Unit A1
Central Park Offices
221 Boom Street
Pietermaritzburg
3201

Tel: 0736292617 Cell: 0726619488
Fax: 0867316815

Email: info@amathongagroup.co.za

SINOHYDRO CONSULTANT

PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED MATHULINI HOUSING DEVELOPMENT PROJECT AT MATHULINI VILLAGE IN UMSHWATHI LOCAL MUNICIPALITY OF UMGUNGUNDLOVU DISTRICT WITHIN KWAZULU NATAL PROVINCE

January, 2019

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DECLARATION

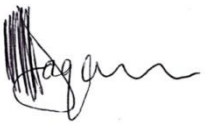
ABILITY TO CONDUCT THE PROJECT

Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and a Master's degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), and the International Council of Archaeozoology (ICAZ). He has more than ten years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over five hundred Archaeological Impact Assessments (AIA) for developmental projects situated in all provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

I, Mr. Munyadziwa Magoma, declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organization. I act as the independent specialist in this application, and 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 vow to comply with all relevant Act, Regulations and applicable legislation.

AUTHOR AND CONTACT DETAILS:

Munyadziwa Magoma,



Cell: 082 535 6855
Fax: 086 566 8079
E-mail: munyadziwam@gmail.com

CLIENT CONTACT DETAILS:

- Jenitha Girdary

Tel: 082 083 1691
Fax: 086 458 5035
E-mail: jenitha@fuzeenvironmental.co.za

EXECUTIVE SUMMARY

Sinohydro has been commissioned to conduct the Cultural Heritage Impact Assessment (HIA) Study for the proposed Mathulini Housing Development project within uMshwathi Local Municipality in the uMgungundlovu District Municipality of KwaZulu-Natal. The aim of the survey was to investigate the availability of archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structures of historical significance that may be affected by the proposed housing development, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The findings of this study have been informed by desktop study and field survey. The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the wider area over the past years.

Receiving Environment

The proposed development is located at Mathulini village in the Local Municipality of uMshwathi within KwaZulu Natal Province. The topography of the proposed area is very undulating such that most of the section will have to be leveled in-order to be utilizable for the proposed development; this will have significant change on the area. The area is currently used for various purposes including residential, farming and other related activities. Although transformed, archaeological resources are not unexpected in these areas, especially graves in area (s) where there are houses or historical farm dwellings.

Impact statement

The construction of the proposed housing development will result in various threats to archaeological and graves sites in the vicinity of the proposed area, with impacts expected to be of moderate nature. Thus, impact of the proposed housing on cultural heritage remains is rated as being medium (see Table 1). It is important to note that all categories of heritage resource, with the possible exception of movable objects, are generally known to occur in the wider area proposed for development. The primary areas of concern in this study are the impacts on grave sites. This impact will last for the lifespan of this proposed development.

Restrictions and Assumptions

Most of the area proposed for development is encroached by bush which make it almost impossible to access. In addition, gravesite are located in the homestead, and due to the nature of this survey, it was not possible to survey within homesteads. It is thus possible that some materials could have been overlooked due to that the area was investigated only in a broad, overview approach as access to the different properties was not possible. It is assumed that the Social Impact Assessment and Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the area and that these then will also have to be considered in the planning of the project.

Survey sensation

The visibility of the area proposed for development was low, some of the area could not be accessed.

Site-Location Model

Archaeologists who do research in the region generally accept a site-location model proposed by Maggs (1980). The model suggests that inland sites will be found in locations which bear the following:

- Limited to below an altitude of 1000 m asl;
- Situated on riverside or streamside locations, on deep alkaline colluvial soils; and
- In areas appropriate for dry-farming (with sufficient summer rainfall).

Table 1: Possibility of archaeological/ heritage materials on sites.

Landscape Type	Description	Occurrence Possible	Likely Occurrence
Archaeology	Early, Middle and Late Stone Age; Iron Age;	Yes Yes	Likely Likely
Burial and Graves	Pre-colonial burials; Graves of victims of conflict; Graves older than 100 years; Graves older than 60 years; Graves younger than 60 years;	Yes	Likely
Built Environment	Formal public spaces; Historical structures; Area associated with social identity/ displacement;	Yes	Likely
Historic Farmland	Historical farm yards; Historical farm workers villages; Irrigation furrows; Historical routes; Distinctive types of planting;	Yes	Likely
Landscape usage	Sites associated with living heritage e.g., initiation school sites; Sites of political conflict; Sites associated with a historic event/ person;	Yes	Likely
Historic rural Town	Historic mission settlements;	Yes	Likely

Survey Findings and discussions

The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Mathulini Housing have identified several grave sites. These are located within homestead and are what can be referred to as family graves. All categories of graves were identified (older than 60 years and younger than 60 years). Unknown graves are handled similarly to those older than 60 years. These graves are thus protected by Section 3 of the National Heritage Resource Act, 1999 (Act 25 of 1999) and the Human Tissues Act, 1983 (Act 65 of 1983). Section 36 (3) of the National Heritage Resource Act, 25 of 1999 further protects these graves against any alterations.

Recommendations and discussions

Burial grounds and Graves are directly associated with human being and are thus accorded a high value (Local Grade III B). This means they must be protected and properly conserved to ensure longevity. However, they can be mitigated if serious need arise. There are two possibilities on how graves can be mitigated. Firstly and mostly preferred is to compile a heritage management plan (HMP) which will ensure their continuous conservation. This HMP should be completed by a heritage specialist, and is done when graves are not in direct jeopardy of the proposed development. The second option is a Phase-2 mitigation (relocation of graves), this should always be considered as a last option. This procedure entails social consultation, and application of permits for those older than 60 years and unknown graves, while those less than 60 years of age, only an undertaker is needed.

Taking all the above information into account, I, as an independent archaeologist due recommend the following:

- A heritage practitioner should be assigned during bush clearing to further assess the area, and document all graves within households; and
- A Heritage Management Plan must be devised to ensure that all graves in the area are protected and preserved. The management plan is an open document meaning that it should be adapted and reassessed from time to time.

No major heritage flaws which can hamper the success of this project where noted in the area. It must be noted that the noted graves are family graves and the proposal aim on improving the village, and no person will be relocated.

Despite that no archaeological objects were observed during the survey, and that the area is disturbed, the client is reminded that unavailability of archaeological material does not mean absentee, archaeological material might be hidden underground. It is thus the responsibility of the developer to notify contractors and workers about archaeological material (e.g., pottery, stone tools, remnants of stone-walling, graves, etc) and fossils that may be located underground. Furthermore, the client is reminded to take precautions during construction.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);

- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or Amafa officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by Amafa.

Conclusions

A thorough background study and survey of the proposed housing development was conducted in line with Amafa guidelines. As per the recommendations above, there are no major heritage reasons why the proposed development could not be allowed to proceed. Thus, it is recommended that the proposed development proceed without further archaeological and cultural heritage mitigation.

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

Archaeological Material: remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used, modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Chance Finds: means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material: remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

Late Iron Age: this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site: a spatial cluster of artifact, structures, organic and environmental remains, as residues of past human activity.

1. Introduction

At the request of Sinohydro, a Phase I Archaeological and Cultural Heritage Impact Assessment Study for the proposed Housing Development was conducted within uMshwathi Local Municipality of uMgungundlovu District in KwaZulu Province. The survey was conducted in accordance with the SAHRA Minimum Standards for the Archaeology and Palaeontology. The minimum standards clearly specify the required contents of the report of this nature. The study aim to identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed construction, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

2. Sites location and description

The proposed development is located within the jurisdiction of Mathulini village in the Local Municipality of uMshwathi - KwaZulu Natal Province. The topography of the proposed area is very undulating and also characterized by rolling hills such that most of the section will have to be leveled in-order to be utilizable for the proposed project; this will have significant change on the area. The area is currently used for various purposes including farming, residential and other related activities. Although transformed, archaeological resources are not unexpected in these areas, especially graves in area (s) where there are houses or historical farm dwellings.

Summary of Project Location Details

Province:	KwaZulu
Local Municipality:	uMshwathi
District Municipality:	uMgungundlovu
Proposed development:	Housing

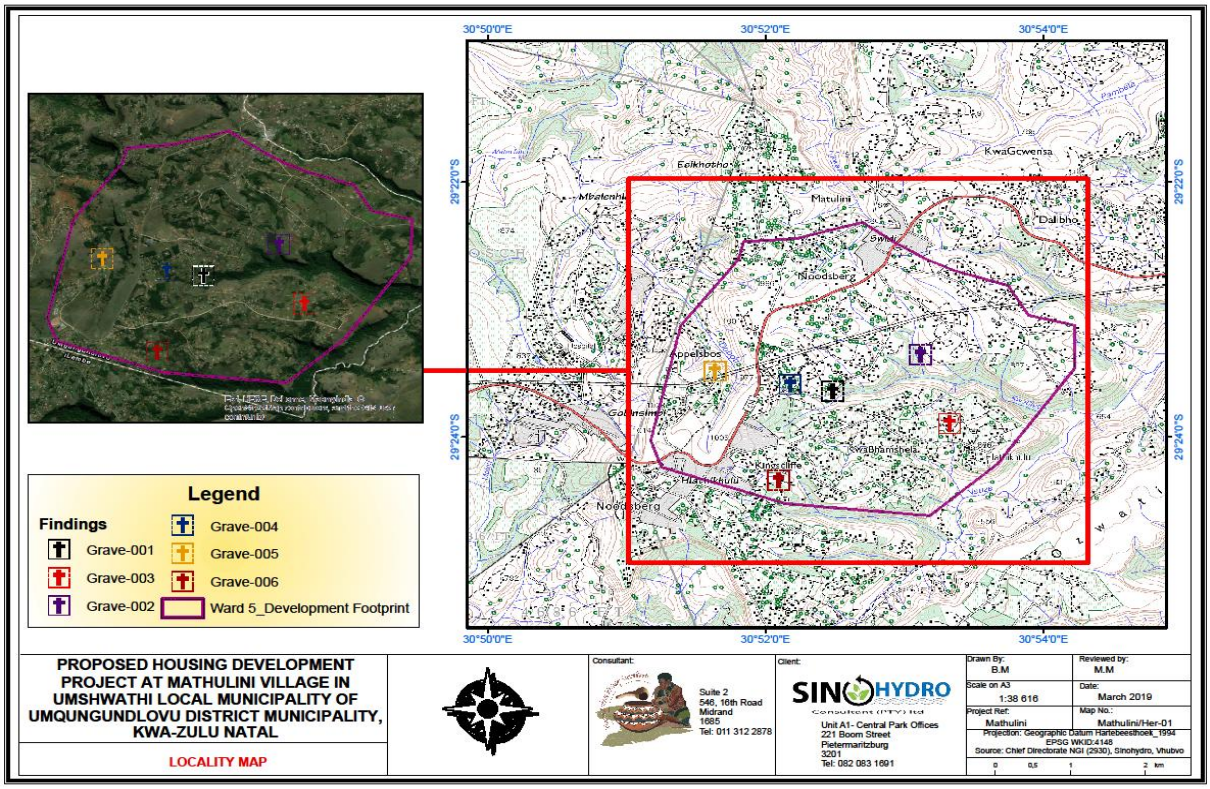


Figure 1: View of topographical map indicating the proposed area.

Figure 2: A general overview of the proposed area of development.

Figure 3: An overview of the southern section of the area proposed for development.

Figure 4: An overview of the western section of the area proposed for development.

Figure 5: View of the eastern section of the proposed area of development.

Figure 6: View of some of the encroachment and small scaling farming in the area proposed for development.

Figure 7: View of the area encroached by grass on the south-eastern section proposed for development.

Figure 8: View of some of the access road in the proposed area. Note high vegetation on the side of the road.

3. Nature of the proposed project

The development proposal entails the in situ construction of 971 RDP houses across ward 5 in Umshwati Municipality. The project is based on the old Department of Human Settlements rural housing subsidy Quantum and the Department of Human Settlements is the funding agent. Majority of the new houses will be constructed within the existing properties (yards) of beneficiaries, adjacent to their informal houses. There is, however, a possibility that a few of the existing properties are too proximal to watercourses and therefore cannot be built within the existing plots. Hence, subject to beneficiary consent, the new homes will be located further away from watercourses (drainage channels). There will also be several new houses constructed within newly allocated plots at the time of construction.

The beneficiary properties will also include a ventilated improved pit latrine (VIP) sanitation system; VIPs are available at most of the existing households and consequently all approved beneficiaries who have previously received this type of toilet (through any Umgungundlovu District Municipality projects) will not receive a second VIP. Each house (including temporary development footprint and VIP) is not expected to exceed 80 square meters. Each house itself will be a single storey, 40.22m2 structure, with a kitchen, two bedrooms and living area. The layout allows for the provision of services and infrastructure in future.

Note that No services or infrastructure will be constructed for this phase of the project. A separate EIA for infrastructure and services (roads, water, electricity etc) will be conducted by relevant service authorities when required.

4. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed Housing Development, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed Housing Development; and

- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

5. Methodology and Approach

Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted: 1) literature review, 2), consultations with the developer and appointed consultants, 3), completion of a field survey and 4), analysis of the acquired data, leading to the production of this report.

Physical survey

The field survey lasted one day of the 16th of January 2019. Two archaeologists from Vhubvo conducted the survey.

Documentation

The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

Oral interview

Oral interview was initiated with locals. The oral interviews aim to understand the cultural landscapes and/ or intangible heritage of the area.

Restrictions and Assumptions

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, should any archaeological/ or grave site be observed during construction, a heritage specialist must immediately be notified. Note that archaeological sites dating to the Stone, Iron and Historical Age as well as battle fields are known to occur in the wider region of study. Below are the sensitive areas that are expected:

- Most of the households which are within the proposed area have family graves, the developers should thus take this into consideration during planning of the project; and
- Iron Age people preferred to settle on the alluvial soils close to rivers. The proposed area also include tributaries. River banks irrespective of extent are viewed to be sensitive and should be cautioned in the best way possible.

6. Applicable Heritage Legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act (No 103 of 1993); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50 m in length; and
(c) any development or other activity which will change the character of an area of land, or water -
- *(i) exceeding 5 000 m² in extent;*
- *(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 SAHRAor a Provincial Heritage Resources Authority;*

(d) the re-zoning of a site exceeding 10 000 m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of theproposed development.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

(a) Places, buildings structures and equipment of cultural significance
(b) Places to which oral traditions are attached or which are associated with livingheritage
(c) Historical settlements and townscapes
(d) Landscapes and natural features of cultural significance
(e) Geological sites of scientific or cultural importance
(f) Archaeological and paleontological sites
(g) Graves and burial grounds including-
- *(i) ancestral graves*
- *(ii) royal graves and graves of traditional leaders*
- *(iii) graves of victims of conflict*
- *(iv) graves of individuals designated by the Minister by notice in the Gazette*
- *(v) historical graves and cemeteries; and*
- *(vi) other human remains which are not covered by in terms of the Human Tissue Act,1983 (Act No. 65 of 1983)*

(h) Sites of significance relating to the history of slavery in South Africa
(i) moveable objects, including -
- *(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites andrare geological specimens*
- *(ii) objects to which oral traditions are attached or which are associated withliving heritage*
- *(iii) ethnographic art and objects*
- *(iv) military objects*
- *(v) objects of decorative or fine art*
- *(vi) objects of scientific or technological interest; and*

(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Section 3 of the National Heritage Resources Act (No. 25 of 1999) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value …' These criteria are the following:

(a) Its importance in the community, or pattern of South Africa's history
(b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage
(c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage
(d) Its importance in demonstrating the principal characteristics of a particular classof South Africa's natural or cultural places or objects
(e) Its importance in exhibiting particular aesthetic characteristics valued by acommunity or cultural group
(f) Its importance in demonstrating a high degree of creative or technicalachievement at particular period
(g) Its strong or special association with a particular community or cultural group forsocial, cultural or spiritual reasons
(h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
(i) Sites of significance relating to the history of slavery in South Africa.

Other sections of the Act with a direct relevance to the AIA are the following:

Section 34(1) *No person may alter or demolish any structure or part of a structure, which isolder than 60 years without a permit issued by the relevant provincial heritage resources authority.*

Section 35(4) *No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite*

Section 36 (3) *No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- *destroy, damage, alter, exhume, remove from its original position orotherwise disturb any grave or burial ground older than 60 yearswhich is situated outside formal cemetery administered by a localauthority; or*
- *bring onto or use at a burial ground or grave any excavationequipment, or any equipment which assists in detection or recovery ofmetals.*

7. Degree of Significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. It must be borne in mind that the significance of a site from an archaeological perspective does not necessarily depend on the size of the site but more on the uniqueness of the site within a region. The following table is used to grade heritage resources.

Table 2: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

Significance rating of sites

(i) High (ii) Medium (iii) Low

These categories relate to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, and will thus be considered to be of high regional significance, however; should there be heavy erosion of the greater part of the site, its significance rating would be medium to low. The following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a 'do not touch' situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be

mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when the appropriate heritage authority has issued a permit. The following table is used to determine rating system on the receiving environment.

Table 3: Rating and evaluating criteria of impact assessment

NATURE		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
TOPOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.

4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of proposed activity		

1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resource	The impact will result insignificant loss of resources.
4	Complete loss of resource	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impact on the heritage parameter. Duration indicates the lifetime of a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0-2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).

3	Long term	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10-50 years).
4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects.
MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.

2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapsed).Rehabilitation and remediation often impossible .If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.

8. History of the Area

Introduction

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia

to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless, the earliest form of culture known in South Africa is the Stone Age. These prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. Noteworthy that the time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman & Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).
Environmental conditions played an important role in influencing past human settlements in the KwaZulu-Natal. As captured in the KwaZulu-Natal Museum, heritage site inventories indicate a wide spectrum of archaeological sites covering different time-periods and cultural traditions in the KZN region.

Stone Age

ESA sites in this Province have produced very little with regards to other archaeological remains and much is not known about their period. Although Early Stone Age sites occur at various locations in the Province, none of them are in context and occur mostly in open-air situations, or in dongas close to water with little in-situ material. These sites were inhabited by Homo erectus and Homo heidelbergensis who were for the most part scavengers. Apart from stone artefacts, no preserved archaeological remains have been preserved dating back to this period. No information is known on the food eaten by ESA people in Natal, but it can be assumed that their diet consisted of animals and plant food (Mazel 1989). Oliver Davies a pioneer archaeologist being the only person to research ESA period in KwaZulu-Natal has recognized different traditions of Early Stone Age traditions in KwaZulu-Natal. All these traditions are characterised by heavy tools made from cores such as scrappers and picks, hand axes and cleavers (David 2018; Davies 1976; Mazel 1989).

MSA period dates between 40 000 years and 200 000 years ago. Clear technological differences separate MSA from ESA tools which were generally core tools, while MSA tools were made of flakes and blades detached from the core (Mazel 1989). Various Middle Stone Age sites occur in the KZN region and the vast majority of these are open air sites or sites with little stratigraphic value. However, cave sites with Middle Stone Age deposits do occur in KwaZulu-Natal as well. A few sites with impressive MSA deposits have been excavated in KZN, which includes the

Sibudu Cave, Holley Shelter, Umbeli Belli Shelter, Umhlatuzana Cave, and Border Cave (Mazel 1989). All these sites provided impressive evidence for fine resolution data and detailed stratigraphy as well as evidence for early farms relating to the period associated with the origins of anatomically modern people in the MSA of South Africa (Wadley 2001; Wadley 2005; Wadley & Jacobs 2006). According to the available evidence, as captured in the Amafa and the KwaZulu-Natal Museum heritage site inventories, there are four known Middle Stone Age sites. None of these are located in the area proposed for development.

The Late Stone Age (LSA) sites occur throughout the province, the caves, plains and hills of this region contain sites with rock art from the San and Khoi San cultural groups. The Later Stone Age is generally associated with San hunter-gatherers or their immediate ancestors in KwaZulu-Natal. The region is renowned for the prolific LSA San rock painting sites concentrated in the areas such as Giants Castle, Ukhahlamba and Kamberg in the Drakensberg Mountains were rock shelters suitable for occupation are plentiful. It is important to note that rock art sites do occur outside the Drakensberg; such as rock art sites documented in the areas around Escourt, Mooi River and Dundee, however, these sites have not been afforded similar research attention as those sites occurring in the Drakensberg (Mazel 1989). According to the KwaZulu-Natal Museum archaeological database Later Stone Age sites have also been located in the Tugela River in the past but these are mostly restricted to surface scatters. Handful later sites have been recorded in the wider area of the propose development, and these are six in total.

Iron Age

Pottery production is also an important feature of Iron Age communities. Iron smelting was practised quite significantly by Iron Age society as they had to produce iron implements for agricultural use. There is however no information of the area having iron smelting areas. Although Iron Age people occasionally hunted and gathered wild plants and shellfish, the bulk of their diet consisted of the crops they cultivated as well as the meat of the animals they kept. The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. However, stone walls were not common as Nguni people used thatch and wood to build their houses.

The archaeological evidence of the Iron Age people in the province is represented through distinct ceramic traditions, stone walls and other structural features such as grain bins and hut floor remains, kraal remains, vitrified cattle dung (sheep and goat), iron implements, slugs, bellows and furnaces (Huffman 2007; Maggs 1984a, 1989; Mitchell 2002). Iron Age occupation

in KwaZulu-Natal was during the Early and Late Iron Age. There is no evidence of occupation during Middle Iron Age. Occupation of the KZN region was by the Bantu speakers who migrated from as far as the Great Lakes regions of Congo and Cameroon (Tomose 2014). Recently research has suggested that it may have been too dry further inland at this time for successful cultivation. However, from AD 650 climatic conditions improved and agriculturalists expanded into the valleys of KZN, where they settled close to rivers in savanna or bushveld environments (van Schalkwyk 2013). These conditions supported sorghum and millet production and cattle management in the grassland component of these environments (Maggs 1984a, 1989; Mitchell 2002). In KwaZulu-Natal, the most dominant and preferred form of Iron Age structures are the 'beehive huts'- documented in many of historical records dating as far back as the colonial times (Tomose 2013).

KZN was occupied by the Nguni speaking group of the Eastern Bantu language stream is characterised by settlement patterns defined as the Central Cattle Pattern (CCP) (Huffman, 2010, 2007). The earliest known type of stonewalling that characterizes this settlement pattern (CCP) in the region (KZN) is known as Moor Park, which dates from the 14th to 16th Centuries AD (Huffman, Whitelaw, Davis 1974) (Figure 13). This type of stonewalling can be found in defensive position on hilltops in the Midlands of KZN (Huffman, 2010 & 2007).

The EIA sites in KZN date to around AD 500 to AD 900. Extensive research in the province of this period led to it being divided in the following time lines according to ceramic styles (Maggs, 1989; Huffman 2007): Msuluzi (AD500); Ndondondwane (AD 700-800); and Ntshekane (AD 800-900). The archaeological database of the Natal Museum indicates that ten Early Iron Age sites occur in the immediate vicinity of the study area. Some well-known excavated sites such as Mamba, Whosi and Ndondondwane (Huffman 2007) occur in the banks of the Thukela River. EIA sites in KZN are found in level valley-bottom situations with tillable (colluvial and alluvial) arable soils and close to rivers or lake shorelines with opportunities for grazing and for obtaining timber (Maggs 1980, 1994–95; van Schalkwyk &Wahl 2013). The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stonewall settlements. However, in this part of the world, stonewalls were not common as the Nguni people used thatch and wood to build their houses (Maggs, 1989; Huffman 2007). An astonishing 82 Later Iron Age sites (belonging to the period 1200 AD – 1880 AD) has been recorded in the Hluhluwe Nature Reserve. The area proposed for development at large had recorded seven Later Iron Age sites, and none of these will be impacted by this proposal

Historical Period

The Portuguese explorer Vasco de Gama named Natal in 1497. The colonial history of the area starts around 1820 when early English ivory traders established themselves at Port Natal (Durban), at the time when Shaka, King of the Zulu was firmly in charge of the hinterland. They made almost no attempt to develop the interior, whose inhabitants had been decimated by the Zulu chief Shaka. During 1837 the Dutch descendants (i.e. Voortrekkers) entered the area through the Drakensberg passes, and defeated the Zulus at the Battle of Blood River in 1838 and thereafter established a short-lived Boer republic called Natalie. However, by 1845 Natal became a British colony. Between 1860 and 1911 shiploads of Indians brought in by British arrived to work in the coastal sugar plantations (www.sahistory.org.zaa; www.zulu.org).

Northern and central KwaZulu-Natal is strewn with sites of battles between the Zulu, Boer and British during the 1800's and 1900's. In 1879 the British finally conquered the Zulu in the Anglo-Zulu War and acquired the Zululand (the area north of the Tugela River). The lands north of the Buffalo River were added in 1902. These conflicts are now collectively known as the South African War. A result of these conflicts was the construction of many forts in the area. Several colonial buildings, gravesites, monuments, stone Cairns and statues dating from the later 19th century as well as subsequent periods abound in the province. These are the legacy of this violent time in our history, like the archaeological resources of the province, are also protected by heritage legislation (Derwent 2006).

In 1910 Natal colony became a province of the Union of South Africa. In 1961 Natal was declared the province of Republic of South Africa. After the end of Apartheid in 1994 the homeland of KwaZulu was re-incorporated into the Natal province and was renamed to KwaZulu-Natal. KwaZulu, means "Place of the Zulu". The KZN province is home to the Zulu monarchy; the majority population and language of the province is Zulu. It is the only province in South Africa that has the name of its dominant ethnic group as part of its name (www.sahistory.org.za; www.zulu.org).

9. Survey Findings

The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Mathulini Housing have identified several grave sites. These are located within homestead and are what can be referred to as family graves. All categories of graves were identified (older than 60 years and younger than 60 years). Unknown graves are handled similarly to those older than 60 years. These graves are thus protected by Section 3 of the National Heritage Resource Act,

1999 (Act 25 of 1999) and the Human Tissues Act, 1983 (Act 65 of 1983). Section 36 (3) of the National Heritage Resource Act, 25 of 1999 further protects these graves against any alterations. Below is the table depicting documented graves and their respective locations. Note that the site (s) of the graves were indicated to us by family members, and are located within homestead:

Table 4: Findings

Recorded Number	GPS	Description
S1	29°23'38.57" S 30°52'29.04" E	These graves are encroached by vegetation and except for the wooden poles, used as demarcation, there is nothing of the graves that can be seen. (See Figure 9).
Significance: High		
S2	29°23'21.32"S, 30°53'7.04"E	These graves are also encroached by vegetation and nothing can be viewed. (See Figure 10).
Significance: High		
S3	29°23'53.76"S, 30°53'19.59"E	These family graves are located in the area which is currently under small scale farming.
Significance: High		
S4	29°23'35.35"S, 30°52'10.72"E	Two graves were noted and these are demarcated by stones. (See Figure 11).
Significance: High		
S5	29°23'29.14"S, 30°51'38.07"E	These graves are located in an encroached area. Nothing can be seen since they are thoroughly covered by shrubs.
Significance: High		
S6	29°24'20.29"S 30°52'5.73"E	The site on which these graves are located is encroached by vegetation.

9.1 Impact Assessment

Below is the impact rating. This rating is for cultural heritage sites known to exist in the proposed area, and includes graves, as well as Historical era materials. Note that these impacts are assessed as per Table 2 above:

Table 5: Anticipated impact rating.

Description	Ratings
Nature	Negative
Topographical Extent	The impact will only affect site
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Irreversible
Irreplaceable Loss	The impact can result in significant loss

Figure 9: View of the area with 5 graves encroached by vegetation.

Figure 10: View of another area with grave sites.

Figure 11: View of the area with two family graves.

10. Recommendations and Discussions

In compliance with the National Heritage Legislature, there was no observable development activities associated with the proposed project.

Burial grounds and Graves are directly associated with human being and are thus accorded a high value (Local Grade III B). This means they must be protected and properly conserved to ensure longevity. However, they can be mitigated if serious need arise. There are two possibilities on how graves can be mitigated. Firstly and mostly preferred is to compile a heritage management plan (HMP) which will ensure their continuous conservation. This HMP should be completed by a heritage specialist, and is done when graves are not in direct jeopardy of the proposed development. The second option is a Phase-2 mitigation (relocation of graves), this should always be considered as a last option. This procedure entails social consultation, and application of permits for those older than 60 years and unknown graves, while those less than 60 years of age, only an undertaker is needed.

Taking all the above information into account, I, as an independent archaeologist due recommend the following:

- A heritage practitioner should be assigned during bush clearing to further assess the area, and document all graves within households; and
- A Heritage Management Plan must be devised to ensure that all graves in the area are protected and preserved. The management plan is an open document meaning that it should be adapted and reassessed from time to time.

No major heritage flaws which can hamper the success of this project where noted in the area. It must be noted that the noted graves are family graves and the proposal aim on improving the village, and no person will be relocated.

Despite that no archaeological objects were observed during the survey, and that the area is disturbed, the client is reminded that unavailability of archaeological material does not mean absentee, archaeological material might be hidden underground. It is thus the responsibility of the developer to notify contractors and workers about archaeological material (e.g., pottery, stone tools, remnants of stone-walling, graves, etc) and fossils that may be located underground. Furthermore, the client is reminded to take precautions during construction.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training

should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or Amafa officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by Amafa.

11. Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with Amafa guidelines. As per the recommendations above, there are no major heritage reasons why the proposed development could not be allowed to proceed. Thus, it is recommended that the proposed development proceed on condition that the recommendation indicated above are adhered to.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the 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?
- Is it important 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?