

## **Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)**

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**Kindly note that:**

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

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### **DEPARTMENTAL DETAILS**

Gauteng Department of Agriculture and Rural Development  
Attention: Administrative Unit of the of the Environmental Affairs Branch  
P.O. Box 8769  
Johannesburg  
2000

Administrative Unit of the of the Environmental Affairs Branch  
Ground floor Diamond Building  
11 Diagonal Street, Johannesburg  
Administrative Unit telephone number: (011) 240 3377  
Department central telephone number: (011) 240 2500

(For official use only)

**NEAS Reference Number:**

**File Reference Number:**

**GAUT 002/16-17/E0280**

**Application Number:**

**Date Received:**

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

Not Applicable

Is a closure plan applicable for this application and has it been included in this report?

No

if not, state reasons for not including the closure plan.

Not Applicable

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

Yes

Refer to **Annexure E**

If no, state reasons for not attaching the list.

Not Applicable

Have State Departments including the competent authority commented?

No

If no, why?

The report is still at Draft report. Comments from State Departments and the Competent Authority will be included in the Final Report.

# SECTION A: ACTIVITY INFORMATION

## 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

### 1.1 Project Title (must be the same name as per application form):

Proposed development of a heritage site comprised of conservation, tourism and recreation to be known as Fort Recce on Portion 280 (a Portion of Portion 26) of the Farm Tiegerpoort 371 JR within the City of Tshwane Metropolitan Municipality. The site measures 8.5916 hectares in extent.



Figure 1: Location Map

Select the appropriate box

The application is for an upgrade of an existing development

 n/a

The application is for a new development

 X

Other, specify

 n/a

Indicate the number of the relevant Government Notice:

Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3

Describe each listed activity as per the wording in the listing notices:

GN R 983 of 8 December 2014	Listing Notice 1 Activity 9	The development of infrastructure <b>exceeding 1000 metres in length for the bulk</b> transportation of <b>water or storm water-</b> (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or
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		(b) where such development will occur within an urban area. than 32 metres from a watercourse, measured from the edge of the watercourse.
GN R 983 of 8 December 2014	Listing Notice 1 Activity 10	<b>The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes.</b> <b>(i) with an internal diameter of 0,36 metres or more; or</b> <b>(ii) with a peak throughput of 120 litres per second or more;</b> excluding where- (a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve; or (b) where such development will occur within an urban area.
GN R 983 of 8 December 2014	Listing Notice 1 Activity 27	<b>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</b> , except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
GN R 985 of 8 December 2014	Listing Notice 3 Activity 4	<b>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</b> <b>(c) In Gauteng:</b> i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; <b>iv. Sites identified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans;</b> v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by relevant environmental authority; vii. Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas; viii. Important Bird and Biodiversity Area (IBA); ix. Sites or areas identified in terms of an International Convention; x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the National Environmental Management: Protected Areas Act (Act No. 57 of 2003); xi. Sites designated as nature reserves within municipal SDFs; or xii. Sites zoned for a conservation or public open space or equivalent zoning.
GN R 985 of 8 December 2014	Listing Notice 3 Activity 12	<b>The clearance of an area of 300 square meters or more of indigenous vegetation</b> except where such clearance is of indigenous vegetation is required from maintenance purposes undertaken in accordance with a maintenance management plan.

		<p>(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape provinces:</p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the MEMBA or prior to the publication of the such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p><b>ii. Within critical biodiversity areas identified in bioregional plans;</b></p> <p>iii. Within the littoral active zone or 100 meters inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line or even in urban areas; or</p> <p>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning</p>
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Does the activity also require any authorisation other than NEMA EIA authorisation?

YES	NO
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If yes, describe the legislation and the Competent Authority administering such legislation

Not Applicable
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If yes, have you applied for the authorisation(s)?

YES	NO
YES	NO

If yes, have you received approval(s)? (attach in appropriate appendix)

## 2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
Constitution of the Republic of South Africa (Act No 108 of 1990)	Government of South Africa	18 December 1996
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	Department of Environmental Affairs (DEA) and Gauteng Department of Agriculture and Rural Development (GDARD)	27 November 1998
Regulations GN. R. 982, 983, 984 and 985 promulgated under Chapter 5 of the National Environmental	Gauteng Department of Agriculture and Rural Development (GDARD)	4 December 2014

<p>Management Act (NEMA, Act 107 of 1998) in Government Gazette 38282 on 4 December 2014.</p> <p>Listed activities:</p> <ol style="list-style-type: none"> <li>1. GN R 983: Listing Notice 1: Activity 9</li> <li>2. GN R 983: Listing Notice 1: Activity 10</li> <li>3. GN R 983: Listing Notice 1: Activity 27</li> <li>4. GN R 985: Listing Notice 3: Activity 4 (c)(iv)</li> <li>5. GN R 985: Listing Notice 3: Activity 5 (c) (iv)</li> <li>6. GN R 985: Listing Notice 3: Activity 12 (ii)</li> </ol>		
National Water Act (Act No 36 of 1998)	Department of Water Affairs (DWA)	26 August 1998
National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)	South African Heritage Resources Agency (SAHRA)	28 April 1999
The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	National -Department of Agriculture Forestry and Fisheries (DAFF)	27 April 1983
Gauteng Environmental Management Framework	Gauteng DARD	
<ol style="list-style-type: none"> <li>i. Companion Guideline on the Environmental Impact Assessment Regulations, 2010</li> <li>ii. Environmental Management Framework Guidelines, 10 October 2012</li> <li>iii. Public Participation Guideline, 10 October, 10 October 2012</li> <li>iv. Fee Regulations Guidance Document, April 2014</li> <li>v. Guideline on need and desirability in terms of the Environmental Impact Assessment Regulations, 2010</li> <li>vi. EIA Listed Activities and Timelines (January 2015)</li> </ol> <p>Section 24G and Similar Listings (January 2015)</p>	Gauteng DARD	Various dates
<p>Spatial Planning and Land Use Management Act, 2013</p> <ol style="list-style-type: none"> <li>i. The National Development Framework</li> <li>ii. Gauteng Spatial Development Framework</li> <li>iii. City of Tshwane Spatial Development Framework</li> <li>iv. Regional Spatial Development Framework</li> <li>v. Section 7 of the Spatial Planning and Land Use Management Act, 2013</li> <li>vi. City of Tshwane Land Use Management By-Law, 2016</li> </ol> <p>City of Tshwane Town Planning Scheme, 2008 (revised 2014)</p>	City of Tshwane	Various dates

Description of compliance with the relevant legislation, policy or guidelines:

Legislation, policy or guideline	Description of compliance
<p>Constitution of the Republic of South Africa (Act No 108 of 1990)</p>	<ul style="list-style-type: none"> <li>• Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and</li> <li>• Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.</li> </ul> <p>The proposed project can be considered as a sustainable development that will prevent pollution and ecological degradation whilst promoting justifiable economic and social development.</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).</p>	<p>The 2014 EIA Regulations, were published on 4 December 2014 in terms of the NEMA and came into effect on 8 December 2014.</p> <p>In terms of these EIA Regulations, the following listed activities within Government Notice R. 983 and R 985 are triggered by the proposed development, thereby requiring environmental authorisation from the GDARD.</p> <ol style="list-style-type: none"> <li>1. GN R 983: Listing Notice 1: Activity 9</li> <li>2. GN R 983: Listing Notice 1: Activity 10</li> <li>3. GN R 983: Listing Notice 1: Activity 27</li> <li>4. GN R 985: Listing Notice 3: Activity 4 (c)(iv)</li> <li>5. GN R 985: Listing Notice 3: Activity 5 (c) (iv)</li> <li>6. GN R 985: Listing Notice 3: Activity 12 (ii)</li> </ol> <p>Government Notice R. 983, R. 984 and R. 985, lists construction, transformation, extraction, exploration and expansion of facilities or activities that require environmental authorisation prior to commencement of construction. A distinction is made between Listing Notices 1 and 3 activities, which require a Basic Assessment, and Listing Notice 2 activities, which require a full EIA (Scoping followed by Impact Assessment).</p> <p>A Basic Assessment is generally intended for smaller scale activities, or activities whose impacts are well understood and can be easily managed. A Full EIA is required for Listing Notice 2 activities which are activities that due to their nature and/or extent are likely to have significant impacts that cannot be easily predicted. Listing 2 activities are therefore higher risk activities that</p>

Legislation, policy of guideline	Description of compliance
	<p>potentially cause higher levels of pollution, waste and environmental degradation.</p> <p>The proposed project requires a basic assessment in terms of R. 982.</p>
National Water Act (Act No 36 of 1998)	All nearby waterbodies were scanned but Water Use License Application is envisioned (i.e. There is a drainage line within 500m of the proposed site)
National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)	A Phase 1 Heritage Impact Assessment and Paleontological Assessment have been undertaken and submitted to PHRAG for comment.
Gauteng Environmental Management Framework	<p>The land falls within the High control zone.</p> <p>Special control zones are sensitive areas outside the urban development zone. These areas are sensitive to development activities and in several cases also have specific values that need to be protected.</p> <ul style="list-style-type: none"> <li>• CBAs (Irreplaceable and Important areas) and ESAs outside the urban development zone as defined in C-Plan 3.3;</li> <li>• Rivers (including a 32m buffer on each side) and currently undeveloped ridges that must be conserved;</li> <li>• Areas that are sensitive (as determined in the sensitivity assessment); and</li> <li>• Protected areas.</li> </ul> <p>No listed activities may be excluded from environmental assessment requirements in this zone and further activities may be added where necessary to protect the environment in this zone. Additional requirements (guidelines, precinct plans, etc.) to ensure the proper development of identified areas in this zone, in a manner that will enhance their potential for conservation, tourism and recreation may be introduced.</p> <p>In this instance: the proposed development is in line with the directives of the Zone. <b>Conservation, tourism and recreation is proposed.</b></p>
vii. Companion Guideline on the Environmental Impact Assessment Regulations, 2010 viii. Environmental Management Framework Guidelines, 10 October 2012	Guidelines have informed this Application for Environmental Authorisation procedures and project / BAR.



Legislation, policy of guideline	Description of compliance
ix. Public Participation Guideline, 10 October, 10 October 2012 x. Fee Regulations Guidance Document, April 2014 xi. Guideline on need and desirability in terms of the Environmental Impact Assessment Regulations, 2010 xii. EIA Listed Activities and Timelines (January 2015) xiii. Section 24G and Similar Listings (January 2015)	
Spatial Planning and Land Use Management Act, 2013 vii. The National Development Framework viii. Gauteng Spatial Development Framework ix. City of Tshwane Spatial Development Framework x. Regional Spatial Development Framework xi. Section 7 of the Spatial Planning and Land Use Management Act, 2013 xii. City of Tshwane Land Use Management By-Law, 2016 xiii. City of Tshwane Town Planning Scheme, 2008 (revised 2014)	Guidelines have informed this Application for Environmental Authorisation procedures and project / BAR

### 3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

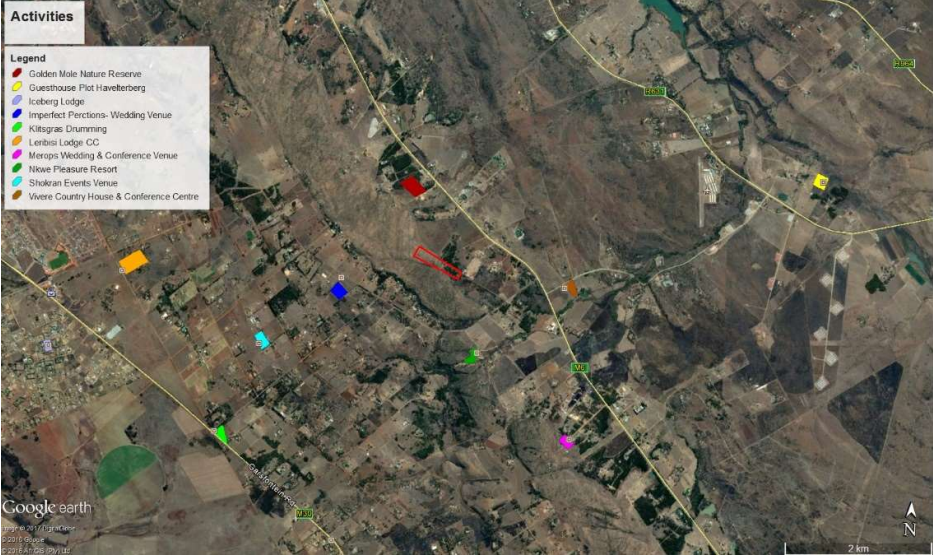
The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not include the no go option into the alternative table below.**

**Note:** After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

**Proposed Activity:** Proposed development of a heritage site comprised of conservation, tourism and recreation to be known as Fort Recce on Portion 280 (a Portion of Portion 26) of the Farm Tiegerpoort 371 JR within the City of Tshwane Metropolitan Municipality. (Preferred Alternative). **Figure 4:**

Provide a description of the alternatives considered

No.	Alternative Type	Description
1	<p><b>PROPOSED ACTIVITY:</b></p>	<p>It is the intention on South African Special Forces Heritage Foundation (applicant) to development a heritage site to include conservation, tourism and recreation to be known as the Fort Recce on Portion 280 (a Portion of Portion 26) of the Farm Tiegerpoort 371 JR within the City of Tshwane Metropolitan Municipality in Gauteng Province. The site would be used to commemorate and remember fallen personnel as well as create awareness among the public regarding the historic events and operations of the South African Special Forces. <b>Figure 2</b> shows the land uses in the area that match the proposed / preferred alternative.</p>  <p><b>Figure 2: Land uses compatible with the GEMF requirements – being conservation, tourism and recreation.</b></p>

No.	Alternative Type	Description
2	<p><b>ALTERNATIVES</b>  <b>1: Light Industrial development</b></p>	<p>Several light industrial activities are taking place in the area, and the option to use the land as a storage facility or a warehouse is a real option. This is a natural occurring progression of land use in peri-urban areas. The introduction of a light industrial development, which will include warehouses, storage facilities, workshops, etc. is a viable option for the land. <b>Figure 3</b> indicate the activities in the area that resemble the light industrial.</p> <p>The additional impact of the light industrial land use are as follows:</p> <ul style="list-style-type: none"> <li>• Increase of heavy vehicles on the surrounding road network, causing further damage to existing roads in the area;</li> <li>• Increased risk of pollution in respect of the surrounding areas.</li> <li>• Contrary to the GEMF requirements.</li> </ul> <div data-bbox="570 779 1455 1310" data-label="Image"> </div> <p><b>Figure 3: Land uses similar to light industrial land uses – not compatible with GEMF.</b></p>

No.	Alternative Type	Description
	<b>Construction methods.</b>	
1	<b>Conventional construction</b>	Conventional strip foundations or raft foundations will require that the full footprint of the building be excavated and that the full area be disturbed. Also, conventional roads will destroy the area and will not allow easy crossing in the event that a Juliana's Golden Mole may access the property- although NO suitable habitat occur on the property for the Juliana's Golden Mole.
2	<b>Gabions, columns and stabilised gravel roads.</b>	<p>It is proposed that the building be constructed on columns. The idea is to use old containers to place them on the columns. The impact will thus be further reduced by the fact that an area of airflow is allowed below the buildings which also allow for small mammals and insects to be able to live on the full extent of the land.</p> <p>The roads will be left gravel and small interlocking block paving areas will be provided. Specific crossing strips will be retained for the Juliana's Golden Mole to ensure that they will be able to cross the gravel roads.</p> <p>Specific construction methods will be implemented to avoid erosion on the roads. Cut off drains, compaction areas and small areas of interlocking blocks will be implemented to stabilise the roads and prevent erosion.</p>

#### **Additional information for the development**

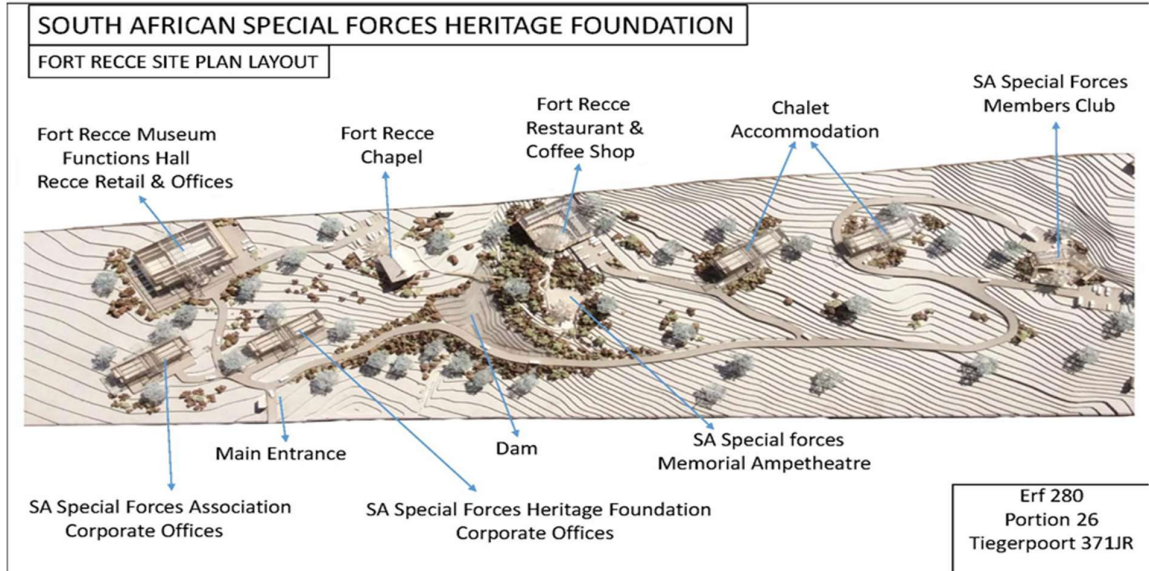
It is the intention on South African Special Forces Heritage Foundation (applicant) to development a heritage site to be known as the Fort Recce on Portion 280 (a Portion of Portion 26) of the Farm Tiegerpoort 371 JR within the City of Tshwane Metropolitan Municipality in Gauteng Province. The site would be used to commemorate and remember fallen personnel as well as create awareness among the public regarding the historic events and operations of the South African Special Forces during the Border War. It must be understood that the South African Recce corps has always been representative of all races in South Africa and these men have over the years become and remained like brothers. Here they will have a place to remember their heritage as make it available to the general public.

#### **1. Development Proposal**

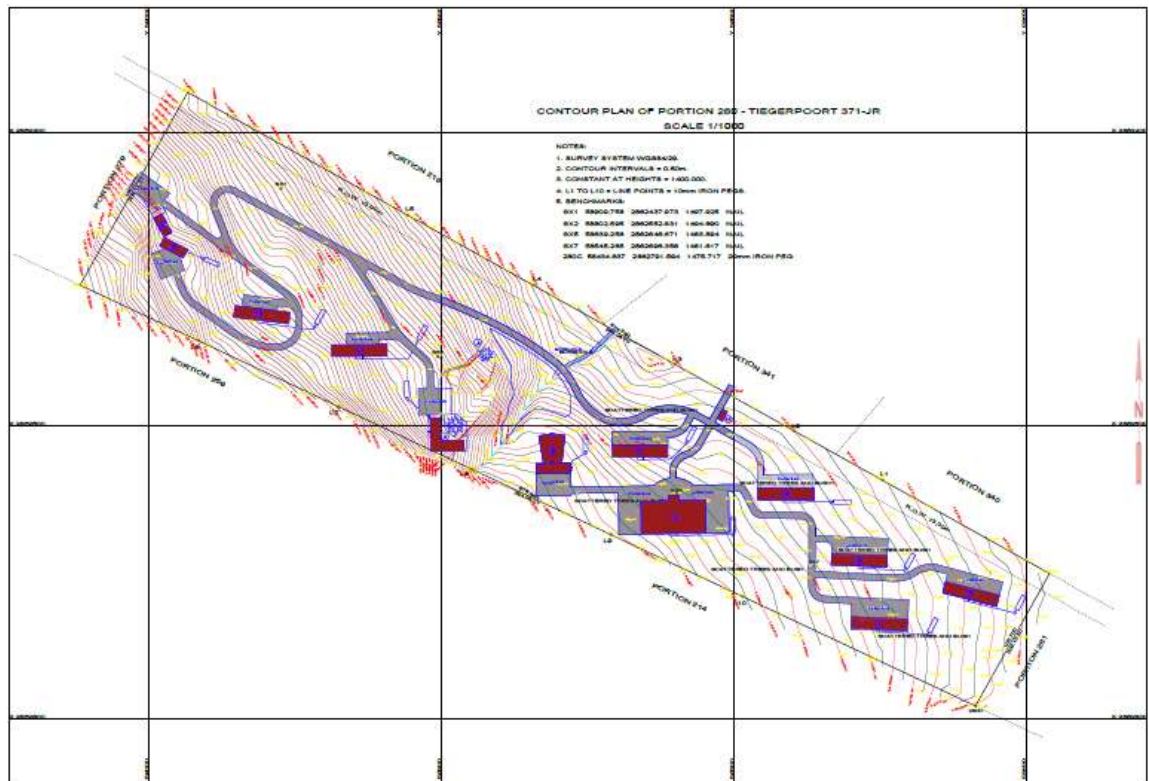
It is not the applicant's intention to use the land for any military operations or training, it will be used as a heritage site consisting of the following subordinate uses:

- Museum with offices
- Chapel
- Educational purposes
- Place of refreshment with a small shop
- Conference facilities
- A curio shop
- A functions hall
- A club house

- A memorial amphitheatre
- Accommodation for 14 people.
- Heritage related activities
- Public recreation
- Entertainment

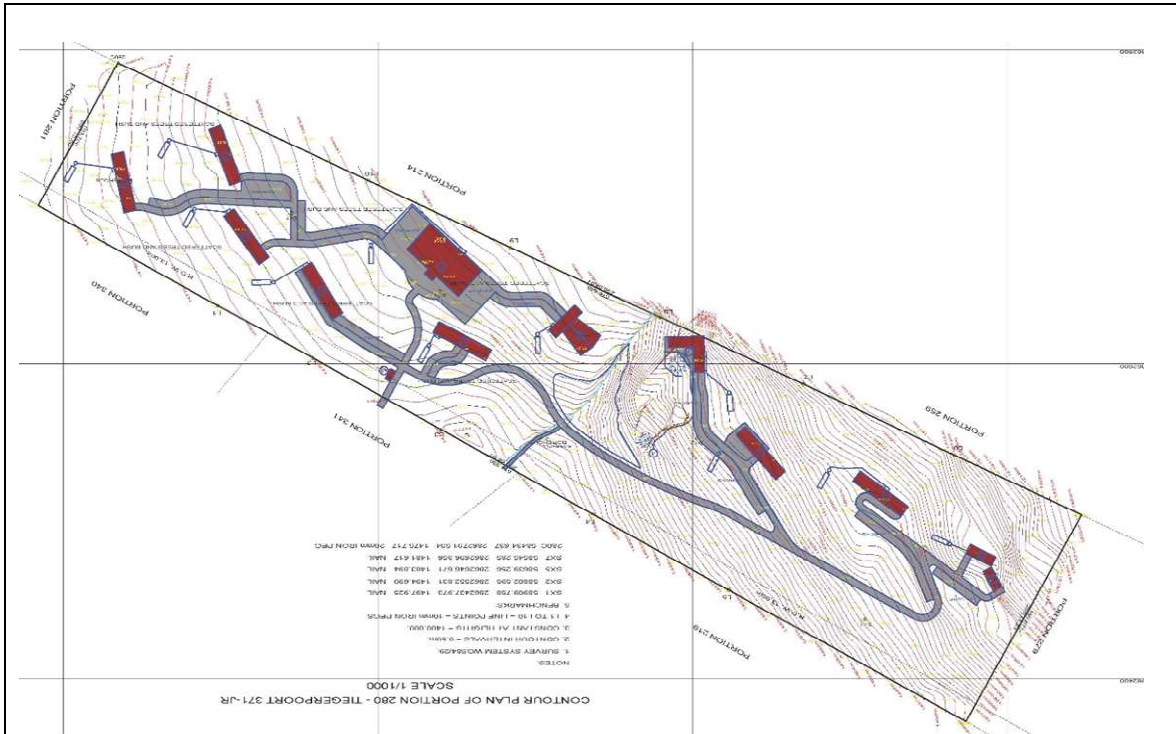


**Figure 4a: Illustration of the Development Layout with uses indicated**



**Figure 4b. Full plan of the proposed development**





**Figure 4c: Shows alternative road and building layouts to reduce the impact on the land**

## 2. Associated Infrastructure

Project engineers have developed the following engineering services proposals:

### 2.1 Water

In terms of the relevant accepted guidelines the developer will be held responsible for the construction and installation of what is required to service the development.

There are no existing water supply lines near the site nor in this area. There is however a very strong borehole in the centre of the site with sufficient capacity and quality for potable use. The tests as shown in Annexure 5 show that the water delivery in excess of 1000 l/hr. These tests may have to be redone.

It is proposed that a 110mm dia connection be provided for the main supply and firefighting purposes. Detailed engineering diagram is attached hereto as annexure 5 for easy reference.

External bulk service contributions will not be required to be paid by this development as there is no bulk supply available.

### 2.2 Sewer Reticulation

In terms of the relevant accepted guidelines the developer will be held responsible for the construction and installation of what is required to service the development.

There is no existing sewer service in the area.

It would require to provide a Modular Processing Package Plant and allow the processed water to be recycled into the natural ground water system safely for further purification and site irrigation. Hydro-geological analysis may need to be provided to determine the effectiveness of this system and percolation rates for seepage in the soils.

External bulk service contributions will not be required to be paid by this development due to no bulk service availability.

### **2.3 Traffic Statements**

According to the requirements of the Tshwane Municipal and Gautrans requirements a traffic engineering Impact study will be required and Louis du Toit of Mariteng Consultants has been appointed to provide such a study and assessment. Any road upgrading or intersection upgrading required by this Impact Study will be provided at the time of final designs. One ingress and One egress lane should be provided at the entrance with a 9m wide riding surface and a guardhouse median of 5m. Access to be designed according to the TIA recommendations. A 2m wide concrete paved sidewalk is to be provide along the site boundary adjacent to the road leading to the development for public pedestrian purposes as required by transportation needs. Refer to Annexure 6 however no information available.

### **2.4 Roads**

There is a fully functional road network servicing most of the area, however most of these roads are gravel surfaced. The gravel road from Graham Road is to be reconstructed as an Asphalt premix surfaced road and the extension thereof will need to have a servitude negotiated with the adjacent land owner and registered in favour of the City Council. The proposed portion of road adjacent to the site will also need to be constructed up to the entrance. A large portion of this construction will serve the community at large and therefore need to be offset against bulk service contributions for roads and stormwater. The client will only be responsible for that area of road equivalent to the length of the road boundary and for half the width as a shared road, the balance will need to be offset. In essence, this would probably be the recommendation of the TIA.

Bulk contributions will be required by this township.

- **Proposed Roads**

The Township will only be required to provide a shared road along its north-eastern boundary in the proposed 13m wide road reserve provided and a fully controlled access with 2 ingress and 2 egress lanes directly off this reserve. However, it would be impractical to provide this road construction at this time and therefore it is suggested that the equivalent area be provided to construction that portion of the access road and the balance be offset against bulk contributions. This will be provided at the time of the final designs if required and in accordance with the findings of the TIA and if any intersection upgradings are found to be necessary. Internal roads to remain natural over rocky areas, gravel, grass blocks or cobblestone where required to be built up.

### **2.5 Stormwater**

There is no formal bulk stormwater system existing near the site. There is only a small natural drainage valley discharging into a very flat open floodplain with no defined valley. There is only a very small catchment area feeding this short valley, some 90m. The area is extremely rocky and any hardstanding provided on site will not change the runoff.

Bulk contributions will not be required by this development.

- **Internal Services**

The design of the township services for the proposed township will be based on the principles contained in the Guidelines for the Provision of Engineering Services in Residential Townships published by the Department of Community Development and to the Councils requirements for engineering services.

- **Proposed Stormwater**

An internal stormwater system will be provided to drain the property and convey such runoff to the low points at the eastern corner and the central natural drainage valley. It must be stated that the overflow condition for the major storm will as existing. The stormwater management (attenuation) report will be provided at the time when final detailed designs are required and will be accommodated on the grassed and natural rocky areas. All pipes required will be laid adjacent to the internal roadways and be covered for protection.

## **2.6 Electrical Service**

- **Existing Infrastructure**

There is no existing infrastructure on the property at present and we have established that Eskom is the electrical service provider for the area.

- **Project Demand**

Considering the type of development, we have estimated the demand as follows:

1. Conference and Wedding area 40 kVA
2. Chapel 13 kVA
3. Coffee Shop and Restaurant 40 kVA
4. Luxury accommodation 40 kVA
5. Self-Catering accommodation 40 kVA
6. Bush Restaurant 20 kVA
7. Fort Doppies 20 kVA
8. Accommodation for Fort Doppies 40 kVA

**Total estimate 253 kVA**

The Developer has indicated that most of the electricity usage will be generated off-grid from photovoltaic cells to be installed on the roofs of the proposed building structures and that the Eskom point of supply will only be required for top-up of the batteries and emergency situations. The Eskom point of supply will be sufficient to supply 80% of the development without an off-grid system for the interim period.

- **Street lights**

Streetlights will be installed with minimum light pollution. LED lamps will be used for power efficiency.

- **LV network**



The Low Voltage network will be installed from the Eskom point of supply to the various areas where electricity will then be supplied to each point of connection

The electrical aspects relating to the development envisaged accordingly do not present any obstacles. The project may proceed accordingly without encumbrance as far as the electrical supply is concerned.

**No-Go Alternative**

This option assumes that a conservative approach would ensure that the environment is not impacted upon any more than is currently the case. It is important to state that this assessment is informed by the current condition of the area. Should the GDARD decline the application, the 'No-Go' option will be followed and the status quo of the site will remain.

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Alternative are provided.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

##### Size of the activity:

Proposed activity (**Total environmental (landscaping, parking, etc.) and the building footprint**)

Approximately 3800 sqm for buildings, 10000sqm gravel roads and parking areas.

##### Alternatives:

Alternative 1 (if any)

Approximately 8.5 ha

Alternative 2 (if any)

n/a

Ha / m<sup>2</sup>

or, for linear activities:

##### Length of the activity:

Proposed activity

n/a
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##### Alternatives:

Alternative 1 (if any)

n/a
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Alternative 2 (if any)

n/a
-----

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

##### Size of the site/servitude:

Proposed activity


##### Alternatives:

Alternative 1 (if any)


Alternative 2 (if any)

n/a
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Ha/m<sup>2</sup>

#### 5. SITE ACCESS

##### Proposal

Does ready access to the site exist, or is access directly from an existing road?

<b>YES</b>	<b>NO</b>
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If NO, what is the distance over which a new access road will be built

n/a

Describe the type of access road planned:

A Traffic Impact Study was undertaken by Mariteng Consulting Engineers. The complete report may be found in **Annexure I2**.

Access to the subject property will be taken from the existing 13.0m right of way (R.o.W.) servitude provided along the northern boundary of the applicant site. The R.o.W. servitude intersects with Nkwe Road.

The developer will be responsible for the construction of half the road width (3.5) for the full length of the property or the full width 7.0m for half the length of the property. The length of the property is approximately 675m, which limits the responsibility of the development to a 7.0m road for a total length of approximately 340m. The distance between the property boundary and Nkwe Road measures 720m.

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**Alternative 1**

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
-----	----

If NO, what is the distance over which a new access road will be built

n/a

Describe the type of access road planned:

An existing road provide access to the site.

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**Alternative 2**

Does ready access to the site exist, or is access directly from an existing road?

YES	n/a
-----	-----

If NO, what is the distance over which a new access road will be built

n/a

Describe the type of access road planned:

An existing road provide access to the site.

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives**

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

## 6. LAYOUT OR ROUTE PLAN

<b>Refer to Annexure</b>
--------------------------

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500
  - A1 = 1: 1000
  - A2 = 1: 2000
  - A3 = 1: 4000
  - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated).

### **FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)**

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;

- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

## **7. SITE PHOTOGRAPHS**

**Refer to Annexure E**

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

## **8. FACILITY ILLUSTRATION**

**Facility illustrations not applicable - Refer to Annexure A for Proposed Site Development Plan**

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.

## SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

---

**Note:** Complete Section B for the proposal and alternative(s) (if necessary)

### Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route 

n/a
-----

 times

### Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives 

n/a
-----

 times (complete only when appropriate)

### Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route 

n/a
-----

 (complete only when appropriate for above)

Section B – Location/route Alternative No. 

n/a
-----

 (complete only when appropriate for above)

## 1. PROPERTY DESCRIPTION

**Property Description:**  
(Including Physical Address and Farm name, portion etc.)

Fort Recce Heritage Development is located on portion 280 (a portion of portion 26) of the farm Tiegerpoort 371 JR, east of Tshwane area, with a total area of 8.5916 ha. The property is bound on the north west by a portion of portion 26,
---

the south west by portions 6 and 214, the south east by a portion of portion 26 and the north east by portions 219, 341 and 340.

## 2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:	Latitude (S):	Longitude (E):
1. Project Proposal	25°45'34.94"S	28°25'47.69"E
2. Alternative 1	25°45'34.94"S	28°25'47.69"E

### In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
• Starting point of the activity	n/a	n/a
• Middle point of the activity	n/a	n/a
• End point of the activity	n/a	n/a

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

The 21digit Surveyor General code of each cadastral land parcel

Portion	T	0	J	R	0	0	0	0	0	0	0	0	0	3	7	1	0	0	0	2	6
---------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

## 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

## 4. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site.

Ridgeline	Plateau	<b>Side slope of hill/ridge</b>	Valley	Plain	Undulating plain/low hills	River front
-----------	---------	---------------------------------	--------	-------	----------------------------	-------------

**5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)	YES	NO
Dolomite, sinkhole or doline areas	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO
Any other unstable soil or geological feature	YES	NO
An area sensitive to erosion	YES	NO

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s) 

YES	NO
-----	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

c) are any caves located within a 300m radius of the site(s) 

YES	NO
-----	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

d) are any sinkholes located within a 300m radius of the site(s) 

YES	NO
-----	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department



## 6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

YES

NO



Figure 5: Gauteng Agricultural Potential Atlas (Source: GDARD)

**Please note:** The Department may request specialist input/studies in respect of the above.

## 7. GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site.

Natural veld - good condition % =	<b>Natural veld with scattered aliens % = 80</b>	Natural veld with heavy alien infestation % = 0	Veld dominated by alien species % = 0	Landscaped (vegetation) % = 0
Sport field % =	Old Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	<b>Bare soil % = 20</b>

**Please note:** The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

**Specialist Study** - J. Arkert Consulting Engineering Geologist was appointed to conduct a Geotechnical Investigation on the subject property.

The site is currently undeveloped and the vegetation on the slopes of the ridge consist of indigenous grasses and scattered woody vegetation. The southern and eastern sides of the site are vegetated by a thick grove of exotic *Acacia mearnsii* (Black wattle). The steeper portions of the site located on the side of the Bronberg slope down towards the east at a gradient of 10 to 15%, while the flatter portions of the southeastern portions have a gradient of some 2 to 4%.

The northern and western portion of the site are however aesthetically attractive and with careful planning this area does lends itself to being developed.

No ground water seepage was encountered on the site, however it must be anticipated that shallow ground water may occur in isolated areas throughout the site after periods of sustained rainfall, and appropriate precautions should therefore be implemented beneath all the structures and paved areas.

Are there any rare or endangered flora or fauna species (including red list species) present on the site

YES	NO
-----	----

If YES, specify and explain:

Not Applicable

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

YES	NO
-----	----

If YES, specify and explain:

It is possible since the Bronberg is suitable for a variety of red and orange listed species.

Are there any special or sensitive habitats or other natural features present on the site?

YES	NO
-----	----

If YES, specify and explain:

Specialist Study – Eco Agent Ecology & Biodiversity Consultants was appointed to conduct a Biodiversity Assessment on the subject property. A summary is presented here, and the complete report may be found in **Annexure F**.

A development is planned for the property of the South African Special Forces Heritage Foundation on Portion 28, a Portion of Portion 26, on the Farm Tiegerpoort 371 JR. The site is located on foot and northern footslopes of the Tierpoortrant, which form part of the Bronberg.

1. The area subject to the ridges policy is located along the south western boundary. Although the rocky ridge has high species diversity, there are no red data or orange listed species located in this areas.
2. A small drainage line originates south of the site and drains northwards down the rocky slope (Figure 6). A small dam was constructed in the drainage line. No definite riparian zone is present and the drainage line flows directly through the adjacent mountain shrubveld. The water overflowing the dam accumulated in a ditch along the boundary fence (Figure 4).

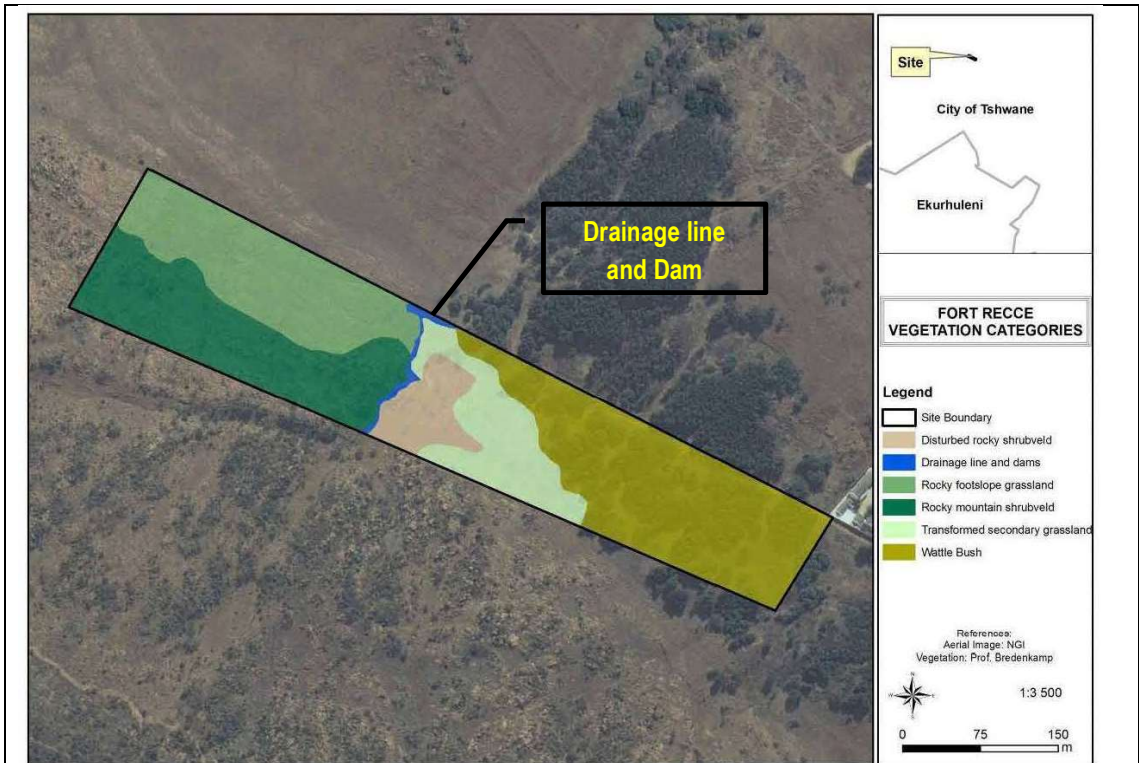


Figure 6: Vegetation Map



Figure 7: Example of the ridge areas.





**Figure 8: The small drainage line and dam**

**Conclusion**

The rocky ridge and the secondary grassland areas are rich in species diversity and is indicated as high sensitivity.

The very small drainage line transects the rocky mountain shrubveld. The plant species are similar, except for the few sedges that grows in the water (**Figure 6**). The entire drainage line area is regarded as ecologically sensitive.

Was a specialist consulted to assist with completing this section

<b>YES</b>	<b>NO</b>
------------	-----------

If yes complete specialist details

Name of the specialist:	EcoAgent CC / Mr. George Bredenkamp -		
Qualification(s) of the specialist:	D.Sc. (Ph.D.) University of Pretoria, Plant Ecology. Pr.Sci.Nat. Reg No 400086/83		
Postal address:	PO Box 25533 Monument Park		
Postal code:	0105		
Telephone:	012 460 2525	Cell:	082 576 7046
E-mail:	ecoagent@mweb.co.za	Fax:	-

Are any further specialist studies recommended by the specialist?	<b>YES</b>	<b>NO</b>
If YES, specify:	<b>Golden Mole study</b>	
If YES, is such a report(s) attached?	<b>YES</b>	<b>NO</b>

If YES list the specialist reports attached below

- Annexure G1: Geotechnical Assessment**
- Annexure G2: Biodiversity Assessment**
- Annexure G3: Golden Mole Study**
- Annexure G4: Heritage Assessment**
- Annexure G5: Paleontological Assessment**

Signature of specialist: \_\_\_\_\_ Date: \_\_\_\_\_

**Please note:** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated.

## 8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site.

1. <b>Vacant land</b>	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	<b>8. Low density residential</b>	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	<b>14. Commercial &amp; warehousing</b>	15. Light industrial
16. Heavy industrial <sup>AN</sup>	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport <sup>N</sup>	23. Train station or shunting yard <sup>N</sup>	24. Railway line <sup>N</sup>	25. Major road (4 lanes or more) <sup>N</sup>
26. Sewage treatment plant <sup>A</sup>	27. Landfill or waste treatment site <sup>A</sup>	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	<b>34. Small Holdings</b>	
Other land uses (describe):				

**NOTE:** Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

<b>NORTH</b>						
	<b>8</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>34</b>	
	<b>34</b>	<b>1</b>	<b>1</b>	<b>14</b>	<b>34</b>	
<b>WEST</b>	<b>35</b>	<b>5</b>		<b>1</b>	<b>8</b>	<b>EAST</b>
	<b>35</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>15</b>	
	<b>35</b>	<b>5</b>	<b>2</b>	<b>14</b>	<b>14/</b>	
<b>SOUTH</b>						

= Site

**Note:** More than one (1) Land-use may be indicated in a block

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached

<b>YES</b>	<b>NO</b>
------------	-----------

If yes indicate the type of reports below

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## Geotechnical Assessment

The site is currently undeveloped and the vegetation on the slopes of the ridge consist of indigenous grasses and scattered woody vegetation. The southern and eastern sides of the site are vegetated by a thick grove of exotic *Acacia mearnsii* (Black wattle). The steeper portions of the site located on the side of the Bronberg slope down towards the east at a gradient of 10 to 15%, while the flatter portions of the southeastern portions have a gradient of some 2 to 4%.

### o Site Geology

From the available literature as well as the observations during the site investigation, it is evident that the northern and western portions of the site are underlain by quartzite that belongs to the Daspoort Quartzite Formation, of the Pretoria Group, Transvaal Sequence. While the southeastern portions of the site are underlain by shale that belongs to the Silverton Shale Formation. Refer to Figure 5

The Daspoort quartzite formation is located immediately west of the site and forms the prominent Bronberg Ridge. Transported soils with a collapsible fabric are developed over the residual soils and bedrock. The soils are derived from the Daspoort quartzites and form a fine grained silty sand of colluvial origin that blankets the entire site.

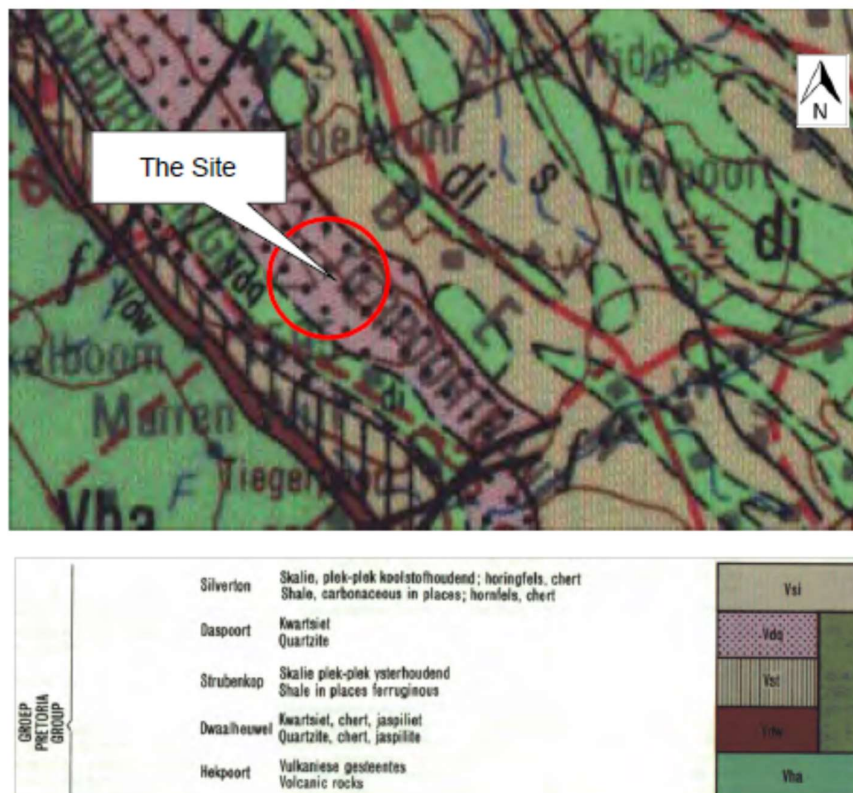


Figure 9. Regional geology map of eastern Tshwane

### o Hydrology

The average annual rainfall in this area is approximately 750 mm, most of which occurs as heavy, isolated thunder showers between October and March. Storm water runoff from the site is primarily in the form of sheetwash towards the east and a small non-perennial stream that flows towards the east and an ornamental dam is located on the central portion of the site that will concentrate stormwater runoff emanating from the Bronberg.

No groundwater seepage was noted in any of the test pits excavated, however minor evidence of pedogenesis was recorded and seasonal fluctuations of the level of the perched water table may be experienced.

○ **Observations**

**Transported Soils**

The south-eastern portions of the site are covered by a layer, on average 1.4m thick, of silty sand and gravels, of colluvial (hillwash) origin. The soil is generally of loose to medium dense consistency, and is rich in organic matter.

**Residual Shale**

The residual granite soil which originates from the in-situ weathering of the shale parent rock underlies the southeastern side of the site. The soil is of medium dense to dense consistency, showing the typical relic joints and bedding (resulting in a typical blocky structure) often seen in residual argillaceous sedimentary soils. The horizon consists of silty coarse sand, with scattered many angular shale gravels.

**Quartzite Bedrock**

Prominent outcrop of quartzite occurs on the majority of the property. The rock form the prominent north south orientated Bronberg Ridge that is located along the western side of the property. The rock is generally described as being medium weathered, widely bedded and jointed, medium to coarse grained, medium hard rock, quartzite.

The Collapse Potential Tests completed on the transported hillwash indicated that soils are collapsible and compressible. It has been determined that greater than 20mm total collapse and consolidation settlement may be anticipated. These values have been calculated by assuming that 700mm wide strip footings will be placed at an average depth of 0.8m below natural ground surface and the foundations would apply a maximum bearing pressure of 100kPa.

In terms of the National Home Builders Registration Council (NHBRC) of 1999 site classification system, the site has been classified as shown below.

R Area underlain by outcropping and shallow bedrock. Negligible settlement anticipated.

C2 Area underlain by collapsible soils with >10mm consolidation and collapse settlement anticipated.



## Biodiversity Assessment

A development is planned for the property of the South African Special Forces Heritage Foundation on Portion 28, a Portion of Portion 26, on the Farm Tiegerpoort 371 JR. The site is located on foot and northern footslopes of the Tierpoortrant, which form part of the Bronberg.

The significance of the impact of the proposed development on the natural indigenous vegetation of plant communities 1 and 2 (Rocky mountain shrubveld and Rocky footslope grassland) will be high, as this area has very high species richness, protected species and is considered to be a Critically Endangered Ecosystem (SANBI & DEAT 2009). Furthermore, according to the GDARD minimum requirements all hills and ridges have to be regarded as ecologically sensitive. It is suggested that the site is important to conserve, and that the proposed development must be restricted to the western part, particularly on the area where the wattle bush occurs and where the ecological sensitivity is Low. All wattles must be eradicated and regeneration controlled.

It is likely that 29 species of mammals persist on the site or at times are vagrants. Six species have been sighted during the site visit, or were reported as occupants by the manager. All four main habitat types are present, predominantly terrestrial rupicolous and arboreal, with a very small spring and constructed small dams. Some of the arboreal habitat consists of exotic wattles. Considering the modest size of the site, population sizes are restricted to a few individuals, though connectivity for small species is good. The sandy nature of the flat plains at the foot of the ridge provides suitable habitat for Juliana's golden mole, though no populations were found during the field survey. A fence limits connectivity for larger mammal species. For these reasons, none of the populations of any possible threatened mammal species is assessed to be negatively affected should the development is to proceed.

From the avian perspective the rocky ridge is the most important habitat, with virtually pristine vegetation and currently under good conservation management. The transformed habitats, although attracting a range of species, are limited in both extent and quality. No threatened species are expected to make anything more than a passing visit to the site, and for them the habitats have no more than a temporary and incidental attraction. For these reasons, none of the populations of these threatened species is assessed to be negatively affected if the development is to proceed. It is proposed that any development be confined to the footprint of the transformed wattle plantation area or other disturbed areas and that no developments be permitted on the rocky ridge area, which is a GDARD Class 1 Ridge, and it also falls, at least in part, within a critically sensitive zone of the Bronberg Conservancy.

As far as herpetofauna is concerned, two important topographical features occur on the study site itself. The drainage line, with its man-made dams, and the rocky ridge on the north-western side of the site are regarded as sensitive areas. The study site contains all four herpetofauna habitats, namely terrestrial, arboreal, rupicolous and wetlands habitat. The small part of the study site is disturbed by anthropogenic influences such as building rubble, dumping, foot paths, roads, veld fires, invasive plants, vegetable garden and fences. Due to the presence of all four habitat types, the study site will have a good number of herpetofauna species. It must be emphasised that the species richness for the general area is far greater due to the presence and good quality of all four habitat types. The contentious Red Data Giant Bullfrog may occur on the study site.

The striped harlequin snake has not been recorded on this quarter degree square and moribund termitaria, where this species is most likely to be found, are absent on the study site. It is very difficult to confirm whether this cryptic snake is present on any study site, but there is a very small possibility that this species could occur on this particular study site. A small possibility exists that at least some individuals of coppery grass lizard occur on the study site. Connectivity is very good. Emigration and immigration are likely along the entire study site.

The proposed development will have an effect on species richness and conservation, because of the construction of buildings and new roads carrying more vehicles, and by increased human presence.

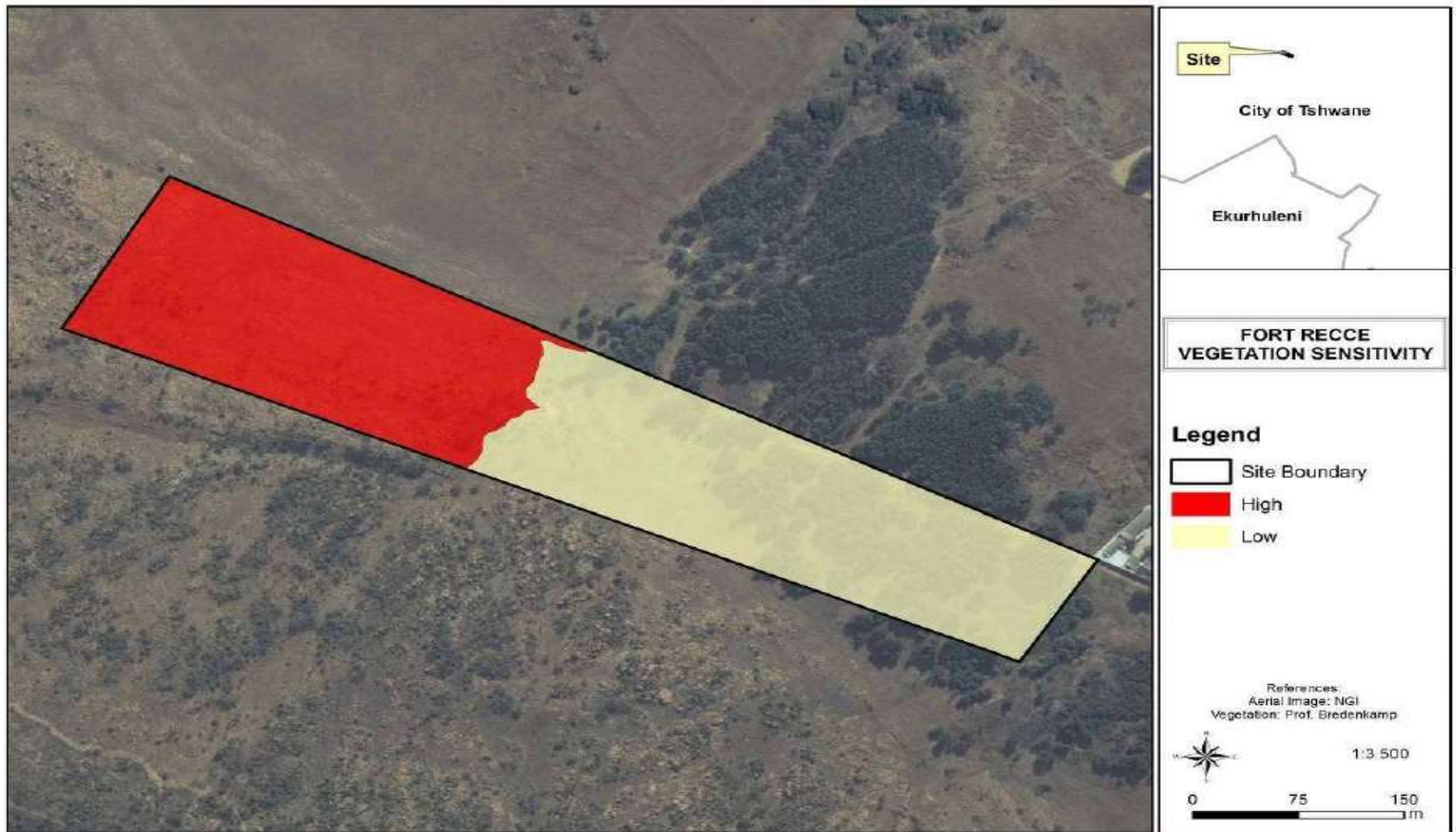


Figure 10: Sensitivity map

**Golden Mole Study**

A site visit was initially conducted on 29 April 2016. During this visit the study site was walked to search for golden mole tunnels and the suitability of the substrate was assessed.

The substrate is too compacted to allow for the occurrence of Juliana's golden mole. As expected, no tell-tale borrows of the mole were found. It was also concluded that the mole is absent on adjoining properties. Juliana's golden mole does not occur on Portion 280 of the Farm Tiegerpoort 371 JR.

**Wetland Statement**

The drainage is seasonal and just flows when it rains although there is a lot of runoff from the mountain. The area falls within a 32m buffer area around the drainage line.

**Heritage Assessment**

Refer to Section 10 below

## **Paleontological Assessment**

The development is taking place on the Silverton Formation (Vsi), it may overlap onto the Daspoort Formation (Vdq), both of the Pretoria Group, Transvaal Supergroup.

The Transvaal Supergroup fills an east-west elongated basin in the south-central part of the old Transvaal (now North – West, Gauteng and Mpumalanga) as far south as Potchefstroom. It is Vaalian in age, approximately 2600 Ma to 2100 Ma. A maximum thickness of the Transvaal Supergroup reaches 2000 m in the north-eastern section. The east-west elongated basin is filled with clastic, volcanic and chemical sedimentary rocks. Three groups based on lithological differences have been established: they are the Rooiberg, Pretoria and Chuniespoort Groups as well as other smaller groups (Kent 1980, Snyman 1996). It is the Bushveld Complex that is responsible for the tilting of the Transvaal sediments and the heat of its intrusion having created andalusite crystals (Norman and Whitfield 2006). This Supergroup is underlain by the Ventersdorp, Witwatersrand and Pongola Supergroups, and the Dominion Group. Three prominent ridges are present from the oldest to the youngest, the Time Ball Hill, Daspoort and Magaliesberg Formations (Norman and Whitfield 2006).

The Pretoria Group consists predominantly of quartzite and shale, together with a prominent volcanic unit, minor conglomerate, chemical and volcanic members. It comprises the Hekpoort Andesite, Dullstroom Basalt, Time Ball Hill, Silverton, and Magaliesberg Quartzite Formations as well as several smaller formations (in total 15) and overlies the Chuniespoort Group (Kent 1980). Both the shale and quartzite of the Pretoria Group are utilised in the building industry (Snyman 1996). The Time Ball Hill shale Formation is known to contain ‘algal microfossils’ diagenetic in origin. Stromatolites as they are known are preserved in the subordinate carbonate rocks (Kent 1980). The Pretoria Group is clastic sedimentary in nature (Eriksson 1999). The pile of sedimentary rocks, mainly mudstones and quartzites with some basalt can collectively reach a thickness of up to 5 km. The Silverton shale Formation is the thickest of all the shale formations of the Pretoria Group (300 – 3000 m) (Visser 1989).

Fossils in South Africa mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature. Therefore, if there is the presence of sedimentary rocks the palaeontological sensitivity can generally be LOW to VERY HIGH, and here locally HIGH for the Pretoria Group (SG 2.2 SAHRA APMHOB, 2012).

The impact of the development on fossil heritage is HIGH and therefore a field survey or further mitigation or conservation measures may be necessary for this development (according to SAHRA protocol). A Phase 1 Palaeontological Impact Assessment and/or mitigation may be recommended. The overburden and inter-burden must be surveyed for fossils during construction. Special care must be taken during the digging, drilling, blasting and excavating of foundations, trenches, channels and footings and removal of overburden during construction not to intrude fossiliferous layers.

There is no objection to the development, and it is not necessary to request a Phase 1 Paleontological Impact Assessment: Field study to determine whether the development will affect fossiliferous outcrops. The palaeontological sensitivity is HIGH so caution is recommended. A Phase 2 Paleontological Mitigation may be required if a fossil is found during construction (for example a stromatolite).

## **9. SOCIO-ECONOMIC CONTEXT**

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

## REGIONAL INFORMATION

### LOCALITY

Region 6 is bordered by the Magaliesberg Mountain range to the north and the N1 freeway to the west and Ekurhuleni Local Municipality to the South. The Region includes large parts of the former Kungwini and Nokeng Tae Tsamane regions.

- The N4 freeway which links the City of Tshwane with Mpumalanga Province and runs east-west through the region.
- The N1 freeway which runs on the western side of the region and links the City of Tshwane with the Limpopo Province in the north and Johannesburg, Bloemfontein and Cape Town towards the south
- The R21 freeway along the western boundary of the region which links the City with the Ekurhuleni Municipality and the OR Tambo International Airport. The region clearly enjoys a high level of accessibility.

### AREA

The region is 885 km<sup>2</sup> in extend.

Region 6	M <sup>2</sup>	km <sup>2</sup>	ha	Wards
	885,239,940	885	88524	24

### Demographic

Region 6 had a population of about 605554 people according to the 2011 Census.

POPULATION			
High	Medium	Low	Total
152289	141418	292743	605 554

In terms of income groups 48 % can be regarded as within the Low income group (monthly household income of less than R 2000.00 a month).

Region 6 has an unemployment figure of about 20.5 % which is below the national average of 25%

### REGIONAL CHARACTERISTICS

The main characteristics of Region 6 are discussed below:

- The south-eastern section of this region has the highest income per capita and could be considered the fuel injection of the city.
- However, there is also a huge concentration of people in the north east quadrant, representing low and no-income groups.
- It is the region with the greatest development pressure.
- Decentralised nodes accommodate a wide range of urban facilities.
- The region is popular in terms of retail as well as office functions as many of the higher category retail and office functions of the City have relocated to this region over the past few years. Further to this is also the

second most important industrialised area in Tshwane situated in Silverton/ Silvertondale/ Waltloo/ Bellevue- area.

- Suburban areas are mostly low density in nature and the region accommodates a number of Golf and Life Style Estates such as Woodhill, The Hills and Silver lakes. However, there is also a high density area to the north of the region with large areas planned for RDP type development and informal settlements invaded the land before construction of services took place.
- The east-west transportation linkages between nodes are saturated during peak hours.
- The historical radial linkages to the CBD are prominent.
- There is a high dependency on private motor vehicles, from the southern section of the region, placing an impossible demand on the road infrastructure. Further to this is a high rail related dependency of the north eastern quadrant to the City Centre. No south connection is possible.
- There is also an unusually high dependency on bus travel through the area from the far outlying rural areas e.g. Moutse and Moloto.
- The Bronberg and the Magaliesberg Mountain range is a major environmental feature running east to west in the northern part of the region. It provides limited thoroughfare, with only two major crossing points.
- The Moreleta Spruit and its tributaries cover virtually the entire area to the south of the Bronberg, contributing to the well-defined regional open space system of the southern part of the region.
- Further to the south of the region is the Rietvlei Dam and Nature reserve which is one of the larger open space assets of the City.
- The region contains a number of strategic land uses including the CSIR, South African National Intelligence Service and the Menlyn Park Retail Node which has a metropolitan function in terms of facilities.
- The Hatherley landfill site has a metropolitan function in terms of its Strategic nature and size. No other sites are known for future development in the Metro as yet.
- The region contains three large private hospitals as well as the Pretoria East Cemetery
- Almost all the developable land within the southern section of the Region has been developed and the uncontrolled development in the old Kungwini area places a burden on the existing saturated road infrastructure
- The north-eastern section of the region accommodates mostly low-income communities and industrial land uses.
- The middle and south-western section of the region accommodates medium to high-income areas with large institutional uses.
- The northern section of the region includes a number of strategically located undeveloped areas in terms of accessibility and infrastructure which offer significant development potential.

### **STRUCTURING ELEMENTS**

- The main structuring elements of the region include:
- The N1 and N4 Freeways facilitating north-south and east-west regional linkages with the rest of the country.
- The secondary (mobility) roads including Lynnwood Road, Atterbury Road, Garsfontein Road, radiating from the CBD through the region and Solomon Mahlangu Drive (Hans Strydom) linking the three roads with the N1 in the south and N4 in the north.
- The Bronberg Mountain limits road linkage with the northern section of the region to only two major crossing points.

- The Moreleta Spruit and its tributaries covering the entire area forming an interlinked regional open space network.
- The Rietvlei Nature Area limiting southward expansion of the region.
- The Urban Edge roughly following the municipal boundaries and currently under pressure due to limited expansion possibilities.
- The low density rural residential estate – Mooikloof – limits expansion in a south-eastern direction.
- The Menlyn retail node and Silverton/Waltloo Industrial node within the region plays a further important structuring role in terms of economic development and regional accessibility.
- Pretoria Road and Stormvoël/Tsamaya Roads are parallel to the N4.
- Large industrial and vacant land parcels divide the mainly low-income in the north east and the higher income areas to the south.
- A railway line runs east-west through the region with industrial and residential uses following this line, and a north- south line linking with the huge freight facility near Babsfontein to the south east of the region.
- The Magaliesberg forms the northern boundary of the region and limits access to the areas north of the mountain.
- Micheal Brink (Nico Smith)/Stormvoël/Tsamaya Roads provides east-west linkage between the north eastern part of the region and the CBD.
- Linkage between the north-eastern part of the metro and the CBD is very poor and obstructed by the mountain range.

## 10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

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.*



Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

YES	NO
-----	----

If YES, explain:

n/a
-----

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

**HCAC** was appointed to assess the study area in terms of Section 38 (3) of the NHRA as part of the Basic Assessment (BA) for the proposed development.

No significant Stone Age sites were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. No further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. An independent Paleontological study was conducted by Fourie (2017) and this study determined that the impact of the development on fossil heritage is HIGH and further mitigation measures are required as per the specialist report (Fourie 2017).

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study area. In terms of Section 36 of the Act no burial sites were recorded in the study area. However if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area.

Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMPr.

The study area is surrounded by residential developments (formal and informal) and no significant cultural landscapes or viewsapes were noted during the fieldwork. Based on the results of the field survey of the proposed development there are no significant archaeological risks associated with the development and HCAC is of the opinion that from a heritage point of view there is no reason why the development should not proceed if the recommendations as made in the report area adhered to and based on approval from SAHRA.

Will any building or structure older than 60 years be affected in any way?

YES	NO
YES	NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

If yes, please attached the comments from SAHRA in the appropriate Appendix

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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Note: The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

### 1. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES	NO
-----	----

If yes, has any comments been received from the local authority?

YES	NO
-----	----

Not Applicable

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

Not Applicable

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

The public participation report is attached as **Annexure E**.

As part of the initial assessment and viability of the site the Environmental Management Department of the City of Tshwane Municipality was invited participate.

The Ward councillor of the area; Mr Mike Strange (Ward 101) received emails including documents like the Background Information Document.

Comment from the municipality on the Draft BA will be included in the Public participation report of this Final Basic Assessment.

### 2. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
-----	----

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

The main concern is the potential adverse impact of the proposed Fort Recce and associated developments on the potential presence of the Juliana Golden Mole, especially if no Golden Mole specialist study has been undertaken.

In this regard a Juliana's Golden Mole study was undertaken .

If "NO" briefly explain why no comments have been received

Not Applicable

### 3. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

### 4. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below:

**Annexure E provides details of the public consultation process. that will be followed during the project.**

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I &APs

# SECTION D: RESOURCE USE AND PROCESS DETAILS

**Note:** Section D is to be completed for the proposal and alternative(s) (if necessary)

## Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed.
- 2) Each alternative needs to be clearly indicated in the box below.
- 3) Attach the above documents in a chronological order.

Section D has been duplicated for alternatives  times  
(complete only when appropriate)

Section D Alternative No.  (complete only when appropriate for above)

## 1. WASTE, EFFLUENT & EMISSION MANAGEMENT

### Solid Waste Management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
<b>Unknown at this stage</b>	

If yes, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

The building rubble and solid construction waste (such as sand, gravel, concrete and waste material) that cannot be used for filling and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a licensed landfill site, i.e. a landfill licensed in terms of Section 20 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989).

Where will the construction solid waste be disposed of (describe)?

All non-recycled general waste will be removed by a registered waste Contractor and taken to the licensed Landfill Site.

Will the activity produce solid waste during its operational phase?

YES	NO
<b>Unknown at this stage</b>	

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

Solid waste during the operational phase will primarily be household waste. It will be picked-up by the local municipality and discarded at a registered landfill site. Refuse is brought to these areas and removed on a weekly basis by Council or as necessary

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

YES	NO
-----	----

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Waste will feed into the City of Tshwane Metropolitan Municipality's waste stream.

**Note:** If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO
-----	----

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

Recycling facilities for paper and glass will be available within the small waste transfer station on the property.

**General Waste Management**

- Litter and rubble on the construction site and in the construction camp will be monitored strictly by a dedicated housekeeping team.
- All waste generated on site will be separated into metal, paper, plastic, glass & contaminated paper, glass, plastic and polystyrene and will be recycled.

**Construction rubble**

- All rubble from demolition activities will be used on site as part of the existing development, or will be taken off the construction site and disposed at an appropriate landfill.
- No material shall be left on site that may harm man or animals. Broken, damaged and unused nuts, bolts and washers shall be picked up and removed from site.
- Surplus concrete will not be dumped indiscriminately.
- Concrete water will be re-used in the batching process

**Operational waste**

- Waste is to be sorted and recycled at source.

**Liquid Effluent (other than domestic sewage)**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
-----	----

If yes, what estimated quantity will be produced per month?

n/a	
-----	--

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

n/a	n/a
-----	-----

Will the activity produce any effluent that will be treated and/or disposed of on site? 

Yes	<b>NO</b>
-----	-----------

  
 If yes, what estimated quantity will be produced per month? 

n/a	
-----	--

If yes describe the nature of the effluent and how it will be disposed.

**Not Applicable**

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility? 

YES	<b>NO X</b>
-----	-------------

If yes, provide the particulars of the facility:

Facility name:			n/a
Contact person:			n/a
Postal address:			n/a
Postal code:			n/a
Telephone:	n/a	Cell:	n/a
E-mail:	n/a	Fax:	n/a

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

No waste water will be produced for this proposed activity.

**Liquid Effluent (Domestic Sewage)**

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system? 

YES	<b>NO</b>
-----	-----------

If yes, what estimated quantity will be produced per month? 

n/a	
-----	--

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)? 

YES	<b>NO</b>
-----	-----------

Will the activity produce any effluent that will be treated and/or disposed of onsite? 

YES	<b>NO</b>
-----	-----------

If yes describe how it will be treated and disposed off.  

n/a
-----

**Emissions into the Atmosphere**

Will the activity release emissions into the atmosphere? 

YES	<b>NO</b>
-----	-----------

If yes, is it controlled by any legislation of any sphere of government? 

n/a	n/a
-----	-----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Emissions during construction will mostly be in the form of dust and smoke.  
 Odour from the refuse yards are to be combated by the provision of a compaction unit and is to be walled.  
 The EMP attached in Annexure H of the Basic Assessment Report indicates various ways in which these emissions will be minimized and controlled.

**2. WATER USE**

Indicate the source(s) of water that will be used for the activity

Municipal	Directly from water board	<b>groundwater</b>	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

<b>375 kl/d</b>
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If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs? 

<b>YES</b>	NO
------------	----

If yes, list the permits required

A General Authorisation will be required for the drainage line that is on the proposed site. Will apply for a General Authorisation after the approval of the Environmental Authorisation
---

If yes, have you applied for the water use permit(s)?

<b>YES</b>	<b>NO</b>
------------	-----------

If yes, have you received approval(s)? (attached in appropriate appendix)

<b>YES</b>	<b>NO</b>
------------	-----------

### 3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

There is no existing infrastructure on the property at present and it has been established that Eskom is the electrical service provider for the area. Negotiations are underway with Eskom in terms of a 200-kVA supply for the development.
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The electrical aspects relating to the development envisaged accordingly do not present any obstacles. The project may proceed accordingly without encumbrance as far as the electrical supply is concerned.
--

If power supply is not available, where will power be sourced from?

See above
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### 4. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

<p>The following energy savings methods shall be investigated for possible implementation for the proposed development:</p> <ul style="list-style-type: none"> <li>• Use of energy efficient lighting,</li> <li>• Use of day light wherever possible in lieu of artificial lighting,</li> <li>• Use of renewable solar powered lighting for external lighting,</li> <li>• Switching off of all electrical appliances at night and times not in use,</li> <li>• Use of high-efficient HVAC systems,</li> <li>• Possibility of co-generation in co-operation with the supply authority,</li> <li>• Use of solar water heating,</li> <li>• Setting thermostats of water heaters at the most efficient level,</li> </ul>
--

- Insulation of hot water pipes and hot water storage tanks,
- Use of low-flow shower heads,
- Use of high-efficient electric motors,
- Use of variable speed drives on electric motors,
- Use of appropriate conductor size to reduce distribution losses,
- Use of control methods to reduce maximum demand and exploit off peak electricity tariffs,
- Insulation of windows, walls, ceilings and roofs.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

The design intent is to make use of renewable solar powered lighting for external lighting.



## SECTION E: IMPACT ASSESSMENT

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The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

### 1. ISSUES RAISED BY INTERESTED & AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

The main concern is the potential adverse impact of the proposed Fort Recce and associated developments on the potential presence of the Juliana Golden Mole, especially if no Golden Mole specialist study has been undertaken.

The Moles do Not occur on the property

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

Golden Mole Study was done by a Specialist.

The Moles do Not occur on the property

### 2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION & OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts.

**A combination of the following methods was used to identify impacts during the Basic Assessment:**

#### 2.1. Specialist Study Findings

A minimum of legally responsible specialist studies is conducted (as usually required by the relevant authority). These usually include a red data fauna & flora assessment and heritage impact assessment. The findings of such specialist studies will highlight potential impacts on protected or endangered species or environments.

#### 2.2. Site Inspection

The EAP and specialists conduct several site visits and identified potential sensitive environments. These areas are then red-flagged to be investigated further and excluded from development if necessary.

#### 2.3 Technical / Desktop Studies

Technical and specialist reports such as the geotechnical and agricultural assessments are used to identify those areas and aspects that may be impacted on, but that will not be identified through the other specialists' studies.

#### 2.4 Public Participation

Conducting public participation produces an issues list. Such a list needs to be screened for relevant impacts which then need to be addressed by specialist studies or identified for further investigation.

## 2.5 GDARD Policies, Review / Terms of Reference

GDARD C-Plan 3 as well as the policies provides the red flags that must be investigated by the specialists. Furthermore, the GDARD officials and the different sub-directorates within the department review the application and give comments to the relevant environmental officer. The issues identified are forwarded to the environmental consultant and these issues are addressed or translated as impacts.

### 2.5 Methodology to determine significance of impacts

The significance of the identified impacts will be determined using the approach outlined below. This incorporates two aspects or assessing the potential significance of impacts (terminology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998), namely occurrence and severity, which are further sub-divided as follows:

**Table 1: Methodology to Assess Impacts**

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Magnitude (severity) of impact	Scale / extent of impact

To assess each of these factors for each impact, the following four ranking scales are used:

Probability	Duration
5 – Definite/don't know	5 – Permanent
4 – Highly probable	4 – Long-term
3 – Medium probability	3 –Medium-term (8-15 years)
2 – Low probability	2 – Short-term (0-7 years) (impact ceases after the operational life of the activity)
1 – Improbable	1 – Immediate
0 – None	
Scale	Magnitude
5 – International	10 – Very high/don't know
4 – National	8 – High
3 – Regional	6 – Moderate
2 – Local	4 – Low
1 – Site only	2 – Minor
0 – None	

Once these factors are ranked for each impact, the significance of the two aspects, occurrence and severity, is assessed using the following formula:

$$\text{SP (significance points)} = (\text{probability} + \text{duration} + \text{scale}) \times \text{magnitude}$$

The maximum value is 150 significance points (SP). The impact significance will then be rated as follows:

SP >75	Indicates <b>high</b> environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
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SP 30 – 75	Indicates <b>moderate</b> environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates <b>low</b> environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

**Refer to Tables below**

## 2.1 Significance scores of expected impacts

Preferred Alternative – Proposed development of a heritage site to be known as Fort Recce on Portion 280 (a Portion of Portion 26) of the Farm Tiegerpoort 371 JR within the City of Tshwane Metropolitan Municipality.

**Table 2: Assessment of Potential Impact of the Proposed Potential impacts**

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>Biophysical Environment</b>							
<b>1. Issue: Air Quality</b>							
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	Site Only (1)	Immediate (1)	High Probability (4)	Moderate (6)	36	Moderate environmental significance	high
<b>2. ISSUE TOPOGRAPHY</b>							
2.1 Visual impacts: Topographical features contribute to the landscape character and sense of place of an area cutting and embankments and areas devoid of vegetation are most obvious when located on elevated areas in the landscape	Local (2)	Long term (4)	Highly Probability (4)	Minor (2)	20	Moderate environmental significance	high
2.2 Bulk earthworks: Deep cuttings, high embankments disposal of soil, and excavations cause local changes to topography	Site only (1)	Long term (4)	Highly probability (4)	Minor (2)	18	Low environmental significance	high
<b>3. ISSUE GEOLOGY AND SOILS</b>							
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Site only (1)	Long term (4)	Highly probable (4)	Minor (2)	18	Low environmental significance	high
3.2 soil pollution (due to hydrocarbon spillages)	Site only (1)	Medium term (3)	Medium probability (2)	Moderate (6)	36	Moderate environmental significance	high
<b>ISSUE FOUNA AND FLORA</b>							

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
4.1 Degradation, destruction of habitats/ ecosystem	Site only (1)	Medium term (3)	Definite probability (5)	Very high (10)	90	High environmental significance	high
4.2 Increase of alien invasive plant species.	Site only (1)	Medium term (3)	Highly probable (4)	High (8)	64	Moderate environmental significance	high
4.3 Impacts on fauna and flora	Local (1)	Medium term (4)	Definite probability (5)	Very high (10)	100	High environmental significance	high
<b>ISSUE HYDROLOGY</b>							
5.1 Storm water flow and damage- Developments cause the modification of the drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development.	Regional (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	high
5.2 Impact on water quality (due to hydrocarbon spillages)	Regional (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	high
<b>SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT</b>							
<b>4. ISSUE AESTHETICS, LANDSCAPE CHARACTER AND SENSE OF PLACE</b>							
6.1 Noise/ vibration	Site only (1)	Immediate (1)	Highly probable (4)	Minor (2)	12	Low environmental significance	high
6.2 Visual impact on adjacent residents and motorists	Site only (1)	Short term (2)	Medium probability (3)	Minor (2)	12	Low environmental significance	high

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>7. ISSUE SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT</b>							
7.1 Safety and Security	Local (2)	Short term (2)	Low probability (2)	Minor (2)	12	Low environmental significance	high
7.2 Employment opportunities	Region (3)	Long term (4)	Highly Probable (4)	Moderate (6)	66	Moderate	Medium
<b>8. ISSUE HISTORICAL ENVIRONMENT</b>							
8.1 Destruction of palaeontological resources	None	None	Improbable	-	Not significant	-	High
8.1 No heritage resources occur in the study area	none	none	Improbable	-	Not significant	-	High
<b>9. ISSUE INFRASTRUCTURE AND SERVICES/WASTE</b>							
9.1 Generation of waste	Site only (1)	Short time (3)	Medium probability (3)	Minor (2)	14	Low environmental significance	high
9.2 Pressure on existing infrastructure and services	Region (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	Medium
<b>10. ISSUE DESIGN AND LAYOUT</b>							
10.1 Functional design	Local (2)	Long term (4)	Low Probability (2)	Minor (2)	16	Low environmental significance	Medium

#### Alternative 1: Light Industrial Development including related uses

The impacts for Alternative 1 are similar to that of the preferred alternative with the following exceptions. Increase in air pollution in the area due to industrial nature of the development. Increase in pollutants into the surrounding environmental due to the industrial nature of Alternative 1.

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>BIOPHYSICAL ENVIRONMENT</b>							
<b>ISSUE: AIR QUALITY</b>							
1.1 Dust/ Air pollution- The generation of fugitive dust associated with construction activities & earthworks.	Local (2)	Long term (4)	Highly probable (4)	Moderate (8)	80	High environmental significance	high
<b>3. ISSUE GEOLOGY AND SOILS</b>							
3.1 Soil pollution	Local (2)	Medium term (3)	High Probability (4)	High (8)	72	High environmental significance	high
<b>4. ISSUE HYDROLOGY</b>							
5.1 Storm water flow and damage- Developments cause the modification of the drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development	Regional (3)	Long term (4)	High probability (4)	High (8)	88	High environmental significance	high
5.2 Impact on water quality of water resources situated within the vicinity of the proposed development.	Site only (1)	Long term (4)	High probability (4)	Moderate (6)	54	Moderate	high
<b>SOCIO- ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT</b>							
<b>5. ISSUE AESTHETICS, LANDSCAPE CHARACTER AND SENCE OF PLACE</b>							
6.1 Noise/ vibration	Local (2)	Long term (4)	Highly probable (4)	Moderate (6)	60	Moderate environmental significance	high
6.2 Noise impact	Site only (1)	Long term (4)	High probability (4)	Moderate (6)	54	Moderate environmental significance	high

**Table 4: Assessment of potential impacts and proposed mitigation measures**

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
<p><b>1.1 Dust /Air pollution</b>  <b>The generation of dust associated with construction activities &amp; earthworks</b></p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• The building area is to be physically screened off with a shade cloth fence at least 1.8m in height, to prevent dust from being blown onto the road or neighbouring properties.</li> <li>• Dust generation should be kept to a minimum.</li> <li>• Dust must be suppressed on access roads and construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent.</li> <li>• Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.</li> <li>• It is recommended that the clearing of vegetation from the site should be selective and done just before construction so as to minimise erosion and dust.</li> <li>• Should construction in areas that have been stripped not be commencing within a short period of time the exposed areas shall be re-vegetated or stabilised. Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20 m<sup>2</sup>), applying mulching or brush packing, or creating windbreaks using brush or bales.</li> <li>• Excavating, handling or transporting erodable materials in high wind or when dust plumes are visible shall be avoided.</li> <li>• All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials.</li> <li>• No burning of refuse or vegetation is permitted.</li> </ul>	<p>Low</p>
<p><b>2.1 Visual Impacts - Topographical changes</b></p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• The site area is to be physically screened off with a shade cloth fence at least 1.8m in height.</li> <li>• The site must be managed appropriately and all rubbish and rubble removed to a recognized waste facility.</li> <li>• Excess soil and bedrock should be disposed of at an appropriate facility.</li> <li>• A certificate of disposal must be obtained for any waste that is disposed of.</li> <li>• Waste must not remain on site for more than 2 weeks.</li> <li>• Refuse bins must be provided by the Contractor for rubbish to be used by staff.</li> <li>• Excess concrete must be disposed of correctly and at an appropriate facility.</li> <li>• No waste may be placed in any excavations on site.</li> <li>• The construction camp must be located as far from other properties as possible.</li> <li>• Light pollutions should be minimised.</li> <li>• The construction footprint must be minimised.</li> <li>• Construction / management activities must be limited to the daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays.</li> </ul>	<p>Low</p>



Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic.</li> <li>• Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents.</li> <li>• In this situation, low flux and frequency lighting shall be utilised.</li> </ul>	
<b>2.2 Bulk earthworks</b>	Low	<ul style="list-style-type: none"> <li>• Avoid development on excessively steep slopes.</li> <li>• Avoid cutting steep embankments</li> <li>• Provide the necessary erosion protection measures.</li> </ul>	Low
<b>3.1 Soil erosion, loss of topsoil, deterioration of soil quality</b>	Medium	<ul style="list-style-type: none"> <li>• Appropriate erosion and stormwater management structures must be installed around the construction site.</li> <li>• All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks.</li> <li>• Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area.</li> <li>• Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants.</li> <li>• Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow.</li> <li>• Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes.</li> <li>• Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and bunded.</li> <li>• All excavations and foundations must be inspected regularly.</li> <li>• Once earthworks are complete, disturbed areas are to be stabilised with mulch, straw or other approved method.</li> </ul>	Low
<b>3.2 Soil Pollution</b>	Medium	<ul style="list-style-type: none"> <li>• Ensure correct position of construction caps, equipment yards, refueling depots, concrete batching plant etc. to avoid areas susceptible to soil and water pollution.</li> <li>• Ensure appropriate handling of hazardous substances</li> <li>• Remediate polluted soil.</li> <li>• The maintenance of vehicles and equipment used for any purpose during the development will take place only in the maintenance yard. Any breakdown in the field requires the presence of a spill treatment team and equipment. This team must prevent and mitigate any spills that occur in this situation.</li> <li>• Equipment used in the development process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.</li> <li>• In the event of spills from vehicles, the area should be cleaned immediately using a bioremediation product, such as <i>Petro-Clean™</i>. The absorbent and soil must be placed in a bin and removed from the site by a certified company and disposed of as a hazardous waste at a licensed commercial facility. No</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		Hydrocarbons may escape into the environment. A spill recovery kit must be on site, along with trained personnel.	
<p><b>4.1 Degradation, destruction or elimination of habitats/ecosystems</b></p>	<p><b>High - Medium</b> The proposed development site, and can therefore be mitigated through observing the ecological sensitivity map.</p>	<ul style="list-style-type: none"> <li>• Red data plant species may occur (suitable habitat for several species, though presence not confirmed during field survey) on the proposed development. Wetland habitat along the eastern side of the site has been designated as ecologically sensitive.</li> <li>• No development will occur within the 32m buffer zone of the drainage line.</li> <li>• Site clearing is to be limited to only the area necessary for carrying out the specified works and the destruction of vegetation should be minimised.</li> <li>• No littering by construction workers is permitted. Any litter will be collected and removed off-site to a registered waste site.</li> <li>• Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention.</li> <li>• Stockpiles of vegetation are only to be located in areas approved by the ECO, and may not exceed 2m in height. Methods of stacking must take cognisance of the possible creation of a fire hazard.</li> <li>• No burning of stockpiled vegetation is permitted.</li> <li>• All alien plants that occur in South Africa. None of these species may be introduced and they must all be controlled.</li> <li>• The alien plants on site will be removed during construction.</li> <li>• Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material).</li> <li>• Alien vegetation re-growth must be controlled throughout the entire site during the construction period.</li> <li>• Remaining indigenous trees (naturally occurring in the area) should be retained wherever possible</li> <li>• The wetland area including the buffer zone should be fenced-off during the construction phase.</li> <li>• Currently very few alien plants occur within this plant community (excluding the wattle bush).</li> <li>• An alien invasive management programme must be incorporated into the Environmental Management Programme (particularly the wattle bush);</li> <li>• Ongoing alien plant control must be undertaken;</li> <li>• Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan</li> <li>• must be implemented for the clearing/eradication of alien species.</li> <li>• Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge.</li> <li>• Avoid planting of exotic plant species in public areas or home gardens, use indigenous species.</li> </ul>	<p>Medium</p>

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• Use indigenous plant species in all gardens</li> </ul>	
<p><b>4.2 Impacts on fauna and flora</b></p>	<p>Medium-low</p>	<ul style="list-style-type: none"> <li>• No RDL or otherwise sensitive fauna or flora is thought to inhabit the actual proposed development site due to the generally poor PES of the area. Wetland habitat along the eastern side of the site has been designated as ecologically sensitive.</li> <li>• Other than the road crossing the wetland and services crossing within the road reserve no development will occur within the 15m buffer zone of the wetland</li> <li>• The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase.</li> <li>• Disturbance to birds, animals and reptiles and their habitats should be prevented at all times.</li> <li>• The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution.</li> <li>• These species should then be relocated to a natural habitat.</li> <li>• During the construction phase, artificial lighting must be restricted to areas under construction only. Where lighting is required for safety or security reasons, this should be targeted at the areas requiring attention. Yellow sodium lights or Compressed Fluorescent Bulbs (CFL"s) should be prescribed as they do not attract as many invertebrates (insects) at night and will not disturb the existing wildlife. Sodium lamps require a third less energy than conventional light bulbs.</li> <li>• Ideally fences should not restrict the natural migratory movements of certain animals. The site offers limited suitable migratory habitat. Electric fences have a negative impact on certain animal species including Bushbabies, geckoes, chameleons, bullfrogs and tortoises. Palisade fencing with adequate gaps is recommended for the conserved public open spaces.</li> <li>• Before any vegetation is removed, a suitably qualified person (i.e. on ECO request of a vegetation specialist) shall inspect the study area for any plant/ grass/ tree species that could be transplanted to other similar/ suitable areas. This includes all Red Data or Protected, or rare plants that may be found during the flora site assessment or during construction operations.</li> <li>• There is suboptimal habitat for <i>Boweia volubilis</i> subsp. <i>volubilis</i> on the study site, but none were observed during the field survey. <i>Brachycorythis conica</i> subsp. <i>transvaalensis</i> and <i>Searsia gracillima</i> do not occur on the site. No other medicinal / protected / Red Data Flora was found on the site however should any medicinal/ protected/ Red Data flora that will have to be removed shall be removed by a suitably qualified specialist and relocated. The applicable responsible person at</li> </ul>	<p>Low</p>

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<p>the provincial department must be notified in the event of such plants being identified, who will then advise the ECO regarding what steps need to be taken and who will be responsible for the relocation and transplanted processes.</p> <ul style="list-style-type: none"> <li>• All invader or exotic plant species must be removed from the site and disposed of at a landfill site.</li> <li>• All Declared Weeds and invaders must be removed from the site.</li> <li>• Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited.</li> <li>• Only indigenous floral species (preferably using endemic or local species from the area), which are water wise and require minimal horticultural practices may be used during landscaping and rehabilitation.</li> <li>• Remaining indigenous trees (naturally occurring in the area) should be retained wherever possible</li> <li>• The body corporate should be encouraged to plant indigenous non-invasive plants. The attention of property owners must be drawn to the most recent Declared Weeds List (2001) in the <i>Conservation of Agricultural Resources Act 43 of 1983</i> and the associated penalties and prohibitions</li> <li>• The least environmentally damaging insecticides, to manage invertebrate pests, must be applied. Pyrethroids and Phenylpyrazoles are preferable to Acetylcholines. Use insecticides that are specific to the pest (species specific) in question. The lowest effective dosages must be applied. The suppliers advice should always be sought. Do not irrigate for 24 hours after applying insecticides in areas where there is a chance of contaminating water-courses or dams, fungal pathogens should be used in preference to chemical insecticides.</li> </ul>	
<p><b>5.1 Stormwater flow, drainage and increased runoff due to hardened surfaces</b></p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• Natural storm water must flow freely, either as sheet flow or where necessary in open grass swales, to allow for infiltration and retention. Natural veld grass must be left undisturbed as far as possible, to allow natural drainage.</li> <li>• Drainage channels must be constructed along access roads every 50m to divert runoff during construction period.</li> <li>• Energy dissipaters (gabions/grass bales etc.) must be installed at all potential large flow volume areas, especially during the construction phase where large areas will be open soil.</li> <li>• Where feasible the use of vegetated swales should be used to accommodate surface runoff, in order to increase infiltration into the soil. The swales should be vegetated with indigenous, riparian vegetation in order to provide habitat for bird life and other aquatic and semi-aquatic species. Where feasible, the swales should be provided adjacent to the property boundaries along the natural gradient</li> </ul>	<p>Low</p>

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• The cross-section of the swale should be parabolic or trapezoidal in shape with side slopes no steeper than 1:3, to maximise the wetted channel perimeter. It is recommended that the longitudinal slope not exceed 2% where possible and that a maximum slope of 4% be used. Where a 4% slope must be exceeded, check dams should be provided at a minimum interval of 17m. As a rule of thumb the total surface area of the swale must be 1% of the area that drains into the swale. The surface of the swale must be carefully constructed, to avoid compaction, which will inhibit dense vegetation growth and effective runoff infiltration. The installation of vegetated filter strips parallel to the top of the channel banks can help to treat sheet flows entering the swale.</li> <li>• Maintenance of the swale should include periodic mowing of the grass (never shorter than the design flow depth of the channel). Bare areas should be re-seeded and debris and blockages regularly removed. Sediment depositions should be regularly removed from the swale, to prevent pollution of the runoff from contaminants contained therein.</li> <li>• Please note that the recommendations for the design of the swales are guidelines only and that the designs of the swales, sedimentation ponds and check dams must be done by a hydrological engineer.</li> <li>• Permeable paving should be used to reduce runoff and increase infiltration and ground water recharge.</li> <li>• As much as possible water should be retained on site to be reused again for irrigation and habitat creation.</li> <li>• Both storm water and excess effluent intended for irrigation must be purified according to DWS standards.</li> </ul>	
<p><b>5.2 Impacts</b>  <b>Drainage line and water quality</b></p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• Utilize proper waste management practices.</li> <li>• Cover any wastes that are likely to wash away or contaminate storm water</li> <li>• Ensure handling, transport and disposal of hazardous substances are adequately controlled and managed.</li> <li>• Provide containment areas for potential pollutants at construction camps, refueling depot and concrete batching plants.</li> <li>• Fuel storage shall be within the construction camp, and within a bunded area with at least 110% of the volume of the amount of fuel stored, as per agreement and approval of the ECO. No storage of any fuel will be allowed on site, other than what is approved by the applicable provincial government departments.</li> <li>• Drip trays (min 10cm deep) are to be placed under all vehicles if they stand for more than 3 hours. The drip tray must be able to contain 110% of the total amount/ volume of oil in the vehicle. Spill kits must be available in all vehicles that transport hydrocarbons for dispensing to other vehicles on the site. The dispensing devices (pump heads) must be compatible with the</li> </ul>	<p>Low</p>

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<p>vehicles to which they are dispensing. In addition the dispensing devices must be fitted with the necessary valves/ apparatus that will ensure that the nozzles do not drip fuel after pumping has stopped.</p> <ul style="list-style-type: none"> <li>• Cement mixing shall be done only at specifically selected sites. After construction activities ended the cement shall be crushed and removed from the site. This mixing area shall then be ripped and rehabilitated.</li> </ul> <p><b>A small drainage line originates south of the site and drains northwards down the rocky slope</b></p> <p>Limit the construction footprint and support areas (e.g. temporary access servitudes) as far as possible;</p> <ul style="list-style-type: none"> <li>• No indiscriminate destruction of wetland vegetation should be allowed;</li> <li>• Make use of geotextiles within disturbed areas of steeper topography to avoid erosion through surface water runoff;</li> <li>• Stormwater management along informal roadways to reduce gulley erosion formation;</li> <li>• Construct within the low-flow (dry) period;</li> <li>• Correct site reinstatement and landscaping following any disturbances will abate channel and gulley formation;</li> <li>• Proper re-instatement of soils and landscaping to limit erosion gulley formation.</li> <li>• Soil layers within wetland zones are to be stored in their respective layers and replaced after entrenching has occurred in reverse order i.e. the original soil layering must be retained should entrenching within wetland habitat found to be necessary. Provision for this should be detailed within a rehabilitation plan and the site reinstatement should be audited by suitably qualified personnel.</li> <li>• No dumping of any excess building material or other wastes or litter should be allowed within any wetland and buffer areas;</li> <li>• Exotic vegetation recruitment was observed as an impacting feature within the wetlands. It is recommended that an exotic vegetation management strategy be developed as part of a rehabilitation plan to manage the present and future emergent exotic vegetation;</li> <li>• Subsistence hunting or harvesting of fauna or flora within the wetland zones should be prohibited;</li> </ul>	
<b>6.1 Noise/ vibration</b>	Low	<ul style="list-style-type: none"> <li>• Noise levels shall be kept within acceptable limits, and construction crew must abide by National Noise Laws and local by-laws regarding noise.</li> <li>• If work is to be undertaken outside of normal work hours permission, must be obtained. Prior to commencing any such activity the Contractor is also to advise the potentially affected neighbouring residents. Notification could include letter-drops.</li> <li>• No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• Construction / management activities involving use of the service vehicle, machinery, hammering etc, must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays.</li> <li>• Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc) must be preceded by notice being given to the affected neighbours at least 24 hours in advance.</li> <li>• Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc) must be used as per operating instructions and maintained properly during site operations</li> </ul>	
<b>6.2 Visual Impact</b>	Low	<ul style="list-style-type: none"> <li>• The site is in an extremely disturbed state , with existing properties that are not well maintained.</li> <li>• Structures that are to be erected should be aesthetically pleasing and blend into the area as far as possible to minimise the visual impact.</li> <li>• Buildings are to reflect and residential scale and design with finishes matching the existing styles and finishes. Buildings must adhere to the local zoning code.</li> <li>• Buildings must be maintained in good standing at all times</li> </ul>	Low
<b>7.1 Safety and Security</b>	Low	<ul style="list-style-type: none"> <li>• A fence will be constructed around the site prior to commencement of construction</li> <li>• The Applicant will be in contact with the local security firms.</li> <li>• Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.</li> <li>• The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations</li> <li>• All structures that are vulnerable to high winds must be secured (including toilets).</li> <li>• Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times.</li> <li>• The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads.</li> <li>• Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.).</li> <li>• All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA).</li> <li>• An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<p>appropriately briefed about the EMP and relevant occupational health and safety issues.</p> <ul style="list-style-type: none"> <li>• All construction workers shall be issued with ID badges and clearly identifiable uniforms.</li> <li>• Access to fuel and other equipment stores is to be strictly controlled.</li> <li>• Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided.</li> <li>• Adequate emergency facilities must be provided for the treatment of any emergency on the site.</li> <li>• The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times.</li> <li>• The Contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses.</li> <li>• The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas.</li> <li>• Washing and toilet facilities shall be provided on site and in the Contractors camp.</li> <li>• Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided.</li> <li>• The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately.</li> <li>• The chemical toilets must be emptied on a regular basis.</li> <li>• The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site.</li> <li>• HIV AIDS awareness and education should be undertaken by all Contractor staff.</li> </ul>	
<b>7.2 Economic opportunities</b>	Low	<ul style="list-style-type: none"> <li>• Make use of local labour</li> <li>• Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations.</li> </ul> <p>Provide skills training for construction workers.</p>	Medium
<b>8.1 Destruction of cultural / heritage sites</b>	Low	<ul style="list-style-type: none"> <li>• Ensure that construction staff members are aware that heritage resources could be unearthed and the scientific importance of such finds.</li> </ul>	Low



Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
No sites of cultural or heritage importance were found during the Heritage impact Assessment		<ul style="list-style-type: none"> <li>• Ensure that heritage objects are not to be moved or destroyed without the necessary permits from the South African Heritage Resources Agency (SAHRA) in place.</li> </ul>	
<b>9.1 Waste</b>	Low	<ul style="list-style-type: none"> <li>• Adequate number of waste disposal receptacles are to be positioned at strategic locations within the development.</li> <li>• Temporary waste storage points on site shall be determined. These storage points shall be accessible by waste removal trucks and these points should not be located in areas highly visible from the properties of the surrounding land-owners/tenants/in areas. These areas should also be already disturbed. The storage of solid waste on site, until such time that it may be disposed of, must be in the manner acceptable to the relevant Authority.</li> <li>• No waste materials shall at any stage be disposed of in public areas or adjacent properties, or where the wind direction will carry bad odours across the properties of adjacent tenants or landowners. The piling of any material that could rot and release unpleasant smells into the air will not be permitted. Burning of waste is not permitted. Spot fines of up to R100 may be administered if the employees are found to be polluting the area in any way.</li> <li>• Several waste bins must be provided and clearly marked or colour coded according to industry standards to allow for recycling of waste into <ul style="list-style-type: none"> <li>○ Paper</li> <li>○ Biodegradable</li> <li>○ Glass</li> <li>○ Plastics</li> <li>○ General</li> </ul> </li> <li>• No burning of waste.</li> <li>• Wayleaves required for all disposed waste.</li> <li>• The waste bins shall be cleared by municipal services on a weekly basis. During municipal strikes special arrangements must be made to have the waste removed via private waste removal services.</li> </ul>	Low
<b>9.2 Existing infrastructure</b>	Medium	<ul style="list-style-type: none"> <li>• Integrity of existing services to be ensured.</li> <li>• Adherence to Service Report</li> <li>• Adherence to Traffic Impact Study requirements.</li> <li>• The service systems are to be designed according to the minimum requirements of, and submitted to the City of Tshwane Metropolitan Municipality for approval. No construction activities must commence on site prior to obtaining the necessary approval.</li> <li>• Underground services should be designed in such a way so as to require minimum maintenance to avoid disturbance of the underground and superficial environment.</li> </ul>	Medium-low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
10.1 Functional design	Medium	<ul style="list-style-type: none"> <li>Scale and design must fit with adjacent land uses</li> <li>Areas where services infrastructure has been installed must be rehabilitated with indigenous vegetation on completion.</li> </ul>	Low

**NO GO:**

**No-Go Alternative**

The No- Go alternative is the option of not implementing the activities. This implies that the site be left as is and that no development be done.

This option has the following potential impacts:

- The Fort Recce will provide a tourism activity in the Bronberg area. This is an aspect of the South African history where all races were represented and that to date remain untold. By establishing the tourism facility, the South Africa Public will have an opportunity to learn about the contribution of the elite defense force in the founding of the South African freedom as we currently enjoy it.
- Many direct and indirect spin-off benefits, such as job creation, capacity building, rates for the municipality and the upgrading of supply of services will not be realised.
- Invasive vegetation would probably continue to spread in areas where land is vacant and not actively used in its entirety.
- If not developed, the site will derive no income and will not contribute to the services and total income of the area.
- Illegal squatters are becoming increasingly interested in using this site and are posing more of a threat to local inhabitants. They are setting up temporary structures on unsupervised areas of the site that are well hidden. If this continues unchecked, it may spread and the land may become unmanageable.

Given the fact that the site will eventually degenerate if left unmanaged, and the fact that it is most likely unsuitable to be utilised for grazing or agricultural purposes due to its location, it is reasonable to state that the no-go option is less favourable than some of the other options presented.

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- Annexure G1: Geotechnical Assessment
- Annexure G2: Ecological Assessment
- Annexure G3: Paleontological Assessment Phase 1
- Annexure G4: Heritage Impact Assessment
- Annexure G5: Golden Mole Study

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

- **Assumptions**

In undertaking this BAR, it has been assumed that:

- All requirements from the local authority will be met by the proponent as a separate undertaking to the EIA process;
- The information provided by the proponent and the project planning team / specialists is accurate and discloses all information relevant to EIA, proposed project and possible impacts.
- Where supporting or baseline information was unavailable, a precautionary approach is adopted.

- **Gaps in Knowledge**

All specialist studies are conducted to certain levels of confidence, but in all instances known methodologies have been used and confidence levels are generally high. This means that in most cases the situation described in the pre-construction environment is accurate at high certainty levels, but there exists a low probability that some issues have not been identified during the studies. Furthermore, statistical analyses and mathematical models are merely tools which assist the researcher in assessing field observations and have innate assumptions which can reduce objectivity of the results obtained. This is not seen as a major flaw but should always be considered when assessing results.

Gaps in knowledge known to LEAP at this time, includes:

- Predicting the impact to the socio-economic and bio-physical environment for the life-cycle of the proposed project (i.e. 25-50 years) although it is expected to be positive since the social contribution will be extremely high

**3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING & CLOSURE PHASE  
– NOT APPLICABLE**

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

The decommissioning or closure of the proposed project is not anticipated.

**Proposal**

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

**Alternative 1**

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

**Alternative 2**

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Not Applicable

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

Not Applicable



## 4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

Cumulative impacts are assessed with the combination effects of the Project with current and future development in the immediate area of the Project site. The cumulative impacts assessed depend on the status of other projects and the level of data available to characterise the magnitude of the impacts.

The large portions of the surrounding land is or has been utilised for industrial developments and as such it would make sense for these properties to be used for this purpose. In terms of density, the general typology of development in the area consists of higher impact uses.

### **Cumulative Impacts**

- **Litter and Waste**

Activities associated with use of the site results in littering. Similarly the building process generates wastes that could pollute the site and its surrounds. For this reason it is important that a waste management plan must be developed. The litter will reduce as the construction phase ends. This will not result in a cumulative impact.

- **Vegetation and Fauna**

The proposed development will partially transform the site and will lead to the partial loss of habitat for any potential plant of animal species. This is considered to be an impact of low significance as the largest portion of the development will occur on the low sensitive areas. A very small component of the development will be located on the high sensitivity areas of the site. The buildings is raised above the ground and constructed on columns to allow for free flow below the buildings, thus reducing the impact of the development. The cumulative impact is thus low

- **Stormwater Runoff**

The development of hard surfaces will give rise to greater volumes and velocity of runoff waters during high peak flows. This water will drain into the roads and stormwater management system. Localised flooding may result on negative impacts on bed and banks of the stream course due to the cumulative effects.

## 5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### **Proposal**

The identified impacts in both the construction and the operational phase are those usually experienced with rural development. The negative impacts identified, however, are not considered highly significant and with appropriate mitigation can be reduced

to a lower significance. The positive impacts are considerable in that the proposed development will provide employment opportunities.

#### **Alternative 1: Light Industrial Development**

The impacts for Alternative 1 are similar to that of the preferred alternative with the following exceptions. Increase in air pollution in the area due to industrial nature of the development. Increase in pollutants into the surrounding environment due to the industrial nature of Alternative 1.

Impacts can be successfully mitigated, however Alternative 1, is less favourable than the proposed development and will have slightly higher environmental impacts than the preferred alternative.

#### **Alternative 2**

**Not Applicable**

#### **No-go (compulsory)**

The No- Go alternative is the option of not implementing the activities. This implies that the site be left as is and that no development be done.

This option has the following potential impacts:

- Many direct and indirect spin-off benefits, such as job creation, capacity building, rates for the municipality and the upgrading of supply of services will not be realised.
- Invasive vegetation would probably continue to spread in areas where land is vacant and not actively used in its entirety.
- If not developed, the site will derive no income and will not contribute to the services and total income of the area.
- Illegal squatters are becoming increasingly interested in using this site and are posing more of a threat to local inhabitants. They are setting up temporary structures on unsupervised areas of the site that are well hidden. If this continues unchecked, it may spread and the land may become unmanageable.

Given the fact that the site will eventually degenerate if left unmanaged, and the fact that it is most likely unsuitable to be utilised for grazing or agricultural purposes due to its location, it is reasonable to state that the no-go option is less favourable than some of the other options presented.

## **6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE**

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

In accordance with GN No. 982, the Environmental Impact Phase is aimed at identifying and assessing potential impacts caused by the proposed development. The ability to mitigate any of the identified impacts are also addressed and summarised into a working / dynamic Environmental Management Programme (EMP) for consideration by I&APs and ultimately by the GDARD.

Comments and/or concerns identified by Interested and Affected Parties (I&APs) during the review period of the Draft Basic Assessment will be incorporated into the Final Basic Assessment to be submitted to the GDARD for consideration.

Having assessed all the potential environmental impacts associated with the proposed development it is the opinion of the EAP that the proposed Fort Recce Heritage Site on Portion 280 (A Portion of Portion 26) of the Farm Tiegerpoort 371-JR is issued with a positive Authorisation from the GDARD for the following reasons:

- The proposed development is in line with requirements of the spatial planning tools (i.e. the Spatial Development Framework for City of Tshwane Local Municipality – 03, July 2008, City of Tshwane Town Planning Scheme, 2008 (revised 2014) and the Gauteng Development Framework, 2011);
- The proposed development is not for human settlement or business activity outside the Urban Edge but rather for heritage purposes and thus does not contribute to urban sprawl.
- The proposed heritage site would make use of natural and human resources within the local community and as such complies to above factor.
- The economic service sphere of the heritage site would be of National and International significance and thus economic growth within the area would be stimulated by the proposed heritage site.
- As from the traffic study, the client would be responsible to construct an access road from Nkwe Road which would be to the benefit of surrounding properties thus, increased access and mobility will be a result of the proposed heritage site.
- The site is located in a remote area, not close to major public transport routes. It is expected that the development will generate employment opportunities for workers dependent on public transport for daily commuting. As part of the approval for the development, it is proposed to allocate a parking area on the property for a public transport vehicle/s.
- The proposed heritage site would stimulate local economic growth and therefore contribute to the wellbeing of the area.
- The property is found in a rural area with limited resources, social amenities, and infrastructure. The proposed development would contribute to all mentioned aspects. Therefore, the intensification of the property by means of the proposed rezoning application would result in the land and infrastructure being optimally utilised.
- The proposed development is sustainable in the sense that the infrastructure would be optimally used and the proposed heritage site would create sustainable employment opportunities. The proposed use would be located in an area earmarked for tourism activities and therefore would stimulate eco-tourism activity within the area and contribute to spatial sustainable growth.

Although a number of potential negative biophysical, socio economic and cumulative impacts were identified, there are no fatal flaws that should prevent the development from proceeding. It was demonstrated that most of these impacts can also be mitigated effectively in order to reduce the significance. Refer to Table 6 for a summary of the impact significance ratings – before and after mitigation.



**Table 6: Proposed Activity: Impact Summary**

	Before Mitigation	After Mitigation
<b>BIOPHYSICAL ENVIRONMENT</b>		
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	Moderate	Low
2.1 Visual Impacts: Topographical features contribute to the landscape character and sense of place of an area. Visual scarring due to cutting and embankments and areas devoid of vegetation are most obvious when located on elevated areas in the landscape.	Moderate	Low
2.2 Bulk earthworks: Deep cuttings, high embankments, disposal of soil and excavations cause local changes to topography	Moderate	Low
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Moderate	Low
3.2 Soil pollution (due to hydrocarbon spillages)	Moderate	Low
4.1 Degradation, destruction of habitats/ ecosystem and impact on connectivity – classified as a Critical Biodiversity Area (CBA)	High	Moderate
4.2 Impacts on fauna and flora	Moderate	Low
5.1 Stormwater flow and drainage- Developments cause the modification of drainage patterns. Stormwater may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development.	Moderate	Low
5.2 Impact on water quality (due to hydrocarbon spillages)	Moderate	Low
<b>SOCIO-ECONOMIC ENVIRONMENT</b>		
6.1 Noise/ vibration	Low	Low
6.2 Visual impact on adjacent residents and motorists	Low	Low
7.1 Safety and Security	Low	Low
7.2 Employment opportunities	Moderate (Positive)	High (Positive)
8.1 Destruction of paleontological resources	High	Moderate
9.1 Waste	Low	Low
9.2 Existing infrastructure	Low	Low
10.1 Functional design	Low (Positive)	Moderate (Positive)
<b>CUMULATIVE IMPACT</b>		
Transformation of natural habitat caused by the urban sprawl of Pretoria in a south-eastern direction	low	low

## 7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

### **Tshwane Regional Spatial Development Framework – Region 6 (2012 and 2013)**

- The Tshwane Regional Spatial Development Framework - Region 6 was compiled by the City of Tshwane Metropolitan Municipality and aims to ensure that the desired urban form and patterns are established within the region.
- The property falls within the City of Tshwane's Spatial Development Framework for Region 6 (RSDF).
- The proposed heritage site is in line with above characteristics outlined by City of Tshwane and would contribute to the implementation of the City's vision.
- The proposed rezoning can also be motivated in terms of the Gauteng Spatial Development Framework, 2011 (GSDF). The GSDF identified 5 critical factors:

#### **a. Contained urban growth**

The proposal is not for human settlement or business activity outside the Urban Edge but rather for heritage purposes and thus does not contribute to urban sprawl.

#### **b. Resource based economic development**

The proposed heritage site would make use of natural and human resources within the local community and as such complies to above factor.

#### **c. Re-direction of urban growth (stabilize /limit growth in economically non-viable areas, achieve growth on the land within the economic growth sphere)**

The economic service sphere of the heritage site would be of National and International significance and thus economic growth within the area would be stimulated by the proposed heritage site.

#### **d. Protection of rural areas and enhancement of tourism and agricultural related activities**

An environmental study is being conducted which would identify sensitive environmental areas to be protected and enhanced accordingly.

#### **e. Increased access and mobility**

As from the traffic study, the client would be responsible to construct an access road from Nkwe Road which would be to the benefit of surrounding properties thus, increased access and mobility will be a result of the proposed heritage site.

**Refer to Annexure I1 Rezoning Motivating Memorandum**

## 8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES	NO
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If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

Not Applicable

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

**It is recommended that the Proposed Activity is authorised over Alternative 1.**

The recommendations to include, if the authorisation of the Proposed Activity is granted, are amongst others:

**General:**

- The monitoring of the construction site must be carried out by a professionally qualified Environmental Compliance Officer (ECO) with proven expertise in the field so as to ensure compliance to the Environmental Management Programme (EMP).
- All mitigation measures listed in the BAR as well as the EMP must be implemented and adhered to.
- rehabilitated as soon as possible and revegetated with indigenous species.
- The species should be indigenous to the specific area and the composition of the vegetation should reflect the natural vegetation
- The species used in rehabilitation of the proposed development should be indigenous to lessen the impact of exotic plant species on existing fauna and flora systems.

**Paleontology:**

- The overburden and inter-burden must be surveyed for fossils. Special care must be taken during the digging, drilling, blasting and excavating of foundations, trenches, channels and footings and removal of overburden not to intrude fossiliferous layers.

**Heritage:**

Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

**9. THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT** (as per notice 792 of 2012, or the updated version of this guideline)

There is a need for the proposed memorial and heritage site to commemorate fallen individuals. The site will also include a museum to educate subsequent generations of the South African history. The site needs to be located within a tourism area on the periphery of the city. Neighbouring structures and uses are not negatively influenced by overshadowing of the proposed heritage site. The heritage site would support nearby businesses and facilities. The trustees of the heritage site would also strengthen needed security within the area by implementing a vigilant community security programme.

The desirability of the rezoning application can be motivated in the following:

- The proposed development will not in any way encumber the existing municipal infrastructure.
- All required parking can easily be provided on site.

- Due to the high accessibility no access problems or interference with the existing traffic circulation patterns in the area are foreseen.
- The proposed land use is policy and legislative compliant.

It is therefore evident that there is a need and desirability.

**10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED**  
(CONSIDER WHEN THE ACTIVITY IS EXPECTED TO BE CONCLUDED)

**10 years**

**11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)** (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

**YES**

## **SECTION F: APPENDIXES**

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The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Annexure A: Site plan(s)

Annexure B: Photographs

Annexure C: Facility illustration(s) – Not Applicable

Annexure D: Route position information – Not Applicable

Annexure E: Public participation information

Annexure F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information - Not Applicable

Annexure G: Specialist reports

Annexure G1: Geotechnical Assessment

Annexure G2: Ecological Assessment

Annexure G3: Heritage Assessment

Annexure G4: Paleontological Assessment

Annexure H: EMPr

Annexure I: Other information

Annexure I1: Townplanning Memorandum

Annexure I2: Traffic Impact Assessment

Annexure I3: Services report

Annexure I4: Electrical Services Report

Annexure I5: EAP CV

Annexure I6: EAP declaration

### **CHECKLIST**

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been complete

