

HERITAGE IMPACT ASSESSMENT
FOR PORTION 14 OF ASCOT 184-JM, TOSCA

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November 2019

EXECUTIVE SUMMARY

Introduction

The Heritage Impact Assessment (HIA) for the proposed township establishment on Portion 14 of Ascot 184-JM, Tosca in Kagisano-Molopo Local Municipality, North West Province was done as part of the Environmental Impact Assessment process for the proposed development.

General Desktop Study

An archival and historical desktop study was undertaken to provide a historic framework for the project area and surrounding landscape. The desktop study did not reveal any known archaeological or heritage sites located within the study area.

Fieldwork

The fieldwork was undertaken on Friday, 25 September 2018. The field assessment focussed exclusively on the proposed development footprint comprising the overall settlement boundaries. This development footprint was assessed by way of walkthroughs and drive throughs. The fieldwork resulted in the identification of one heritage site, BUILDING. The table below provides information on this site.

Table 1 – Heritage sites identified within the study area

Site	Type	GPS Coordinates
BUILDING	Demolished buildings	S25.883094°; E23.971864°

General Mitigation Measures and Recommendations

The following general mitigation measures are required:

- Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved *in situ* by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below).
- Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.

Site-Specific Mitigation Measures

Impact risk assessments were undertaken to calculate the impact risk of the proposed development on these identified heritage sites. Considering that the buildings at BUILDING has already been demolished, no mitigation measures are required for BUILDING.

Mitigation Measures required for Palaeontology

The following mitigation measures are required for palaeontology:

- A protocol for chance finds.

Conclusions

The overall impact that the proposed township establishment has on heritage resources is seen as acceptably low after the recommendations have been implemented and therefore, impacts can be mitigated to acceptable levels. In conclusion, on the condition that the general recommendations are adhered to, and in cognisance of the assumptions and limitations, no heritage reasons can be given for the development not to continue.

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TERMINOLOGY AND ABBREVIATIONS

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

1 INTRODUCTION

Ecologic Afrika conducted this Heritage Impact Assessment as part of the Environmental Impact Assessment (EIA) process for the proposed township establishment on Portion 14 of the farm Ascot 184-JM, Tosca, Kagisano-Molopo Local Municipality, North West Province.

1.1 Scope of the Study

The aim of the study was to identify possible heritage sites and finds that may occur in the proposed study area. The HIA aims to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 Assumptions and Limitations

Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted. Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. In the event that any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply as set out below.

1.3 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- National Environmental Management Act (NEMA), Act 107 of 1998
- National Heritage Resources Act (NHRA), Act 25 of 1999
- Mineral and Petroleum Resources Development Act (MPRDA), Act 28 of 2002

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- National Environmental Management Act (NEMA) Act 107 of 1998
- Basic Assessment (BEA) – Section (23)(2)(d)
- Scoping Report (SR) – Section (29)(1)(d)
- Environmental Impact Assessment (EIA) – Section (32)(2)(d) ○

- Environmental Management Plan (EMPr) – Section (34)(b)
- National Heritage Resources Act (NHRA) Act 25 of 1999
- Protection of Heritage Resources – Sections 34 to 36; and
- Heritage Resources Management – Section 38

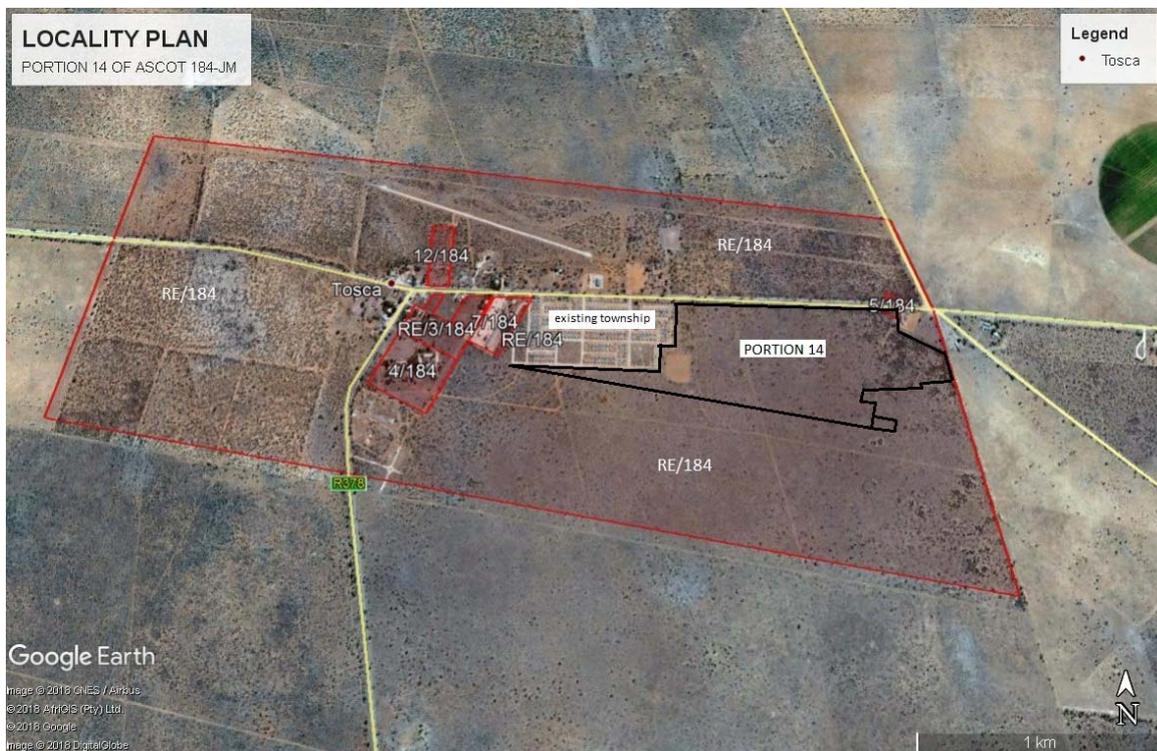
- Mineral and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
- Section 39(3)

The NHRA stipulates that heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the 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 issued by the relevant provincial heritage resources authority...” The NHRA is utilized as the basis for the identification, evaluation and management of heritage resources and in the case of CRM those resources specifically impacted on by development as stipulated in Section 38 of NHRA. This study falls under s38(8) and requires comment from the relevant heritage resources authority.

2 TECHNICAL DETAILS OF THE PROJECT

2.1 Locality

The project area is located adjacent east of the existing township east of Tosca town, Kagisano-Molopo Local Municipality, North West Province.



2.2 Technical Project Description

Township establishment will consist of:

- 1131 residential erven (38,161ha)
- 1 place of instruction erf (2,734ha)
- 5 business erven (1,106ha)
- 4 place of worship erven (0,552ha)
- 2 recreational erven (1,275ha)
- 1 sports field erf (2,693ha)
- 1 public open space erven (0,931ha)
- 3 day care facility erven (0,452ha)4
- 4 municipal erven (0,724ha)
- 4 government erven (0,615ha)
- 1 sewer treatment buffer erf (0,525)
- 1 sewer treatment plant erf (0,544ha)
- 1 roads erf (14,365ha)

Total area for township establishment 64,684ha.

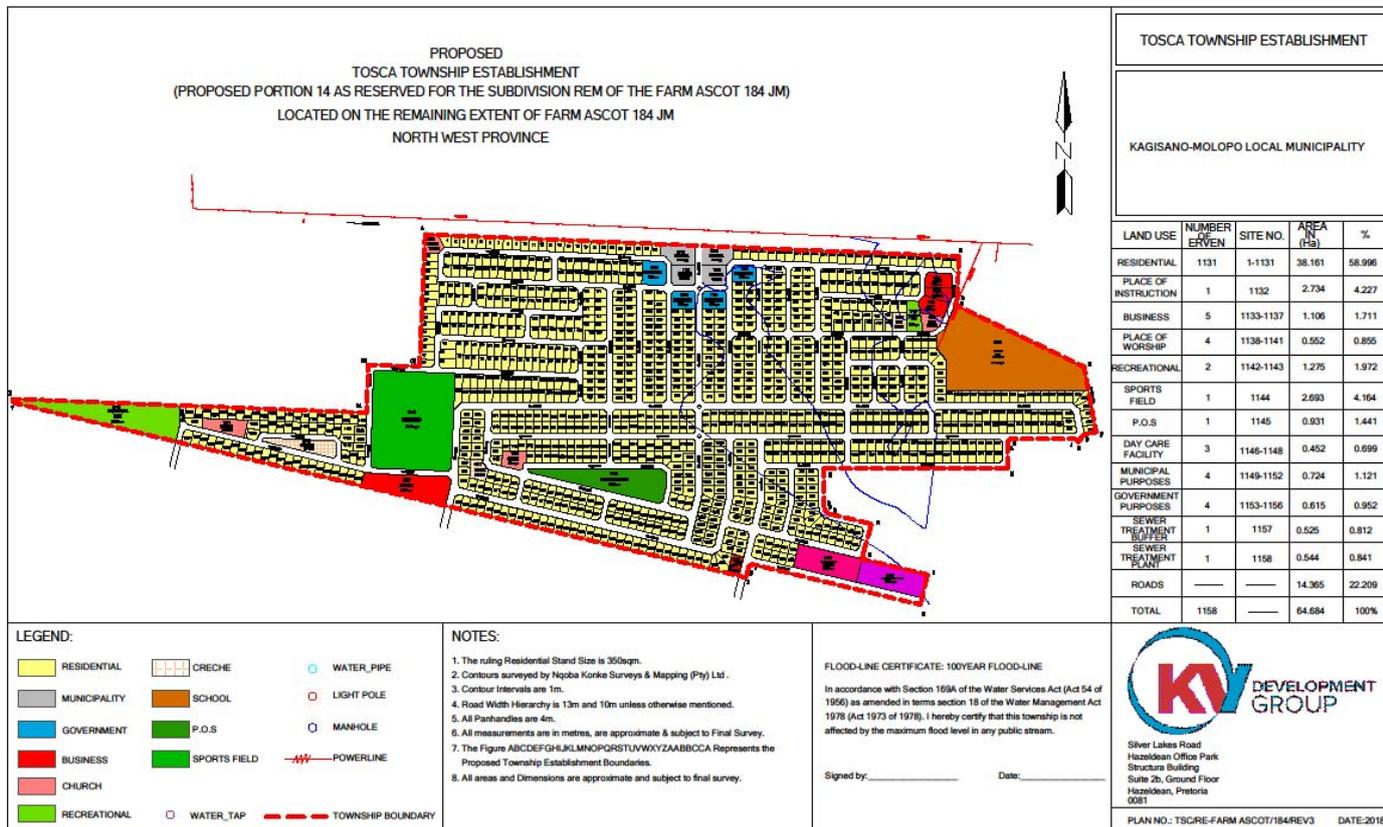


Figure 3 - Proposed development layout (KV Development Group)

3 ASSESSMENT METHODOLOGY

3.1 Methodology for Assessing Heritage Site Significance

This report was compiled by Ecologic Afrika for the proposed development. The applicable maps, tables and figures are included as stipulated in the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (no 107 of 1998). The HIA process consisted of three steps:

Step I – Desktop Study: An overview of the study area and surroundings was undertaken. This work was augmented by an assessment of available reports and data and personal communications with residents in the area. Additionally, an assessment was made of the available historic topographic and Google maps. All these desktop study components were undertaken to support the fieldwork.

Step II – Field Survey: The fieldwork was undertaken on Friday 25 September 2018. The field assessment focussed exclusively on the proposed development footprint comprising the overall settlement boundaries. This development footprint was assessed by way of walkthroughs and drive throughs. Identified sites were recorded by way of photographs and descriptions taken in the field. The positions of the identified sites were recorded using the hand-held GPS device,

Step III – Report: The final step involved the recording and documentation of relevant heritage resources, as well as the assessment of resources regarding the heritage impact assessment criteria and report writing, as well as mapping and recommendations.

The significance of heritage sites was based on five 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)
 - o Low - <10/50m²
 - o Medium - 10-50/50m²
 - o High - >50/50m²
- uniqueness and
- potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;

B - Mapping of the site and controlled sampling required;

C - No-go or relocate development position

D - Preserve site, or extensive data collection and mapping of the site; and E - Preserve site

Site Significance

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

Site significance classification as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High/Medium	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium	Recording before destruction
Generally Protected C (GP.C)	Grade 4D	Low	Destruction

3.2 Methodology for Impact Assessment

In order to ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria.

A summary of each of the qualitative descriptors, along with the equivalent quantitative rating scale for each of the aforementioned criteria, is given below.

Quantitative rating and equivalent descriptors for the impact assessment criteria

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	<i>Isolated corridor / proposed corridor</i>	<u>Incidental</u>
2	LOW	<i>Study area</i>	<u>Short-term</u>
3	MODERATE	<i>Local</i>	<u>Medium-term</u>
4	HIGH	<i>Regional / Provincial</i>	<u>Long-term</u>
5	VERY HIGH	<i>Global / National</i>	<u>Permanent</u>

A more detailed description of each of the assessment criteria is given in the following sections.

Significance Assessment

The significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these, since their importance in the rating scale is very relative.

For example, 10 structures younger than 60 years might be affected by a proposed development, and if destroyed the impact can be considered as VERY LOW in that the structures are all of Low Heritage Significance. If two of the structures are older than 60 years and of historic significance, and as a result of High Heritage Significance, the impact will be considered to be HIGH to VERY HIGH.

A more detailed description of the impact significance rating scale is given below.

Description of the significance rating scale

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale.

The spatial assessment scale is described in more detail below.

Heritage Impact Assessment for Portion 184 of Ascot 184-JM, Tosca

Description of the spatial significance rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.
4	Regional/Provincial	The spatial scale is moderate within the bounds of possible impacts, and will be felt at a regional scale (District Municipality to Provincial Level). The impact will affect an area up to 50 km from the proposed site / corridor.
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the boundary of the study area.
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the site.

Temporal/Duration Scale

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The temporal or duration scale is rated according to criteria set out below.

Table 7 – Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium-term	The environmental impact identified will operate for the duration of life of the project.
4	Long-term	The environmental impact identified will operate beyond the life of operation of the project.
5	Permanent	The environmental impact will be permanent.

Degree of Probability

The probability or likelihood of an impact occurring will be outlined below.

Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very likely
5	It's going to happen / has occurred

Degree of Certainty

It is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale is used, as discussed below. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making.

Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner, in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale, as described below:

$$\text{Impact Risk} = \frac{(\text{Significance} + \text{Spatial} + \text{Temporal})}{3} \times \frac{\text{Probability}}{5}$$

An example of how this rating scale is applied is shown below:

Table 10 – Example of rating scale

IMPACT	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Low	Local	Medium Term	Could Happen	Low
Impact on heritage structures	1	1	2	2	0.53

Note: The significance, spatial and temporal scales are added to give a total of 4, which is divided by 3 to give a criterion rating of 1.333. The probability (2) is divided by 5 to give a probability rating of 0.4. The criteria rating of 1.333 is then multiplied by the probability rating (0,4) to give the final rating of 0.53.

The impact risk is classified according to five classes as described in the table below.

Table 11 – Impact Risk Classes

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

Therefore, with reference to the example used for heritage structures above, an impact rating of 0.53 will fall in the Impact Class 1, which will be considered to be a very low impact.

4 CURRENT STATUS QUO

The project area is located adjacent east of the existing township east of Tosca town within the Kagisano-Molopo Local Municipality, North West Province.

The study area is relatively dry, with sparse occurrences of trees and grass cover. By and large, the study area is mostly disturbed as a direct result of overgrazing.

The area consists of Savanna-Grassland vegetation, however not much remains due to vegetation overgrazing by local herds of cattle, goats and sheep.

Overall, the site was easily accessible by foot and site detection visibility was very good.



Central site in summer



Central site in winter



Overgrazing to right, on site



Adjacent existing township

Desktop findings could not establish any historical actions or activities in the study area, probably due to its remoteness, harshness, lack of water, and location away from the more historically attractive eastern to central parts of the country. The overview below represents historical events and occurrences that may have impacted on the study area.

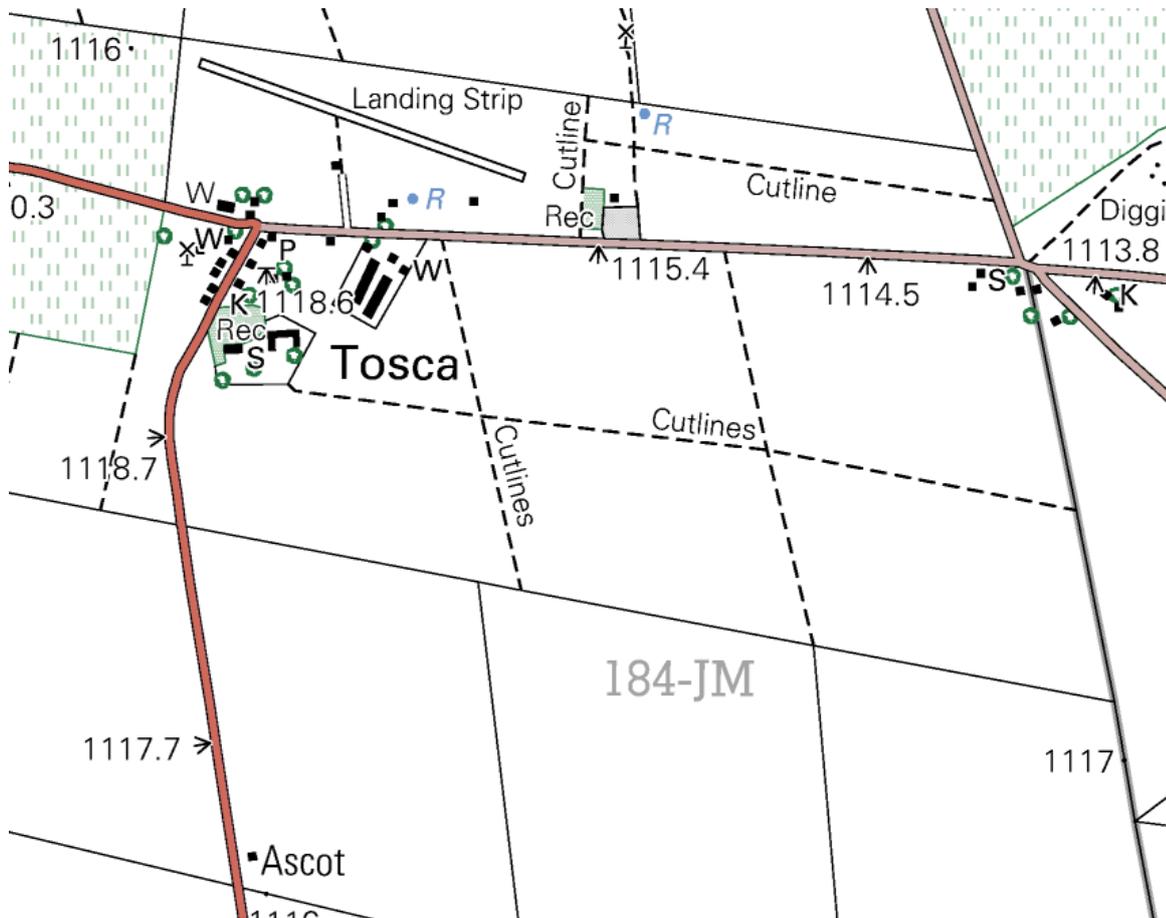
The Study Area and Surroundings during the Historic Period	
<p>The early Historical Period within the study area and surroundings was characterised by the arrival of newcomers to this area. The first arrivals would almost certainly have been travellers, traders, missionaries, hunters and fortune seekers. However, with time, this initial trickle was replaced by a flood of white immigrants during the 1830s, when a mass migration of roughly 2 540 Afrikaner families (comprising approximately 12 000 individuals) from the frontier zone of the Cape Colony to the interior of Southern Africa took place. The people who took part in this Great Trek were later to be known as Voortrekkers (Visagie, 2011).</p>	
1836	<p>The first Voortrekker parties crossed over the Vaal River (Bergh, 1999).</p>
1839 – 1840s	<p>In 1839, the town and district of Potchefstroom were established (Bergh, 1998). The establishment of a Voortrekker town at Potchefstroom led to the increasing expansion of white farms toward the west. As a result, the 1840s saw the establishment of the first white farms along the Makwassie stream. Some of the earliest farms on the eastern bank of this stream included Vlakfontein, Rietfontein, Zedelingsfontein and Goedvoornzicht (Bergh, 1998). These farms were all located north of present-day Wolmaransstad, and represented the western expansion of white farms at the time.</p> <p>Although it is possible that a few heritage sites associated with the very first establishment of white farmers from the surroundings would likely still exist, these would be few in number due to their age as well as the destruction of farmsteads by the British forces during the South African War in accordance with the so-called 'scorched earth' policy.</p> <p>The other sites often associated with these early farms are graves and cemeteries. These sites are often all that remains of the farmsteads of the mid to late nineteenth century.</p>

1850 - 1884	After the end of the Anglo-Transvaal War (also referred to the First Boer War) which terminated the two-year British annexation of the Zuid-Afrikaansche Republiek, the Pretoria Convention of 1881 redefined the western boundary of the Z.A.R. The recommendations of the convention were largely based on the investigations undertaken by Lieutenant-Colonel C.J. Moysey who had been appointed by the British Government during the previous year to investigate the Keate Award of 1871 through map surveys and field assessments. According to the recommendations of the Pretoria Convention, the western boundary of the Z.A.R. was moved from the Makwassie Spruit to roughly the Harts River (Bergh, 1999). In 1884, the western boundary of the Zuid-Afrikaansche Republiek was moved in a westward direction once more. This was as a result of the recommendations of the London Convention (Bergh, 1998).
15 June 1883	The district of Lichtenburg was established on this date (Bergh, 1999).
1899 - 1902	The South African War between Great Britain and her allies and the Boer Republics of the Transvaal and Free State took place between October 1899 and May 1902. No battles or skirmishes associated with this war are known from within the study area.
The Study Area and Surroundings during the Twentieth Century	
The general surroundings of the study area underwent changes and development during the twentieth century, including the development of roads and railway networks.	
Early 1900s	<p>The history of diamond mining within the wider vicinity started with the arrival of the first prospectors in Bloemhof during 1908. After the monopolisation of the Kimberley diamond diggings in 1880, many of the independent diamond diggers started working their way northward along the Vaal River. By 1906, they had reached the town of Christiana, and when these diggings faltered after a year or two, the diggers reached the vicinity of Bloemhof in 1908. Although the Bloemhof diggings yielded only 783 carats in 1909, the following year saw the doubling of earnings (Van Onselen, 1996).</p> <p>The discovery and proclamation of an extensive diamond field at Mooifontein (north-west of Bloemhof) in 1911, attracted roughly 5 000 people to these diggings with another 1 200 fortune seekers setting their sights on the Bloemhof townlands. By the end of the year, the two fields had yielded more than 37 000 carats, a yield that was maintained for the following two years as well (Van Onselen, 1996).</p>
1914	Delareyville was established in 1914, primarily to provide accommodation for the many people working on the salt pans found in this area. The town was named in honour of the widely revered Boer General J.H. de la Rey (Erasmus, 2014). The study area is located directly north of Delareyville.

1914 - 1915	<p>Even before the outbreak of the First World War in 1914, the Union of South Africa's responsibility to Great Britain in such a war was the subject of a heated debate. With the outbreak of hostilities, the South African Government of General Louis Botha notified Britain of their willingness to assist in the war effort. A number of Boer leaders were not happy with this turn of events, and when General Koos de la Rey was killed at a roadblock in Johannesburg on 15 September 1914, emotions reached a boiling point and rebellion broke out across what was then known as the Transvaal, Free State and northern regions of the Cape Province.</p> <p>No battles or skirmishes from the Boer Rebellion is known for the study area or its surroundings. However, on 2 November 1914, a meeting was held at Vleeschkraal (Glaudina) to allow some of the rebel leaders and their men to discuss what their options were. The meeting was attended by between 1 800 and 2 000 burghers, and was addressed by well-respected Boer War Officers General Jan Christoffel Greyling Kemp and General Christiaan Frederik Beyers. The decision was for General Kemp to take a commando of 600 volunteers across the Northern Cape to join up with the rebel commando of General Manie Maritz in German South West Africa (present-day Namibia) and for General Beyers to take the remaining 1 200 men into the Free State to join up with the commando of General De Wet. After the meeting, the two generals took command of their commandos and departed on their separate treks (Bothma, 2015). It was the last time the two generals would ever see each other again. Little over a month later, on 8 December 1914, General Beyers drowned in the Vaal River near Makwassie when his commando was attacked by government troops (Van Zijl, 1966).</p>
1917	<p>The town of Ottosdal was founded in 1917, and followed on the establishment of a Dutch Reformed Church on the farm Korannafontein in 1913. The farm Korannafontein was owned by G.P. Otto, and the town of Ottosdal was named in his honour (Erasmus, 2014).</p>
October 1918	<p>The Influenza Pandemic reached the general vicinity of the study area during this time. In his book, <i>The Seed is Mine</i>, Dr. Charles van Onselen (1996) relates how the crowded and unsanitary diamond diggings dotted across the wider landscape, resulted in large numbers of fatalities. At the diggings on the farms Kameelkuil 88 HO and London 112 HO hundreds of people died. One eyewitness account reveals how dozens of corpses were buried in mass graves near these diggings. As people starting leaving the diggings out of fear of getting infected, they brought the disease to their homesteads, villages and farms. Many of these returning workers also died along the roads on their way home and were often buried where they died. The farms themselves were also not immune to the disease and many people died as a result on the farms as well (Van Onselen, 1996).</p>
1930s	<p>On this day the Dutch Reformed congregation of Piet-Renier was established. On 8 April 1836, the name of the congregation was changed to Glaudina as it was felt that the original name may be confused with Piet Retief. In 1939, an application was made for the establishment of a town here (National Archives, CDB, PB4/2/2/533).</p> <p>All of the above occurred far southeast of the application site, although may have had an impact on the migration and settlement of people in the study area.</p>

5.2 Archival and Historical Maps

5.2.1 2010 Topographical map



The 2010 edition of the 2625CB Topographical Map is depicted **above**. Historic map sheets such as these are utilised to identify any features or sites which may be considered of archaeological or heritage value.

No features of potential heritage value were identified.

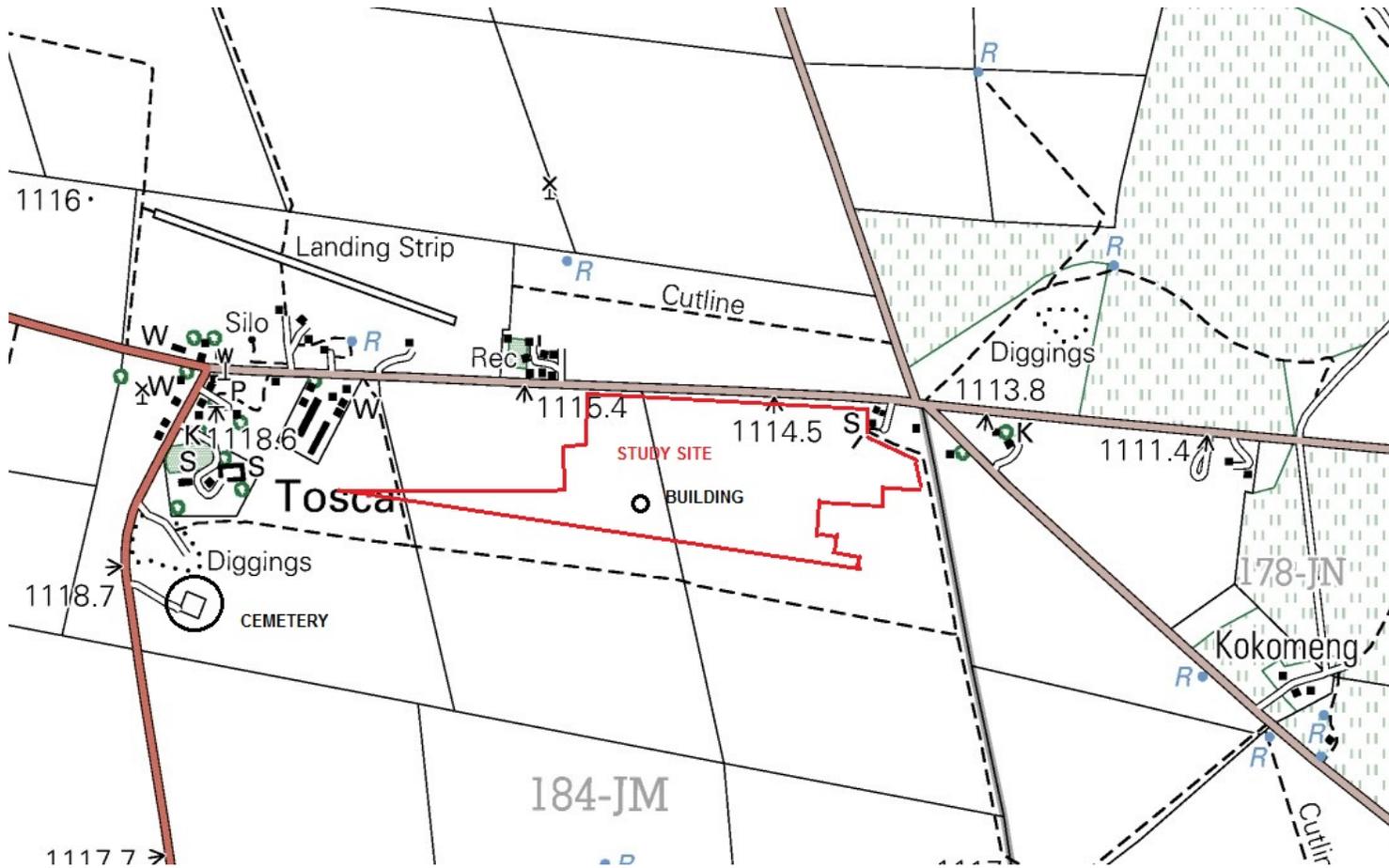
6 FIELDWORK FINDINGS

The field assessment focussed exclusively on the proposed development footprint comprising the overall settlement boundaries. This development footprint was assessed by way of walkthroughs and drive throughs.

During the fieldwork, track logs were recorded by the fieldwork team using a hand-held GPS device. All identified sites were recorded by way of photographs and descriptions taken in the field. The positions of the identified sites were recorded using the hand-held GPS device.

The fieldwork resulted in the identification of one (1) heritage site.

A distribution map of the identified heritage sites is shown below, followed by its description.



Heritage sites (2015 topographical map)

Identified sites during fieldwork

Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
BUILDING	S25.883094°	E23.971864°	<p>The site comprises two demolished clay brick buildings not indicated/identified on either the 2010 or 2015 topographical maps.</p> <p>Site extent: Building area 15x15m</p>	Low	GP.A
Site Number	Lat	Lon	Description	Heritage Significance	Heritage Rating
CEMETERY	S25.886281°	E23.9958583°	<p>A cemetery is located southwest of the study site consisting of approximately 15 graves, with capacity for expansion. According to local residents the cemetery services the residents of community. When questioned further, he confirmed that all the town's deceased are buried in that particular cemetery, including infants and that there are no burials (those of infants or otherwise) that take place at the homesteads of residents.</p> <p>The burial ground is relatively recent with the oldest burial having occurred in 2012 and the youngest burial recently.</p> <p>Site extent: Cemetery – 200x100m</p>	Low	GP.A



Demolished clay brick buildings within the study area.



Cemetery with graves near the study area.

7 IMPACT ASSESSMENT

One heritage site was identified within the study area during the field survey. Even though this site does occur within the proposed development footprint, the chance of any actual impact on the site is minimal. Refer to **Risk Assessment** below to see impact rating that the proposed development will have on the associated site.

Impact Risk Assessment

IMPACT	IMPACT DIRECTION	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
BUILDING	Negative	Medium to High	Local	Long Term	Unlikely	
	-	1	1	2	2	0.53

8 CONCLUSIONS AND RECOMMENDATIONS

General Mitigation Measures and Recommendations

The following general mitigation measures are required:

- Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved *in situ* by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below).
- Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.

Site-Specific Mitigation Measures

Impact risk assessments were undertaken to calculate the impact risk of the proposed development on these identified heritage sites. Considering that the buildings at BUILDING has already been demolished and no account of their historical evidence could be established, no mitigation measures are required for BUILDING.

Mitigation Measures required for Palaeontology

The following mitigation measures are required for palaeontology:

- A protocol for chance finds.

Conclusions

The overall impact that the proposed township establishment has on heritage resources is seen as acceptably low after the recommendations have been implemented and therefore, impacts can be mitigated to acceptable levels. In conclusion, on the condition that the general recommendations are adhered to, and in cognisance of the assumptions and limitations, no heritage reasons can be given for the development not to continue.

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9.2 Historical Topographic Maps

All the historic topographical maps used in this report were obtained from the Directorate: National Geo-spatial Information of the Department of Rural Development and Land Reform in Cape Town.

9.3 Internet

www.angloboerwar.com

www.sahistory.org.za

www.wikipedia.org

Appendix A

Legislative Requirements – Terminology and Assessment Criteria

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation -

- i. NEMA;
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999; and
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002.

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- i. GNR 982 of 2014 (Government Gazette 38282) promulgated under the NEMA:
 - a) Basic Assessment Report (BAR) – Regulations 19 and 23
 - b) Environmental Scoping Report (ESR) – Regulation 21
 - c) Environmental Impacts Report (EIR) – Regulation 23
 - d) EMPr – Regulations 19 and 23
- ii. NHRA:
 - a) Protection of Heritage Resources – Sections 34 to 36; and
 - b) Heritage Resources Management – Section 38
- iii. MPRDA Regulations of 2014:
 - a) Environmental reports to be compiled for application of mining right – Regulation 48.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA states that, “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”. The NEMA (Act No 107 of 1998) states that an integrated EMP should, (23 -2 (b)) “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. In accordance with legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and the Association of Southern African Professional Archaeologists (ASAPA) have also been incorporated to ensure that a comprehensive legally compatible HIA report is compiled.