

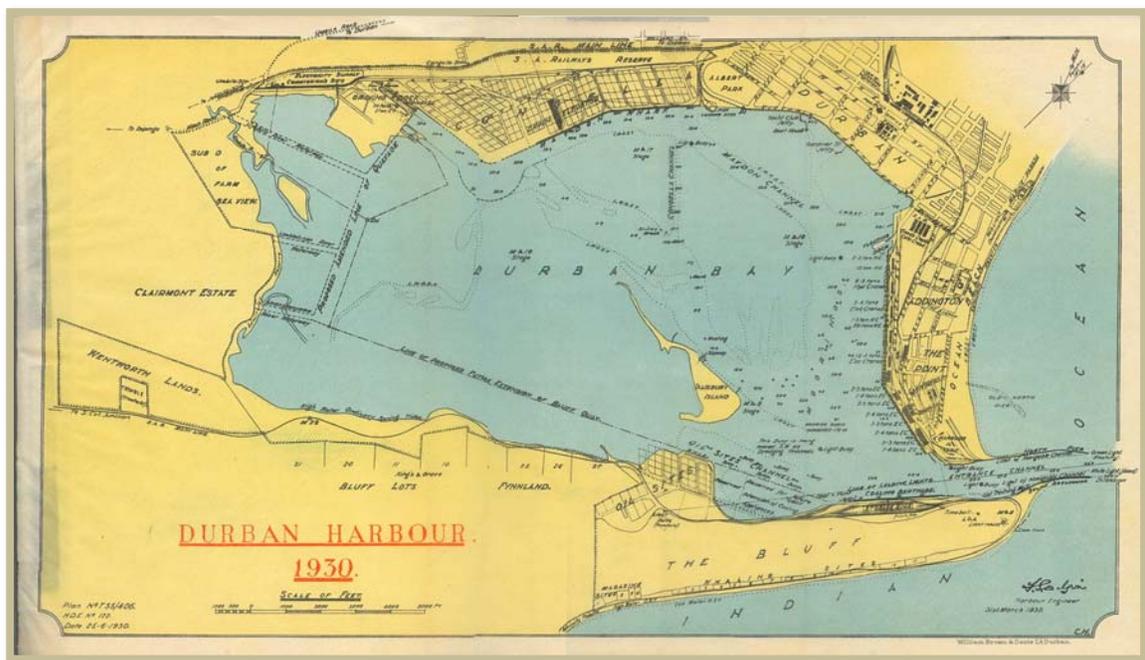
APPENDIX M

Cultural and Heritage Impact Assessment



**eTHEMBENI
CULTURAL
HERITAGE**

**Heritage Impact Assessment Report
Proposed Lanele Terminal 1.
(Lot 1) Project, Ambrose Park, Bayhead
Durban Harbour
eThekweni Municipality**



Report prepared for:

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16 January 2019

DECLARATION OF INDEPENDENCE

I, Leonard van Schalkwyk, declare that –

- I act as the independent specialist in this application.
- I will perform the work relating to the application in an objective manner even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- All the particulars furnished by me in this form are true and correct.

Signed



16 January 2019

EXECUTIVE SUMMARY

INTRODUCTION

eThembeni Cultural Heritage was appointed by Golder Associates Africa (Pty) Ltd, to conduct a Phase1 Heritage Impact Assessment (HIA) for the establishment of a new liquid fuel storage and handling facility, the Lanele Oil Terminal 1 (Lot 1) project, on a portion of the Kings Royal Flats No. 16576 and the remainder of ERF 10019 at Bayhead, within the Durban Harbour precinct. This 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.

HERITAGE RESOURCE DESCRIPTIONS AND SIGNIFICANCE

Palaeontology

The underlying lithostratigraphy of the study area comprises Quaternary alluviums of sand and calcrete with low fossil potential. The SAHRIS Palaeo-sensitivity mapping indicates the study area to fall within a blue demarcation and consequently no palaeontological investigations are required.

Places, buildings, structures and equipment

None were present.

CONCLUSION

We recommend that the development proceeds and have submitted this report to Amafa in fulfilment of the requirements of the National Heritage Resources Act. The client may contact Ms Bernadet Pawandiwa at Amafa's Pietermaritzburg office in due course to enquire about the Council's decision.

If permission is granted for the development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and adhere to the protocol described in Section 8 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
HIA	Heritage Impact Assessment
KZNHA	KwaZulu-Natal Heritage Act 4 of 2008
NHRA	National Heritage Resources Act 25 of 1999
NEMA	National Environmental Management Act 107 of 1998
PHRA	Provincial Heritage Resources Authority
PIA	Palaeontological Impact Assessment
SAHRA	South African Heritage Resources Agency

1. INTRODUCTION

1.1 Background

Lanele Group (Pty) Ltd (Lanele) has the intention of building, owning and operating a liquid fuels storage facility located in Ambrose Park, Durban. The facility is intended for the import of refined product via the port of Durban and the distribution via pipeline to Gauteng and via road locally by both Lanele and storage tenants.

eThembeni Cultural Heritage was appointed by Golder Associates Africa (Pty) Ltd, to conduct a Phase 1 Heritage Impact Assessment (HIA) for the establishment of a new liquid fuel storage and handling facility, the Lanele Oil Terminal 1 (Lot 1) project, on a portion of the Kings Royal Flats No. 16576 and the remainder of ERF 10019 at Ambrose Park, Bayhead, within the Durban Harbour precinct. This 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.



Figure 1. Proposed Lanele Oil Terminal 1 (Lot 1) project

In compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA), a Phase 1 HIA must address the following key aspects (refer to Appendix A for further legislative details):

- 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.

In addition, the HIA should comply with the requirements of the National Environmental Management Act 107 of 1998 (NEMA), including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of independence.

Further, the following were investigated and applied where applicable:

- An overview survey of the study area and the identification of heritage resources that may be affected by the proposed infrastructure or which may affect the construction and operation of the proposed infrastructure.
- An assessment of alternatives, where possible alternatives could be identified, to avoid negative impacts.
- Recommended mitigation measures for enhancing positive impacts and avoiding or minimizing negative impacts and risks.
- Provision of a protocol to be followed for the identification, protection or recovery of cultural heritage resources during construction and operation.
- The early identification of any red flag and fatal flaw issues or impacts.

1.1.1 Methodology

Appendix 2 describes the methodology employed for this project, which included drive/walkovers of proposed development areas and a desktop study. Appendix 2 also includes heritage resource significance assessment criteria; development impact assessment criteria; and the assumptions and limitations associated with this project.

2. PROJECT LOCATION AND ENVIRONMENTAL DESCRIPTION

The proposed project is located within Ambrose Park, Bayhead, within the Durban Harbour precinct (see Figure 2). Ambrose Park was a storage and training facility established by SAR&H¹ (the predecessor to Transnet) during harbour facility and infrastructure expansions in the 1960's and 1970's, when train transport was the preferred means of moving bulk freight and cargo from the harbour to the hinterland. With the advent and growth of the trucking industry over the last 50 years these facilities subsequently fell into disuse and abandonment.

With current harbour expansion programmes under Transnet, these landholdings are now being revitalised for use as bulk storage *locales* for cargo, containers and fuel.

¹ South African Railways and Harbours



Figure 2 Project area at Bayhead in the context of Durban Harbour

The landscape upon which Ambrose Park is located has been fundamentally transformed. Firstly, the entire Bayhead is reclaimed tidal marshes with reclamation already beginning in the late 19th C. Canalization of the Umbilo River in the mid-20th C further allowed industrial expansion over the previous papyrus reed beds of that river's estuary. Whilst the tidal marshes were no doubt exploited for crabbing and fishing by the Salisbury Island Indian community in the late 19th C and early 20th C, there is no record or evidence of people having lived here prior to the reclamation processes that took place².

In 1898 the Umbilo River was the furthest boundary of the Durban Municipality's (Ward 2) town planning scheme. Figure 3 illustrates reclamation already then taking place at Maydon Wharf, adjacent to Bayhead³.

² Legends of the Tide. Neelan Govender and Viroshen Pillay. 2014. Publisher: Rebel Rabble. ISBN Number:9780620456395.

³ Brian Kearney. Alas Poor Little Colony. 2014. Self published.

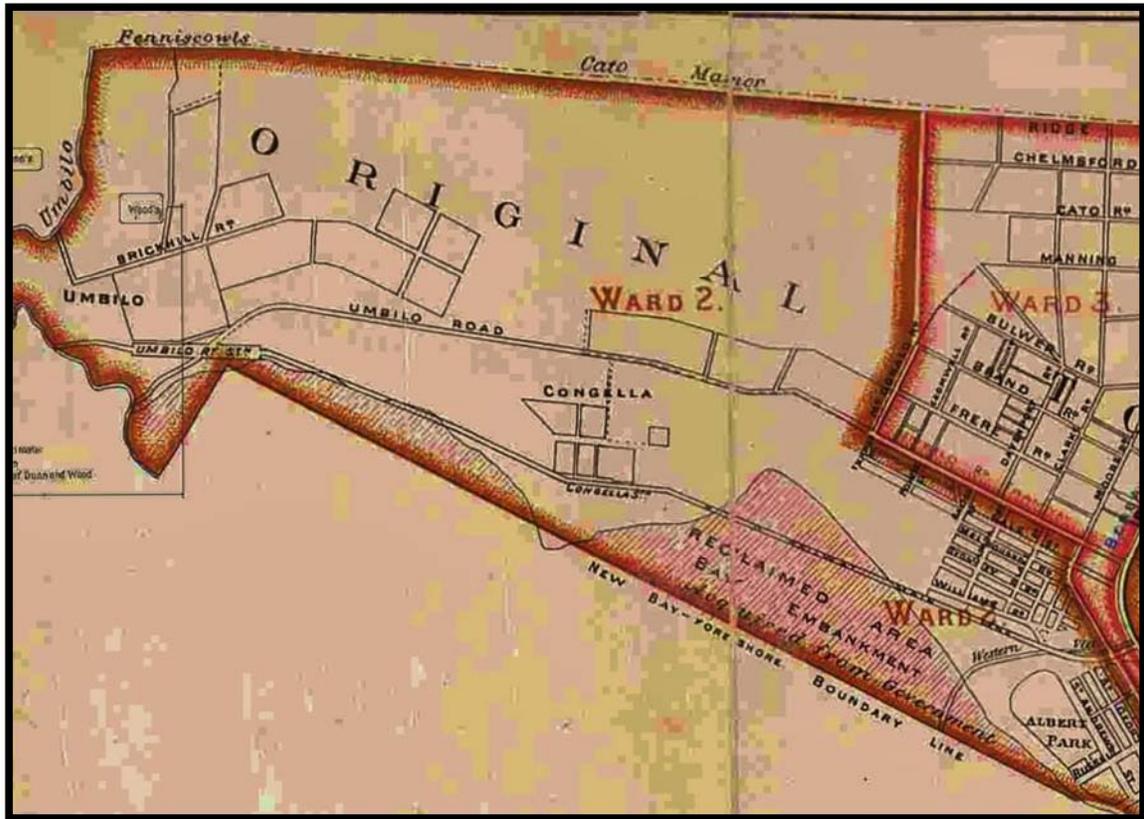


Figure 3. Townlands of Durban – Umbilo and Congella (1898).
 Note land reclamation for Maydon Wharf (Photo Credit: David Baillie)

3. GEOLOGY AND PALAEOONTOLOGY

The underlying lithostratigraphy of the study area comprises Quaternary alluviums of sand and calcrete with low fossil potential. The SAHRIS Palaeo-sensitivity mapping indicates the study area to fall within a blue demarcation and consequently **no palaeontological investigations are required.**

4. DESCRIPTION AND SIGNIFICANCE OF HERITAGE RESOURCES

No development activities associated with the proposed project had begun at the time of eThembeni’s field work. Table 1 summarises the heritage resource types assessed, and our observations.

Table 1 Heritage resources types assessed.

Heritage resource type	Observation
Places, buildings, structures and equipment	None were identified within the proposed development area.
Places associated with oral traditions or living heritage	None were identified within the proposed development area.
Landscapes	None were identified within the proposed development area.
Natural features	None were identified within the proposed development area.
Traditional burial places	None were identified within the proposed development area.

Ecofacts	None were identified within the proposed development area.
Geological sites of scientific or cultural importance	None were identified within the proposed development area.
Archaeological sites	None were identified within the proposed development area.
Historical settlements and townscapes	None were identified within the proposed development area.
Public monuments and memorials	None were identified within the proposed development area.
Battlefields	None were identified within the proposed development area.

4.1 Places, buildings, structures and equipment

No places, buildings, structures and equipment of conservation value or architectural significance were observed.

5. ASSESSMENT OF DEVELOPMENT IMPACT

5.1 Places, buildings, structures and equipment

None.

6. RECOMMENDED MITIGATION MEASURES

6.1 Places, buildings, structures and equipment

None.

7 RECOMMENDED MONITORING

7.1 Places, buildings, structures and equipment

None

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

Although highly unlikely, it is possible that aboveground or 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 head of archaeology at Amafa's Pietermaritzburg office should be contacted; telephone 033 3946 543).
- 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.

9. CONCLUSION

We recommend that the development proceeds and have submitted this report to Amafa in fulfilment of the requirements of the NHRA. According to Section 38(4) of the Act 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 the NHRA 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.

The client may contact Ms Bernadet Pawandiwa at Amafa's Pietermaritzburg office (telephone 033 3946 543) in due course to enquire about the Council's decision.

If permission is granted for development to proceed, the client is reminded that the NHRA requires that a developer cease all work immediately and adhere to the protocol described in Section 8 of this report

should any heritage resources, as defined in the Act, be discovered during the course of development activities.

10. REFERENCES

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APPENDIX 1

Relevant Legislation

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) [Repealed]
- KwaZulu-Natal Planning and Development Act 6 of 2008.
- SPLUMA - Spatial Planning and Land Use Management Act, Act 16 of 2013.

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)

National Environmental Management Act 107 of 1998

NEMA makes provision for sustainable development in the context of environmental management through the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations. Since the environment includes the physical, chemical, aesthetic and cultural properties of the earth, heritage resources must be identified and considered when undertaking sustainable development.

NEMA Section 24 requires all developers to obtain the necessary environmental authorisation prior to undertaking a development. Applications must include the following:

- investigation of the potential consequences or impacts of the development on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity;
- investigation of mitigation measures to keep adverse consequences or impacts to a minimum;
- investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate identified in the NHRA;
- reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;

-
- investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;
 - consideration of environmental attributes identified in the compilation of information and maps; and
 - provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.

When assessing the environmental impact of any application for an environmental authorisation, the applicant must undertake a public participation process by which potential interested and affected parties are given the opportunity to comment on, or raise issues relevant to, the application. Stakeholders may include communities, defined as follows:

- Any group of persons or a part of such a group who share common interests, and who regard themselves as a community; and
- In relation to environmental matters pertaining to prospecting, mining, exploration, production or related activity on a prospecting, mining, exploration or production area, means a group of historically disadvantaged persons with interest or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law.

National Heritage Resources Act 25 of 1999 (NHRA)

The NHRA established the South African Heritage Resources Agency (SAHRA) together with its Council to fulfil 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 (HIAs)

Section 38(1) of the NHRA may require an HIA 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 subdivisions thereof which have been consolidated within the past five years; or

-
- the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority (PHRA);
 - 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 PHRA.

Reports in fulfilment of Section 38(3) of the NHRA 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.

In addition, the HIA should comply with the requirements of NEMA, including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of independence.

It is incumbent upon the developer or Environmental Practitioner to approach the heritage authority 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 Section 38(2) of the NHRA 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.

KwaZulu-Natal Heritage Act 4 of 2008

The KZNHA is implemented by Amafa aKwaZulu-Natali / Heritage KwaZulu-Natal, the PHRA 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.

In KwaZulu-Natal Amafa implements both the KZNHA and the NHRA, the latter in terms of a Memorandum of Understanding with SAHRA. Accordingly, all authorizations in the province required by NEMA in compliance with Section 38 of the NHRA, which governs HIAs, are submitted to and reviewed by Amafa.

Amafa will only advise an applicant of the requirement for an HIA, or comment on an HIA report, upon receipt of a Need and Desirability Application on the SAHRIS website.

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.

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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 and management 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 authority, as detailed in the following table.

Grave type	Relevant legislation	Administrative authority – disinterment	Administrative authority – reburial
Graves located within a formal cemetery administered by a local authority	KwaZulu-Natal Cemeteries and Crematoria Act 12 of 1996. National Health Act 61 of 2003, Regulation 363 of 22 May 2013.	National and / or Provincial Departments of Health. Provincial Department of Co-operative Governance and Traditional Affairs (CoGTA)	If relocated to an existing cemetery or private property – CoGTA.
Graves younger than 100 years located outside a formal cemetery administered by a local authority and the graves of victims of conflict	KwaZulu-Natal Heritage Act 4 of 2008. KwaZulu-Natal Cemeteries and Crematoria Amendment Act 2 of 2005. National Health Act 61 of 2003, Regulation 363 of 22 May 2013. Commonwealth War Graves Act 8 of 1992.	Amafa aKwaZulu-Natali, the provincial heritage resources authority and CoGTA.	If relocated to private or communal property – Amafa and CoGTA. If relocated to formal cemetery – Amafa and CoGTA.

– **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 Remains⁴

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.

⁴ <http://www.worldarchaeologicalcongress.org/>

APPENDIX 2

Methodology

Site survey

eThembeni staff members inspected the proposed development area on 07 December 2018 and 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).

The site survey comprised a walkover and visual survey of the proposed activity area where vegetation density and terrain allowed. Geographic coordinates were obtained using a handheld Garmin global positioning unit (WGS 84).

Database and literature review

Existing maps and Google Earth imagery were studied in detail prior to and during fieldwork. Existing specialist reports, including research papers and HIA reports, were reviewed where relevant and available on SAHRIS. Archaeological site data was sought for the project area from the KwaZulu-Natal Museum database.

Assessment of heritage resource value and significance

Heritage resources are significant only to the extent that they have public value, as demonstrated by the following guidelines for determining site significance developed by Heritage Western Cape (HWC 2007) and utilised during this assessment:

Grade I Sites (National Heritage Sites)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that:

Grade I heritage resources are heritage resources with qualities so exceptional that they are of special national significance should be applied to any heritage resource which is

- a) Of outstanding significance in terms of one or more of the criteria set out in section 3(3) of the NHRA;
 - b) Authentic in terms of design, materials, workmanship or setting; and is of such universal value and symbolic importance that it can promote human understanding and contribute to nation building, and its loss would significantly diminish the national heritage.
1. Is the site of outstanding national significance?
 2. Is the site the best possible representative of a national issue, event or group or person of national historical importance?
 3. Does it fall within the proposed themes that are to be represented by National Heritage Sites?
 4. Does the site contribute to nation building and reconciliation?
 5. Does the site illustrate an issue or theme, or the side of an issue already represented by an existing National Heritage Site – or would the issue be better represented by another site?
 6. Is the site authentic and intact?
 7. Should the declaration be part of a serial declaration?
 8. Is it appropriate that this site be managed at a national level?
 9. What are the implications of not managing the site at national level?

Grade II Sites (Provincial Heritage Sites)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that:

Grade II heritage resources are those with special qualities which make them significant in the context of a province or region and should be applied to any heritage resource which -

- a) is of great significance in terms of one or more of the criteria set out in section 3(3) of the NHRA; and
- (b) enriches the understanding of cultural, historical, social and scientific development in the province or region in which it is situated, but that does not fulfil the criteria for Grade 1 status.

Grade II sites may include, but are not limited to –

- (a) places, buildings, structures and immovable equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites; and
- (g) graves and burial grounds.

The cultural significance or other special value that **Grade II** sites may have, could include, but are not limited to –

- (a) its importance in the community or pattern of the history of the province;
- (b) the uncommon, rare or endangered aspects that it possess reflecting the province's natural or cultural heritage
- (c) the potential that the site may yield information that will contribute to an understanding of the province's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of the province's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group in the province;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period in the development or history of the province;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- (h) its strong or special association with the life or work of a person, group or organization of importance in the history of the province.

Grade III (Local Heritage Resources)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that:

Grade III heritage status should be applied to any heritage resource which

- (a) fulfils one or more of the criteria set out in section 3(3) of the NHRA; or
- (b) in the case of a site contributes to the environmental quality or cultural significance of a larger area which fulfils one of the above criteria, but that does not fulfill the criteria for Grade 2 status.

Grade IIIA

This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant any alteration being regulated. The significances of these buildings and/or sites should include at least some of the following characteristics:

- Highly significant association with a
 - historic person
 - social grouping
 - historic events
 - historical activities or roles
 - public memory
- Historical and/or visual-spatial landmark within a place
- High architectural quality, well-constructed and of fine materials
- Historical fabric is mostly intact (this fabric may be layered historically and/or past damage should be easily reversible)
- Fabric dates to the early origins of a place
- Fabric clearly illustrates an historical period in the evolution of a place
- Fabric clearly illustrates the key uses and roles of a place over time
- Contributes significantly to the environmental quality of a Grade I or Grade II heritage resource or a conservation/heritage area

Such buildings and sites may be representative, being excellent examples of their kind, or may be rare: as such they should receive maximum protection at local level.

Grade IIIB

This grading is applied to buildings and/or sites of a marginally lesser significance than grade IIIA; and such marginally lesser significance argues against the regulation of internal alterations. Such buildings and sites may have similar significances to those of a grade IIIA building or site, but to a lesser degree. Like grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than grade IIIA examples: as such they should receive less stringent protection than grade IIIA buildings and sites at local level and internal alterations should not be regulated (in this context).

Grade IIIC

This grading is applied to buildings and/or sites whose significance is, in large part, a significance that contributes to the character or significance of the environs. These buildings and sites should, as a consequence, only be protected and regulated if the significance of the environs is sufficient to warrant protective measures. In other words, these buildings and/or sites will only be protected if they are within declared conservation or heritage areas.

Assessment of development 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.

Criteria	Rating Scales	Notes
	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 HIA

- 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 heritage impact assessment.**
- Soil surface visibility varied from good to non-existent. Heritage resources might be present below the surface or in areas of dense vegetation and we remind the client that the NHRA requires that a developer cease all work immediately and observe the protocol in Section 7 of this report should any heritage resources, as defined in the Act, 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; and comply at all times with the Codes of Ethics and Conduct of the Association of Professional Heritage Practitioners (SA) and the Association of Southern African Professional Archaeologists.
- eThembeni staff members take no personal or professional responsibility for the misuse of the information contained in this report, although they will take all reasonable precautions against such misuse.



Leonard Outram van Schalkwyk

Principle Practitioner.

14 January 2019.

Curriculum Vitae

Position: Director / Heritage Consultant
Name of Firm: eThembeni Cultural Heritage Management
Name: Leonard Outram van Schalkwyk
Profession: Archaeologist; Heritage Practitioner
Date of birth: 7 July 1959
Position in firm: Director
Years with Firm: 20
Professional Membership and Association: Association of Professional Heritage Practitioners – Accredited Member since 2016
South African Association of Archaeologists: 1984 – 1998.
Association of Southern African Professional Archaeologists (ASAPA):
1998 – present.
ASAPA Council Member - Cultural Resources Management Portfolio (CRM):
2011 – 2019.
ASAPA CRM Section - listed as Principal Investigator since 1998.
Amafa aKwaZulu-Natali accredited heritage practitioner since 2001.
SAHRA Archaeological Permit Advisory Committee (2004/5).
South African member of International Scientific Committee for Archaeological Management, elected by ICOMOS-SA Executive (1999 - 2000).
Provincial Representative: South African World Heritage Convention Committee (1998 - 2000).
Southern African Museums Association (1984 -1999).

Specialisation: CRM Accreditation: Principal Investigator: Later Stone Age and Iron Age archaeology; Ancestral Graves Management.

Academic qualifications: BA Hons. Archaeology (Stell) 1982; MA Archaeology (UCT) 1992
Specified Skills: **Cultural Heritage Impact Assessment. ***

* [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), other relevant SADEC national heritage legislations and UNESCO/ICOMOS and IMF/WB/IFC standards and guidelines for international best practice.]

Specialist Declaration



edtea

Department :
Economic Development, Tourism and
Environmental Affairs
PROVINCE OF KWAZULU-NATAL

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	DC/
NEAS Reference Number:	
Date Received:	

Application for an environmental authorisation in terms of section 24(2) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) or for a waste management licence in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008),.

PROJECT TITLE

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Specialist:	Heritage Impact Assessment		
Contact person:	Len van Schalkwyk		
Postal address:	PO Box 20057 ASHBURTON		
Postal code:	3213	Cell:	0826559077
Telephone:	0826559077	Fax:	0866728557
E-mail:	thembeni@iafrica.com		
Professional affiliation(s) (if any)	ASAPA – Association of Southern African Professional Archaeologists APHP – Association of Professional Heritage Practitioners		

Project Consultant:			
Contact person:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			

Specialist Declaration

4.2 The specialist appointed in terms of the Regulations_

I, LO van Schalkwyk , declare that --

General declaration:

- I act as the independent specialist in this application;
- do not have and will not have any vested interest (either business, financial, personal or other) in the undertaking of the proposed activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I am aware that a person is guilty of an offence in terms of Regulation 48 (1) of the EIA Regulations, 2014, if that person provides incorrect or misleading information. A person who is convicted of an offence in terms of sub-regulation 48(1) (a)-(e) is liable to the penalties as contemplated in section 49B(1) of the National Environmental Management Act, 1998 (Act 107 of 1998).

LO van Schalkwyk

Signature of the specialist:

eThembeni Cultural Heritage Management

Name of company (if applicable):

30 September 2019

Date:

Key Qualifications and Relevant Experience

I have 36 years of professional experience as a practising archaeologist and heritage resource practitioner in South Africa, Lesotho, Namibia, Botswana and Mozambique. My research interests have focussed on the Iron Age of southern Africa, while my management specialisations are heritage impact assessments, community liaison and ancestral grave management. I have successfully run a heritage management consultancy as a going business concern for the past 20 years. My key heritage management, tourist guide training and research initiatives include:

- Principal Investigator - survey and excavation of heritage resources in Richards Bay Minerals' concession areas, KwaZulu-Natal, including oral history recording programme with traditional wisdom keepers to ensure appropriate mitigation. Procedures regarding discovery, retrieval and re-interment of human remains were satisfactorily negotiated.
- Member of the Ministerial Monuments Task Group committee to formulate the KwaZulu-Natal Heritage Act No 10 of 1997.
- Implementation of the cultural resources management plan for the uKhahlamba Drakensberg Park (CURE), focussing on rock art management.
- ICOMOS (SA) observer for uKhahlamba Drakensberg Park World Heritage Site assessment.
- Maloti / Drakensberg Transfrontier Conservation and Development Area project feasibility assessment for the Global Environment Facility of the World Bank (GEF). Worked both in Lesotho and South Africa.
- Mnweni Valley cultural landscape management, northern uKhahlamba / Drakensberg - cultural tourist guide training, development of integrated land use and cultural heritage management plan, co-ordination of displays for interpretive centre.
- Reichenau Mission, southern uKhahlamba/Drakensberg - cultural tourist guide training; permaculture design workshop, compilation of infrastructural development plan with local community, including establishment of a community Trust, upgrade of access roads, building restoration, skills training and empowerment. SA Catholic Bishops Conference.
- Specialist report on coastal zone management of KwaZulu-Natal for Environmental Evaluation Unit of the University of Cape Town.
- Lead consultant - cultural resources assessment of uThukela Water Scheme for Department of Water Affairs and Forestry and Institute of Natural Resources.
- Fencing and stabilisation of excavated deposits at Border Cave, Ingwavuma district, KZN.
- Excavation of middens at King Shaka's KwaBulawayo iKhanda in collaboration with Gavin Whitelaw (Natal Museum).
- Co-Director, Isandlwana Archaeological Project, with Glasgow University Archaeology Research Division
- Cultural heritage management of greater Chobe Conservation area in Botswana – Department of Parks and Wildlife. Production of policy document for submission to World Wildlife Fund.
- Archaeological Impact Assessment Riversdale Coal, Tete, Mozambique for Golder and Associates.
 - Heritage Practitioner – DAC Legacy Project - Oliver Tambo Homestead and Memorial Site development at Inkantolo, and Khananda Hill Memorial Site, Bizana, Eastern Cape – for the Independent Development Trust and National Department of Arts and Culture.
 - DAC Legacy Project – JL Dube Homestead and Ohlange Institute Heritage Site development - for the Independent Development Trust and National Department of Arts and Culture.

I have completed more than 1500 heritage impact assessments and specialist studies throughout southern Africa including the Republic, Lesotho, Namibia, Botswana and Mozambique. My most current heritage management projects are all listed on SAHRIS (<http://www.sahra.org.za>).

Dams, Water and Sewerage Supply Projects

Ozwathini bulk water supply	Ibhongo Consulting cc
Richmond Water Pipeline	
Construction of New Water Mains on the Western Shores and a Water Reservoir near St Lucia, Eastern Shores, Isimangaliso Wetland Park, KZN	ACER (Africa)
Pholela Dam, Himeville, KZN	Pholela Irrigation Board
Sikoto Dam, Appelsbosch / Noodsberg, KZN	Alletson Ecologicals
King Williamstown Bulk Regional Sewage Scheme: Phases 2 - 7, and Ugie dam sites, Eastern Cape	Terreco (Pty) Ltd
Assagay Trunk Water Pipeline and Umdloti Waste Water Pipeline, La Mercy, KZN and Mount Ayliff - Ntsizwa Weirs Water Supply Scheme, Eastern Cape	Arcus GIBB
Eshowe Bulk Water Supply Project, KZN	WSP Environment & Energy
DR08473, DR08111 and Ntinga borrow pit upgrades, Mbizana, Eastern Cape	Terratest (Pty) Ltd
River sand mining, Portion of Inanda Location No 4675, Pinetown Magisterial District, KZN	Inhlabathi Quarrying and Trading cc
Ludeke Dam, Bizana, Eastern Cape.	
Exhumation and reinterment of 24 graves within FSL.	Umgeni Water.

Transnet pipeline river crossing, uMvoti River, KZN
 Thukela Hydro Electric Power Scheme, KZN
 Ludeke Dam borrow pit and ancestral graves exhumation (n=24), Bizana, Eastern Cape
 Mvutshane Dam – HIA and ancestral graves management
 Mzimvubu Water Project EIA: Proposed dams on the Tsintsa River, Eastern Cape
 Communities affected by Paris Dam: negotiation of appropriate mitigation for exhumation and reinterment of 48 ancestral graves.

Residential, commercial and mixed-use projects

Expansion of Alumicor Facility, Pietermaritzburg
 Amber Lakes housing development
 Gates residential development, Hilton Estate, KZN
 Umlazi Uganda housing development, KZN
 Tulele housing development, Shakaskraal, KZN
 Glenwood North-East Sector Phase 2 housing development, Pietermaritzburg, KZN
 Hull Valley housing development, Craigieburn; Ekwandeni housing development, Hammarsdale; Emapheleni housing development, Clermont, KZN
 Msunduzi Waterfront Development, Pietermaritzburg, KZN
 Izinga Phase 3 residential development and Lungisisa Indlela Village, Umhlanga; and Zimbali Lakes residential development, Ballito, KZN
 Mpola Phase 3 housing development, Pinetown, KZN
 Driefontein Gardens Estate development, Shakas Rock, KZN
 Grootville Priority 1 Phase 2 and Chris Hani residential developments, Darnall, KZN
 Bhanoyi Country Estate, Rietvlei, KZN
 Amaotana housing development, Verulam, KZN
 Housing, commercial and industrial development, Ixopo, KZN
 Ashburton housing development, Pietermaritzburg, KZN
 Compensation Flats Industrial and Business Park Development, Compensation; Inyaninga Mixed Use Development, Tongaat; and uShukela Highway Business and Office Park Development.

Roads and bridges

Mkhambathi road upgrade, Eastern Cape
 N3TC Route Location Initiative: Warden to Keeversfontein – De Beers Pass Section, Free State Province
 N2 Pondoland Toll Route
 Proposed N2–Mvezo Village link road and bridge, Eastern Cape
 National Road 2 Section 26 from Mt Edgecombe Interchange to Tongaat Toll Plaza; Improvements to Umgeni Road Interchange on National Route 2, Section 25, KZN
 Road Upgrade and Borrow Pits, Rehabilitation of N2 between Ngqweleni River and Brookes Nek, Umzimvubu Local Municipality, Eastern Cape
 Construction and Upgrading of Ingquza Hill to Mangwanini; Mpophomeni; and Matheko River to Msikaba AA Access Roads; Vialiti road upgrades, Mthatha, Eastern Cape
 Mnini (Bonnyrigg) Interchange on National Route 2 Section 24 (Km 1.8), Ethekewini Metropolitan Municipality, KZN
 Trade Zone Watson Highway Link Road, La Mercy, KZN

Power lines and substations

Idutywa-Gatyana, Mafini-Tombo,
 Ruigtevallei-Dreunberg 132kV EC transmission infrastructure
 Grassridge (Coega)-Victoria West 765kV Transmission Line
 Majuba-Nhlazatshe-Richards Bay 400kV Transmission Line
 Majuba-Nhlazatshe-Richards Bay 400kV Transmission Line
 Majuba-Ingula-Venus 400kV Transmission Line
 Msinga Pomeroy 132kV Power line and Substation, KZN
 Venus-Sigma-Hector-(Ariadne) 765kV Transmission Isundu S/S
 Kareedouw – Patensie 400kV Transmission Line
 Thyspunt /Oyster Bay – Humansdorp and Tsitsikama S/S + 132/400kV Transmission lines

BKS (Pty) Ltd
 ACER (Africa)
 MBB Consulting Engineers for Umgeni Water
 Umgeni Water
 Iliso Consulting (Pty) Ltd for DWAF
 DWAF/Polela Water Board

WSP Environment & Energy
 Terratest (Pty) Ltd
 Environmental Planning and Design
 EThekweni Metropolitan Municipality
 Indiflora cc
 JEC Environmental Services

NDG-Africa

Ocean Spray Investments (Pty) Ltd

SiVEST Environmental Division

SRK Consulting
 Dewanig Investments cc
 KwaDukuza Municipality

Bhanoyi Property Holdings (Pty) Ltd
 2G Environmental Management
 The Craigie Burn Land Trust
 Oro Management cc

Tongaat Hulett Developments

Arcus GIBB

Cave Klapwijk and Associates for SANRAL
 CCA Environmental Consultants for SANRAL
 SSI for Chris Hani DM

Terratest (Pty) Ltd for SANRAL

Terreco (Pty) Ltd for SANRAL

WSP Environment & Energy for Alfred Nzo DM

Afzelia Environmental Consultants
 Arcus GIBB for eThekweni Municipality

Arcus GIBB for Eskom Transmission E/C

ACER (Africa) for Eskom
 Iliso Consulting (Pty) Ltd for Eskom
 Stemele Bosch Africa (Pty) Ltd for Eskom
 Cave Klapwijk and Associates for Eskom
 Stemele Bosch Africa (Pty) Ltd for Eskom
 ACER (Africa) for Eskom
 GIBB Science and Technology for Eskom
 GIBB Science and Technology for Eskom

Mkhambati Nature Reserve and local communities LDP
Sodwana Bay Tourism Node and Beach Rehabilitation LDP
St Lucia town precinct, boardwalks and beach access LDP

Eastern Cape Parks
Acer (Africa) and Isimangaliso Wetland Park Authority
Acer (Africa) and Isimangaliso Wetland Park Authority

Ancestral graves management

- Communities affected by Paris Dam – DWAF/Polela Water Board: negotiation of appropriate mitigation for exhumation and reinterment of 48 ancestral graves. 1996-7.
- Inyaninga Hindu Cemetery. Dube Trade Port. Institute of Natural Resources (UKZN) for ACCSA. 2010.
- Graves and Burial Grounds Policy for Tongaat Hulett Developments, KZN. 2012.
- Embo Community Trust - Cotswold Downs Grave Mediation for Keith Wakefield / Luke Bales Developments. 2010-2017. LRDA.
- Grave Mediation Process: Eagles Eyre Estate, Camperdown, KZN for Intense Heat Investments (Pty) Ltd. 2011-2012. Amafa approved.
- Kwandengezi residential and infrastructure development. Graves mediation. Aurecon for eThekweni Municipality. 2012–2015.
- Mbonambi family graves - negotiation of appropriate mitigation for exhumation and reinterment of two ancestral graves at Dlambula School, Umgababa/Mnini. Department of Public Works and Ithala Bank. 2014.
- Identification of 550 graves in Zulti South Mineral Lease Area and community negotiations for graves management. Richards Bay Mining (Rio Tinto). 2011-2016. Amafa approved. Ongoing.
- Ludeke Dam, Bizana, Eastern Cape for Umgeni Water. Exhumation and reinterment of 24 graves within FSL. 2012–2014. SAHRA approved.
- Mvutshane Dam, Mapumulo, KZN for Umgeni Water. Exhumation and reinterment of 54 graves within FSL. 2013-2014. Amafa approved. Completed. December 2014.
- Proposed Fuleni Coal Mine for Jacana Environmental / Ibutho Coal. Terminated due to community resistance. 2014.
- Grave mediation. Mlaba Traditional Authority. Ukhuko Mine. For Zululand Anthracite Collieries. 2015.
- Ariadne-St Faiths-Eros Powerlines. Grave mediations (n=125). Mokgope Consulting / Eskom. 2016 – 2018.
- Ozwathini Reservoir. Negotiation of appropriate mitigation for exhumation and reinterment of four ancestral graves. Umgeni Water. 2017.

Community liaison

- Nxamalala and Bhengu Traditional Authorities - investigated declaration of archaeological conservancy in lower uThukela River Basin.
- Mpungose Traditional Authority - negotiated extended boundaries of Ondini Historical Reserve.
- Mngomezulu Traditional Authority - negotiated management of Border Cave archaeological site.
- Bhekeshowe Traditional Authority - investigated feasibility of developing King Shaka's KwaBulawayo site as a tourist destination.
- Mangwebuthanani Traditional Authority - negotiated establishment of Isandlwana Historical Reserve.
- Mbonambi and Sokhulu communities - negotiated mitigation and future practice regarding exposure of human remains by Richards Bay Minerals' mining activities on ancestral lands.
- Khovokeni and Mvutshane communities at Kosi Bay - investigated feasibility of declaring Tsonga fish traps as significant cultural landscape;
- Amangwane and Amazizi Traditional Authorities - Mnweni Valley cultural landscape management plan for inclusion into the uKhahlamba / Drakensberg World Heritage Site.
- Amangwane and AmaZizi Traditional Authorities – establishment of Cultural Centres and Cultural Guide training / Rock Art Custodians in the Mweni Area of the Okhahlamba/Drakensberg World Heritage Site.
- KwaNdengezi *in situ* housing and infrastructure upgrade - negotiation of appropriate mitigation for exhumation and reinterment of 30 ancestral graves. eThekweni Metropolitan Municipality.
- Dube and Mkhwanazi communities – management of 550 graves in Zulti South Mineral Lease Area for Richards Bay Mining.
- Dodoma Avenue/Kennedy Road Hindu Burial Site. Clare Estate Development Forum and eThekweni Metro (2013 - present).
- Consultation and liaison with the Gamnkwa Khoisan Council regarding HIA's and archaeological research conducted within in their perceived ancestral territories between the van Staadens River and the Bloukranz River. (2010 – to present).

Collaborative Research and Archaeological Site Management

- University of Manitoba, Canada – Ndongondwane Early Iron Age research Project 1994 – 2004 with Professor Haskel Greenfield.
- University of Calgary, Canada – Cattle Transhumance and Isotope Study 2005 -2008 with Dr Elizabeth Arnold.
- University of Witwatersrand – Acacia Project – Site Management and Stabilisation of Sibudu Cave, Tongaat. 2007 – 2013 with Professor Lyn Wadley.

- University of Toronto, Canada – Grassridge MSA Site reconnaissance 2014. with Dr. Ben Collins.
- University of Manitoba, Canada – Zulu Ethnographic and Ethnoarchaeology Ceramic Project. 2009 – 2013 with Professor Kent Fowler.
- University of Manitoba, Canada – Ceramics and Geochemistry Study of the eMakhosini Basin 2014 – 2015 with Professor Kent Fowler (ongoing).
- University of Manitoba, Canada – Cattle Transhumance and Isotope Study of the eMakhosini Basin and Sphere of Influence. 2015 – 2017 with Professor Kent Fowler (ongoing).
- University of Cape Town – Indigenous Small Livestock Project 2013 – 2015 with Professor Judy Sealey and Louisa Hutton.
- University of Witwatersrand – Border Cave in the 21st C - Site Management and Stabilisation of Border Cave MSA Project Excavations with Dr. Lucinda Backwell and Professor Lyn Wadley 20014 – 2019 (ongoing).
- Evolutionary Studies Institute, University of the Witwatersrand - MSA Site Reconnaissance, lower Mtamvuna, Izotsha and Umzimkulu Valleys, 2016 with Drs. Paloma de la Peña and Aurore Val.
- University of Witwatersrand - Klasies River Mouth Cave MSA Excavations. 2016. Cave lighting and logistics for Prof. Sarah Wurz.
- University of Leiden – Mhlathuzana Shelter and Shongweni Cave - Site Management and Stabilisation of Excavations with Dr's Gerrit Dusseldorf and Geeske Langejans. 2018-2019.
- University of Cape Town – 500 Year Project – Dingane's Capital, Mgungungdlovu with Professor Carolyn Hamilton. 2014 – 2017.
- Isimangaliso Wetland Park Authority - Cultural Heritage Resources Management Plan for the Isimangaliso Wetland Park.
- Polihali Dam CRM Project. Cultural Team Leader. Mokhotlong, Lesotho for PGS Heritage and LHDA. Current.

Employment Record

2000 to present

Director at eThembeni Cultural Heritage, an independent consultancy specialising in heritage impact assessments, ancestral grave management, cultural resource management plans and integrated environmental management.

November 1996 to December 2000

Assistant Director (Research, Professional Services and Compliance) of Amafa aKwaZulu-Natali, in charge of ten professional and administrative staff, including archaeologists, anthropologists, architects, compliance and database managers.

November 1992 to October 1996

Archaeologist with the KwaZulu Monuments Council; Principal Professional Officer-(Research Division), in charge of six professional and administrative staff. Responsible for Museum and Interpretive Centre Coordination in the previous KwaZulu Homeland.

February 1986 to October 1992

Professional Officer and O.i.C at Ondini Museum in Ulundi with KwaZulu Monuments Council. Responsible for supervising archaeological excavations and reconstruction of King Cetshwayo's Ondini Royal Residence; management of the Historical Reserve and Nguni cattle herd; development of the Ondini Museum and its tourist facility, and regional site interpretation. Responsible for 30 General-Assistant and administrative staff members.

July 1983 to January 1986

Field Director of an Early Iron Age archaeological research project in the lower uThukela Valley under the aegis of the KwaZulu Bureau of Natural Resources. Solely responsible for 15 General-Assistants, all excavations and curation/reporting; procurement, logistics, wage payments and balance sheets/stock returns.

December 1978 to June 1983

Deployed as a Ranger/Naturalist in the Kruger National Park under Messrs. Piet van Wyk, Johan Vehoef, Irene Grobelaar, and Richard Garstang..

December 1977 to February 1978

Field Research Assistant in Hluhluwe/iMfolozi Game Reserve under Regional Ecologist, Roger Porter.

LANGUAGES

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Good	Excellent	Good
Zulu	Good	Basic	Poor

Conference papers

- 2019 The Polihali Dam Cultural Resources Management Programme for LHDA – Scope of work and achievements to date. (ASAPA Biennial Conference, Kimberley).
- 2015 ‘Grief, at what cost? Ancestral land displacement and alienation – What about our graves?’ (African Heritage Challenges Conference, University of Cambridge, United Kingdom).
- 2014 ‘Graves and Ancestors – Managing for the Intangibles of Tangible Cultural Heritage’. (Society of Petroleum Engineers International – HSE Conference, Maputo, Mozambique).
- *2004 ‘Rescue excavation of an Iron Age Shell midden, Shrimp Lane, Salt Rock, KwaZulu-Natal’. (Southern African Association of Archaeologists biennial conference, Kimberley).
- 1996’ The Early Iron Age site of Ndongondwane, KwaZulu-Natal, South Africa. Preliminary report on the 1995 excavations’. (Southern African Association of Archaeologists biennial conference, Bloemfontein).
- *1995 ‘Archaeology, *amasiko*, and cultural resource management: a dialogical approach. A case-study from Richards Bay Minerals' mining concession areas in northern KwaZulu-Natal’. (South African Museums Association regional conference, Hermannsburg).
- 1994 Settlement shifts and socio-economic transformations in early farming communities in the lower Thukela Basin, Zululand. A Revisionist Model. (Conference on the growth of farming-communities from the Equator southwards, Newnham College, University of Cambridge, United Kingdom).
- 1994 ‘Border Cave: who really cares? The site management of a priceless cultural resource’ and ‘People, pots and pits: women's space in the Early Iron Age’. (Southern African Association of Archaeologists biennial conference, Pietermaritzburg).

Publications

- 2008 co-author with Haskel J. Greenfield Early Iron Age Regional Settlement and Demographic Patterns along the Eastern seaboard of South Africa: a view from the lower Thukela Valley. In. *Animals and People: Archaeozoological Papers in Honour of Ina Plug*. **BAR International Series** 1849: 131-151. Oxford.
2005. Greenfield, H. J., Fowler, K. D. & van Schalkwyk, L. O. Where are the gardens? Early Iron Age horticulture in the Thukela River Basin of South Africa. **World Archaeology** 37, 307-328.
- 2004 co-author with Kent D. Fowler and Haskel J. Greenfield. The effects of burrowing activity on archaeological sites: Ndongondwane, South Africa. **Geoarchaeology** 19(5): 441-470.
- *2003 co-author with Haskel J. Greenfield. Intra-settlement social and economic organisation of Early Iron Age farming communities in southern Africa: a view from Ndongondwane. **Azania** 38: 121-137.
- *2000 co-author with Haskel J. Greenfield & Tina L. Jongsma. Surface and subsurface reconnaissance at Ndongondwane: preliminary results of the 1995-97 field seasons. **Southern African Field Archaeology** 9: 5-16.
- 2000 co-author with Kent D. Fowler & Haskel J. Greenfield. The identification and significance of ceramic ecofacts from Early Iron Age Ndongondwane, South Africa. **Southern African Field Archaeology** 9: 32-42.
- 1999 The archaeological excavations of Ondini, the Royal Capital of King Cetshwayo ka Mpande: 1873-1879. **One World Archaeology Series**. The Constructed Past: Experimental Archaeology, Education and the Public (15). UNESCO.
- *1997 Mining Yields up Ancient Past. **Titania**. Richards Bay Minerals.
co-author with Haskel J. Greenfield and Tina L. Jongsma. Preliminary results of the 1995 research at the Early Iron Age site of Ndongondwane, KwaZulu-Natal, South Africa. **Nyame Akuma** 47: 42-52.
- *1997 co-author with Haskel J. Greenfield and Tina L. Jongsma. The Early Iron Age site of Ndongondwane, KwaZulu-Natal Province, South Africa. **Southern African Field Archaeology** (6)2.
- *1996 Settlement Shifts and Socio-Economic Transformations in Early Farming Communities in the lower Thukela Basin, Zululand. A Revisionist Model. Proceedings of the conference on the growth of farming communities from the Equator southwards. **Azania** (XXVIII).
- 1996 A new relevance for old monuments: the Isandlwana model. **Southern African Museums Association Bulletin** (21).
- 1996 co-author with Jo Walker. Monuments and cultural heritage conservation in KwaZulu-Natal. **Restorica** (29).
- *1994 Rediscovering the Iron Age. **Titania**. Richards Bay Minerals.

- *1994 Wosi - an Early Iron Age village in the lower Thukela Basin, Zululand. **Natal Museum Journal of Humanities** (6): 65-117.
- 1994 Mamba Confluence - a preliminary report on an Early Iron Age industrial centre in the lower Thukela Basin, Zululand. **Natal Museum Journal of Humanities** (6): 119-152.
- *1994 Tracking-down old miners and beachcombers - Brown mussels and iron working long, long ago. **Titania**. Richards Bay Minerals.
- 1993 Fort Ivuna and the Battle of Ndunu Hill. **Journal of the Natal Institute of Architects** (18): 8-9.
- *1989 Exploding a Myth - Natal's First Farmers. **Condenser**. Hulett-Tonga Corporation, Durban.
- * indicate archaeological retrieval and curation of human remains

The Following Persons May Be Contacted to Attest to My Professional Standing:

Prof. John Parkington (retd). University of Cape Town	john.parkington@uct.ac.za
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Mr Lebo Mokoatsi Independant Social Facilitator	lebo.mokoatsi@yahoo.com

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.



Leonard Outram van Schalkwyk.