



An EOH Company

**PROPOSED DOOR OF HOPE VILLAGE PROJECT,  
SEDIBENG DISTRICT MUNICIPALITY,  
GAUTENG PROVINCE**

**Archaeological Impact Assessment**

A 3D rendering of a globe with water splashing over it, set against a white background with a reflection below. A large, faint infinity symbol is overlaid on the globe.

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Prepared for: **CES**

Prepared by: **Exigo Sustainability**

## ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) ON A PORTION OF THE FARM HARTSENBERGFONTEIN 332I FOR THE PROPOSED DOOR OF HOPE VILLAGE PROJECT, SEDIBENG DISTRICT MUNICIPALITY, GAUTENG PROVINCE

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**Compiled for:**

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**DECLARATION**

I, Nelius Le Roux Kruger, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Door of Hope Village Project in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, including the relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980), the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment (SAHRA and the CRM section of ASAPA), regulations and any guidelines that have relevance to the proposed activity;
- I have not, 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 declaration are true and correct.



Signature of specialist  
**Company:** Exigo Sustainability  
**Date:** 21 October 2019

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### EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study subject to an Environmental Basic Assessment (BA) process for the establishment of the proposed Door of Hope Village situated on a portion of the farm Hartsenbergfontein 332IQ north of Walkerville area of the Gauteng Province. The project entails the establishment of the new Door of Hope Village centre over a surface portion of approximately 24ha. The report includes background information on the area's archaeology, its representation in Southern Africa, and the history of the larger area under investigation, survey methodology and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the Gauteng Provincial Heritage Resources Authority (Gauteng-PHRA) and recommendations contained in this document will be reviewed.

<b>Project Title</b>	Door of Hope Village Project
<b>Project Location</b>	S26.38182° E27.96623°
<b>1:50 000 Map Sheet</b>	2627BD
<b>Farm Portion / Parcel</b>	Hartsenbergfontein 332IQ
<b>Magisterial District / Municipal Area</b>	Sedibeng District Municipality
<b>Province</b>	Gauteng Province

A number of archaeological and historical studies have been conducted in this section of the Gauteng most of which infer a varied and rich heritage landscape. The literature shows traces of Iron Age farmer presence and a rich Colonial frontier denoting European farmer expansion. The landscape that encompasses the Door of Hope Village footprints seems to have been inhabited continuously for centuries in prehistoric and historical times, the remnants of which are visible in transformed agriculture and rural settlement areas. The following general recommendations are made based on general observations in the proposed Door of Hope Village area pertaining to a number of identified occurrences of heritage potential:

- A number of monoliths used as fencing posts occur on the property along disused agricultural fields. The utilization of these natural features during historical and recent times for agricultural purposes is a common occurrence across farming areas in South Africa and the monoliths do not carry implicit historical significance. No action in terms of heritage mitigation is required for these features.
- The remains of a Historical Period "kraal" (**Site Exigo-DOH-HP01**) occurring along the northern periphery of the project is rated as low heritage significance as no material culture or man-made structures occur at the poorly preserved site. The "kraal" occurs within the project area and it is recommended that the area be monitored by an informed ECO in order to avoid the destruction of previously undetected heritage remains.
- An informal burial site containing at least 3 graves (**Site Exigo-DOH-BP01**) occurs within the project development area. The site is of high significance and a 50m conservation buffer is required for the burial site as a primary measure. It is recommended that infrastructure components proposed for the project avoid encroaching on the required 50m conservation buffer. In addition it is recommended that the burial site be fenced off with wire, chicken wire or palisade fencing of a minimum height of 1.8m placed no closer than 2m from the burials. An access gate should be erected and access control should be applied to the site. A heritage Site Management Plan (SMP) should be compiled for the burials to stipulate conservation measures, responsible persons and chance find procedures for further heritage

mitigation. The developer should carefully liaise with the heritage specialist, SAHRA as well as local communities and possible affected parties with regards to the management and monitoring of any human grave or cemetery in order to detect and manage negative impact on the sites. **Should impact on the burial site prove inevitable, full grave relocations are recommended for these burial grounds. This measure should be undertaken by a qualified archaeologist, and in accordance with relevant legislation, permitting, statutory permissions and subject to any local and regional provisions and laws and by-laws pertaining to human remains. A full social consultation process with the Kamffer family and other affected parties should occur in conjunction with the mitigation of cemeteries and burials (see Addendum B).**

- Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO is recommended during planning and construction phases of the project.. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that the possibility of undetected archaeological remains occurring elsewhere in the project area should not be excluded. Burials and historically significant structures dating to the Colonial Period occur on farms in the area and these resources should be avoided during all phases of construction and development, including the operational phases of the development

**Door of Hope Village Project Heritage Sites Locations**

Site Code	Coordinate S E	Short Description	Mitigation Action
EXIGO-DOH-BP01	S26.37828° E27.96456°	Burial Site	Site monitoring, avoidance, 100m conservation buffer, site management. Grave relocation subject to authorisations and permitting if impacted on.
EXIGO-DOH-HP01	S26.37687° E27.96554°	Historical Period Site	Site monitoring.

This report details the methodology, limitations and recommendations relevant to these heritage areas, as well as areas of proposed development. It should be noted that recommendations and possible mitigation measures are valid for the duration of the development process, and mitigation measures might have to be implemented on additional features of heritage importance not detected during this Phase 1 assessment (e.g. uncovered during the construction process).

## NOTATIONS AND TERMS/TERMINOLOGY

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**Absolute dating:** Absolute dating provides specific dates or range of dates expressed in years.

**Archaeological record:** The archaeological record minimally includes all the material remains documented by archaeologists. More comprehensive definitions also include the record of culture history and everything written about the past by archaeologists.

**Artefact:** Entities whose characteristics result or partially result from human activity. The shape and other characteristics of the artefact are not altered by removal of the surroundings in which they are discovered. In the Southern African context examples of artefacts include potsherds, iron objects, stone tools, beads and hut remains.

**Assemblage:** A group of artefacts recurring together at a particular time and place, and representing the sum of human activities.

**Context:** An artefact's context usually consists of its immediate *matrix*, its *provenience* and its *association* with other artefacts. When found in *primary context*, the original artefact or structure was undisturbed by natural or human factors until excavation and if in *secondary context*, disturbance or displacement by later ecological action or human activities occurred.

**Cultural Heritage Resource:** The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

**Cultural landscape:** A cultural landscape refers to a distinctive geographic area with cultural significance.

**Cultural Resource Management (CRM):** A system of measures for safeguarding the archaeological heritage of a given area, generally applied within the framework of legislation designed to safeguard the past.

**Feature:** Non-portable artefacts, in other words artefacts that cannot be removed from their surroundings without destroying or altering their original form. Hearths, roads, and storage pits are examples of archaeological features

**Lithic:** Stone tools or waste from stone tool manufacturing found on archaeological sites.

**Matrix:** The material in which an artefact is situated (sediments such as sand, ashy soil, mud, water, etcetera). The matrix may be of natural origin or human-made.

**Midden:** Refuse that accumulates in a concentrated heap.

**Microlith:** A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.

**Monolith:** A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

**Phase 1 CRM Assessment:** An Impact Assessment which identifies archaeological and heritage sites, assesses their significance and comments on the impact of a given development on the sites. Recommendations for site mitigation or conservation are also made during this phase.

**Phase 2 CRM Study:** In-depth studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required. Mitigation / Rescue involves planning the protection of significant sites or sampling through excavation or collection (in terms of a permit) at sites that may be lost as a result of a given development.

**Phase 3 CRM Measure:** A Heritage Site Management Plan (for heritage conservation), is required in rare cases where the site is so important that development will not be allowed and sometimes developers are encouraged to enhance the value of the sites retained on their properties with appropriate interpretive material or displays.

**Provenience:** Provenience is the three-dimensional (horizontal and vertical) position in which artefacts are found. Fundamental to ascertaining the provenience of an artefact is *association*, the co-occurrence of an artefact with other archaeological remains; and *superposition*, the principle whereby artefacts in lower levels of a matrix were deposited before the artefacts found in the layers above them, and are therefore older.

**Random Sampling:** A probabilistic sampling strategy whereby randomly selected sample blocks in an area are surveyed. These are fixed by drawing coordinates of the sample blocks from a table of random numbers.

**Site (Archaeological):** A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity. These include surface sites, caves and rock shelters, larger open-air sites, sealed sites (deposits) and river deposits. Common functions of archaeological sites include living or habitation sites, kill sites, ceremonial sites, burial sites, trading, quarry, and art sites,

**Stratigraphy:** This principle examines and describes the observable layers of sediments and the arrangement of strata in deposits

**Systematic Sampling:** A probabilistic sampling strategy whereby a grid of sample blocks is set up over the survey area and each of these blocks is equally spaced and searched.

**LIST OF ABBREVIATIONS**

<b>Abbreviation</b>	<b>Description</b>
ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
BCE	Before Common Era
BGG	Burial Grounds and Graves
CRM	Culture Resources Management
ECO	Environmental Control Officer
EIA	Early Iron Age (also Early Farmer Period)
EIA	Environmental Impact Assessment
EFP	Early Farmer Period (also Early Iron Age)
ESA	Earlier Stone Age
GIS	Geographic Information Systems
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
K2/Map	K2/Mapungubwe Period
LFP	Later Farmer Period (also Later Iron Age)
LIA	Later Iron Age (also Later Farmer Period)
LSA	Later Stone Age
MIA	Middle Iron Age (also Early later Farmer Period)
MSA	Middle Stone Age
NHRA	National Heritage Resources Act No.25 of 1999, Section 35
PFS	Pre-Feasibility Study
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Association
YCE	Years before Common Era (Present)

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## 1 BACKGROUND

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### 1.1 Scope and Motivation

Exigo Sustainability was commissioned by CES for an Archaeological Impact Assessment (AIA) study subject to an Environmental Basic Assessment (BA) process for the Door of Hope Village in the Sedibeng District Municipality, Gauteng Province. The rationale of this AIA is to determine the presence of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance in previously unstudied areas; to consider the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

### 1.2 Project Direction

Exigo Sustainability's expertise ensures that all projects be conducted to the highest international ethical and professional standards. As archaeological specialist for Exigo Sustainability, Mr Nelius Kruger acted as field director for the project; responsible for the assimilation of all information, the compilation of the final consolidated AIA report and recommendations in terms of heritage resources on the demarcated project areas. Mr Kruger is an accredited archaeologist and Culture Resources Management (CRM) practitioner with the Association of South African Professional Archaeologists (ASAPA), a member of the Society for Africanist Archaeologists (SAFA) and the Pan African Archaeological Association (PAA) as well as a Master's Degree candidate in archaeology at the University of Pretoria.

### 1.3 Project Brief

Door of Hope is proposing the establishment of a new village near Walkerville within the Sedibeng District Municipality of the Gauteng Province. In particular, the project which will cover a surface portion of approximately 24ha on the farm Hartsenbergfontein 3321Q, will consist of the following:

- Residential House
- Office Block
- School Buildings
- Dining Hall
- Sports Fields / Courts and Play Areas
- Vegetable Gardens
- Baby House
- Medical Facility
- Early Childhood Development Centre
- Main Roads, Paved walkways and bike paths

During the course of the Basic Assessment Process, it became apparent that vegetation had been cleared for the construction of the three housing units in the project area, which is classified as a Critical Biodiversity Areas (CBA). In addition, a dirt road and a 10kl sewerage package plant had been constructed and these activities triggered Listed Activity 12 in Listing Notice 3. As such, a Section 24G process was effected and a memorandum was compiled additional to this AIA to detail the results of a heritage screening of areas affected by the S24G application<sup>1</sup> (see Addendum 3)

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<sup>1</sup> Kruger, N. 2019. MEMORANDUM ON SITE STATUS AND HERITAGE IMPACT SUBJECT TO A SECTION 24G APPLICATION AS PART OF THE DOOR OF HOPE DEVELOPMENT PROJECT ON A PORTION OF THE FARM HARTSENBERGFONTEIN 3321, SEDIBENG DISTRICT MUNICIPALITY, GAUTENG PROVINCE. Exigo Sustainability



Figure 1-1: Project map indicating infrastructure components proposed for the Door of Hope Village.



#### 1.4 Terms of Reference

Heritage specialist input into the Environmental Impact Assessment (EIA) process is essential to ensure that, through the management of change, developments still conserve our heritage resources. Heritage specialist input in EIA processes can play a positive role in the development process by enriching an understanding of the past and its contribution to the present. It is also a legal requirement for certain development categories which may have an impact on heritage resources (Refer to Section 2.5.2).

Thus, EIAs should always include an assessment of heritage resources. The heritage component of the EIA is provided for in the **National Environmental Management Act, (Act 107 of 1998)** and endorsed by section 38 of the **National Heritage Resources Act (NHRA - Act 25 of 1999)**. In addition, the NHRA protects all structures and features older than 60 years, archaeological sites and material and graves as well as burial sites. The objective of this legislation is to ensure that developers implement measures to limit the potentially negative effects that the development could have on heritage resources. Based hereon, this project functioned according to the following **terms of reference for** heritage specialist input:

- *Provide a detailed description of all archaeological artefacts, structures (including graves) and settlements which may be affected, if any.*
- *Assess the nature and degree of significance of such resources within the area.*
- *Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;*
- *Assess and rate any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities.*
- *Propose possible heritage management measures provided that such action is necessitated by the development.*
- *Liaise and consult with the South African Heritage Resources Agency (SAHRA)*

#### 1.5 CRM: Legislation, Conservation and Heritage Management

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

##### 1.5.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and its provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation at all times.

###### a. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act No 25 of 1999 (section 35) the following features are protected as cultural heritage resources:

- a. Archaeological artefacts, structures and sites older than 100 years

- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

In addition, the national estate includes the following:

- a. Places, buildings, structures and 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 features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

With regards to activities and work on archaeological and heritage sites this Act states that:

*“No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority.” (34. [1] 1999:58)*

and

*“No person may, without a permit issued by the responsible heritage resources authority-*

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58).”*

and

*“No person may, without a permit issued by SAHRA or a provincial heritage resources agency-*

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60).”*

**b. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925**

Graves and burial grounds are commonly divided into the following subsets:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and Ordinance on Excavations (Ordinance no. 12 of 1980) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant local authorities.

**c. National Heritage Resources Act No 25 of 1999, section 35**

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation’s cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

**1.5.2 Background to HIA and AIA Studies**

South Africa’s unique and non-renewable archaeological and palaeontological heritage sites are ‘generally’ protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs

and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

**A detailed guideline of statutory terms and requirements is supplied in Addendum 1.**

## **2 REGIONAL CONTEXT**

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### **2.1 Area Location**

The project area for the Door of Hope Village is located on a portion of the farm Hartsenbergfontein 332IQ north-east of Walkerville within the Sedibeng District Municipality of the Gauteng Province. The Johannesburg CBD is situated more or less 25km to the north and Vereeniging occurs 30km south of the project area. The project footprint appears on 1:50 000 map sheets **2627BD** (see Figure 2-1), more or less at the following geographical point:

- **S26.38182° E27.96623°**

### **2.2 Area Description: Receiving Environment**

The development site lies within the Savanna biome which is the largest biome in Southern Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants (trees and shrubs). The original vegetation is classified as Moist Cool Highveld Grassland. The environmental factors delimiting the biome are complex and include altitude, rainfall, geology and soil types, with rainfall being the major delimiting factor. The general landscape is characterised by undulating, Highveld grassland that is drained by the Klein-Rietspruit. The Vaal River flows approximately 35km south of the study area. The Walkerville area is situated approximately 1 500m above sea level. It has an annual summer rainfall of 650 mm per annum. The geology is made up of volcanic rock to the west and shale in the east.

### **2.3 Site Description**

The landscape on the farm Hartsenbergfontein 332IQ is generally an open flat piece of land delineated by farm boundaries. The survey area is approximately 24 hectares in extent. The current land-use of the proposed development site is accommodation and recreation for the Door of Hope centre along the southern edge of the property where a number of buildings and refuse dumps occur along a rocky outcrop. Here, a large residential house with associated features such a water fountain and concrete hedge seems to date to the 1960's. In addition, new housing units, a dirt road and a 10kl sewerage package plant have been constructed in a southern portion of the project area (See Addendum 3). Large portions of the project area have been converted to agricultural fields in past decades and a large embankment dam occurs in a central portion. Neighbouring farms are being used for livestock grazing, farming and tourism.



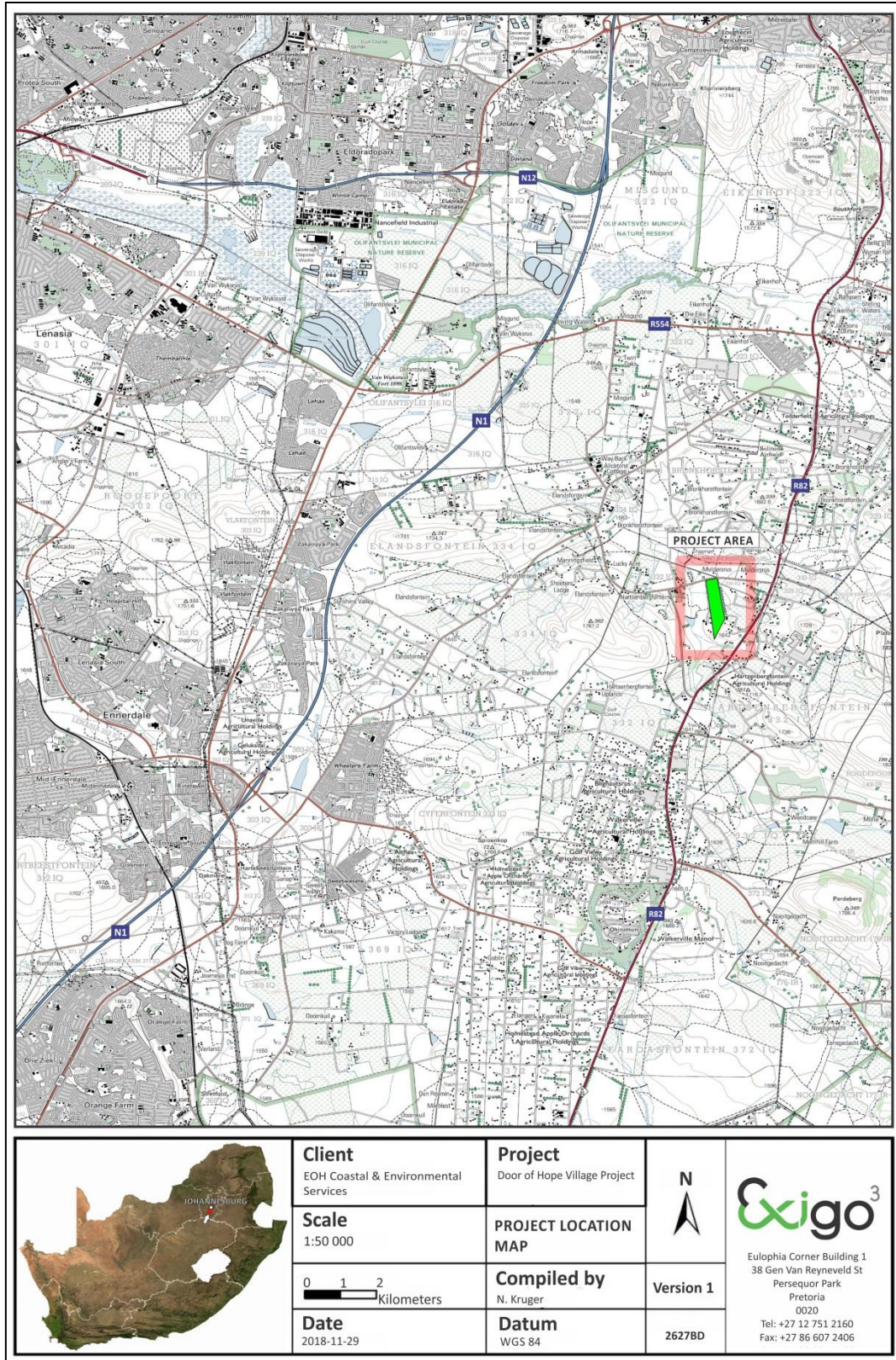


Figure 2-1: 1:50 00 Map representation of the location of the proposed Door of Hope Village (sheet 2627BD).



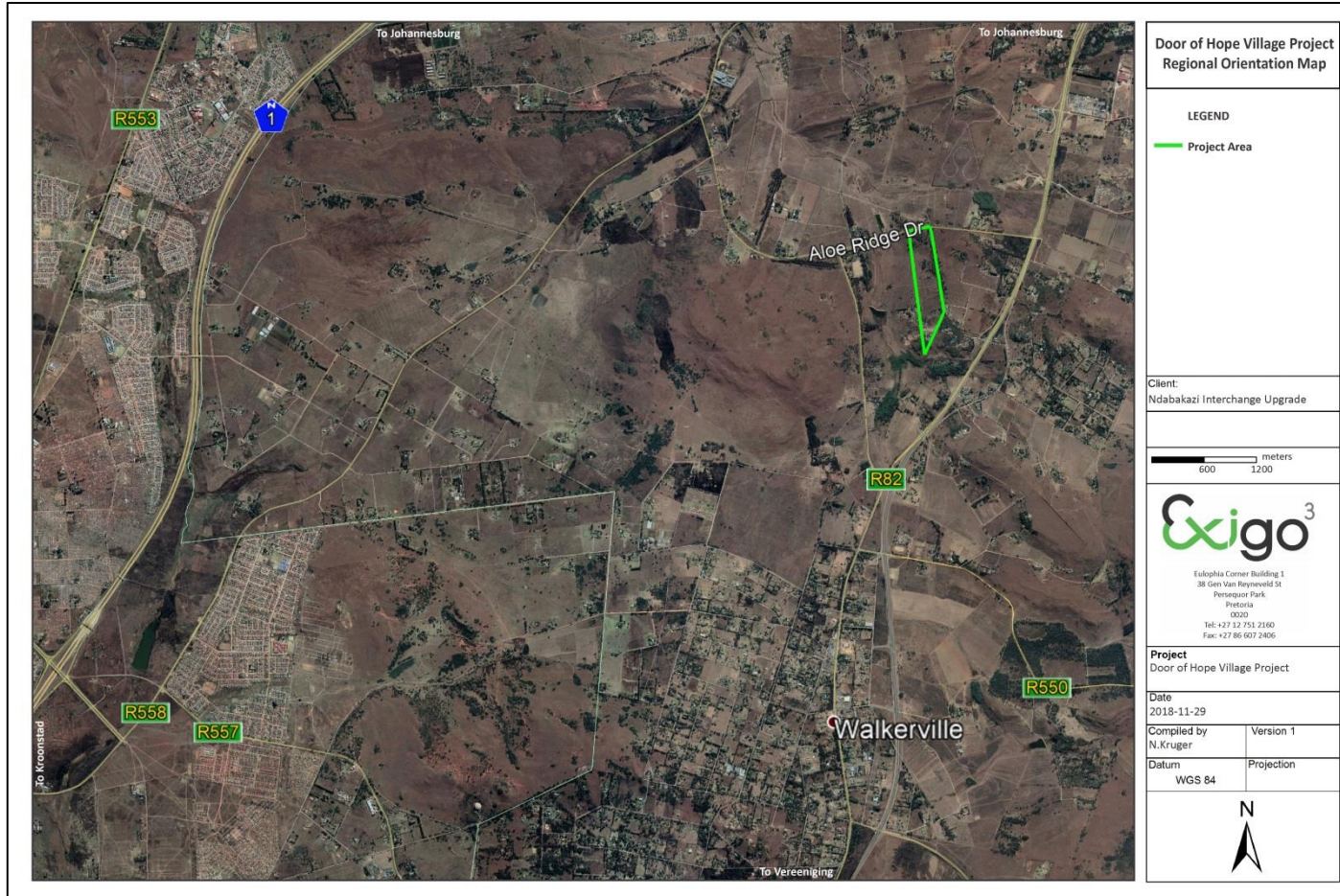


Figure 2-2: Aerial map providing a regional setting for the Door of Hope Village project locality.

### 3 METHOD OF ENQUIRY

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#### 3.1 Sources of Information

Data from detailed desktop, aerial and field studies were employed in order to sample surface areas systematically and to ensure a high probability of heritage sites recording.

##### 3.1.1 Desktop Study

A desktop study was prepared in order to contextualize the proposed project within a larger historical milieu. As such, the study functioned to provide a historical context for the proposed project and archival sources, aerial photographs, historical maps and local histories were used to create a baseline of the landscape's heritage. This desktop study also relied on commercially driven Heritage Assessments as well as academic papers and research articles that have been conducted in the region around the project area.

##### 3.1.2 Aerial Representations and Survey

Aerial photography is employed to locate and study archaeological sites, particularly where larger scale area surveys are performed. This method was applied to assist the foot site survey where depressions, variation in vegetation, soil marks and landmarks were examined. Specific attention was given to shadow sites (shadows of walls or earthworks which are visible early or late in the day), crop mark sites (crop mark sites are visible because disturbances beneath crops cause variations in their height, vigour and type) and soil marks (e.g. differently coloured or textured soil (soil marks) might indicate ploughed-out burial mounds). Attention was also given to moisture differences, as prolonged dampening of soil as a result of precipitation frequently occurs over walls or embankments. By superimposing high frequency aerial photographs with images generated with Google Earth, potential sensitive areas were subsequently identified, geo-referenced and transferred to a handheld GPS device. These areas served as referenced points from where further vehicular and pedestrian surveys were carried out. The aerial survey suggested a landscape that has been transformed over the last century by human activity relating to agriculture and settlement (see Figure 3-1).

##### 3.1.3 Mapping of sites

Historical and current maps of the project area were examined (see Figure 3-2). By merging data obtained from the desktop study and the aerial survey, sites and areas of possible heritage potential were plotted on these maps of the larger Walkerville area using GIS software. These maps were then superimposed on high definition aerial representations in order to graphically demonstrate the geographical locations and distribution of potentially sensitive landscapes. Historical maps of the project area indicate the presence of man-made features such a farmstead, a dam and later buildings on the property (see Figure 3-2).

##### 3.1.4 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the Door of Hope project area subject to this study were conducted on 22 November 2018. The survey process encompassed field surveys in accordance with standard archaeological practice by which heritage resources are observed and documented. In order to sample surface areas systematically and to ensure a high probability of site recording, the entire project area was carefully inspected on foot by means of a transect survey. GPS reference points identified during the aerial and mapping surveys were also visited and random spot checks were made (see detail in previous section). Using a Garmin E-trex Montana GPS, the site was geo-referenced and photographed with a Samsung Digital camera. Real time aerial mapping and positioning by means of a hand-held tablet-based Google Earth application was also employed on site to investigate possible disturbed areas during the survey.





Figure 3-1: Historical aerial images dating to 1938 (left) and 1955 (right) indicating the development area within the historical landscape. Note the presence and absence of a farmstead along the northern border as well as a dwelling on the southern property border on the later image (white arrows). Agricultural fields are indicated by the green arrow.

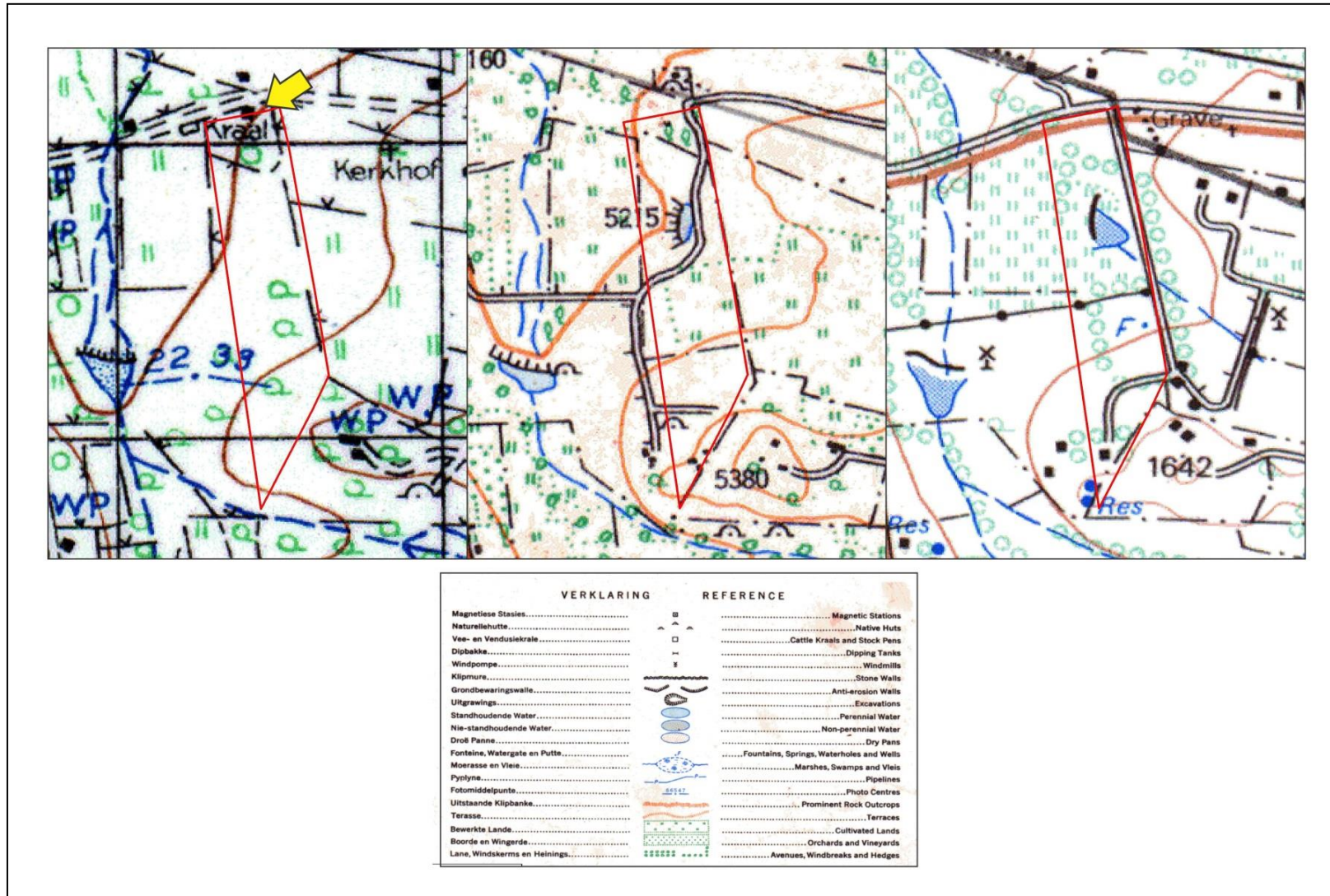


Figure 3-2: Historical topographic maps dating to 1944 (left), 1956 (middle) and 1976 (right) indicating the development area within the historical landscape. Note the presence of a “kraal” (1944 - yellow arrow) and dwellings and structures on later maps.



### 3.1.5 General Public Liaison

Correspondence with the developer at the property provided information on the possible locations of heritage resources and brief commentaries on the recent history of the farm. He indicated that, besides for the informal cemetery, according to his knowledge no heritage resources were present within the area demarcated for development of new infrastructure, subject to this AIA Study.

## 3.2 Limitations

### 3.2.1 Access

The project area subject to this survey is accessed directly from Aloe Ridge Drive connecting to the R82 road. Access control is applied to the survey areas but no restrictions were encountered during the site visits in terms of access as the author was accompanied by the developer.

### 3.2.2 Visibility

The surrounding vegetation in the project area is mostly comprised out of mixed grassland, trees and scrubs and riparian vegetation along the dam. The general visibility at the time of the AIA survey (November 2018) ranged from low in densely vegetated areas to high in transformed regions (see Figures 3-3 to 3-18). In single cases during the survey sub-surface inspection was possible. Where applied, this revealed no archaeological deposits.



Figure 3-3: View of general surroundings in the project area.



Figure 3-4: View of the large embankment dam in the project area.



Figure 3-5: A modern structure present on the property.



Figure 3-6: The remains of a modern brick structure present on the property.





Figure 3-7: View of dense vegetation along the northern periphery of the site.



Figure 3-8: View of dense vegetation and pioneering species along the eastern border site.



Figure 3-9: Partially destroyed braai structures in the project area.





Figure 3-10: View of old agricultural fields in the project area.



Figure 3-11: View of old agricultural fields in the project area.



Figure 3-12: View of old agricultural fields in the project area, looking north.





Figure 3-13: Large refuse dumps occurring in the project area along a rocky outcrop.



Figure 3-14: View of a large residence in a southern section of the project area.



Figure 3-15: The partially collapsed remains of a water fountain (left) and a concrete hedge at the modern residence.



Figure 3-16: View of new buildings for the Door of Hope centre in a southern section of the project area (see Addendum 3).



Figure 3-17: View of the current Door of Hope centre in a southern section of the project area (see Addendum 3).

### 3.2.3 Limitations and Constraints Summary

The foot and vehicular site survey for the Door of Hope Village primarily focused around areas of potential heritage sensitivity as well as areas of high human settlement catchment probability (for example, in association with vegetation changes or around soil disturbances).

- **Visibility** proved to be a minor constraint where denser surface cover obscured surface occurrences.

Even though it might be assumed that survey findings are representative of the heritage landscape of the project area for the Door of Hope Village, it should be stated that the possibility exists that individual sites could be missed due to the localised nature of some heritage remains as well as the possible presence of sub-surface archaeology. Therefore, maintaining due cognisance of the integrity and accuracy of the archaeological survey, it should be stated that the heritage resources identified during the study do not necessarily represent all the heritage resources present in the project area. The subterranean nature of some archaeological sites, dense vegetation cover and visibility constraints sometimes distort heritage



representations and any additional heritage resources located during consequent development phases must be reported to the Heritage Resources Authority or an archaeological specialist.

### 3.3 Impact Assessment

For consistency among specialists, impact assessment ratings by Exigo Specialists are generally done using the Plomp<sup>2</sup> impact assessment matrix scale supplied by Exigo. According to this matrix scale, each heritage receptor in the project area is given an impact assessment. An assessment of potential heritage impacts for the proposed project is included in this report (see Section 6).

## 4 ARCHAEO-HISTORICAL CONTEXT

### 4.1 The archaeology of Southern Africa

Archaeology in Southern Africa is typically divided into two main fields of study, the **Stone Age** and the **Iron Age** or **Farmer Period**. The following table provides a concise outline of the chronological sequence of periods, events, cultural groups and material expressions in Southern African pre-history and history.

Table 1 Chronological Periods across Southern Africa

Period	Epoch	Associated cultural groups	Typical Material Expressions
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominins: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens sapiens</i> including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period 300 – 900 AD	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD	Holocene	Bantu-speaking groups, ancestors of present-day groups	Typically distinct ceramics, bead ware and iron / gold / copper objects, trade goods and grinding stones.
Late Iron Age / Later Farmer Period 1400 AD -1850 AD	Holocene	Various Bantu-speaking groups including Venda, Thonga, Sotho-Tswana and Zulu	Distinct ceramics, grinding stones, iron objects, trade objects, remains of iron smelting activities including iron smelting furnace, iron slag and residue as well as iron ore.
Historical / Colonial Period ±1850 AD – present	Holocene	Various Bantu-speaking groups as well as European farmers, settlers and explorers	Remains of historical structures e.g. homesteads, missionary schools etc. as well as, glass, porcelain, metal and ceramics.

### 4.2 The Gauteng and Landscape: Specific Themes.

The archaeological history of the Gauteng Province dates back to about 2 million years and possibly older.

<sup>2</sup> Plomp, H.,2004

Several archaeological sites have been recorded in the landscape around Barkly East. A number of Archaeological Impact Assessments (e.g. Coetzee 2003, Roodt 2008, Van Schalkwyk 2010 and Pistorius 2007) have been conducted in the Walkerville area. Generally, sites documenting Earlier, Middle and Later Stone Age habitation occur across the Highveld, mostly in open air locales or in sediments alongside rivers or pans. Sites dating to the Iron Age occur on the Highveld where environmental factors and population density delegated that the spread of Iron Age farming. Moving into recent times, the archaeological record reflects the development of a rich colonial frontier, characterised by, amongst others, a complex industrial archaeological landscape such as mining developments and war events, which herald the modern era in South African history.

#### 4.2.1 The Stone Ages

The Earlier Stone Age, from between 1.5 million and 250 000 years ago, refers to the earliest that *Homo sapiens sapiens*' predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduvan Industry, originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant Southern African Early Stone Age Industry, which replaced the Olduvan Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. The most well-known Early Stone Age site in Southern Africa is Amanzi Springs, situated about 10km north-east of Uitenhage, near Port Elizabeth (Deacon 1970). In a series of spring deposits a large number of stone tools were found in situ to a depth of 3-4m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old. Large stone ESA tools are often found associated with the gravels in the area, and were later replaced by smaller stone tools called the Middle Stone Age (MSA) flake and blades industries.

The Middle Stone Age (MSA) spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art and symbolism. The large handaxes and cleavers were replaced by smaller stone artefacts called the MSA flake and blade industries. Surface scatters of these flake and blade industries occur widespread across Southern Africa. The majority of MSA sites occur on flood plains and sometimes in caves and rock shelters. Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris.

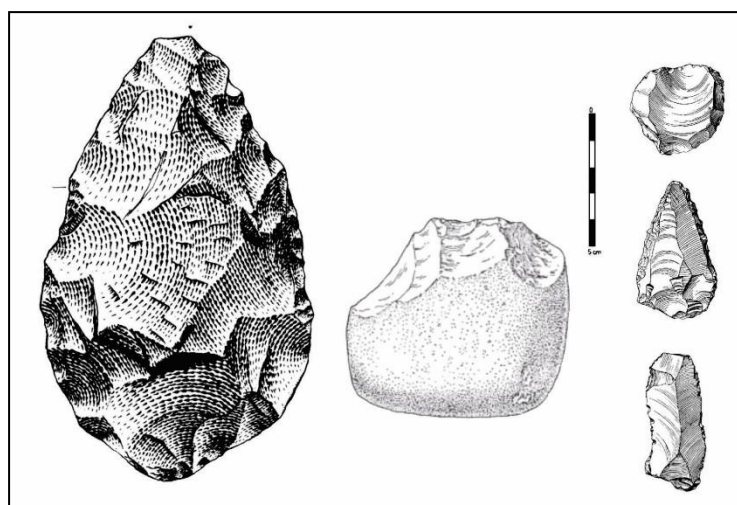


Figure 4-1: Typical ESA handaxe (left) and cleaver (center). To the right is a MSA scraper (right, top), point (right, middle) and blade (right, bottom).

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the MSA to LSA; although there is a lack of crucial sites and evidence that represent this change. The LSA is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg, Wilton Industries and in between, the larger Albany/Oakhurst and the Kabeljous Industries. Bored stones used as part of digging sticks, grooved stones for sharpening and grinding and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2000 years that earthenware pottery was introduced. Before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Sites dating to the LSA are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material.

The earliest ancestors of modern man may therefore have roamed the Vaal valley at the same time that their contemporaries occupied some of the dolomite caves near Krugersdorp. Middle Stone Age sites dating from as early as two hundred thousand years ago have been found all over South Africa. Middle Stone Age hunter-gatherer bands also lived and hunted in the Orange and Vaal River valleys. These people, who probably looked like modern humans, occupied campsites near water but also used caves as dwellings. They manufactured a wide range of stone tools, including blades and points that may have had long wooden sticks as hafts and were used as spears. The Late Stone Age commenced twenty thousand years ago or somewhat earlier. The various types of Stone Age industries scattered across the country are associated with the historical San and Khoi-Khoi people. The San were renowned as formidable hunter-gatherers, while the Khoi-Khoi herded cattle and small stock during the last two thousand years. Late Stone Age people manufactured tools that were small but highly effective, such as arrow heads and knives. The Late Iron Age people were also known for their rock art skills. At least one rock engraving site exists near Vereeniging, at Redan.

#### **4.2.2 The Iron Age Farmer Period**

The beginnings of the Iron Age (Farmer Period) in southern Africa are associated with the arrival of a new Bantu speaking population group at around the third century AD. These newcomers introduced a new way of life into areas that were occupied by Later Stone Age hunter-gatherers and Khoekhoe herders. Distinctive features of the Iron Age are a settled village life, food production (agriculture and animal husbandry), metallurgy (the mining, smelting and working of iron, copper and gold) and the manufacture of pottery. Iron Age farming communities generally preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum. Even though much research has been conducted on the Iron Age (IA) across southern Africa, only a small portion has focused on the Gauteng. Complex stone wall clusters are scattered across the landscapes of the Southern Highveld and the Free State. These stone structures, commonly associated with Bantu speaking farming communities, are the remnants of a complex 500 year old sequence of stone wall building in central interior of South Africa. Tim Maggs, noted archaeologist of the later Farmer Period in southern Africa, named the first phase in this sequence "Type N" walling, dating to the 15<sup>th</sup> to 17<sup>th</sup> centuries AD (Maggs 1976). This phase, which mostly developed in the Free State, was characterised by central cattle kraals linked by outer walls, while the whole settlement was surrounded by a perimeter wall which also incorporated small stock enclosures. After the 17<sup>th</sup> century, the "Type N" style of building spread across the Vaal River in consecutive phases where it later became known as "Klipriviersberg" type walling (Taylor 1979a). These settlements

typically displayed outer scalloped walls that demarcated back courtyards, a large number of small stock kraals and straight walls which separated household units in the domestic zone. Beehive huts would have housed communities on these sites. The Klipriviersberg walling type dates to the 18<sup>th</sup> and 19<sup>th</sup> centuries and are associated with the Fokeng cluster of the Sotho-Tswana speaker group. These people used iron implements and there is a site of one of their kraals just to the east of the boundary between Hartzenbergfontein and Roodepoort. In addition, settlement remains occur in Grade Road, Walker's Fruit Farms; at the base of Perdeberg; and at plot 143 Homestead Apple Orchards as well as at Walkerville Manor.



Figure 4-2: Characteristic Klipriviersberg-type stone walled settlements east of Vereeniging on the Highveld (after Huffman [2007



Figure 4-3: Iron Age stone walling on a small hill near Walkerville.

#### 4.2.3 Historical and Colonial Times and Recent History

The first white person to settle in the Walkerville area was an unknown Voortrekker in about 1838. The remains of a hut built with the front axle of his wagon is near Dairy Cottage on Woodacres Dairy Farm. This Voortrekker sold the Hartzenbergfontein property to Hendrik Balthazar Greyling in about 1859 and the whole property, in extent over 3,422morgen was transferred to Greyling on the 11th December 1861. This deed of transfer has been lost but is referred to in numerous other deeds. Hendrik Greyling died in 1879 and his wife Anna Margaretha nee Scheepers split the farm into undivided portions amongst the nine children and herself. The children and their husbands purchased the undivided tenth shares for 15 pounds a share. Each share was equivalent to over 342 morgen. Each tenth share forms the basis of the present subdivision of Hartzenbergfontein, Walkerville and its surrounds being on two tenths of the original area. A further two sections are still owned by the descendants of the family, namely the two large Kamffer farms, one in



Hartzenbergfontein and one in Drumblade. The Kamffer family plays a prominent role in the history of Walkerville and the farm Hartzenbergfontein. One of the Greyling daughters, Aletta Maria Gertiena, married Christoffel Johannes Kamffer and they settled on their portion of the farm, just South East of Aloe Ridge School. They had two sons, Hendrik and Willem Kamffer. In the latter part of the 19th century the district was composed of enormous farms. In the way that such matters were executed in those times, a farm's extent was measured by the distance a horse could walk in one day. This was about 3000 morgan, or 6 300 acres. There were no boundary fences and the law forbade any subdivision, except where portions were left to family members. Probably due to the lack of entertainment as much as any other reason, families were extremely large, and this often led to problems when the head of the family passed away. After the death of President Paul Kruger early in the last century, this statute fell away -sort of. As the population began to increase, people realised that land was a very valuable commodity, and thus began the division of these huge farms into the 5, 10 and 20 acre plots that most of us live on today. However, the law pronounced that only 50% of any one farm could be subdivided - the other half becoming a commonage on which the people who had bought the land parcels could graze their livestock.



Figure 4-4: View of the old Walkerville Post Office.



Figure 4-5: The ruined remains of the Kamffer farmstead building on the farm Hartsenbergfontein.





Figure 4-6: Hendrik Kamffer photographed in 1916.



Figure 4-7: The Kamffer family during the first part of the 20<sup>th</sup> century

## 5 RESULTS: ARCHAEOLOGICAL SURVEY

In terms of heritage resources, the landscape around the project area is primarily well known for the occurrence of Iron Age Farmer and Historical Period sites. The landscape around the proposed Door of Hope Village project remains pristine in places with the regular occurrence of transformed zones as a result of agriculture. Single occurrences of heritage potential were nonetheless identified in the project area and these were coded “Exigo-DOH-HP” (Exigo Door of Hope Village Historical Period) and “Exigo-DOH-BP” (Exigo Door of Hope Village Burial Place).

### 5.1 The Stone Age

Stone Age remains associated with caves, outcrops/hills and river courses are known to exist in the larger Gauteng landscape. However, no stone tools or associated material culture or evidence of any factory or workshop site were found in the project areas.

### 5.2 The Iron Age Farmer Period

A frontier zone between the east and the west, the Gauteng around the project area is rich in precolonial Iron Age Farmer Period remnants. However, the site inspection identified no Iron Age farmer sites.

### 5.3 Colonial / Historical Period Sites

European and local farming communities settled in the former Trans-Vaal region during the Colonial Period in the last centuries. The project area remained rural for the largest part of the previous century but aerial imagery dating to the first part of the 20<sup>th</sup> century indicate the occurrence of a Historical Period structure, possibly a small farmstead, along the northern periphery of the site. Literature notes that Christoffel Johannes Kamffer settled south east of Aloe Ridge School in this area but it is unclear if this structure is their farmstead (see Section 4.2.3). This structure disappeared from later imagery (see Figure 5-1) and no remnants of this feature were found during the site visit. In addition, a number of monoliths used as fencing posts occur on the property along disused agricultural fields. The utilization of these natural features during historical and recent times for agricultural purposes is a common occurrence across farming areas in South Africa and the monoliths does not carry implicit historical significance.



Figure 5-1: Historical aerial photo dating to 1938 (left) and 1955 (right) indicating the presence, and absence of a Historical Period structure in the project area.



Figure 5-2: Stone monolith fence posts along agriculture areas in the project area.



Figure 5-3: An example of stone fence posts in farming areas in the Eastern Cape of South Africa

- **Site Exigo-DOH-HP01: Historical / Colonial Period Building**  
**S26.37687° E27.96554°**

A number of upright stones and monoliths were noted along the northern periphery of the project area. Here, prickly pears (an alien plant species commonly associated with human habitation areas) grow in association with ashy soil around the stones. No material culture or man-made structures were noted at the site. An analysis of historical topographical maps and aerial photographs indicate the presence of a “kraal” by at least 1944 and it might be assumed that the “kraal” was related the possible farmstead visible on early aerial photos (see reference above). The occurrence is not indicated on later maps and it seems as though the feature disappeared with the assumed farmstead during the mid-1900s. As the site is generally devoid of material culture or man-made structures it carries limited heritage significance.



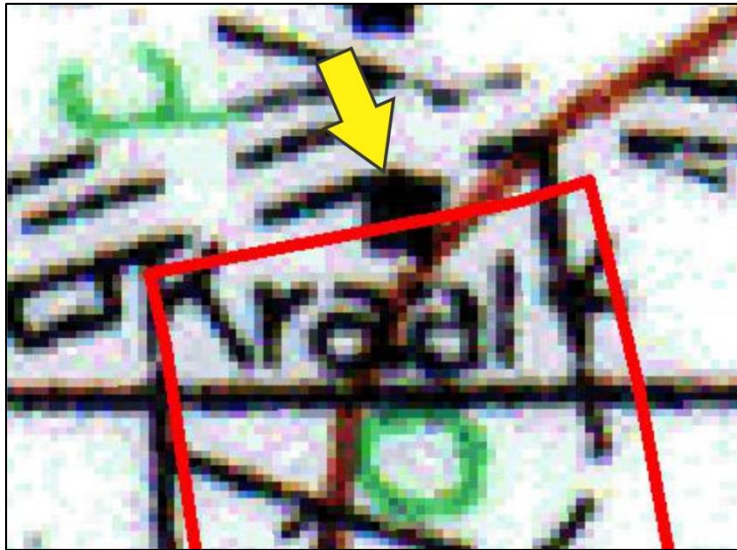


Figure 5-4: A “kraal” indicated on a 1944 topographic map at Site Exigo-DOH-HP01.



Figure 5-5: View of a stone structures and a prickly pear (left – background) at Site Exigo-DOH-HP01.

#### 5.4 Graves / Human Burial Sites

A single burial site was documented in the project area. The burial place holds at least 3 graves, some of which are unmarked.

- **Site Exigo-DOH-BP01: Burial Site**  
**S26.37828° E27.96456°**

An informal cemetery containing at least 3 graves occurs along the north western border of the project area under a stand of Eucalyptus trees. One of the burials is indicated by slate rock headstone bearing the following inscription:

*Hier rus ons dierbare seuntjie  
Willem Jacobus Kamffer  
...(?) AUG 1913  
OVERL 21 AUG 1914  
HY RUS IN JEZUZ ARMS*

It is highly likely that the grave belongs to an infant relative of one of the Kamffer family members who settled on the property and the surrounding farms, possibly within the context of the farmstead visible on early aerial imagery. However, it seems peculiar that the child was not buried with other Kamffer family members in the family cemetery on the neighbouring property near the ruins of the Kamffer homestead. In addition, two additional unmarked graves occur at the site. These burials are indicated by stone cairns and it's relation to the Kamffer grave is unclear. The burial site is of high heritage significance, it is situated within the development footprint of the project and a conservation buffer should be observed. Alternatively, the burials should be relocated according to the applicable social and statutory requirements, should impact prove inevitable.



Figure 5-6: View of the marked infant grave at Site Exigo-DOH-BP01.



Figure 5-7: View of an unmarked grave next to the infant grave at Site Exigo-DOH-BP01 (yellow arrow).





Figure 5-8: View of an unmarked grave near to the infant grave at Site Exigo-DOH-BP01 (yellow arrow).

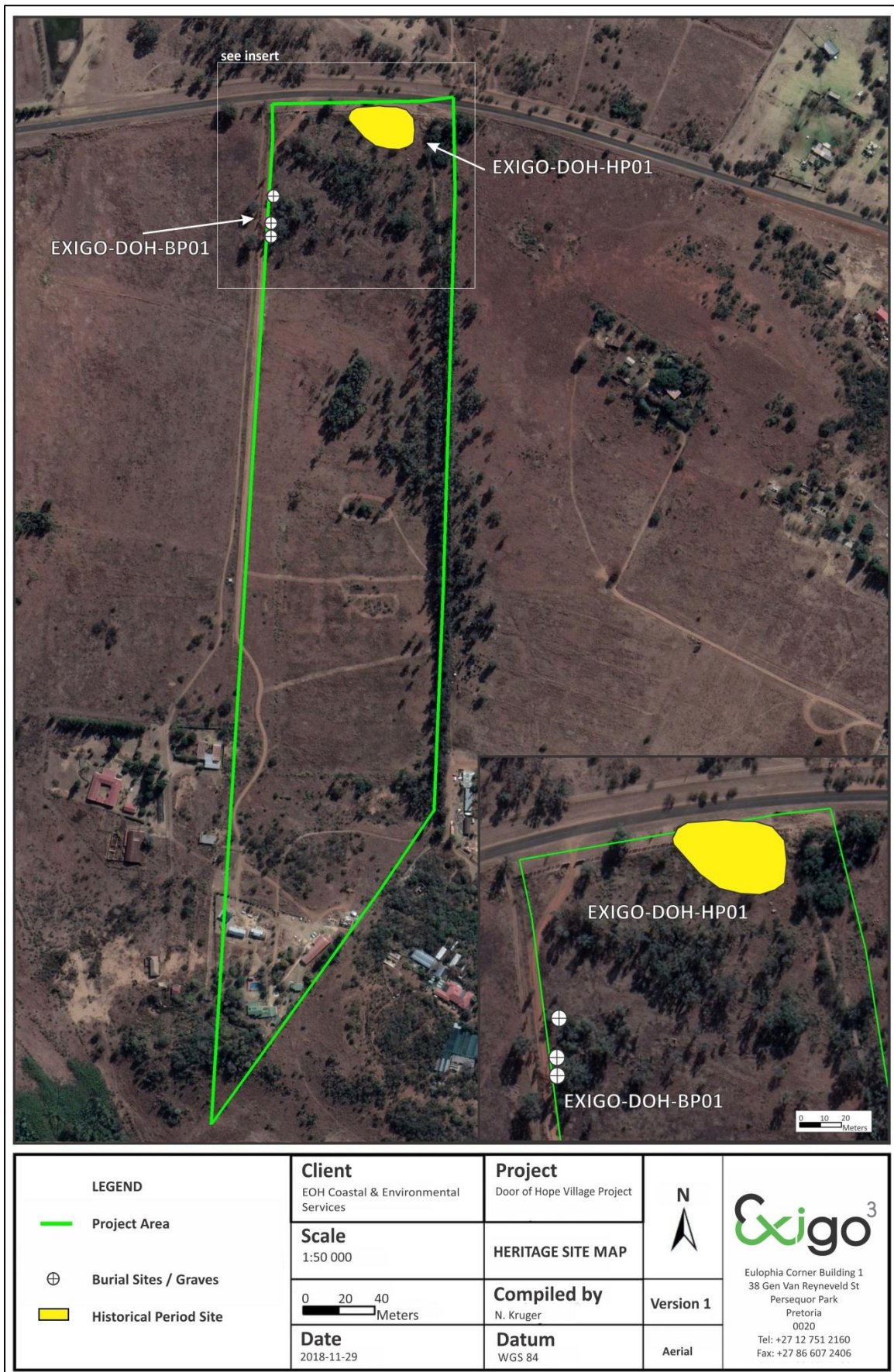


Figure 5-9: Aerial map indicating the locations of occurrences of heritage potential in the project area, discussed in the text.



## 6 RESULTS: STATEMENT OF SIGNIFICANCE AND IMPACT RATING

### 6.1 Potential Impacts and Significance Ratings<sup>3</sup>

The following section provides a background to the identification and assessment of possible impacts and alternatives, as well as a range of risk situations and scenarios commonly associated with heritage resources management. A guideline for the rating of impacts and recommendation of management actions for areas of heritage potential within the project area is supplied in Section 10.2 of the Addendum.

#### 6.1.1 General assessment of impacts on resources

Generally, the value and significance of archaeological and other heritage sites might be impacted on by any activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, any archaeological material or object (as indicated in the National Heritage Resources Act (No 25 of 1999)). Thus, the destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. However, in the long run, the proximity of operations in any given area could result in secondary indirect impacts. The EIA process therefore specifies impact assessment criteria which can be utilised from the perspective of a heritage specialist study which elucidates the overall extent of impacts.

#### 6.1.2 Direct impact rating

**Direct or primary effects** on heritage resources occur at the same time and in the same space as the activity, e.g. loss of historical fabric through demolition work. **Indirect effects or secondary effects** on heritage resources occur later in time or at a different place from the causal activity, or as a result of a complex pathway, e.g. restriction of access to a heritage resource resulting in the gradual erosion of its significance, which is dependent on ritual patterns of access (refer to Section 10.3 in the Addendum for an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected). The significances of the impacts were determined through a synthesis of the criteria below:

<b>Probability:</b> This describes the likelihood of the impact actually occurring.	
Improbable:	The possibility of the impact occurring is very low, due to the circumstances, design or experience.
Probable:	There is a probability that the impact will occur to the extent that provision must be made therefore.
Highly Probable	It is most likely that the impact will occur at some stage of the development.
Definite:	The impact will take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect.
<b>Duration:</b> The lifetime of the impact	
Short term:	The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
Medium term:	The impact will last up to the end of the phases, where after it will be negated.
Long term:	The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
Permanent:	Impact that will be non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.
<b>Scale:</b> The physical and spatial size of the impact	

<sup>3</sup> Based on: Winter, S. & Baumann, N. 2005. *Guideline for involving heritage specialists in EIA processes: Edition 1.*



Local:	The impacted area extends only as far as the activity, e.g. footprint
Site:	The impact could affect the whole, or a measurable portion of the above mentioned properties.
Regional:	The impact could affect the area including the neighbouring residential areas.
<b>Magnitude/ Severity:</b> Does the impact destroy the environment, or alter its function.	
Low:	The impact alters the affected environment in such a way that natural processes are not affected.
Medium:	The affected environment is altered, but functions and processes continue in a modified way.
High:	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
<b>Significance:</b> This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.	
Negligible:	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
Low:	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
Moderate:	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High:	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The following weights were assigned to each attribute:

Aspect	Description	Weight
<b>Probability</b>	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
<b>Duration</b>	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
<b>Scale</b>	Local	1
	Site	2
	Regional	3
<b>Magnitude/Severity</b>	Low	2
	Medium	6
	High	8
<b>Significance</b>	<b>Sum (Duration, Scale, Magnitude) x Probability</b>	
	Negligible	<20
	Low	<40
	Moderate	<60
	High	>60

The significance of each activity is rated without mitigation measures and with mitigation measures for both construction and operational phases of the development.

The following table summarizes impacts to the heritage receptors within and in close proximity of the project area:

Nr	Activity	Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Probability		Duration		Scale		Magnitude/ Severity		Significance		Mitigation Measures
					Magnitude	Score	Magnitude	Score	Magnitude	Score	Magnitude	Score	Score	Magnitude	
<b>Planning Phase</b>															
1	Site Exigo-DOH-HP01	Potential damage to Historical Period feature	WOM	Negative	Probable	2	Short term	1	Site	2	Low	2	14	Negligible	Frequent site monitoring by ECO.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	
2	Site Exigo-DOH-BP01	Potential damage to burial sites	WOM	Negative	Probable	2	Short term	1	Site	2	High	8	22	Low	Frequent site monitoring by heritage specialist / ECO, heritage site management plan.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	
<b>Construction Phase</b>															
3	Site Exigo-DOH-HP01	Potential damage to Historical Period feature	WOM	Negative	Probable	2	Long term	4	Site	2	Low	2	20	Negligible	Frequent site monitoring by ECO.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	
4	Site Exigo-DOH-BP01	Potential damage to burial sites	WOM	Negative	Definite	5	Long term	4	Site	2	High	8	70	High	Site monitoring, avoidance, 100m conservation buffer, site management. Grave relocation subject to authorisations and permitting if impacted on.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	
<b>Operational Phase</b>															
5	Site Exigo-DOH-HP01	Potential damage to Historical Period feature	WOM	Negative	Improbable	1	Permanent	5	Local	1	Low	2	8	Negligible	No further action required.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	
6	Site Exigo-DOH-BP01	Potential damage to burial sites	WOM	Negative	Definite	5	Permanent	5	Site	2	High	8	75	High	Avoidance, 100m conservation buffer and implementation of site management plan. Grave relocation subject to authorisations and permitting if impacted on.
			WM	Positive	Improbable	1	Short term	1	Site	2	Low	2	5	Negligible	

## 6.2 Evaluation Impacts

Previous studies conducted in the larger Gauteng landscape around the project area suggest a rich and diverse archaeological landscape. The Door of Hope Village landscape has been inhabited continuously in prehistoric and historical times where large portions of land have been transformed for agriculture. Cognisance should be taken of archaeological material that might be present in surface and sub-surface deposits.

### 6.2.1 Archaeology

The study did not identify any archaeological receptors which will be directly impacted by the proposed project and no impact on archaeological sites or features is anticipated.

### 6.2.2 Built Environment

A number of Historical Period buildings relating to rural settlement occur in the general landscape and more recently constructed buildings occur in the project footprint. However, no impact on the built environment is anticipated.

### 6.2.3 Cultural Landscape

The larger area comprises a rich cultural horizon and the natural landscape surrounding the proposed project encompasses open grasslands, typical of the southern Highveld and rural Gauteng. The cultural landscape holds Iron Age remains, Colonial Period farmsteads and Historical towns. The proposed project is unlikely to result in a significant impact on the cultural landscape of this area.

### 6.2.4 Graves / Human Burials Sites

A burial site containing 3 graves was located in the project development footprint. These receptors are of high significance for their social and cultural value. The potential impact on the resources is anticipated to be high but this impact rating can be limited to an indelible impact by the implementation of mitigation measures (avoidance, site management, site monitoring / grave relocation) for the sites, if / when required.

In the rural areas of the Gauteng, graves and cemeteries sometimes occur within settlements or around homesteads but they are also randomly scattered around archaeological and historical settlements. The probability of additional and informal human burials encountered during development should thus not be excluded. In addition, human remains and burials are commonly found close to archaeological sites; they may be found in "lost" graveyards, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from SAHRA (for pre-colonial burials as well as burials later than about AD 1500). Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.

**Heritage resources occur within the Door of Hope Village project zones and potential direct impacts on these heritage receptors are foreseen. However, these impacts can be mitigated and in the opinion of the author of this AIA study the proposed Door of Hope Village project may proceed from a culture resources management perspective on the condition that mitigation measures are implemented where applicable, and provided that no subsurface heritage remains are encountered during construction.**

**6.3 Management actions**

Recommendations for relevant heritage resources management actions are vital to the conservation of heritage resources. A general guideline for recommended management actions is included in Section 10.4 of the Addendum. The following management measures should be considered during implementation of the proposed Door of Hope Village.

**OBJECTIVE:** prevent unnecessary disturbance and/or destruction of previously undetected heritage receptors.

- For the Historical Period remains if a "kraal" of low significance (**Site Exigo-DOH-HP01**) within the project area the following are required in terms of heritage management and mitigation:

<b>PROJECT COMPONENT/S</b>	All phases of construction and operation.		
<b>POTENTIAL IMPACT</b>	Damage/destruction of sites.		
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
<b>MITIGATION: TARGET/OBJECTIVE</b>	To conserve the historical fabric of the sites and to locate undetected heritage remains as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.		
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>	
Fixed Mitigation Procedure ( <b>required</b> )			
<b>Site Monitoring:</b> Regular examination of trenches and excavations.	ECO, HERITAGE ASSESSMENT PRACTITIONER	Monitor as frequently as practically possible.	
<b>PERFORMANCE INDICATOR</b>	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
<b>MONITORING</b>	Successful location of sites by person/s monitoring.		

- For the highly significant burial site (**Site Exigo-DOH-BP01**) occurring within the project area the following are required in terms of heritage management and mitigation:

<b>PROJECT COMPONENT/S</b>	All phases of construction and operation.		
<b>POTENTIAL IMPACT</b>	Damage/disturbance to subsurface burials and surface burial features.		
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
<b>MITIGATION: TARGET/OBJECTIVE</b>	To locate human burials as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.		
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>	
Preferred Mitigation Procedure			

<b>Avoidance:</b> Implement a heritage conservation buffer of at least 50m around the grave / cemeteries, if necessary redesign the project infrastructure to avoid the heritage resource and the proposed conservation buffer. Fence all burial places and apply access control. Implement a site management plan detailing strict site management conservation measures.		
	DEVELOPER QUALIFIED HERITAGE SPECIALIST	Prior to and during the commencement of construction and earth-moving as well as during operation phase.
<b>Alterative Mitigation Procedure (if preferred mitigation procedure is not feasible)</b>		
<b>Grave Relocation:</b> Relocation of burials and documentation of site, full social consultation with affected parties, possible conservation management and protection measures. Subject to authorisations and relevant permitting from heritage authorities and affected parties.	QUALIFIED HERITAGE SPECIALIST	Prior to the commencement of construction and earth-moving.
<b>Fixed Mitigation Procedure (required)</b>		
<b>Site Monitoring:</b> Regular examination of trenches and excavations in this area in order to avoid the destruction of previously undetected burials or heritage remains.	ECO	Monitor prior to and during the commencement of construction and earth-moving...
<b>PERFORMANCE INDICATOR</b>	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.	
<b>MONITORING</b>	Successful location of sites by person/s monitoring.	



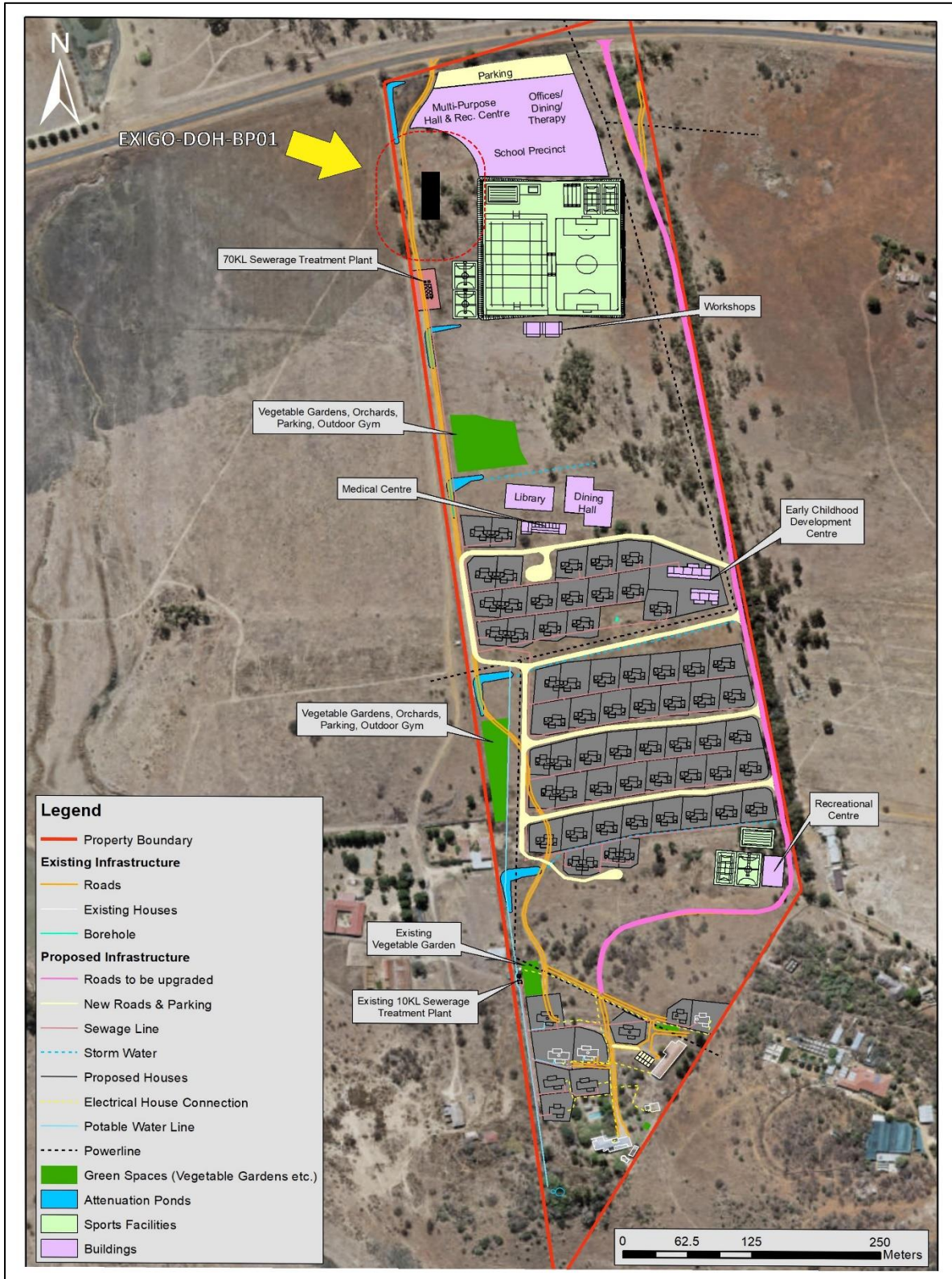


Figure 6-1: Aerial map indicating the extent of required 50m heritage conservation buffer (red dashed line) in relation to Door of Hope Village infrastructure components, discussed in the text.

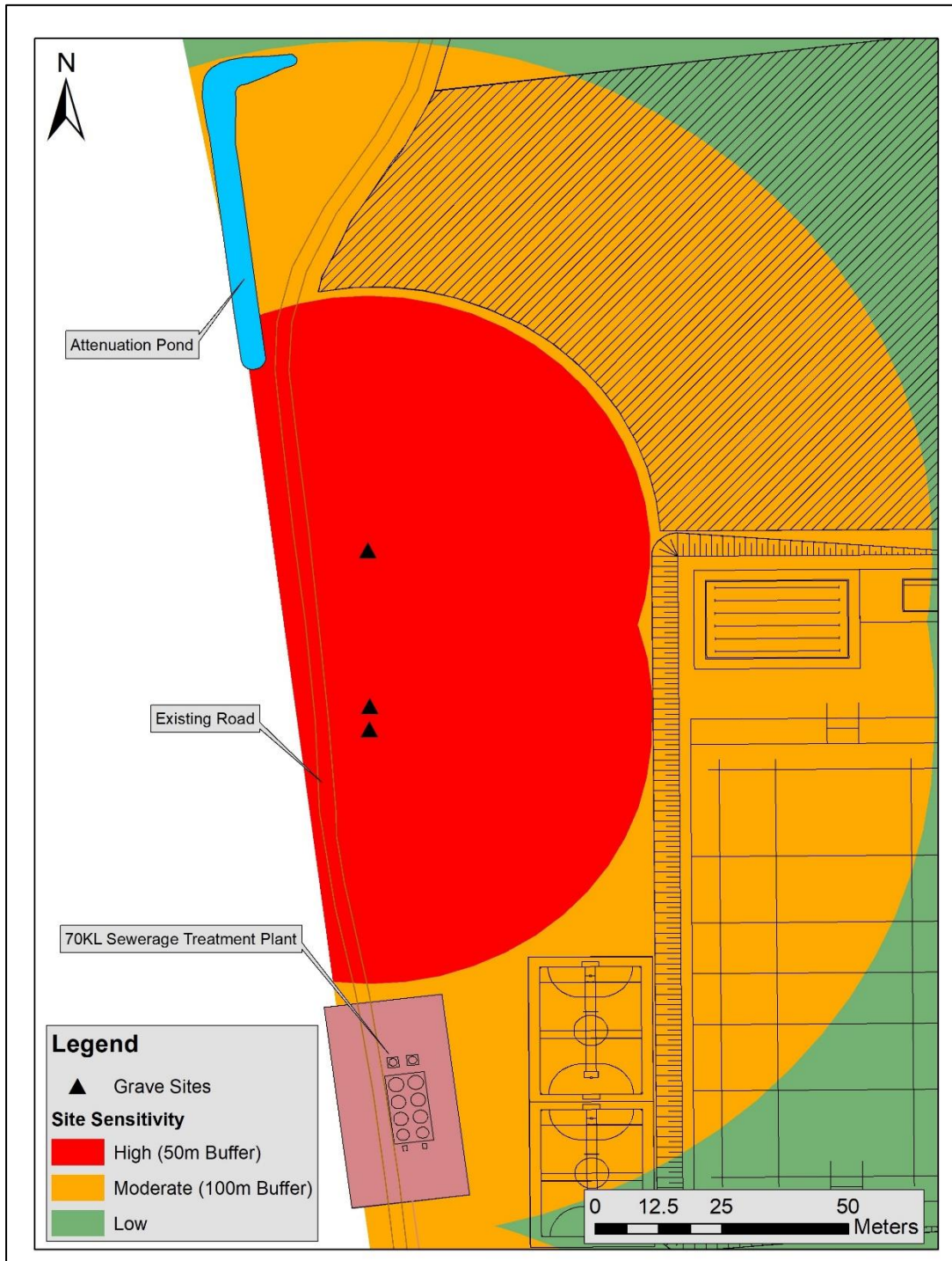


Figure 6-2: Detailed plan of infrastructure components around required heritage conservation buffer (50m), discussed in the text.



## 7 RECOMMENDATIONS

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In terms of heritage resources, the landscape around the project area is primarily well known for the occurrence of Iron Age farmer presence and a Colonial frontier denoting farmer expansion. The landscape that encompasses the Door of Hope Village footprints seems to have been inhabited continuously for centuries in prehistoric and historical times, the remnants of which are visible in transformed agriculture and rural settlement areas. The following general recommendations are made based on general observations in the proposed Door of Hope Village area pertaining to a number of identified occurrences of heritage potential:

- A number of monoliths used as fencing posts occur on the property along disused agricultural fields. The utilization of these natural features during historical and recent times for agricultural purposes is a common occurrence across farming areas in South Africa and the monoliths does not carry implicit historical significance. No action in terms of heritage mitigation is required for these features.
- The remains of a Historical Period “kraal” (**Site Exigo-DOH-HP01**) occurring along the northern periphery of the project is rated as low heritage significance as no material culture or man-made structures occur at the poorly preserved site. The “kraal” occurs within the project area and it is recommended that the area be monitored by an informed ECO in order to avoid the destruction of previously undetected heritage remains.
- An informal burial site containing at least 3 graves (**Site Exigo-DOH-BP01**) occurs within the project development area. The site is of high significance and a 50m conservation buffer is required for the burial site as a primary measure. It is recommended that infrastructure components proposed for the project avoid encroaching on the required 50m conservation buffer. In addition it is recommended that the burial site be fenced off with wire, chicken wire or palisade fencing of a minimum height of 1.8m placed no closer than 2m from the burials. An access gate should be erected and access control should be applied to the site. A heritage Site Management Plan (SMP) should be compiled for the burials to stipulate conservation measures, responsible persons and chance find procedures for further heritage mitigation. The developer should carefully liaise with the heritage specialist, SAHRA as well as local communities and possible affected parties with regards to the management and monitoring of any human grave or cemetery in order to detect and manage negative impact on the sites. **Should impact on the burial site prove inevitable, full grave relocations are recommended for these burial grounds. This measure should be undertaken by a qualified archaeologist, and in accordance with relevant legislation, permitting, statutory permissions and subject to any local and regional provisions and laws and by-laws pertaining to human remains. A full social consultation process with the Kamffer family and other affected parties should occur in conjunction with the mitigation of cemeteries and burials (see Addendum B).**
- Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO is recommended during planning and construction phases of the project. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that the possibility of undetected archaeological remains occurring elsewhere in the project area should not be excluded. Burials and historically significant structures dating to the Colonial Period occur on

farms in the area and these resources should be avoided during all phases of construction and development, including the operational phases of the development.

In addition to these site-specific recommendations, careful cognizance should be taken of the following:

- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits.

## 8 GENERAL COMMENTS AND CONDITIONS

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This AIA report serves to confirm the extent and significance of the heritage landscape of the proposed Door of Hope Village area. The larger heritage horizon encompasses rich and diverse archaeological landscapes and cognizance should be taken of heritage resources and archaeological material that might be present in surface and sub-surface deposits. If, during construction, any possible archaeological material culture discoveries are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find. Such material culture might include:

- Formal Earlier Stone Age stone tools.
- Formal MSA stone tools.
- Formal LSA stone tools.
- Potsherds
- Iron objects.
- Beads made from ostrich eggshell and glass.
- Ash middens and cattle dung deposits and accumulations.
- Faunal remains.
- Human remains/graves.
- Stone walling or any sub-surface structures.
- Historical glass, tin or ceramics.
- Fossils.

If such sites were to be encountered or impacted by any proposed developments, recommendations contained in this report, as well as endorsement of mitigation measures as set out by Gauteng-PHRA, SAHRA, the National Resources Act and the CRM section of ASAPA will be required.

It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, represent the area's complete archaeological legacy. Many sites/features may be covered by soil and vegetation and might only be located during sub-surface investigations. If subsurface archaeological deposits, artefacts or skeletal material were to be recovered in the area during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately (**cf. NHRA (Act No. 25 of 1999)**, Section 36 (6)). It must also be clear that Archaeological Specialist Reports will be assessed by the relevant heritage resources authority (SAHRA).

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## 10 ADDENDUM 1: HERITAGE LEGISLATION BACKGROUND

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### 10.1 CRM: Legislation, Conservation and Heritage Management

The broad generic term Cultural Heritage Resources refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

#### 10.1.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and their provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation at all times.

##### d. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act of 1999 a historical site is any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years. This clause is commonly known as the "60-years clause". Buildings are amongst the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Iron Age settlements. "Tell" refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts).

The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects, meteorites and rare geological specimens
- visual art objects
- military objects
- numismatic objects
- objects of cultural and historical significance
- objects to which oral traditions are attached and which are associated with living heritage
- objects of scientific or technological interest
- any other prescribed category

With regards to activities and work on archaeological and heritage sites this Act states that:

*"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority." (34. [1] 1999:58)*

and

*"No person may, without a permit issued by the responsible heritage resources authority-*

- (d) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (e) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*

- (f) *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (g) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58)."*

and

*"No person may, without a permit issued by SAHRA or a provincial heritage resources agency-*

- (h) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (i) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (j) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."*

#### **e. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925**

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

#### **10.1.2 Background to HIA and AIA Studies**

South Africa's unique and non-renewable archaeological and palaeontological heritage sites are 'generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

The National Heritage Resources Act (Act No. 25 of 1999, section 38) provides guidelines for Cultural Resources Management and prospective developments:

*"38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a*

*development categorised as:*

- (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 50m in length;*
- (c) any development or other activity which will change the character of a site:*
  - (i) exceeding 5 000 m<sup>2</sup> in extent; or*
  - (ii) involving three or more existing erven or subdivisions thereof; or*
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- (d) the re-zoning of a site exceeding 10 000 m<sup>2</sup> 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 the proposed development.”*

And:

*“The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:*

- (k) The identification and mapping of all heritage resources in the area affected;*
- (l) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (m) an assessment of the impact of the development on such heritage resources;*
- (n) 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;*
- (o) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (p) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (q) plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64).”*

Consequently, section 35 of the Act requires Heritage Impact Assessments (HIAs) or Archaeological Impact Assessments (AIAs) to be done for such developments in order for all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic or technological value or significance to be protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60



years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects. Heritage resources management and conservation.

## 10.2 Assessing the Significance of Heritage Resources

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people have lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable*. Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

### - Categories of significance

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites. In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

#### - *Aesthetic value:*

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

#### - *Historic value:*

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

#### - *Scientific value:*

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality and on the degree to which the place may contribute further substantial information.

#### - *Social value:*

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group.

It is important for heritage specialist input in the EIA process to take into account the heritage management structure set up by the NHR Act. It makes provision for a 3-tier system of management including the South Africa Heritage Resources Agency (SAHRA) at a national level, Provincial Heritage Resources Authorities (PHRAs) at a provincial and the local authority. The Act makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

**Formally protected sites:**

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the provincial HRA (MP-PHRA).
- Grade 3 or local heritage sites.

**Generally protected sites:**

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 60 years.
- Structures older than 60 years.

With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low. The significance of archaeological sites is generally ranked into the following categories.

Significance	Rating Action
No significance: sites that do not require mitigation.	None
Low significance: sites, which may require mitigation.	2a. Recording and documentation (Phase 1) of site; no further action required 2b. Controlled sampling (shovel test pits, augering), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction
Medium significance: sites, which require mitigation.	3. Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]
High significance: sites, where disturbance should be avoided.	4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism
High significance: Graves and burial places	4b. Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinterment [including 2a, 2b & 3]

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

**11 ADDENDUM 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE**

**11.1 Site Significance Matrix**

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these. The following matrix is used for assessing the significance of each identified site/feature.

2. SITE EVALUATION			
2.1 Heritage Value (NHRA, section 2 [3])	High	Medium	Low
It has importance to the community or pattern of South Africa's history or pre-colonial history.			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			
It is of importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.			
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.			
It has marked or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).			
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.			
It has significance through contributing towards the promotion of a local sociocultural identity and can be developed as a tourist destination.			
It has significance relating to the history of slavery in South Africa.			
It has importance to the wider understanding of temporal changes within cultural landscapes, settlement patterns and human occupation.			
2.2 Field Register Rating			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
2.3 Sphere of Significance	High	Medium	Low
International			
National			
Provincial			
Local			
Specific community			



## 11.2 Impact Assessment Criteria

The following table provides a guideline for the rating of impacts and recommendation of management actions for sites of heritage potential.

### Significance of the heritage resource

This is a statement of the nature and degree of significance of the heritage resource being affected by the activity. From a heritage management perspective it is useful to distinguish between whether the significance is embedded in the physical fabric or in associations with events or persons or in the experience of a place; i.e. its visual and non-visual qualities. This statement is a primary informant to the nature and degree of significance of an impact and thus needs to be thoroughly considered. Consideration needs to be given to the significance of a heritage resource at different scales (i.e. sitespecific, local, regional, national or international) and the relationship between the heritage resource, its setting and its associations.

### Nature of the impact

This is an assessment of the nature of the impact of the activity on a heritage resource, with some indication of its positive and/or negative effect/s. It is strongly informed by the statement of resource significance. In other words, the nature of the impact may be historical, aesthetic, social, scientific, linguistic or architectural, intrinsic, associational or contextual (visual or non-visual). In many cases, the nature of the impact will include more than one value.

### Extent

Here it should be indicated whether the impact will be experienced:

- On a site scale, i.e. extend only as far as the activity;
- Within the immediate context of a heritage resource;
- On a local scale, e.g. town or suburb
- On a metropolitan or regional scale; or
- On a national/international scale.

### Duration

Here it should be indicated whether the lifespan of the impact will be:

- Short term, (needs to be defined in context)
- Medium term, (needs to be defined in context)
- Long term where the impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or by human intervention; or
- Permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

Of relevance to the duration of an impact are the following considerations:

- Reversibility of the impact; and
- Renewability of the heritage resource.

### Intensity

Here it should be established whether the impact should be indicated as:

- Low, where the impact affects the resource in such a way that its heritage value is not affected;
- Medium, where the affected resource is altered but its heritage value continues to exist albeit in a modified way; and
- High, where heritage value is altered to the extent that it will temporarily or permanently be damaged or destroyed.

### Probability

This should describe the likelihood of the impact actually occurring indicated as:

- Improbable, where the possibility of the impact to materialize is very low either because of design or historic experience;
- Probable, where there is a distinct possibility that the impact will occur;
- Highly probable, where it is most likely that the impact will occur; or
- Definite, where the impact will definitely occur regardless of any mitigation measures

### Confidence

This should relate to the level of confidence that the specialist has in establishing the nature and degree of impacts. It relates to the level and reliability of information, the nature and degree of consultation with I&AP's and the dynamic of the broader socio-political context.

- High, where the information is comprehensive and accurate, where there has been a high degree of consultation and the socio-political context is relatively stable.
- Medium, where the information is sufficient but is based mainly on secondary sources, where there has been a limited targeted consultation and socio-political context is fluid.
- Low, where the information is poor, a high degree of contestation is evident and there is a state of socio-political flux.

**Impact Significance**

The significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature and degree of heritage significance and the nature, duration, intensity, extent, probability and confidence of impacts and can be described as:

- Low; where it would have a negligible effect on heritage and on the decision
- Medium, where it would have a moderate effect on heritage and should influence the decision.
- High, where it would have, or there would be a high risk of, a big effect on heritage. Impacts of high significance should have a major influence on the decision;
- Very high, where it would have, or there would be high risk of, an irreversible and possibly irreplaceable negative impact on heritage. Impacts of very high significance should be a central factor in decision-making.

**11.3 Direct Impact Assessment Criteria**

The following table provides an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected

HERITAGE CONTEXT	TYPE OF DEVELOPMENT			
	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY D
<b>CONTEXT 1</b> High heritage Value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
<b>CONTEXT 2</b> Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
<b>CONTEXT 3</b> Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
<b>CONTEXT 4</b> Low to no heritage value	Little or no heritage impact expected	Little or no heritage impact expected	Minimal heritage value expected	Moderate heritage impact expected
<b>NOTE: A DEFAULT "LITTLE OR NO HERITAGE IMPACT EXPECTED" VALUE APPLIES WHERE A HERITAGE RESOURCE OCCURS OUTSIDE THE IMPACT ZONE OF THE DEVELOPMENT.</b>				
HERITAGE CONTEXTS		CATEGORIES OF DEVELOPMENT		
<p><b>Context 1:</b> Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources</p> <p><b>Context 2:</b> Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.</p> <p><b>Context 3:</b> Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources</p>		<p><b>Category A: Minimal intensity development</b></p> <ul style="list-style-type: none"> <li>- No rezoning involved; within existing use rights.</li> <li>- No subdivision involved.</li> <li>- Upgrading of existing infrastructure within existing envelopes</li> <li>- Minor internal changes to existing structures</li> <li>- New building footprints limited to less than 1000m2.</li> </ul> <p><b>Category B: Low-key intensity development</b></p> <ul style="list-style-type: none"> <li>- Spot rezoning with no change to overall zoning of a site.</li> <li>- Linear development less than 100m</li> <li>- Building footprints between 1000m2-2000m2</li> </ul>		

<p><b>Context 4:</b> Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage.</p>	<ul style="list-style-type: none"> <li>- Minor changes to external envelop of existing structures (less than 25%)</li> <li>- Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%).</li> </ul> <p><b>Category C: Moderate intensity development</b></p> <ul style="list-style-type: none"> <li>- Rezoning of a site between 5000m<sup>2</sup>-10 000m<sup>2</sup>.</li> <li>- Linear development between 100m and 300m.</li> <li>- Building footprints between 2000m<sup>2</sup> and 5000m<sup>2</sup></li> <li>- Substantial changes to external envelop of existing structures (more than 50%)</li> <li>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%)</li> </ul> <p><b>Category D: High intensity development</b></p> <ul style="list-style-type: none"> <li>- Rezoning of a site in excess of 10 000m<sup>2</sup></li> <li>- Linear development in excess of 300m.</li> <li>- Any development changing the character of a site exceeding 5000m<sup>2</sup> or involving the subdivision of a site into three or more erven.</li> <li>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%)</li> </ul>
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### 11.4 Management and Mitigation Actions

The following table provides a guideline of relevant heritage resources management actions is vital to the conservation of heritage resources.

#### No further action / Monitoring

Where no heritage resources have been documented, heritage resources occur well outside the impact zone of any development or the primary context of the surroundings at a development footprint has been largely destroyed or altered, no further immediate action is required. Site monitoring during development, by an ECO or the heritage specialist are often added to this recommendation in order to ensure that no undetected heritage\ remains are destroyed.

#### Avoidance

This is appropriate where any type of development occurs within a formally protected or significant or sensitive heritage context and is likely to have a high negative impact. Mitigation is not acceptable or not possible. This measure often includes the change / alteration of development planning and therefore impact zones in order not to impact on resources.

#### Mitigation

This is appropriate where development occurs in a context of heritage significance and where the impact is such that it can be mitigated to a degree of medium to low significance, e.g. the high to medium impact of a development on an archaeological site could be mitigated through sampling/excavation of the remains. Not all negative impacts can be mitigated.

#### Compensation

Compensation is generally not an appropriate heritage management action. The main function of management actions should be to conserve the resource for the benefit of future generations. Once lost it cannot be renewed. The circumstances around the potential public or heritage benefits would need to be exceptional to warrant this type of action, especially in the case of where the impact was high.

#### Rehabilitation

Rehabilitation is considered in heritage management terms as a intervention typically involving the adding of a new heritage layer to enable a new sustainable use. It is not appropriate when the process necessitates the removal of previous historical layers, i.e. restoration of a building or place to the previous state/period. It is an appropriate heritage management action in the following cases:

- The heritage resource is degraded or in the process of degradation and would benefit from rehabilitation.
- Where rehabilitation implies appropriate conservation interventions, i.e. adaptive reuse, repair and maintenance, consolidation and minimal loss of historical fabric.
- Where the rehabilitation process will not result in a negative impact on the intrinsic value of the resource.

#### Enhancement

Enhancement is appropriate where the overall heritage significance and its public appreciation value are improved. It does not imply creation of a condition that might never have occurred during the evolution of a place, e.g. the tendency to sanitize the past. This



management action might result from the removal of previous layers where these layers are culturally of low significance and detract from the significance of the resource. It would be appropriate in a range of heritage contexts and applicable to a range of resources. In the case of formally protected or significant resources, appropriate enhancement action should be encouraged. Care should, however, be taken to ensure that the process does not have a negative impact on the character and context of the resource. It would thus have to be carefully monitored.

**12 ADDENDUM 3: S24G HERITAGE MEMORANDUM**

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