor sports complex utility hall (Figure 8). They will not be affected by the proposed development (refer to layout in Figure 4) and do not constitute heritage resources.



Figure 6 View over the development site to the north.



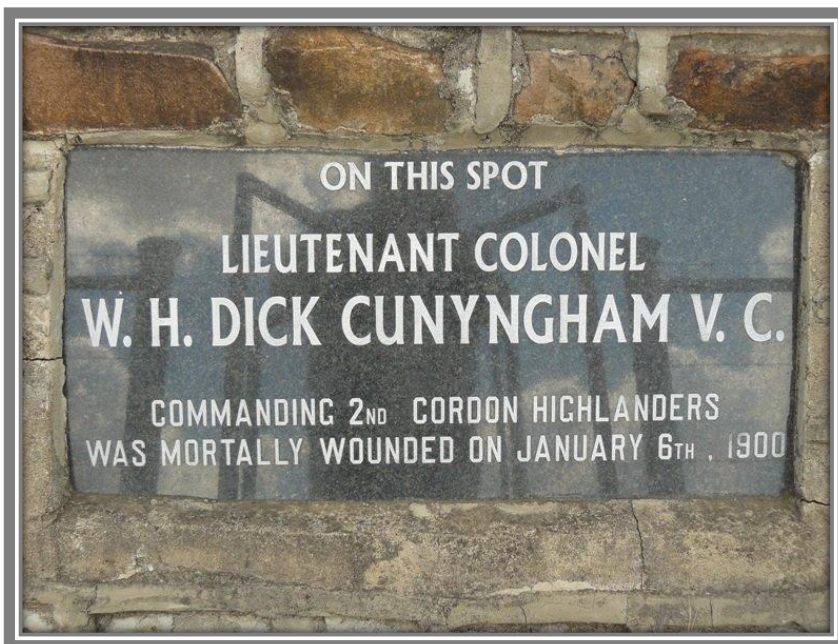
Figure 7 View over development site to south with Wagon Hill in the background.



Figure 8 Indoor sports complex in centre of proposed development site.

6.1 Battlefields

The only heritage resource present within the proposed development area is the marker of the place where Lieutenant-Colonel WH Dick Cunyngham VC, a popular commanding officer of 2nd Battalion, The Gordon Highlanders, was killed on 6 January 1900 during the South African War. A memorial cairn was erected on the spot where he was shot, with every man in the battalion placing a stone on it (Figures 9 and 10). The cairn has high heritage significance at all levels for its historical significance.



Figures 9 and 10 Memorial cairn to Lieutenant-Colonel Cunyngham.

7 ASSESSMENT OF IMPACTS

The impact of the proposed development on the identified heritage resource is illustrated in the following table, both with and without mitigation. The aim of mitigation measures is to reduce impacts on all heritage resources to LOW wherever possible. The confidence in our predictions is medium to high.

7.1 Battlefields

Table 2 Potential impact of development on battlefield remains.

Mitigation measures	Nature	Extent	Duration	Intensity	Irreplaceable resource loss	Consequence	Probability	Significance of impact
Unmanaged	Negative	Low	High	High	High	High	Medium-High	High
Managed	Neutral-Positive	Low	High	Low	Low	Low	Medium	Low

8 RECOMMENDED MITIGATION MEASURES

8.1 Battlefields

The memorial cairn may not be altered in any way without a permit from Amafa aKwaZulu-Natali, the Provincial Heritage Resources Agency.

We recommend that the memorial is incorporated into the development in an appropriate manner, subject to the layout of the development in the immediate vicinity of the memorial being approved by Amafa prior to the start of any development activities. It is imperative that public access to the memorial is retained without undue restrictions, including adequate provision for parking of tour buses.

9 RECOMMENDED MONITORING

None at present, although Amafa may require monitoring of the heritage resource during the construction phase of the proposed development.

10 PROTOCOL FOR THE IDENTIFICATION, PROTECTION AND RECOVERY OF HERITAGE RESOURCES DURING CONSTRUCTION AND OPERATION

It is possible that sub-surface heritage resources could be encountered during the construction phase of this project. The Environmental Control Officer and all other persons responsible for site management and excavation should be aware that indicators of sub-surface sites could include:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments, including potsherds;
- Stone concentrations that appear to be formally arranged (may indicate the presence of an underlying burial, or represent building/structural remains); and
- Fossilised remains of fauna and flora, including trees.

In the event that such indicator(s) of heritage resources are identified, the following actions should be taken immediately:

- All construction within a radius of at least 20m of the indicator should cease. This distance should be increased at the discretion of supervisory staff if heavy machinery or explosives could cause further disturbance to the suspected heritage resource.
- This area must be marked using clearly visible means, such as barrier tape, and all personnel should be informed that it is a no-go area.
- A guard should be appointed to enforce this no-go area if there is any possibility that it could be violated, whether intentionally or inadvertently, by construction staff or members of the public.
- No measures should be taken to cover up the suspected heritage resource with soil, or to collect any remains such as bone or stone.
- If a heritage practitioner has been appointed to monitor the project, s/he should be contacted and a site inspection arranged as soon as possible.
- If no heritage practitioner has been appointed to monitor the project, the relevant staff member of Amafa should be contacted. The responsible person and her/his contact details should be known to the Resident Engineer and/or Environmental Control Officer prior to the start of construction activities.
- The South African Police Services should be notified by an Amafa staff member or an independent heritage practitioner if human remains are identified. No SAPS official may disturb or exhume such remains, whether of recent origin or not.
- All parties concerned should respect the potentially sensitive and confidential nature of the heritage resources, particularly human remains, and refrain from making public statements until a mutually agreed time.
- Any extension of the project beyond its current footprint involving vegetation and/or earth clearance should be subject to prior assessment by a qualified heritage practitioner, taking into account all information gathered during this initial HIA.

11 CONCLUSION

This report has been submitted to Amafa in fulfilment of the requirements of the NHRA. According to Section 38(4) of the NHRA the report shall be considered timeously by the Council which shall, after consultation with the person proposing the development, decide –

- whether or not the development may proceed;
- any limitations or conditions are to be applied to the development;
- what general protections in terms of this Act apply, and what formal protections may be applied to such heritage resources;
- whether compensatory action shall be required in respect of any heritage resources damaged or destroyed as a result of the development; and
- whether the appointment of specialists is required as a condition of approval of the proposal.

Ms Bernadet Pawandiwa may be contacted at Amafa's Pietermaritzburg office (telephone 033 3946 543) to ascertain the progress of the report review.

If permission is granted for development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and follow the protocol in Section 10 should any heritage resources be discovered during the course of development activities.

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APPENDIX A**STATUTORY REQUIREMENTS****General**

The Constitution of the Republic of South Africa Act 108 of 1996 is the source of all legislation. Within the Constitution the Bill of Rights is fundamental, with the principle that the environment should be protected for present and future generations by preventing pollution, promoting conservation and practising ecologically sustainable development. With regard to spatial planning and related legislation at national and provincial levels the following legislation may be relevant:

- Physical Planning Act 125 of 1991
- Municipal Structures Act 117 of 1998
- Municipal Systems Act 32 of 2000
- Development Facilitation Act 67 of 1995 (DFA)
- KwaZulu-Natal Planning and Development Act 6 of 2008.

The identification, evaluation and management of heritage resources in South Africa is required and governed by the following legislation:

- National Environmental Management Act 107 of 1998 (NEMA)
- KwaZulu-Natal Heritage Act 4 of 2008 (KZNHA)
- National Heritage Resources Act 25 of 1999 (NHRA)
- Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA)

KwaZulu-Natal Heritage Act 4 of 2008 (KZNHA)

This Act is implemented by Amafa aKwaZulu-Natali/Heritage KwaZulu-Natal, the provincial heritage resources authority charged to provide for the conservation, protection and administration of both the physical and the living or intangible heritage resources of the province; along with a statutory Council to administer heritage conservation in the Province.

National Heritage Resources Act 25 of 1999 (NHRA)

The NHRA established the South African Heritage Resources Agency (SAHRA) together with its Council to fulfill the following functions:

- co-ordinate and promote the management of heritage resources at national level;
- set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance;
- control the export of nationally significant heritage objects and the import into the Republic of cultural property illegally exported from foreign countries;
- enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources; and
- provide for the protection and management of conservation-worthy places and areas by local authorities.

Heritage Impact Assessments

Section 38(1) of the NHRA may require a Heritage Impact Assessment in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity which will change the character of a site—
 - (i) exceeding 5 000m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the re-zoning of a site exceeding 10 000m² in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

Reports in fulfilment of NHRA Section 38(3) must include the following information:

- the identification and mapping of all heritage resources in the area affected;
- an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations;
- an assessment of the impact of the development on such heritage resources;
- an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- plans for mitigation of any adverse effects during and after completion of the proposed development.

It is incumbent upon the developer or Environmental Practitioner to approach the South African Heritage Resources Agency (SAHRA) or Amafa to ascertain whether an HIA is required for a project; what categories of heritage resource must be assessed; and request a detailed motivation for such a study in terms of both the nature of the development and the nature of the environment. In this regard we draw your attention to Section 38(2) of the NHRA which states specifically that 'The responsible heritage resources authority must ... if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report'. In other words, the heritage authority must be able to justify a request for an Archaeological, Palaeontological or Heritage Impact Assessment. The Environmental Practitioner may also submit information to the heritage authority in substantiation of exemption from a specific assessment due to existing environmental disturbance, for example.

Definitions of heritage resources

The Act defines a heritage resource as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes, but is not limited to, the following wide range of places and objects:

- living heritage as defined in the National Heritage Council Act 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);
- ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity; definition used in KwaZulu-Natal Heritage Act 2008);
- places, buildings, structures and equipment;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds;
- public monuments and memorials;
- sites of significance relating to the history of slavery in South Africa;
- movable objects, but excluding any object made by a living person; and
- battlefields.

Furthermore, 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; and
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.

Archaeological means –

- material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;

- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act 15 of 1994, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

Palaeontological means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

A **place** is defined as:

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place.

Public monuments and memorials means all monuments and memorials:

- erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
- which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.

Structures 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.

Management of Graves and Burial Grounds

— Definitions

Grave

The NHRA defines a grave as a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such a place.

The KwaZulu-Natal Cemeteries and Crematoria Act 12 of 1996 defines a grave as an excavation in which human remains have been intentionally placed for the purposes of burial, but excludes any such excavation where all human remains have been removed.

Burial ground

The term 'burial ground' does not appear to have a legal definition. In common usage the term is used for management purposes to describe two or more graves that are grouped closely enough to be managed as a single entity.

Cemetery

The KwaZulu-Natal Cemeteries and Crematoria Act 1996 defines a cemetery as any place

- (a) where human remains are buried in an orderly, systematic and pre-planned manner in identifiable burial plots;
- (b) which is intended to be permanently set aside for and used only for the purposes of the burial of human remains.

– Protection of graves and cemeteries

No person may damage, alter, exhume, or remove from its original position any grave, as defined above, without permission from the relevant heritage or health authority.

– Procedures required for permission to disinter and rebury graves

The procedure for consultation regarding burial grounds and graves (Section 36 of the NHRA) is applicable to all graves located outside a formal cemetery administered by a local authority. The following extract from this legislation is applicable to this policy document:

SAHRA or Amafa may not issue a permit for any alteration to or disinterment or reburial of a grave unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

- (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
- (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

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 Services and in accordance with regulations of the responsible heritage resources authority—

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

The Vermillion Accord on Human Remains³

Adopted in 1989 at WAC Inter-Congress, South Dakota, USA

1. Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.
2. Respect for the wishes of the dead concerning disposition shall be accorded whenever possible, reasonable and lawful, when they are known or can be reasonably inferred.
3. Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded whenever possible, reasonable and lawful.
4. Respect for the scientific research value of skeletal, mummified and other human remains (including fossil hominids) shall be accorded when such value is demonstrated to exist.
5. Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by negotiation on the basis of mutual respect for the legitimate concerns of communities for the proper disposition of their ancestors, as well as the legitimate concerns of science and education.
6. The express recognition that the concerns of various ethnic groups, as well as those of science are legitimate and to be respected, will permit acceptable agreements to be reached and honoured.

³ <http://www.worldarchaeologicalcongress.org/>

APPENDIX B ARCHAEOLOGICAL CONTEXT OF THE STUDY AREA

In archaeological terms South Africa's prehistory has been divided into a series of phases based on broad patterns of technology. The primary distinction is between a reliance on chipped and flaked stone implements (the Stone Age), the ability to work iron (the Iron Age) and the Colonial Period, characterised by the advent of writing and in southern Africa primarily associated with the first European travellers (Mitchell 2002). Spanning a large proportion of human history, the Stone Age in Southern Africa is further divided into the Early Stone Age, or Paleolithic Period (about 2 500 000–150 000 years ago), the Middle Stone Age, or Mesolithic Period (about 500 000–30 000 years ago), and the Late Stone Age, or Neolithic Period (about 30 000–2 000 years ago). The simple stone tools found with australopithecine fossil bones fall into the earliest part of the Early Stone Age.

The Stone Age⁴

o Early Stone Age

Most Early Stone Age sites in South Africa can probably be connected with the hominin species known as *Homo erectus*. Simply modified stones, hand axes, scraping tools, and other bifacial artifacts had a wide variety of purposes, including butchering animal carcasses, scraping hides, and digging for plant foods. Most South African archaeological sites from this period are the remains of open camps, often by the sides of rivers and lakes, although some are rock shelters, such as Montagu Cave in the Cape region.

o Middle Stone Age

The long episode of cultural and physical evolution gave way to a period of more rapid change about 120 000 years ago. Hand axes and large bifacial stone tools were replaced by stone flakes and blades that were fashioned into scrapers, spear points, and parts for hafted, composite implements. This technological stage, now known as the Middle Stone Age, is represented by numerous sites in South Africa.

Open camps and rock overhangs were used for shelter. Day-to-day debris has survived to provide some evidence of early ways of life, although plant foods have rarely been preserved. Middle Stone Age bands hunted medium-sized and large prey, including antelope and zebra, although they tended to avoid the largest and most dangerous animals, such as the elephant and the rhinoceros. They also ate seabirds and marine mammals that could be found along the shore and sometimes collected tortoises and ostrich eggs in large quantities.

The Middle Stone Age is perhaps most significant as the time period during which the first modern humans, *Homo sapiens sapiens*, emerged between 120 000 and 30 000 years ago. The Klasies River cave complex, located on the southern Cape coast contains the oldest remains of anatomically modern humans in the world, dating to around 110 000 years ago (Singer & Wymer 1982; Rightmire & Deacon 1991). Humans were anatomically modern by 110 000 years ago but only developed into culturally modern behaving humans between 80 000 and 70 000 years ago, during cultural

⁴ <http://www.britannica.com>; article authored by Colin J. Bundy, Julian R. D. Cobbing, Martin Hall and Leonard Monteath Thompson.

phases known as the Still Bay and Howieson's Poort time periods or stone tool traditions.

- The Late Stone Age

Basic toolmaking techniques began to undergo additional change about 40 000 years ago. Small finely worked stone implements known as microliths became more common, while the heavier scrapers and points of the Middle Stone Age appeared less frequently. Archaeologists refer to this technological stage as the Later Stone Age or LSA, which can be divided into four broad temporal units directly associated with climatic, technological and subsistence changes (Deacon 1984):

1. Late Pleistocene microlithic assemblages (40-12 000 years ago);
2. Terminal Pleistocene / early Holocene non-microlithic (macrolithic) assemblages (12-8 000 years ago);
3. Holocene microlithic assemblages (8 000 years ago to the Colonial Period); and
4. Holocene assemblages with pottery (2 000 years ago to the Historic Period) closely associated with the arrival of pastoralist communities into South Africa (Mitchell 1997; 2002).

Animals were trapped and hunted with spears and arrows on which were mounted well-crafted stone blades. Bands moved with the seasons as they followed game into higher lands in the spring and early summer months, when plant foods could also be found. When available, rock overhangs became shelters; otherwise, windbreaks were built. Shellfish, crayfish, seals, and seabirds were also important sources of food, as were fish caught on lines, with spears, in traps, and possibly with nets.

Elements of material culture characteristic of the LSA that reflect cultural modernity have been summarised as follows (Deacon 1984):

- Symbolic and representational art (paintings and engravings);
- Items of personal adornment such as decorated ostrich eggshell, decorated bone tools and beads, pendants and amulets of ostrich eggshell, marine and freshwater shells;
- Specialized hunting and fishing equipment in the form of bows and arrows, fish hooks and sinkers;
- A greater variety of specialized tools including bone needles and awls and bone skin-working tools;
- Specialized food gathering tools and containers such as bored stone digging stick weights, carrying bags of leather and netting, ostrich eggshell water containers, tortoiseshell bowls and scoops and later pottery and stone bowls;
- Formal burial of the dead in graves, sometimes covered with painted stones or grindstones and accompanied by grave goods;
- The miniaturization of selected stone tools linked to the practice of hafting for composite tools production; and
- A characteristic range of specialized tools designed for making some of the items listed above.

Iron Age⁵

Archaeological evidence shows that Bantu-speaking agriculturists first settled in southern Africa around AD 300. Bantu-speakers originated in the vicinity of modern Cameroon from where they began to move eastwards and southwards, some time after 400 BC, skirting around the equatorial forest. An extremely rapid spread throughout much of sub-equatorial Africa followed: dating shows that the earliest communities in Tanzania and South Africa are separated in time by only 200 years, despite the 3 000 km distance between the two regions. It seems likely that the speed of the spread was a consequence of agriculturists deliberately seeking iron ore sources and particular combinations of soil and climate suitable for the cultivation of their crops.

The earliest agricultural sites in KwaZulu-Natal date to between AD 400 and 550. All are situated close to sources of iron ore, and within 15 km of the coast. Current evidence suggests it may have been too dry further inland at this time for successful cultivation. From 650 onwards, however, climatic conditions improved and agriculturists expanded into the valleys of KwaZulu-Natal, where they settled close to rivers in savanna or bushveld environments. There is a considerable body of information available about these early agriculturists.

Seed remains show that they cultivated finger millet, bulrush millet, sorghum and probably the African melon. It seems likely that they also planted African groundnuts and cowpeas, though direct evidence for these plants is lacking from the earlier periods. Faunal remains indicate that they kept sheep, cattle, goats, chickens and dogs, with cattle and sheep providing most of the meat. Men hunted, perhaps with dogs, but hunted animals made only a limited contribution to the diet in the region.

Metal production was a key activity since it provided the tools of cultivation and hunting. The evidence indicates that people who worked metal lived in almost every village, even those that were considerable distances from ore sources.

Large-scale excavations in recent years have provided data indicating that first-millennium agriculturist society was patrilineal and that men used cattle as bridewealth in exchange for wives. On a political level, society was organised into chiefdoms that, in our region, may have had up to three hierarchical levels. The villages of chiefs tended to be larger than others, with several livestock enclosures, and some were occupied continuously for lengthy periods. Social forces of the time resulted in the concentration of unusual items on these sites. These include artefacts that originated from great distances, ivory items (which as early as AD 700 appear to have been a symbol of chieftainship), and initiation paraphernalia.

This particular way of life came to an end around AD 1000, for reasons that we do not yet fully understand. There was a radical change in the decorative style of agriculturist ceramics at this time, while the preferred village locations of the last four centuries were abandoned in favour of sites along the coastal littoral. In general, sites dating to between 1050 and 1250 are smaller than most earlier agriculturist settlements. It is tempting to see in this change the origin of the Nguni settlement pattern. Indeed, some

⁵ Much of this section derives from Maggs (1976), Huffman (2002) and Mitchell and Whitelaw (2005), including direct extracts. See also Whitelaw (1991, 1997, 2009).

archaeologists have suggested that the changes were a result of the movement into the region of people who were directly ancestral to the Nguni-speakers of today. Others prefer to see the change as the product of social and cultural restructuring within resident agriculturist communities.

Whatever the case, it seems likely that this new pattern of settlement was in some way influenced by a changing climate, for there is evidence of increasing aridity from about AD 900. A new pattern of economic inter-dependence evolved that is substantially different from that of earlier centuries, and is one that continued into the colonial period nearly 500 years later.

No traces of Early Iron Age occupation (during the first millennium CE) have yet been discovered on the Highveld or in the Free State. The first farmers to colonize the higher altitude grasslands of South Africa's interior did so in the 14th century in KwaZulu-Natal. In doing so they opened up possibilities for greater economic specialization and interdependence, not least because of the impossibility of smelting iron where suitable fuel was lacking. Lack of timber encouraged the adoption of stone as a building material in the Free State, as it did in the interior grasslands of KwaZulu-Natal. These parallels may, indeed, reflect real historical connections between Nguni and the Free State Sotho.

Tree-ring data indicate that rainfall in KwaZulu-Natal fell dramatically between 1320 and 1340 following the onset of the Little Ice Age, remaining lower for the rest of the fourteenth century than for the next 600 years. This must have threatened the resource base of farming communities and the resultant stress was probably at least partly responsible for forcing Moor Park communities in the KwaZulu-Natal grasslands to construct settlements on defensible hilltops.

Aridity and outbreaks of violence may also have encouraged some people to cross the Drakensberg, a possibility echoed perhaps in those oral traditions that give the Sotho-speaking Fokeng an Nguni origin and one borne out by similarities between their pottery and that of the Blackburn sequence. This interpretation is consistent with dates previously obtained by Maggs from Ntsuanatsatsi in the northeastern Free State, although these remain isolated and early. A comprehensive survey of relevant radiocarbon dates argues instead that the expansion of farming communities into the highveld grasslands began as recently as 1640, taking advantage of a wetter, warmer climate with more regular summer rains. Any interpretation must, however, accommodate the antiquity with which the Fokeng are regarded in the oral traditions of most other highveld groups and the origin of Fokeng pottery, which is different from that of pottery associated with other highveld Sotho communities.

While the warmer conditions which set in on the highveld after 1420 will undoubtedly have facilitated cereal cultivation, stable isotope analysis of human remains nevertheless shows that people living in the Grassland Biome depended more heavily on animal products than their counterparts in savanna environments to the north. Further fieldwork that might investigate such differences, and more securely establish the antiquity of farming settlement on the highveld, is sorely needed; other than Maggs's pioneering work of a generation ago, there have been only limited excavations of sites near Winburg, in the north-eastern Free State and in the former Qwaqwa homeland.

These early farming communities built numerous stone walled settlements throughout the southern Highveld of the Free State and in the highland grasslands of KwaZulu-Natal. In the Free State these sites are associated with the predecessors of the Sotho-Tswana. Oral traditions clearly identify the 15th to 16th century settlement at Ntsuanatsatsi as a capital of the Fokeng, and this identification has been accepted for some time (Maggs 1976). According to Bryant (1929), the Fokeng were originally MboNguni. Although this view may be extreme, ceramic features such as applique decoration indicate Nguni interaction.

In KwaZulu-Natal stone-walled settlements may date to the Moor Park period (14th century); the later Langa / Dlamini immigration along the eastern escarpment and the establishment of the Zizi chiefdom in the 1600s; and / or to the 18th-19th century Mfecane period.

In summary, from around the 15th century mixed-farming communities of both Nguni and Sotho-speaking origins began to settle the study area along the middle reaches of the larger river drainage basins. The ubiquitous circular and lobed stone walled settlements within the study area are the archaeological evidence of these first farmers. These settlements do not occur randomly across the grasslands but are located in a regular juxtaposition of east to north-east aspect, in the protective lee of a hill or mountain with access to perennial water, a surface supply of rocks for building and colluvial soils for agriculture. Cattle were subjected to seasonal transhumance, moving with young men across the grassland biome between stock posts, in search of sweet-veld or at least palatable grazing. South facing and scarp slopes were eschewed for settlement but provided invaluable resources in the form of wood for fuel, roof laths, ox yokes and sledges. These more wooded slopes further were a source of fruit and medicinal plants. Dolerite ridges and hilltops were avoided for fear of lightning strikes.

The Late Iron Age archaeology and history of black farming settlement along the eastern escarpment is under-researched and poorly documented, although it is alluded to in recorded oral histories (Bryant *ibid*). The stone-walled settlements are thus of considerable research value and are monuments to the expansion of African societies into the Highveld regions of the sub-continent (Whitelaw pers. comm.).

Historical landscape of the Free State and KwaZulu-Natal

The historical landscape of the eastern interior of South Africa has been shaped largely by the activities of farmers over the past 500 years. As described in the Iron Age section above, from around the 15th century mixed-farming communities of both Nguni and Sotho-speaking origins began to settle the area along the middle reaches of the larger river drainage basins. The ubiquitous circular and lobed stone walled settlements in this region are the archaeological evidence of these first farmers. These settlements do not occur randomly across the grasslands but are located in a regular juxtaposition of east to north-east aspect, in the protective lee of a hill or mountain with access to perennial water, a surface supply of rocks for building and colluvial soils for agriculture.

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European farming in the region was heralded by the arrival of wagonloads of Voortrekker families on their trek from the Cape to the interior in the late 1830s.

APPENDIX C**METHODOLOGY****Site survey**

eThembeni staff members inspected the area on 22 November 2013. We completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978; see bibliography for other references informing methodological approach).

Photographs were taken with a Panasonic Lumix DMC FX07 camera and a representative selection is included in this report. Geographic coordinates were obtained using a handheld Garmin GPSMAP 62S global positioning unit set at WGS 84.

Database and literature review

Archaeological site data was obtained from the Natal Museum and SAHRIS. A concise account of the pre and postcolonial history of the broader study area was compiled from sources including those listed in the bibliography.

Assessment of heritage resource value and significance

Heritage resources are significant only to the extent that they have public value, as implicitly demonstrated by the following guidelines for determining site significance developed by the South African Heritage Resources Agency and utilised during this assessment.

Type of Significance

Historical Value: It is important in the community, or pattern of history

- Importance in the evolution of cultural landscapes and settlement patterns.
- Importance in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, Province, region or locality.
- Importance as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period
- It has strong or special association with the life or work of a person, group or organisation of importance in history
- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, Province, region or community.
- Importance for a direct link to the history of slavery in South Africa.

Aesthetic Value: It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group

- Importance to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.

- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

Scientific Value: It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period.
- Importance for its technical innovation or achievement.

Social Value: It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

Degrees of Significance

Rarity: It possesses uncommon, rare or endangered aspects of natural or cultural heritage

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

Representivity: It is 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.

Sphere of Significance: High, Medium, Low

International; National; Provincial; Regional; Local

Assessment of impacts

A heritage resource impact may be defined broadly as the net change, either beneficial or adverse, between the integrity of a heritage site with and without the proposed development. Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource, by minimising natural site erosion or facilitating non-destructive public use, for example. More commonly, development impacts are of an adverse nature and can include:

- destruction or alteration of all or part of a heritage site;
- isolation of a site from its natural setting; and / or
- introduction of physical, chemical or visual elements that are out of character with the heritage resource and its setting.

Beneficial and adverse impacts can be direct or indirect, as well as cumulative, as implied by the aforementioned examples. Although indirect impacts may be more difficult to foresee, assess and quantify, they must form part of the assessment process.

The following assessment criteria have been used to assess the impacts of the proposed development on identified heritage resources:

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the type of effect the construction, operation and management of the proposed development would have on the heritage resource.
	Negative	
	Neutral	
Extent	Low	Site-specific, affects only the development footprint.
	Medium	Local (limited to the site and its immediate surroundings, including the surrounding towns and settlements within a 10 km radius);
	High	Regional (beyond a 10 km radius) to national.
Duration	Low	0-4 years (i.e. duration of construction phase).
	Medium	5-10 years.
	High	More than 10 years to permanent.
Intensity	Low	Where the impact affects the heritage resource in such a way that its significance and value are minimally affected.
	Medium	Where the heritage resource is altered and its significance and value are measurably reduced.
	High	Where the heritage resource is altered or destroyed to the extent that its significance and value cease to exist.
Potential for impact on irreplaceable resources	Low	No irreplaceable resources will be impacted.
	Medium	Resources that will be impacted can be replaced, with effort.
	High	There is no potential for replacing a particular vulnerable resource that will be impacted.
Consequence a combination of extent, duration, intensity and the potential for impact on irreplaceable resources).	Low	A combination of any of the following: - Intensity, duration, extent and impact on irreplaceable resources are all rated low. - Intensity is low and up to two of the other criteria are rated medium. - Intensity is medium and all three other criteria are rated low.
	Medium	Intensity is medium and at least two of the other criteria are rated medium.
	High	Intensity and impact on irreplaceable resources are rated high, with any combination of extent and duration. Intensity is rated high, with all of the other criteria being rated medium or higher.

Probability (the likelihood of the impact occurring)	Low	It is highly unlikely or less than 50 % likely that an impact will occur.
	Medium	It is between 50 and 70 % certain that the impact will occur.
	High	It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.
Significance (all impacts including potential cumulative impacts)	Low	Low consequence and low probability. Low consequence and medium probability. Low consequence and high probability.
	Medium	Medium consequence and low probability. Medium consequence and medium probability. Medium consequence and high probability. High consequence and low probability.
	High	High consequence and medium probability. High consequence and high probability.

Assumptions and limitations of this heritage impact assessment

- The description of the proposed project, provided by the client, is accurate.
- The public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the HIA.
- Soil surface visibility was moderate overall. Heritage resources might be present below the surface or in areas of dense vegetation and we remind the client that the Act requires that a developer cease all work immediately and follow the protocol in Section 10 should any heritage resources be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from Amafa is required to disturb a heritage resource.
- A key concept in the management of heritage resources is that of non-renewability: damage to or destruction of most resources, including that caused by bona fide research endeavours, cannot be reversed or undone. Accordingly, management recommendations for heritage resources in the context of development are as conservative as possible.
- Human sciences are necessarily both subjective and objective in nature. eThembeni staff members strive to manage heritage resources to the highest standards in accordance with national and international best practice, but recognise that their opinions might differ from those of other heritage practitioners.
- Staff members involved in this project have no vested interest in it; are qualified to undertake the tasks as described in the terms of reference (see Appendix D); and comply at all times with the Codes of Ethics and Conduct of ASAPA.
- eThembeni staff members take no personal or professional responsibility for the misuse of the information contained in this report, but take all reasonable measures to prevent such misuse.

APPENDIX D**SPECIALIST COMPETENCY**

Len van Schalkwyk is accredited by the Cultural Resources Management section of ASAPA to undertake Heritage Impact Assessments in South Africa. He currently serves on the ASAPA Council. Mr van Schalkwyk has a master's degree in archaeology (specialising in the history of early farmers in southern Africa) from the University of Cape Town and 25 years' experience in heritage management. He has worked on projects as diverse as the establishment of the Ondini Cultural Museum in Ulundi, the cultural management of Chobe National Park in Botswana, various archaeological excavations (notably the Iron Age site of Ndongondwane in the Thukela Valley) and oral history recording projects. He was part of the writing team that produced the KwaZulu-Natal Heritage Act 1997. He has worked with many rural communities to establish integrated heritage and land use plans and speaks good Zulu.

Mr van Schalkwyk left his position as assistant director of Amafa aKwaZulu-Natali, the provincial heritage management authority, to start eThembeni in partnership with Elizabeth Wahl, who was head of archaeology at Amafa at the time. Over the past decade they have undertaken almost 1000 heritage impact assessments throughout South Africa, as well as in Mozambique.

Elizabeth Wahl has a BA Honours in African Studies from the University of Cape Town and has completed various Masters courses in Heritage and Tourism at the University of KwaZulu-Natal. She is currently studying for an MPhil in the Conservation of the Built Environment at UCT, and is also a member of ASAPA.

Ms Wahl was an excavator and logistical coordinator for Glasgow University Archaeological Research Division's heritage programme at Isandlwana Battlefield; has undertaken numerous rock painting surveys in the uKhahlamba/Drakensberg Mountains, northern KwaZulu-Natal, the Cederberg and the Koue Bokkeveld in the Cape Province; and was the principal excavator of Scorpion Shelter in the Cape Province, and Lenjane and Crystal Shelters in KwaZulu-Natal. Ms Wahl compiled the first cultural landscape management plan for the Mnweni Valley, northern uKhahlamba/Drakensberg, and undertook an assessment of and made recommendations for heritage resource databases and organisational capacity in parts of Lesotho and South Africa for the Global Environment Facility of the World Bank for the Maloti Drakensberg Transfrontier Conservation and Development Area. She developed the first cultural heritage management plan for the uKhahlamba Drakensberg Park World Heritage Site, following UNESCO recommendations for rock art management in southern Africa.