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Amorosa Residential Development  
**Basic Assessment Report - DRAFT**

July 2021

Client: Mr. JS van Niekerk

## Document Information

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## Executive Summary

Mr. JS van Niekerk is the applicant for the township establishment on Portion 1 of Holding 25, Amorosa Agricultural Holdings IQ and appointed Environamic CC to conduct the necessary environmental studies for the proposed development in terms of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended, and the Environmental Impact Assessment (EIA) Regulations (2014) as amended in 2017. The EIA Regulations were promulgated in terms of the said NEMA.

Portion 1 of Holding 25, Amorosa Agricultural Holdings IQ lies within the Amorosa Agricultural Holdings area, nestled between Roodekrans and Wilropark in the jurisdiction of the Johannesburg Metropolitan Municipality in Gauteng. The property's size as per the proposed developed is 1,0016 hectares. The proposed medium-density development entails the construction of 16 residential erven on the property. The township will be known as Amorosa Extension 57. The proposed development is to construct 16 residential units within the boundary of the property.

The proposed development was identified to be, partly situated within an environmental support areas (ESA) as per the Gauteng C-Plan (Version 3.3) and since an area of more than 1 hectare and 300 square metres or more of potentially indigenous vegetation would be cleared, **GN R. 327 – Listing Notice 1 – Activity 27** and **GN R. 324 – Listing Notice 3 - Activity 12(c) Gauteng** were identified as possible listed activities that necessitate an application for an environmental authorisation to be granted by the Competent Authority (CA) i.e. The Gauteng Department of Agriculture and Rural Development (GDARD).

This Report documents the steps undertaken during the assessment of the significance of potential impacts and determine measures to mitigate the negative impacts and enhance the benefits (or positive impacts) of the proposed project. The report furthermore presents the findings of the Public Participation Process, undertaken, to date, and the final report will document all comments received from Interested and Affected Parties during the public participation that forms part of the process.

A Biodiversity Specialist Report was completed and mentioned that no species of conservation concern (SCC) were observed, within the development footprint, during the field assessment. The report also states that it is considered unlikely that any such species will occur within the boundaries of the property given the lack of habitat connectivity, lack of unique or suitable habitat and reduced resources within the overall disturbed nature of the property. The Specialists furthermore reported that no significant impacts on the biodiversity within the boundaries of the property are anticipated. The specialist report also indicated that much of the study area is dominated by floral species associated with disturbance, including alien and invasive plants. The fauna within this area was noted to comprise of commonly occurring and widespread species that have adapted to urban environments. The report confirms that the site is badly degraded because of high alien and invasive plants abundance, fragmentation, fencing, dumping and historic gravel roads which transverse it. The study area is therefore no longer representative of the historic terrestrial biodiversity. Its fragmented nature does not promote re-establishment of native fauna and flora and thus has no conservation value. No significant impacts on the biodiversity associated with the study area are anticipated for the proposed development.

The social, economic and environmental impacts have been identified by the EAP with the assistance of specialists. The environmental impact of the proposed project is well understood, and the proposed project is foreseen to have minimal environmental impact. The proposed development will enhance the aims of the City which strives towards a compact polycentric city as the preferred development model rather than a traditional polycentric city with a strong core. This will be connected to economic sub centres by efficient public transit, with high housing densities surrounding cores and gradually lower densities further from cores. The City of Johannesburg's Final Integrated Development Plan, 2120/21 eloquently described, in particular, in the fourth strategy - which aims to intensify mixed use and high-density residential development in and around economic nodes in the city which includes mixed use and transit-orientated development nodes. This proposed project fits the criteria of this strategy thereby facilitating compliance to the City of Johannesburg's Final Integrated Development Plan, 2120/21.

A palaeontology study is not deemed to be necessary as per the South African Heritage Resource Agency (SAHRA) as determined from the available information on the SAHRA online platform and the cultural and historical specialist study, which was commissioned and completed indicates that there are no significant cultural or historically significant features found within the footprint of the proposed development.

Most of the negative impacts associated with the project will occur during the construction phase. Where negative impacts are unavoidable, they will be mitigated according to stipulations in the EMPr. Recommendations and mitigations presented in the EMPr will reduce the negative effects to within the existing footprint of the development. Where negative impacts are unavoidable, strict management and rehabilitation is recommended to minimise the potential negative impacts. Certain activities such as the clearing of alien vegetation will improve the biodiversity of the site. The use of potentially polluting substances will be managed according to requirements in the EMPr. The EMPr will hold the developer responsible for any unnecessary negative impacts of the development on the environment.

Positive impacts under Section 6 of the Gauteng Sustainable Development Guideline dated April 2017 such as water efficient equipment including rainwater harvesting, energy efficiency green building techniques and waste minimisation were identified. This also include rainwater infiltration and technologies to mitigate flooding.

The overall significance of the negative potential impacts has been assessed to be in the order of Low to Very Low and the potential positive impacts will be medium but localised due to the small footprint of the development i.e., 1,0016 Hectares.

It is recommended that the proposed project be authorised under the EIA Regulations (2014) as amended in 2017.



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# 1 Introduction

Mr. JS van Niekerk, the applicant for the township establishment on Portion 1 of Holding 25 Amorosa Agricultural Holdings IQ, appointed Environamic CC to conduct the necessary Environmental Studies for the proposed development in terms of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended, and the Environmental Impact Assessment (EIA) Regulations (2014) and amended in 2017.

## 1.1 Proposed New Project

The proposed Development would be situated on Portion 1 of Holding, 25 Amorosa Agricultural Holdings IQ. Portion 1 of Holding 25 Amorosa Agricultural Holdings IQ is situated at number 35 Totius Road, Amorosa Agricultural Holdings, nestled between Roodekrans and Wilropark within the jurisdiction of the Johannesburg Metropolitan Municipality in Gauteng as illustrated in Figure 1. The size of the proposed development is 1,0016 hectares. The property's current land zoning is "Agricultural". The zoning would have to be changed to "Residential 1" for the proposed development.

The proposed medium-density development entails the construction of 16 residential units on the property. The township will be known as Amorosa Extension 57. The proposed township development, as depicted in Figure 2, will consist of the following erven:

- 16 'Residential 1' zoned erven with a density of 25DU/Ha,
- 1 Special zoned erf to be utilised for access purposes, a guard house, and municipal services, and
- 1 Private Open Space zoned erf for stormwater management purposes.

Some of the specific activities that would be undertaken are listed below:

- Removal of existing vegetation;
- Construction of new stormwater infrastructure linking with the existing storm water infrastructure and the construction of an attenuation pond mainly to mitigate flooding and to facilitate rainwater infiltration;
- Construction of a new entrance to the existing road reserve;
- Rehabilitation of the disturbed area, after construction of the residential units;
- Rehabilitation of pedestrian facilities inside the existing road reserve.

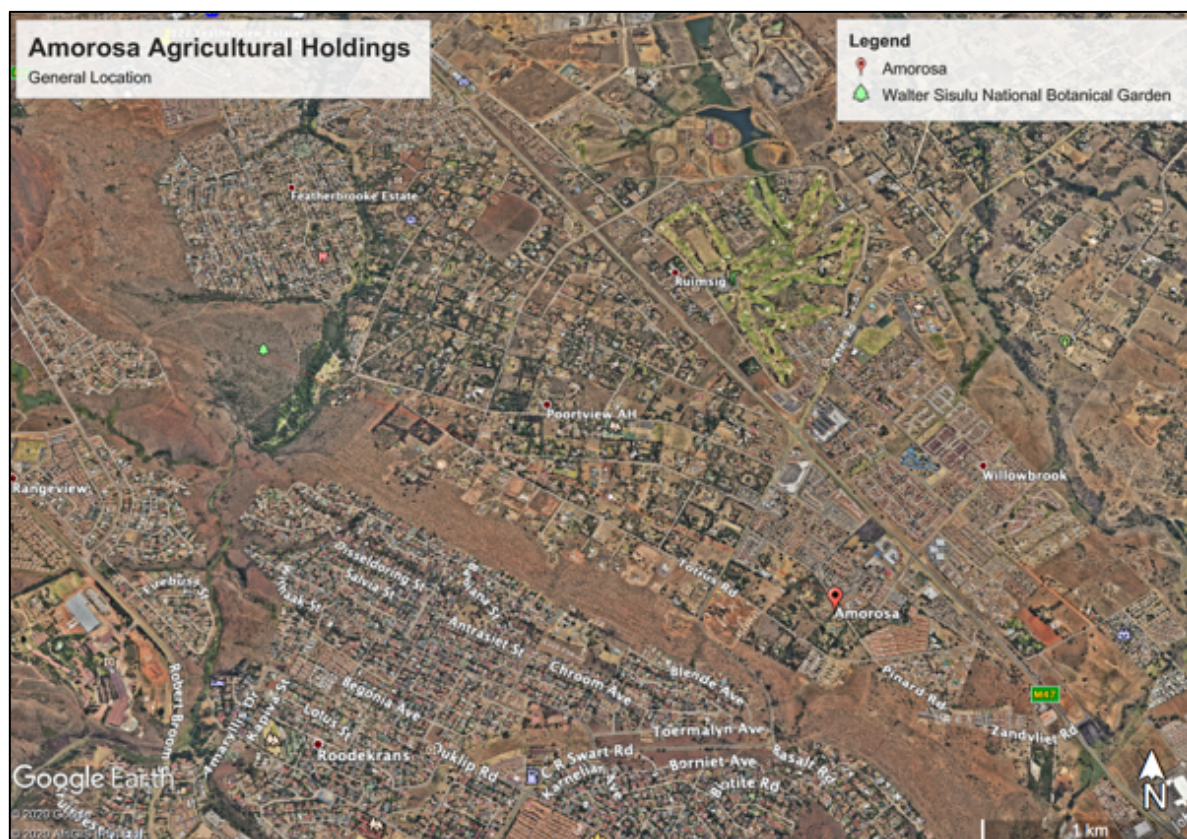


Figure 1: Locality of proposed project



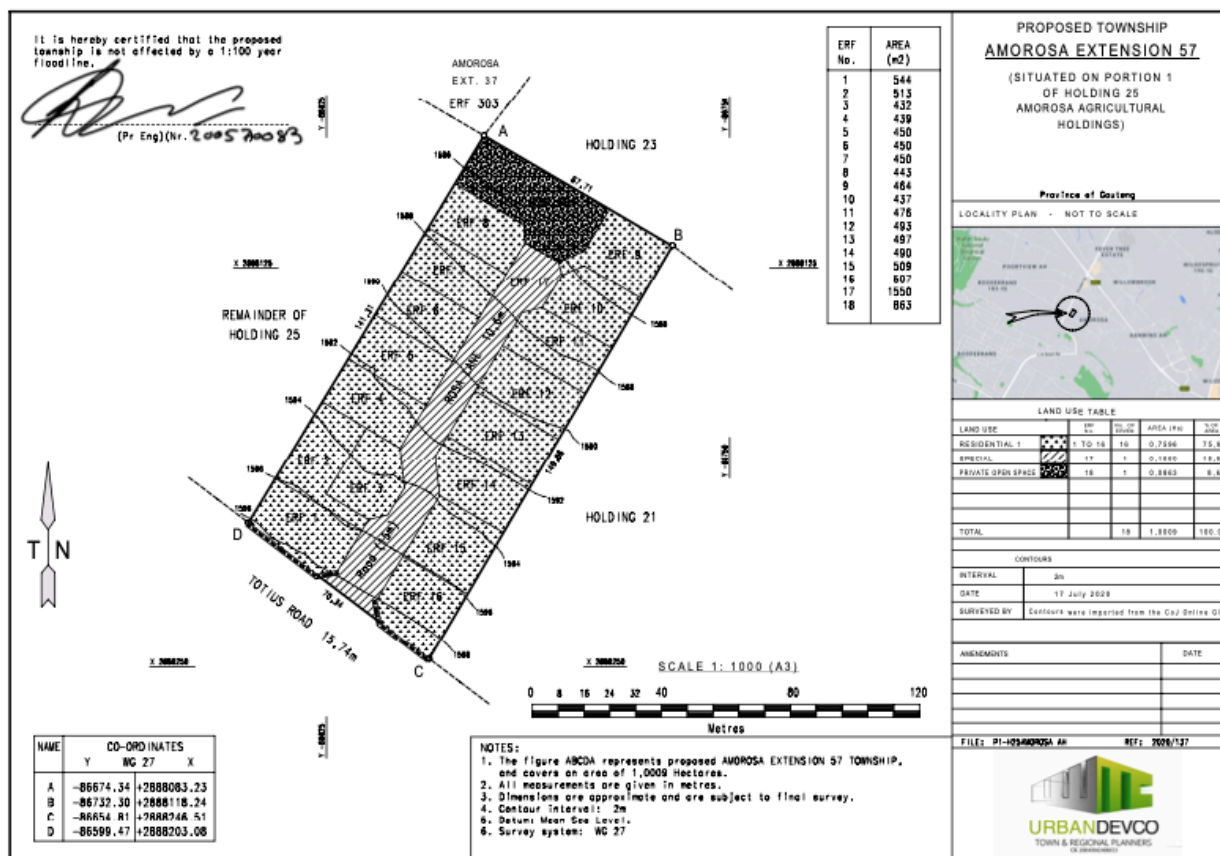


Figure 2: Layout Drawing

This report has been compiled in support of the application for the environmental authorisation in terms of the requirements for a Basic Assessment Report as listed in and promulgated in terms of the National Environmental Management Act, Act No 107 of 1998, as amended. This Report documents the steps undertaken to assess the significance of potential impacts and determine measures to mitigate the negative impacts and enhance the benefits (or positive impacts) of the proposed project. The report presents the activities to be undertaken for the Public Participation Process, and the final report will document all comments received from Interested and Affected Parties (I&AP's) during the public participation (PP) that forms part of the process.

The social, economic, and environmental impacts have been identified by the EAP, with the assistance of specialists. The environmental impact of the proposed project is well understood, and the proposed project is foreseen to have minimal environmental impact. A palaeontology study is not deemed to be necessary as per the South African Heritage Resource Agency as determined from the available information on the SAHRIS website.

A Biodiversity Specialist Report was completed and mentioned that no species of conservation concern (SCC) were observed during the field assessment, within the development footprint. The report also states that it is considered unlikely that any such species will occur within the boundaries of the property given the lack of habitat connectivity, lack of unique or suitable habitat and reduced resources within the overall disturbed nature of the property. The Specialists furthermore reported that no significant impacts on the biodiversity within the boundaries of the property are anticipated. Certain activities such as the clearing of alien vegetation will improve the biodiversity of the site. The use of potentially polluting substances will be managed according to requirements in the EMPr. The EMPr will hold the developer responsible for any unnecessary negative impacts of the development on the environment.

Positive impacts under Section 6 of the Gauteng Sustainable Development Guideline dated April 2017 such as water efficient equipment including rainwater harvesting, energy efficiency, green building techniques and waste minimisation were identified and assessed as positive albeit localised. This also include rainwater infiltration and technologies to mitigate flooding due to the change in surface area which could negatively impact upon existing storm water systems and aquifer recharge. The latter is also deemed to be localised since the proposed development is marginally larger than 1 ha.

Most of the negative impacts associated with the project will occur during the construction phase. Where negative impacts are unavoidable, they will be mitigated according to stipulations in the EMPr. Recommendations and mitigations presented in the EMPr will reduce the negative effects to within the existing footprint of the development. Where negative impacts are unavoidable, strict management and rehabilitation is recommended to minimise the potential negative

impacts. Certain activities such as the clearing of alien vegetation will improve the biodiversity of the site. The use of potentially polluting substances will be managed according to requirements in the EMP. The EMP, as approved by the Competent Authority, will hold the developer responsible for any unnecessary negative impacts of the development on the environment.

The intention of the developer to apply for an authorisation under the EIA Regulations (2014 and amended in 2017) will be advertised, and members of the public will be given the opportunity to register as I&APs as described said EIA Regulations.

The site photographs are listed in Table 1 below and the position of the photographs are labelled in Figure 3.



Figure 3: Position of Site photographs



## 1.2 Site Photographs



Photograph 1: Lat: 26° 5'59.29"S, Long: 27°51'54.28"E



Photograph 2: Lat 26° 5'58.38"S, Long: 27°51'53.68"E



Photograph 3: Lat: 26° 5'58.31"S, Long: 26° 5'58.31"S



Photograph 4: 26° 6'2.43"S, Long: 27°51'59.88"E





Photograph 5: Lat: 26° 5'59.29"S, Long: 27°51'55.46"E



Photograph 6: Lat 26° 6'0.67"S, 27°51'56.52"E



Photograph 7: Lat: 26° 5'59.04"S, Long: 27°51'55.96"E



Photograph 8: Lat: 26° 6'2.31"S, Long: 27°51'58.91"E

Table 1: Site photographs from different directions.

### 1.3 Roles and Responsibilities

#### 1.3.1 Developer

Mr Jacques Sebastiaan van Niekerk purchased the property - Portion 1 of Holding 25 Amorosa Agricultural Holdings IQ. Mr van Niekerk is currently financing the environmental studies and the application for township establishment and he is the applicant for this BAR. Details of the Applicant are listed in Table 2 below.

Developer	
Developer:	Mr Jacques Sebastiaan van Niekerk
Identity Number:	710622 5102 084
Postal Address:	PO Box 1711, Benoni, 1500, South Africa
Telephone:	011 979 3501
Mobile:	082 450 4611
Developer:	Mr Jacques Sebastiaan van Niekerk

Table 2: Contact Details of the Applicant

### 1.3.2 Independent Environmental Assessment Practitioner

Environamic Environmental Consultants was appointed as the Independent Environmental Assessment Practitioner for the project. Details of the Environmental Assessment Practitioner are given in Table 3 below.

Environmental Assessment Practitioner	
Trading name:	Etienne van der Lith
Company Registration:	28B Jeugd Road, Christiaansville AH, Montana Park, 0159, South Africa
Contact Person:	082 781 9454
Postal Address:	086 525 1007
Telephone:	info@environamic.co.za
Fax:	Etienne van der Lith

Table 3: Contact Details of the Environmental Assessment Practitioner

A copy of Environamic's company profile is included as **Annexure B**.

## 1.4 Property Ownership

The property - Portion 1 of Holding 25 Amorosa Agricultural Holdings IQ, has been acquired by Mr Jacques Sebastiaan van Niekerk. Mr van Niekerk will be the developer. The property information is listed in Table 4.

PROPERTY INFORMATION	
Property Type	AGRICULTURAL HOLDING
Holdings Area	AMOROSA AGRICULTURAL HOLDINGS
Holdings Number	25
Portion Number	1
Local Authority	WESTERN MSS
Registration Division	IQ
Province	GAUTENG
Diagram Deed	T17603/992
Extent	1.0016H
Previous Description	-
LPI Code	T0IQ00140000002500001

Table 4: Property Information

A copy of the title deed is included as **Annexure C**.

## 2 Purpose of the Report

The development, in terms of relevant legislation, may not commence prior to obtaining an environmental authorisation. This report has been compiled in support of the application and documents the steps undertaken during the preliminary impact assessment phase to assess the significance of potential impacts and determine measures to mitigate the negative impacts and enhance the benefits (or positive impacts) of the proposed project. The report presents the findings of the preliminary impact assessment phase and details the public participation to be undertaken as part of the process.

The Report is accompanied by an Environmental Management Programme (EMPr), which documents the management and monitoring measures that need to be implemented during the design, construction, and operation phases of the project to ensure that impacts are appropriately mitigated, and benefits enhanced.

More specifically, the objectives of this Report are to:

- Inform the stakeholders about the proposed project and the process followed;
- Obtain contributions from stakeholders (including the applicant, consultants, relevant authorities and the public) and ensure that all issues, concerns and queries raised are fully documented and addressed;
- Assess the potential environmental impacts of the project;
- Identify mitigation measures to address the impacts assessed; and
- Produce a report that will assist the Gauteng Department of Agriculture and Rural Development (GDARD) as the CA to decide whether - and under what conditions - to authorise the proposed development.

### 2.1 Structure of the Report

This report discusses relevant environmental legislation and the application thereof to this project. It also outlines the processes undertaken to date, presents a detailed project description and environmental baseline, details the stakeholder engagement process to be followed and assesses the potential impacts of the project. The report will be concluding with a set of pertinent findings and key recommendations. The report consists of the following sections:

#### **Section 1: Introduction**

This section provides an introduction and background to the proposed project and outlines the purpose of this document as well as the assumptions and limitation applicable to the study.

#### **Section 2: Governance Framework and Environmental Process**

The Governance Framework and Environmental Process detailed in Section 2 entail a summary and interpretation of the relevant legislation as well as pertinent strategic planning documents. It also outlines the approach to the environmental process.

#### **Section 3: Project Description**

The description of the location and current status of the site provides a brief summary of the surrounding land uses is outlined in Section 3. In addition, the motivation, desirability and need for as well as description of the proposed project is outlined in this section. The works to be carried out are also briefly described in this section and the project alternative(s) are listed.

#### **Section 4: Description of the Affected Environment**

Section 4 describes the biophysical and socio-economic characteristics of the affected environment against which potential project impacts, both potentially positive and negative, are assessed in the remainder of the document.

#### **Section 5: Stakeholder Engagement**

Details of the stakeholder engagement approach and summaries of stakeholder comments that informed the impact assessment will be reflected in Section 5 of the final report, as submitted to the Competent Authority.

#### **Section 6: Preliminary Environmental Impact Assessment**

This section describes the methodology used for the impact assessment as well as highlighting critical biophysical features mentioned in the specialist studies undertaken. It also assesses the potential impacts of the proposed project utilising proven impact assessment methodology. Furthermore, it provides a summary of the impacts as assessed prior to mitigation and after mitigation. The proposed mitigation measures, to limit the negative potential environmental impacts are included by virtue of the EMPr.

## Section 7: Environmental Assessment Practitioners Affirmation

Section 7 contains an affirmation by the EAP in relation to:

- The correctness of the information provided in the reports;
- The inclusion of comments and inputs from stakeholders and I&APs, to be finalised in the Final Report to be submitted to GDARD;
- The inclusion of inputs and recommendations from the specialist reports where relevant, and;
- Information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties.

## Section 8: Conclusions and Recommendations

This section summarises the key findings and recommendations in the BAR Report and outlines further opportunities for stakeholder engagement, if need be.

### 2.2 Content of the Report

Table 5 below summarises the requirements for a Basic Assessment Report as listed in Appendix 1 of GNR. 982 of 2014 as amended 2017.

GN 982 Appendix 1 Reference	Description	BAR Section Reference
(3) (1)	Details of the EAP who prepared the report; and	1.3
(3) (1) (a)	The expertise of the EAP, including a curriculum vitae	Annexure B
(3) (1) (b)	The location of the activity, including:	1
(3) (1) (b) (i)	The 21digit Surveyor General code of each cadastral land parcel;	1.4
(3) (1) (b) (ii)	Where available, the physical address and farm name;	1.4
(3) (1) (b) (iii)	where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	1.1
(3) (1) (c) (i)	A plan which locates the proposed activity or activities applied for at an appropriate scale.	1.1
(3) (1) (c) (ii)	On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	1.1
(3) (1) (d)	A description of the scope of the proposed activity, including-	2
(3) (1) (d) (i)	All listed and specified activities triggered;	2.2
(3) (1) (d) (ii)	a description of the activities to be undertaken, including associated structures and infrastructure;	3
(3) (1) (e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	2
(3) (1) (f)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	5
(3) (1) (h) (iii)	A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	5

<b>GN 982 Appendix 1 Reference</b>	<b>Description</b>	<b>BAR Section Reference</b>
(3) (1) (h) (iv)	The environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	4
(3) (1) (h) (v)	The impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-	6
(3) (1) (i) (i)	A description of all environmental issues and risks that were identified during the environmental impact assessment process; and	6
(3) (1) (i) (ii)	An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	6
(3) (1) (j)	An assessment of each identified potentially significant impact and risk.	6
(3) (1) (k)	Where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	6
(3) (1) (l) (i)	A summary of the key findings of the pre-liminary environmental impact assessment:	9
(3) (1) (l) (ii)	A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	6
(3) (1) (l) (iii)	a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	6
(3) (1) (m)	Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;	7
(3) (1) (n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	7
(3) (1) (p)	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	1.9
(3) (1) (q)	A reasoned opinion as to whether the proposed activity should or should not be authorised, any conditions that should be made in respect of that authorization;	7
(3) (1) (r)	Where the proposed activity does not include operational aspects, the period for which the environmental authorization is required and the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	Not applicable – Operational Period indefinite
(3) (1) (s)	An undertaking under oath or affirmation by the EAP in relation to:	11
(3) (1) (s) (i)	The correctness of the information provided in the reports;	11
(3) (1) (s) (ii)	The inclusion of comments and inputs from stakeholders and I&APs;	Annexure F
(3) (1) (s) (iii)	The inclusion of inputs and recommendations from the specialist reports where relevant; and	7



GN 982 Appendix 1 Reference	Description	BAR Section Reference
(3) (1) (s) (iv)	any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	Annexure F
(3) (1) (t)	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	Not applicable – operational phase indefinite
(3) (1) (u)	An indication of any deviation from the approved scoping report, including the plan of study, including-	Not applicable – no deviation
(3) (1) (u) (i)	Any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and	Not applicable – no deviation
(3) (1) (u) (ii)	A motivation for the deviation;	Not applicable – no deviation
(3) (1) (v)	Any specific information that may be required by the competent authority; and	Not applicable – no specific information identified
(3) (1) (w)	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	Not applicable – no other matters identified

Table 5: GNR. 982 – BAR requirements and Reference to Sections in this Report

## 2.3 Assumptions and Limitations

This report is based on assumptions and is subject to certain limitations, as is standard practice and to be expected during the design phase of a project. The assumptions and limitations are based on:

- Information provided by other consultants and specialists are assumed to be accurate and correct;
- Environamic's assessment of the significance of impacts of the proposed development on the affected environment has been based on the assumption that the activities will be confined to those described in Section 3. If there are any substantial changes to the project description, impacts may need to be reassessed;
- Where detailed design information is not available, the precautionary principle, i.e., a conservative approach that overstates negative impacts and understates benefits, has been adopted;
- It is assumed that the stakeholder engagement process to be undertaken during the Public Participation Process will identify all relevant concerns of stakeholders;

Notwithstanding the above, Environamic CC is confident that these assumptions and limitations do not compromise the overall findings of the report.

### 3 Governance Framework and Environmental Process

There are several regulatory requirements at local, provincial, and national level which is mandatory and to which the proposed development will have to conform to. The list below summarises the purpose and aim of the national and provincial legislation applicable to the project. The legislation below was used to determine which specific legislative requirements are applicable to the proposed project.

- The Constitution of the Republic of South Africa, 1996;
- The National Environmental Management Act, 1998, Act No 107 of 1998, as amended (NEMA);
- The National Environmental Management: Biodiversity Act, 2004, Act No. 10 of 2004 (NEMBA);
- National Environmental Management: Protected Areas Act, 2003, Act no 57 of 2003 (NEMPAA);
- The National Forest Act, 1998, Act No. 84 of 1998, as amended 2001 (NFA);
- Government Notice 1003: Alien and Invasive Species Regulations as published in the Government Gazette 43726 dated 18 September 2020 as it relates to the National Environmental Management Biodiversity Act, 1998, Act No. 107 of 1998; and
- The Conservation of Agricultural Resource Act, 1983, Act No. 43 of 1983 (CARA);
- Government Notice 536 List of Protected Tree Species as published in the Government Gazette 41887 dated 7 September 2018 as it relates to the National Forest Act, 1998, Act No. 84 of 1998;
- The Gauteng Department of Agriculture and Rural Development (GDARD) Requirements for Biodiversity Assessments Version 3 (GDARD, 2014);
- The EIA Regulations 2014, promulgated in terms of NEMA and as amended in 2017;
- The National Heritage Resources Act, 1999, Act No 25 of 1999 (NHRA).
- The Gauteng Provincial Environmental Management Framework, GNR 164 dated 2 March 2018 (GPEMF).

A brief explanation of the relevant Acts and Regulations that are applicable to this study, for the proposed project, is provided below.<sup>1</sup>

#### 3.1 National Environmental Management, 1998, Act 107 of 1998, as amended

The National Environmental Management Act, 1998, Act No. 107 of 1998 (NEMA) establishes a set of principles which all authorities must consider when exercising their powers. These include the following:

- Development must be sustainable.
- Pollution must be avoided or minimised and remedied.
- Waste must be avoided or minimised, reused or recycled.
- Negative impacts must be minimised; and
- Responsibility for the environmental consequences of a policy, project, product or service applies throughout its life cycle.

Section 28(1) states that “every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring”. If such degradation/pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. These measures may include:

- Assessing the impact on the environment.
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks.
- Ceasing, modifying, or controlling actions which cause pollution/degradation.
- Containing pollutants or preventing movement of pollutants.

<sup>1</sup> Note that other legislative requirements may also pertain to the proposed project. As such, the summary provided below is not intended to be definitive or exhaustive and serves only to highlight key environmental legislation and obligations.

- Eliminating the source of pollution; and
- Remedying the effects of the pollution.

### 3.2 Environmental Impact Assessment Regulations, 2014, as amended

The NEMA provides environmental governance by providing principles for decision-making on matters that affect the environment and defines the principles that apply to the organs of state involved in that decision-making. The Act sets out the legal and procedural requirements for environmental compliance.

Regulations under the Act define activities that may not commence without prior approval from the competent authority (CA). The Department of Agriculture and Rural Development (GDARD) is the CA for this Basic Assessment Report (BAR) process and the development needs to be authorised by this Department in accordance with the NEMA (as amended) prior to commencement of any activity on the property.

#### 3.2.1 Legal requirements for this project

To fulfil the requirements associated with the Basic Assessment Process, as set out in the Environment Impact Assessment (EIA) Regulations (2014 as amended in 2017) of the National Environmental Management Act, 1998, (Act No. 107 of 1998), an authorisation for the following activities will be applied for (see Table 6 below):

DETAILED DESCRIPTION OF LISTED ACTIVITIES ASSOCIATED WITH THE PROJECT	
Listed activity	Description of project activity that triggers listed activity
<b>GNR 327 - Listing Notice 1: 7 April 2017 - Activity 27</b>	
The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	The property size is larger than 1 hectare (1,0016 ha) and would be cleared.
<b>GNR. 324 - Listing Notice 3: 7 April 2017 - Activity 12(c) Gauteng</b>	
The clearance of an area of 300 square meters or more of indigenous vegetation in Gauteng: <ul style="list-style-type: none"> <li>(i) within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publications such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004.</li> <li>(ii) within Critical Biodiversity Areas (CBA) or Ecological Support Areas (ESA) identified in the Gauteng Conservation Plan or bio-regional plans.</li> </ul>	A small portion of the proposed development fall within the ambient of potentially sensitive areas as per the Gauteng C-Plan Version 3.3.

Table 6: Listed activities as per the EIA Regulations 2014 as amended in 2017

### 3.3 The National Heritage Resources Act 25 of 1999

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act 1999, Act No 25 of 1999, (NHRA), as amended. The enforcing authority for this act is the South African National Heritage Resources Agency (SAHRA). In terms of this Act, historically important features such as graves, trees, archaeological artefacts/sites and fossil beds are protected. Similarly, culturally significant symbols, spaces and landscapes are also afforded protection.

Section 38 of the NHRA requires that any person who intends to undertake certain categories of development must notify SAHRA at the very earliest stage of initiating such a development and must furnish details of the location, nature and extent of the proposed development. SAHRA has designed the South African Heritage Resources Information System (SAHRIS) database to assist the developer in providing the necessary information to enable SAHRA to decide whether a Heritage Impact Assessment (HIA) will be required.



Section 38 also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that, if such an assessment is deemed adequate, a separate HIA is not required. There is however the requirement in terms of Section 38 (8) for the consenting authority to ensure that the evaluation of impacts on the heritage resources fulfils the requirements of the relevant heritage resources authority (SAHRA), and that the comments and recommendations of the heritage resources authority are considered prior to the granting of the consent.

### 3.3.1 Legal requirements for this project

Section 38(1) of the NHRA specifies activities that trigger the need for the proponent to notify SAHRA of the proposed development, for SAHRA to determine the need for further Heritage Assessment.

The proponent is required to notify SAHRA via the SAHRIS online database of the proposed activities and then undertake any assessments deemed necessary by SAHRA. The assessment of potential cultural and heritage impacts was undertaken and the findings are represented in this report.

No palaeontological assessment is necessary as per the SAHRIS database and information.

## 3.4 National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004), as amended

Critically Endangered, Endangered, Vulnerable and Protected Species specified under the National Environmental Management Biodiversity Act also called (NEM:BA species) are evaluated against the list published in Department of Environmental Affairs and Tourism Notice No. 2007 (National Environmental Management: Biodiversity Act (NEMBA), Act 10 of 2004. Chapter 4, Part 2 of the NEMBA, provides for listing of plant and animal species as threatened or protected. If a species is listed as threatened, it must be further classified as Critically Endangered, Endangered or Vulnerable. The Act defines these classes as follows:

- Critically endangered species: any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.
- Endangered species: any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- Vulnerable species: any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.
- Protected species: any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category will include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

### 3.4.1 Legal Requirements for this project

The development footprint falls within the following sensitive areas:

- A small portion, approximately 20% of the study area, towards the northeast of the study area falls within an Ecologically Support Area (ESA) as identified in the Gauteng C-Plan V3.3).
- A 10km radius of an Important Bird Area (IBA), namely the Magaliesberg IBA.
- The following protected areas are located within a 10 km buffer of the study area;
  - The Ruimsig Municipal Nature Reserve,
  - The Kloofendal Municipal Nature Reserve,
  - The Walter Sisulu National Botanical Garden,
  - the Cradle of Humankind World Heritage Site.

The entire study area falls within a ridge with a class sensitivity of three. However, the study area is completely fragmented and development can be considered.

A Biodiversity Specialist report was completed by Scientific Terrestrial Services CC with report reference STS 200052 and is attached to this report for purposes of clarity of the process of assessment as well as to list findings and make recommendations to the CA related to faunal and floral aspects. (See Annexure C.) The report highlights for:

- The plant species theme, the entire study area is considered to have a medium sensitivity.
- The terrestrial biodiversity theme, the study area is considered to have a very high sensitivity.
- The animal species theme, the entire study area is considered to have a medium sensitivity.

### 3.5 National Environmental Management: Protected Areas Act, 2003 (Act no 57 of 2003) (NEMPAA)

Ecosystem types are categorised as “not protected”, “poorly protected”, “moderately protected” and “well protected based on the proportion of each ecosystem type that occurs within a protected area recognised in the National Environmental Management: Protected Areas Act, 2003 (act no. 57 of 2003) (NEMPAA). It should be noted that the former should be compared with the biodiversity target for that ecosystem type by a competent specialist.

The ecosystem protection level status is assigned using the following criteria:

- if an ecosystem type has more than 100% of its biodiversity target protected in a formal protected area either a or b, it is classified as well protected,
- when less than 100% of the biodiversity target is met in formal a or b protected areas it is classified as moderately protected,
- if less than 50% of the biodiversity target is met, it is classified as poorly protected, and
- if less than 5% it is hardly protected.

#### 3.5.1 Legal Requirements for this project

An ecosystem of Critically endangered (CR; Roodepoort Reef Mountain Bushveld) and is currently Moderately Protected according to the Biodiversity Specialist Report.

### 3.6 Conservation of Agricultural Resources Act (Act No.43 of 1983)

Alien Invasive species are listed in the Conservation of Agricultural Resources Act, 1983, Act No. 43 of 1983, as amended.

#### 3.6.1 Legal Requirements for this project

Alien invasive species, according to the Conservation of Agricultural Resources Act (Act No.43 of 1983) are indicated in the vegetation assessment and recommendations regarding control and eradication are listed in the EMPr.

### 3.7 Gauteng Provincial Environmental Management Framework

This section implicitly examines the extent to which the proposed project falls within the Gauteng Development Framework as published in GNR. 164 dated 2 March 2018 and promulgated under the NEMA.

Areas in Zone 1 and 5 related to certain activities can be excluded from the EIA Regulations if less than one (1) hectare is cleared from indigenous vegetations subjected to stipulations around Critical Biodiversity Areas and Ecological Support areas cited in the EIA Regulations, as amended in 2017.

#### 3.7.1 Legal Requirements for this project

A Screening report was generated by the national web-based environmental screening tool in terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended. A copy of the Screening report can be viewed as Annexure D.

Screening report has confirmed the proposed development to be located within the Gauteng Provincial Environmental Management Framework Zone 1 and 5 – Urban Development Zones and the size of the proposed development is 1.0016ha.

The proposed development area environmental sensitivities are summarised as follow in Table 7:

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agricultural Theme			X	
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme			X	

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Civil Aviation Theme		X		
Defence Theme				X
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Table 7: Environmental Sensitivities listed in the DEA Screening Tool

Whilst several environmental sensitivities associated with the proposed development area have been identified in the Screening Report these would only have to be reviewed by a specialist if an Environmental Authorisation is required.

Although various sensitivities have been identified around the proposed development site, the site sits within an area currently actively being developed. Various developments are surrounding the proposed site and the natural vegetation and biodiversity has been all but lost on site.

The very high rated sensitivity related to aquatic and terrestrial biodiversity was noted and a specialist consultant was appointed to review these sensitivities. The findings are as per the Biodiversity Specialist Report in Annexure C.

The sensitivity related to civil aviation was not regarded as high in this instance as the residential units, of a maximum of 2 (two) storeys high, to be developed although located within 8km of a civil aviation aerodrome is highly unlikely to have an impact on civil aviation.

## 4 Project Description

### 4.1 Description of the works to be undertaken

Some of the specific construction activities that would be undertaken are listed below:

- Removal of existing vegetation;
- Construction of new stormwater infrastructure linking with the existing storm water infrastructure and the potential construction of an attenuation pond;
- Construction of a new entrance to the existing road reserve;
- Rehabilitation of the disturbed area, after construction of the residential units;
- Rehabilitation of pedestrian facilities inside the existing road reserve;
- Installation of services e.g., communication cables, electrical supply, firefighting equipment, water supply and storm water management systems;

The developer plans to incorporate the following sustainable development initiatives as outlined under Section 6 of the Gauteng Sustainable Development Guideline as described below.

### 4.2 Sustainable Development Initiatives

The developer plans to incorporate the following sustainable development initiatives to enhance the positive environmental impact of the proposed development and to make provision for the development planning activities as contemplated in the Sustainable Development Guideline of Gauteng dated April 2017.

It should be noted that the initiatives will be based on the Best Available Technology Not Entailing Excessive Cost (BATNEEC) principle given that the proposed units, to be constructed once environmental authorisation was granted, will not be luxury residential units.

#### 4.2.1 Water-efficiency techniques

During the construction phase, water-efficient devices will be installed for all taps, showerheads, wet closet valves and plumbing fixtures.

All residents will be encouraged, through the rules of the homeowner's association, to make use of grey water and rainwater harvesting for irrigation purposes. Residents will also be encouraged to make use of drip irrigation opposed to sprinkler irrigation. The installation of a borehole for irrigation of the common property will be considered. Various techniques such as xeriscaping and mulching will be encouraged through the home-owners association, as part of the final landscaping.

#### 4.2.2 Energy-efficiency techniques

Design of the residential homes will incorporate the latest green building techniques to make use of natural light and heat. Residential homes will be equipped with solar energy for lights and general usage and gas energy for water heating and cooking. As far as possible, electricity usage will be limited to night times and times when the other types of energy cannot be used. Installation of solar energy for lighting the common property and operating the guard house and entrance and exit gates.

#### 4.2.3 Waste minimisation

Residents will be requested, through the rules of association, to divide their residential waste into categories i.e., plastic, glass, paper and other. A waste area within the boundaries of the development will be demarcated with bins for each category of waste. Residents will be requested to deposit their waste according to each category into these bins. Waste will be disposed of to ensure re-use, reduction, recovery, and recycling.

#### 4.2.4 Optimisation of the design/layout

The layout and orientation of the development have been designed to ensure that the available land area is used optimally for the purpose of residential living and to minimise any waste in respect of land, services, and resources. The location of the development is ideal in that it is close to all amenities such as taxi and bus routes, schools, churches, shopping centres etc. Given the design and layout, the development will support resource efficiency.

#### 4.2.5 Materials

Although the use of recycled/reused materials will be limited, the developer intends to use as far as possible recycled/reused materials during the construction and post-construction phases of the development. This includes the use of recycled aggregates, plastics, and metal for the construction of the development's infrastructure as well as upkeep of the development post construction.

#### 4.2.6 Drainage

A stormwater management plan will be designed to deal with stormwater run-off in the development. The plan will include, but not be limited to, the following:

- Minimise the generation of surface run-off through the design of the residential properties and common property.
- Through the rules of association, encourage residents to use techniques such as storm water harvesting and the planting of natural grasses and erosion preventative plants.
- Where possible, incorporate natural grass-lined channels and stone-filled filtration ditches opposed to conventional channels and ditches;
- Consider the use of permeable paving for the access road into the development.

## 5 Description of the Biophysical Environment

### 5.1 Biophysical Aspects of the Receiving Environment

The detail of the biophysical aspects of the receiving environment is described, amongst others, in detail in the specialist study compiled by Scientific Terrestrial Services CC. Please refer to Annexure C.

#### 5.1.1 National Biodiversity Assessment (2018)

The study area is in close proximity to a Critically Endangered ecosystem (CR: Roodepoort Reef Mountain Bushveld) and is currently moderately protected. Refer to Figure 4 below. The Critically Endangered (CR) ecosystems have very little of the original extent left in good ecological condition. The system has lost much of their natural state, functioning and species associated with the ecosystem, according to the specialist report.

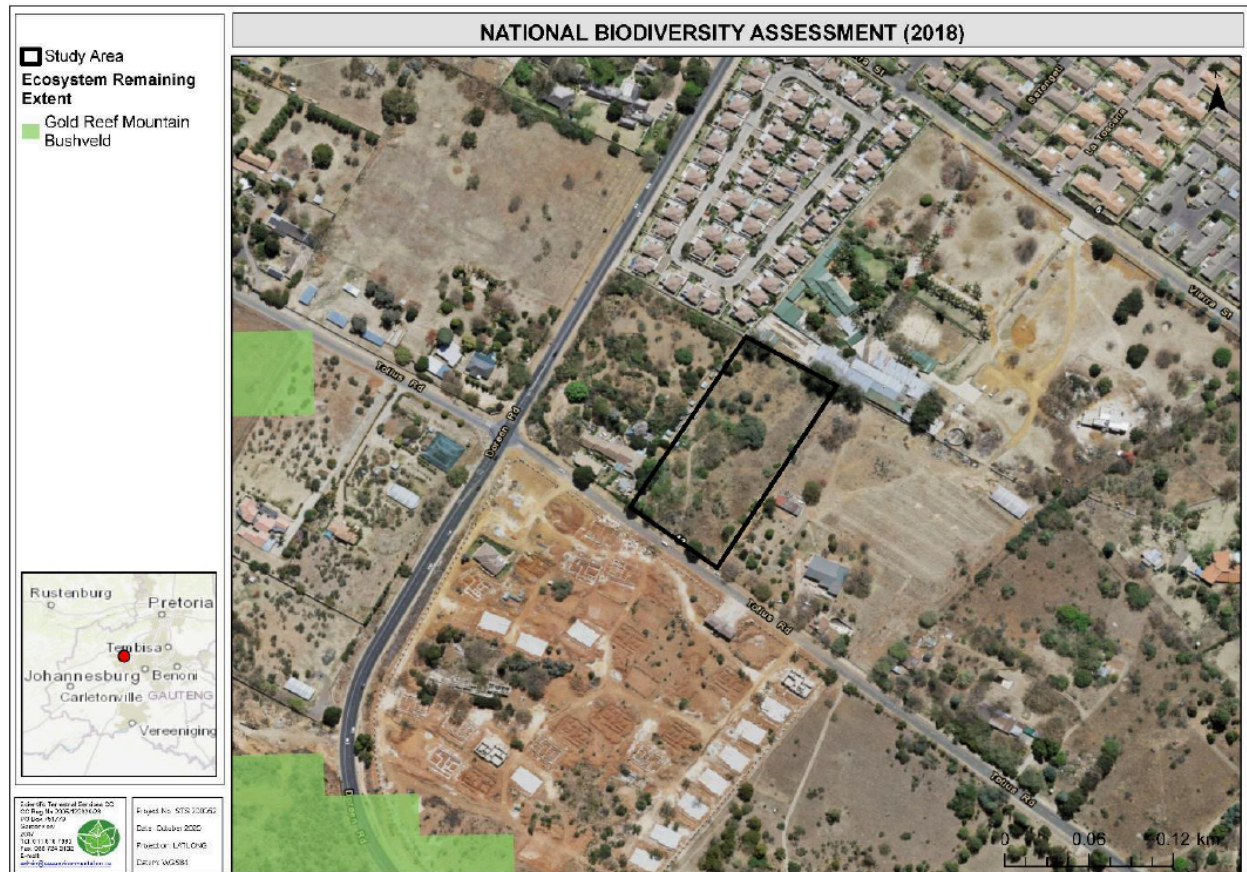


Figure 4: National Biodiversity Assessment (2018)

#### 5.1.2 GDARD C-Plan (V3.3) Ecological Support Area

The GDARD C-Plan as contained in the SANBI: BGIS Land Use Decision Support (LUDS) Tool is mapped within an Ecological Support area and is depicted in Figure 5 below.

A small portion, approximately 20% of the study area, towards the northeast of the proposed development falls within an Ecological support Area.



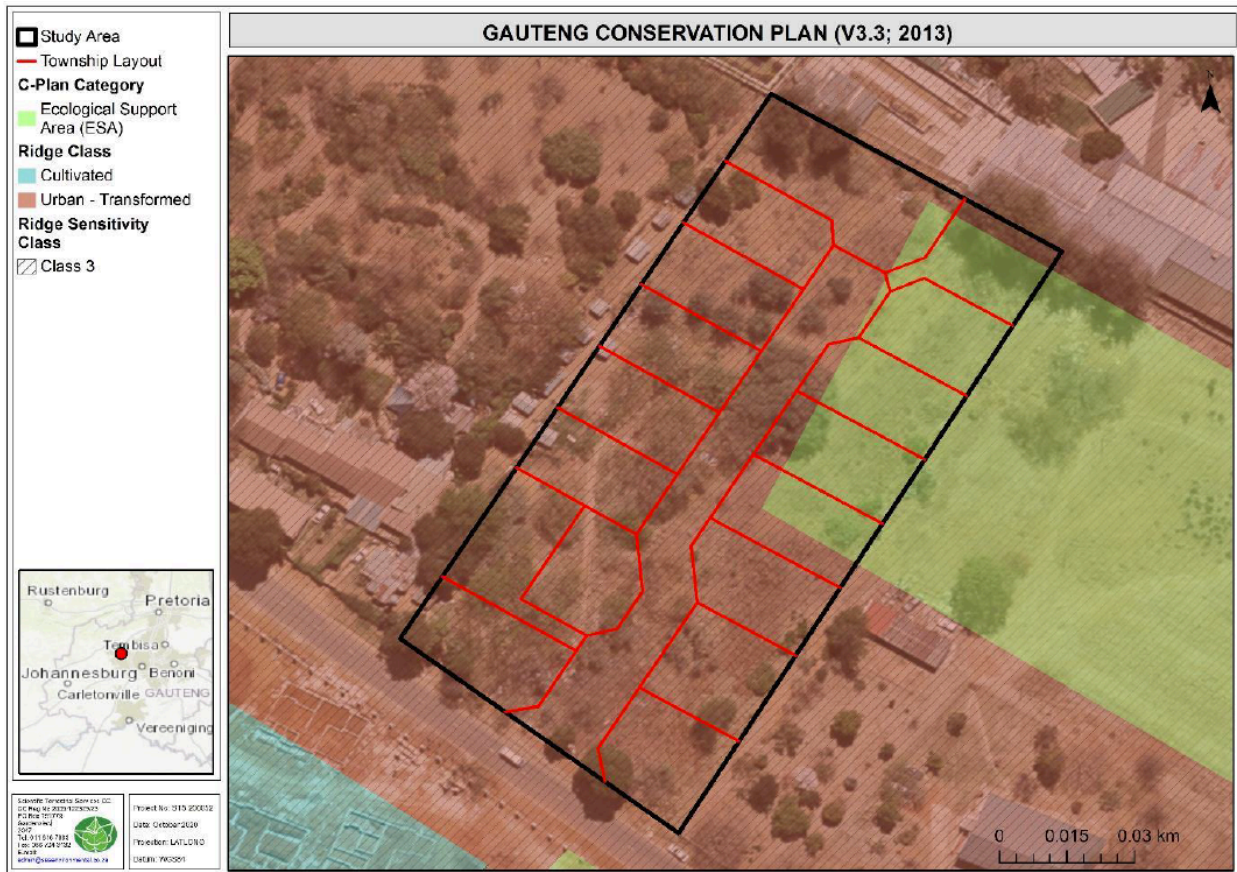


Figure 5: GDARD C-Plan – Critical Biodiversity Areas

### 5.1.3 Protected areas within a 10km radius of the proposed development

The following Protected areas falls within the 10km radius of the proposed development and is depicted in Figure 6 below:

- Cradle of Humankind;
- Kloofendal Municipal Nature Reserve;
- Ruimsig Municipal Nature Reserve; and the
- Walter Sisulu National Botanical Garden.

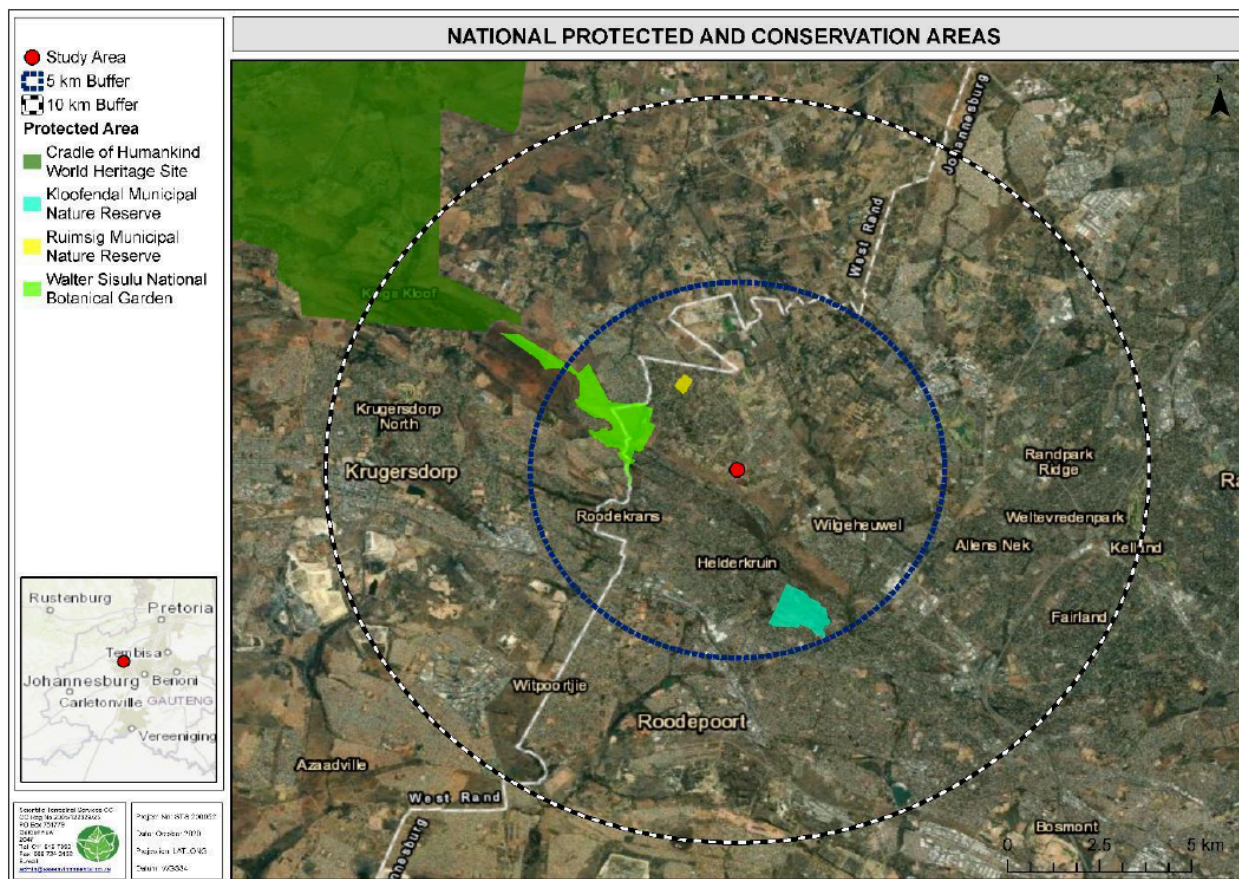


Figure 6: Protected areas within 10 km radius of the proposed development

### 5.1.4 Terrestrial Biodiversity Theme

The area as per the proposed development is considered to have a very high sensitivity. The sensitivity features include a Critically Endangered Ecosystem and Ecological Support Area.

#### 5.1.4.1 Plant and Animal Species

The area is considered to have a medium sensitivity for *Brachycorythis conica* subsp *Transvaalensis*, *Dicilliterea magaliesbergensis* and sensitive species 39 as cited in the specialist report.

The area is also considered to have a medium sensitivity for the Mammalia: *Dasymys robertsii*, Invertebrate: *Clonia uvarovi* and sensitive species 7, as described in the said specialist report.

In conclusion, the specialist report states that the highly fragmented and degraded nature of the area and the associated reduction in the landscape processes reduces the conservation potential of the footprint of the area and that the habitat is highly unlikely to provide suitable habitat for the establishment and persistence of indigenous species, especially SCC.

Several common weeds and declared alien invasive plant species occur within the study area.

## 5.2 Socio-Economic Environment (Regional and Local Context)

The area falls under the jurisdiction of the Johannesburg Metropolitan Municipality, Ward C.

The area currently follows the traditional polycentric city with a strong core, connected to economic sub centres by public transit, with high housing densities surrounding cores and gradually lower densities further from cores as eloquently described in the City of Johannesburg’s Final Integrated Development Plan, 2120/21.

There is potential with this proposed development, although on a very small scale, to give effect to the vision and strategies of the City of Johannesburg to integrate the aims to intensify mixed use and high-density residential development in and around economic nodes in the city. This is already the case with the existing land use where office parks, amenity shops and retail stores are prevalent within walking distance from the proposed development.



## **5.3 Palaeontology, Archaeology and Historical Record**

### **5.3.1 Palaeontological Records.**

No Palaeontological specialist study is necessary as the area is considered by SAHRIS. The area is depicted by SAHRIS as an area with low sensitivity. Chance finds are to be reported according to the prescribed protocol as described in the EMPr.

### **5.3.2 Archaeological, Cultural and Historical Records**

The specialist report compiled by Dr Van Schalkwyk indicated that no significant cultural historical features were identified during the assessment. The results included features and or objects of cultural significance for the stone age, iron age and historic period. Chance finds are to be reported as per the standard prescribed protocol described in the EMPr.

## 6 Stakeholder Engagement

The principles that govern communication with society at large are best embodied in the principles of the Environmental Management Act (NEMA) (Act 107 of 1998, Chapter 1), South Africa's overarching environmental law. Public Participation for environmental authorisation is guided by the Amendments to the EIA Regulations of 2014 and promulgated in:

- GNR 326, EIA Regulations of 7 April 2017;
- GNR 327, EIA Regulations – Listing Notice 2 of 7 April 2017;
- GNR 325, EIA Regulations – Listing Notice 2 of 7 April 2017;
- GNR 324, EIA Regulations – Listing Notice 2 of 7 April 2017.

Public participation is the involvement of all parties who potentially have an interest in a development or project, or may be affected by it, directly or indirectly. It is a process leading to a joint effort by stakeholders, technical specialists, the authorities, and the proponent/developer to work together to produce better decisions towards the proposed development.

The objectives of public participation in an EIA are to provide sufficient and accessible information to stakeholders in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded;
- Contribute relevant local information and knowledge to the environmental assessment.
- Verify that their issues have been considered in the environmental investigations;
- Comment on the findings of the specialist reports and other documentation submitted.

Table 8 lists the steps undertaken for the public participation process. The stakeholder list (database), Comments and Response Report and copies of all relevant correspondence, are provided in Annexure F.

No	Public participation tasks undertaken during Impact Assessment Phase in accordance with Plan of Study	Reference/comment
1	Site Notice.	Refer to <b>Annexure C</b> for the site notice displayed at the gate of the property where the proposed development is to take place.
2	Newspaper advertisement.	Refer to <b>Annexure E</b> for the advertisements / notices placed in the Roodepoort Northsider, in print.
3	Continued interaction with I&AP's.	Refer to <b>Annexure D</b> for letter notifying I&APs of the submission of the BAR and reports.
4	Database updated.	Refer to database in <b>Annexure F</b> .
5	Issues and Response Report updated.	All issues and responses that will be received on the Report will be recorded in the Comments and Response Report in <b>Annexure F</b> which will accompany the Final Report to the CA.
6	Request for information to be recorded by the EAP as per continued contact with I&AA's during the Public Participation.	Interactions will be recorded in <b>Annexure F</b> - issues and response report.
7	Meetings held by Impact Assessment Team with key authorities and stakeholders as and when required.	Focus Group Meetings on the Draft Report will be held when necessary and captured as part of <b>Annexure F</b> .
11	Draft Report distributed for public review (30 calendar day review period) prior to submission of final Report to GDARD.	In Process.

12	Report amended in accordance with public review comments after closing of the public participation period.	To be undertaken once comment period closed.
13	Registered I&APs notified when the Record of Decision is reached by the CA, is issued and informed of appeal procedure.	To be undertaken when the CA issued the Record of Decision.

Table 8: Checklist of public participation activities undertaken

## 6.1 Public Participation during the Impact Assessment Phase

The details of the public participation process proposed for the application as required by Amendments to the Environmental Impact Assessment Regulations. 2014 in GN R. 326, dated 7 April 2017, are listed below.

- Representatives of the Local Municipalities shall be registered on the I&AP register.
- Representatives of all relevant government departments and organs of state shall be registered on the I&AP register.
- The local councillors of the affected wards shall be registered on the I&AP register.
- Adjacent landowners will be notified and invited to register on the I&AP register.
- One advertisement shall be placed a local newspaper i.e. The Roodepoort Northsider.
- A site notice has been placed on the site boundary in Totius Road, Roodepoort.
- All parties responding to the media and site notices' call to register as I&APs shall be included in the I&AP register and their concerns and/or will be logged on the Issues and Response Report.
- Following comments that in significant changes to the draft report the updated report will be submitted to the GDARD.
- The documents will be made available electronically, when requested from Environamic CC's.
- The final report shall be submitted to the GDARD for authorisation, following the final review.
- Following approval, all parties on the I&AP register shall be notified of the decision and informed of the option to lodge appeal – the GDARD's requirements shall be followed for this process.

### 6.1.1 Notification of Authority Decision

I&APs will be advised in writing of the authority decision on the application for this BAR, in other words, on whether environmental authorisation has been granted to the project or not and the conditions of the authorisation, if positive.

Stakeholders will also be advised that the decision may be appealed and will be provided with guidance on how to do so.

## 7 Impact Assessment

The impacts of a project are mostly linked to the sensitivity of the receiving environment and proximity or absence of receptors, the extent or footprint of the development and expected emissions and discharges.

It is important to note that a Screening report was generated by the national web-based environmental screening tool in terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended. A copy of the Screening report can be viewed as Annexure D.

The Screening report has confirmed the proposed development to be located within the Gauteng Provincial Environmental Management Framework Zone 1 and 5 – Urban Development Zones and the size of the proposed development is 1.0016ha.

### 7.1 Introduction

The following themes were identified in the online screening toolkit, 2019, of the DEA.

- Agriculture Combined Sensitivity – Medium;
- Animal Species Combined Sensitivity – Medium;
- Aquatic Biodiversity Combined Sensitivity – Very High;
- Archaeological and Cultural Heritage Combined Sensitivity – Medium to Low;
- Civil Aviation Combined Sensitivity – High;
- Relative Defence Combined Sensitivity – Low;
- Plant Species Combined Sensitivity – Medium;
- Terrestrial Biodiversity Combined Sensitivity – Very High.

The sensitivity related to civil aviation was not regarded as high in this instance as the residential units, of a maximum of 2 (two storeys high), to be developed although located within 8km of a civil aviation aerodrome is highly unlikely to have an impact on civil aviation.

The identified sensitivities for Terrestrial Biodiversity and Aquatic Biodiversity (as part of the Ecological Support Area) were assessed as part of the Biodiversity Specialist Report (STS:2020). Please refer to Annexure C.

### 7.2 Factors Informing the Impact Assessment

The impacts of a project are mostly linked to the sensitivity of the receiving environment and proximity or absence of receptors, the extent or footprint of the development and expected potential impacts. The biodiversity, given the sensitive nature of the surrounding area were regarded with high importance. The sensitive areas are briefly summarised below.

#### 7.2.1 Sensitive Area - Biodiversity

The proposed development lies in a developed urban area that has experienced historical disturbance and anthropogenic influences to date and time.

Overall, the habitat within the study area is typical of a highly fragmented site within an urban setting. Dumping, excavations, and severe edge effects, such as the invasion of alien and invasive plant (AIP) have occurred within the study area. The habitat in the development footprint was severely degraded as mentioned in the STS CC specialist report on Biodiversity.

Several fauna species were recorded in data bases in the area, some of which are linked to specific vegetation communities. The area, to be developed falls within the Gold Reef Mountain Bushveld vegetation type (listed as Least Concern in Mucina and Rutherford (2006)). This can be deemed the reference state and the mentioned authors describe the unit as occurring along west-east rocky quartzite ridges of the Magaliesberg and having a continuous tree and shrub with the herbaceous layer being dominated by grass. In addition, dense woody vegetation occurs on the south-facing slopes (See Figure 7).

The Biodiversity Specialists concluded that degraded Mountain Bushveld Habitat encompasses the entire study area. Although associated with the he Gold Reef Mountain Bushveld, it is evident that this vegetation unit has been transformed through AIP invasion, edge effects and excavations resulting from anthropogenic activities. The habitat unit is therefore considered to be in a degraded state and no longer representative of the Gold Reef Mountain Bushveld and it is unlikely to provide suitable habitat for the establishment and persistence of indigenous species especially SCC.

The existing impacts on the biodiversity within the development footprint are as follows (STS:2020):

- Severe habitat degradation resulting from edge effects from the surrounding built-up infrastructure area;
- Severe fragmentation altering landscape processes of fire, pollination and grazing; Modification of the study area through the historic establishment of roads and footpaths which would have increased the chances of AIP seed dispersal;

- Encroaching alien plant species – an ongoing issue; and
- Fragmentation of the unit from genetic source pools necessary for ongoing diversification of plant species, including hindering the movement of animal species.

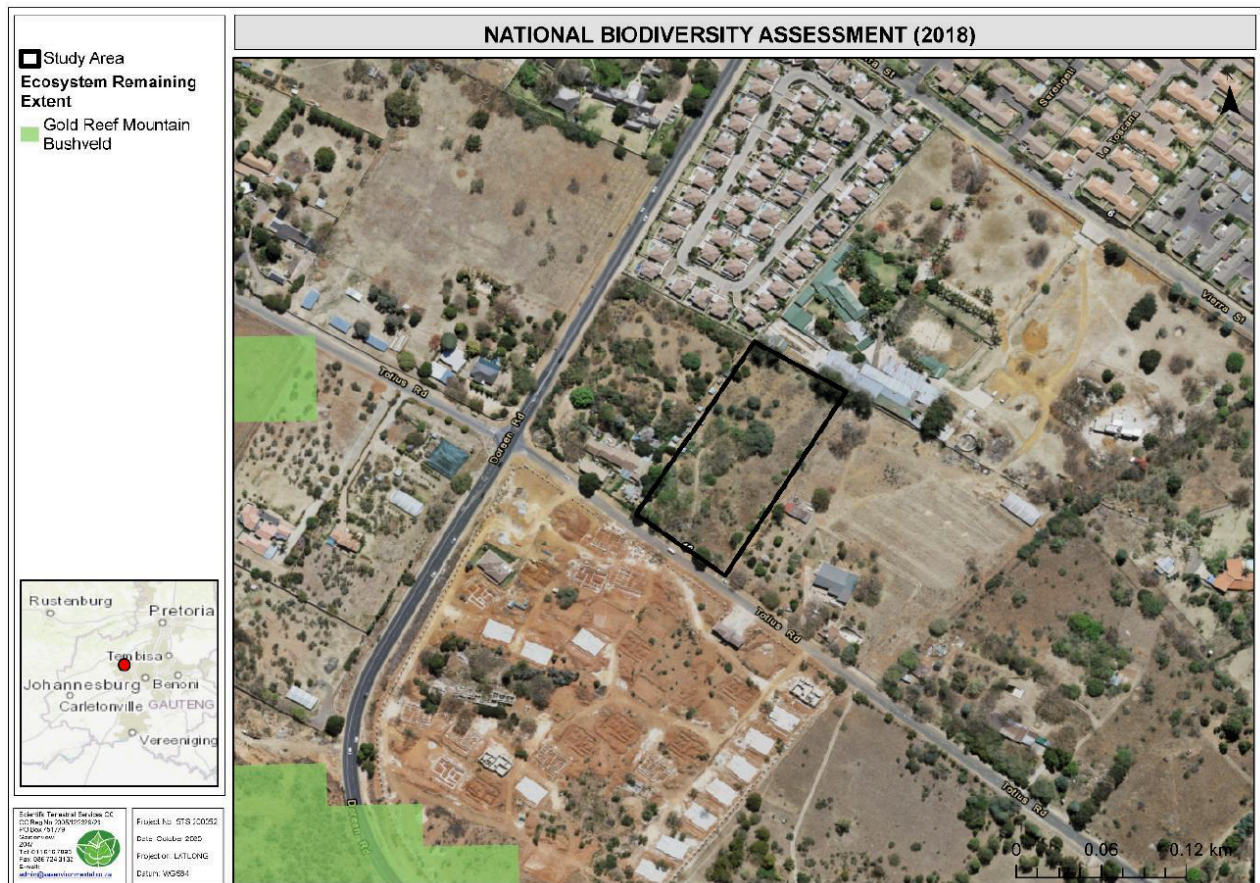


Figure 7: Extent and threat status of vegetation types according to the National Biodiversity Assessment (NBA,2018)

The Biodiversity Specialists categorized the existing habitat as Degraded Mountain Bushveld Habitat i.e., areas historically fragmented with large sections where AIPs form a prominent part of the floral Community. See Annexure C.

### 7.2.2 Palaeontology

The palaeontology map on the SAHRIS website indicate that no palaeontological studies are required however a protocol for chance finds are required as per Figure 8 below.



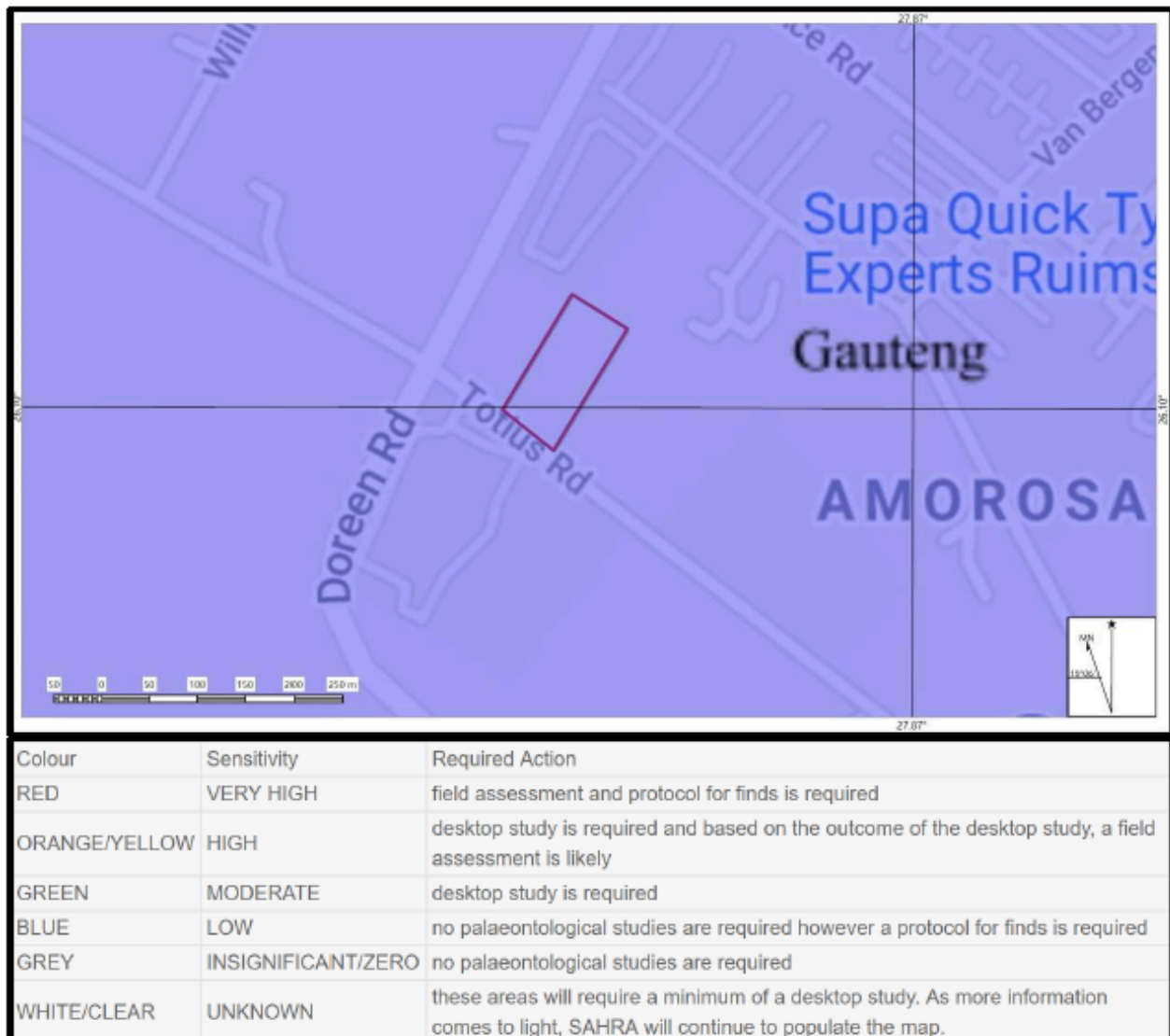


Figure 8: Palaeontological requirements as prescribed by SAHRIS

In event of any archaeological/palaeontological sites 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. For a chance find, the protocol is to immediately cease all construction activities, construct a 30 m no-go barrier, and contact SAHRA for further investigation. This mitigation measure is included in the EMPr.

### 7.2.3 Cultural / Heritage Impact Assessment

The cultural landscape qualities of the region essentially consist of two components. The first is a rural area in which the human occupation is made up of a pre-colonial element (Stone Age and Iron Age) as well as a much later colonial (farmer and industrial) component. The second component, although much younger, is an urban one.

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action.

The potential cultural and heritage impacts were assessed for the following themes i.e., the first is a rural area in which the human occupation is made up of a pre-colonial element (Stone Age and Iron Age) as well as a much later colonial (farmer and industrial) component. The second component, although much younger, is an urban one.

Iron Age people started to settle in southern Africa c. AD 300, with one of the oldest known sites at Broederstroom, dating to AD 470, located south of Hartebeespoort Dam just outside of the WHS area (Mason 1974; Huffman 1990). Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior highveld area.

The occupation of the region by Iron Age communities did not start much before the 1500s. Due to climatic fluctuations, bringing about colder and drier conditions, people were forced to avoid this area. Following a dry spell that ended just before the turn of the millennium the climate became better again until about AD 1300. This coincided with the arrival of the ancestors of the present-day Sotho-, Tswana- and Nguni-speakers in southern Africa, forcing them to avoid large sections of the interior (Dreyer 1995; Mason 1986).

Potential impacts on the heritage resources on the properties specifically potential chance heritage finds which are unlikely to occur given that the construction was carried out in the past in the road servitude and that all heritage aspects were complied with under the environmental authorisation at the time of construction.

### **7.3 Socio-economic**

The Metropolitan Municipality of the City of Johannesburg is striving for a compact polycentric city as the preferred development model. A traditional polycentric city with a strong core, connected to economic sub centres by efficient public transit, with high housing densities surrounding cores and gradually lower densities further from cores is preferred - as eloquently described in the City of Johannesburg's Final Integrated Development Plan, 2120/21. This proposed project, in particular, strengthen this strategy which aims to intensify mixed use and high-density residential development in and around economic nodes in the city which includes mixed use and transit-orientated development nodes.

## 7.4 Impact Rating Methodology

The impact assessment was completed for the entire life cycle of the project and includes:

- Planning and Design;
- Construction and Operations;
- Decommissioning.

Decommissioning of the proposed project is not foreseen to take place in the near future and all designs are based on a typical 20-year life span. The environmental impacts for decommissioning are not included as decommissioning is not envisaged within the next 50 years.

Alternatives were not assessed as the development **falls within the Gauteng Zone 1 and 5 developments** as described in Gauteng Provincial Environmental Management Framework (GPEMF)

The Alternatives will be addressed as Alternative 1 only i.e., the construction of residential units within the boundary of the property. A 'No-go' alternative will also be assessed.

The significance of potential impacts that may result from the proposed project was determined in order to assist decision-makers (typically by a designated authority or state agency, but in some instances, the proponent). The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur and the criteria used to determine impact consequence are presented in the table below.

Rating	Definition of Rating	Score
<b>A. Extent</b> – the area over which the impact will be experienced		
Local	Confined to project or study area or part thereof.	1
Regional	The region (District Municipality or Quaternary catchment)	2
(Inter) national	Nationally or beyond	3
<b>B. Intensity</b> – the magnitude of the impact in relation to the sensitivity of the receiving environment, taking into account the degree to which the impact may cause irreplaceable loss of resources		
Neutral	No site-specific and wider natural and/or social functions and processes are altered	0
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered	3
<b>C. Duration</b> – the timeframe over which the impact will be experienced and its reversibility		
Short	Up to 2 years and reversible	1
Medium-term	2 to 15 years and reversible	2
Long	More than 15 years and irreversible	3

Table 9: Criteria used to determine the consequence of the impact



The combined score of these three criteria corresponds to a Consequence Rating, as follows:

Combined Score (A+B+C)	3 – 4	5	6	7	8 – 9
Consequence Rating	Very low	Low	Medium	High	Very high

Table 10: Method used to determine the consequence score

Once the consequence was derived, the probability of the impact occurring was considered, using the probability classifications presented in the table below.

Probability – the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

Table 11: Probability classification

The overall significance of impacts was determined by considering consequence and probability using the rating system prescribed in the table below.

Consequence	Probability			
	Improbable	Possible	Probable	Definite
Very Low	INSIGNIFICANT	INSIGNIFICANT	VERY LOW	VERY LOW
Low	VERY LOW	VERY LOW	LOW	LOW
Medium	LOW	LOW	MEDIUM	MEDIUM
High	MEDIUM	MEDIUM	HIGH	HIGH
Very High	HIGH	HIGH	VERY HIGH	VERY HIGH

Table 12: Impact significance ratings

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	Positive – a 'benefit' = Pos
	Negative – a 'cost' = Neg

Table 13: Status of impact

Confidence of assessment	
The degree of confidence in predictions based on available information, judgment of the team and/or specialist knowledge.	Low
	Medium
	High

Table 14: Impact status and confidence assessment

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings ascribed below:

- **INSIGNIFICANT/NO IMPACT:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity/development.
- **VERY LOW:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity/development.
- **LOW:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- **MEDIUM:** the potential impact should influence the decision regarding the proposed activity/development.
- **HIGH:** the potential impact will affect the decision regarding the proposed activity/development.
- **VERY HIGH/FATAL FLAW:** The proposed activity should only be approved under special circumstances.

Practicable mitigation and optimisation measures are recommended and impacts are rated in the prescribed way both without and with the assumed effective implementation of mitigation and optimisation measures. Mitigation and optimisation measures are either:

- **Essential:** measures that must be implemented and are non-negotiable; and
- **Best Practice:** recommended to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the proponent if not implemented. Both essential and best practice mitigation measures are included in the impact assessment tables listed below under the heading 'Mitigation'.

The expected impacts on the receiving environment for the proposed development are summarised in Table 15 below.

The assessment of impacts was based on specialists' expertise, the Environamic Team's professional judgement, field observations and desk-top analysis.

Item	Impact Description	Mitigation measures	Impact Significance	
			Without mitigation	With mitigation
Topography & Drainage (Negative Impact)	The topographical changes will be minimal for the proposed development. Storm water will however accumulate due to the increase in hard surfacing.	The Developer will appoint a Competent Person for the design of a site-specific storm water management plan. The plan will be designed and implemented to meet the requirements of the City of Joburg's storm water bylaws and will be submitted to JRA and EISD for approval.	Moderate	Low
Geology (Negative Impact)	Foundation condition will be fairly shallow for the proposed development as the units will be limited to two levels. The proposed development will have no impact on the geology on site.	No impact on geology. Implement the requirements of the Environmental Management Programme.	Low	Low
Soils (Negative Impact)	Impacts on soils will be limited to the excavations of the foundations. The excavations are small and the impact on soils is viewed as minimal.	No impact on the soils. Implement the requirements of the Environmental Management Programme.	Low	Low
Surface Water & Groundwater (Negative Impact)	During the construction phase surface water could become contaminated by spillages of dangerous materials, or accidental leaks may occur.	Implement the requirements of the Environmental Management Programme.	Low	Low
Air Quality (Negative Impact)	Impacts on air quality will be limited to activities associated with the excavation of the foundations. The excavations are small, and the air quality impact is viewed as minimal.	Implement the requirements of the Environmental Management Programme.	Low	Low
Vegetation (Negative Impact)	Existing vegetation will be cleared during the construction phase. There is no sensitive vegetation on the site. Landscaping will be implemented after construction is completed.	Implement the requirements of the Environmental Management Programme.	Low	Low

Item	Impact Description	Mitigation measures	Impact Significance	
			Without mitigation	With mitigation
Sensitive Habitats (Negative Impact)	A Screening report was generated by the national web-based environmental screening tool. There are Important and sensitive areas neighbouring the proposed development (outside the footprint). There are no remaining sensitive features on site.	Implement the requirements of the Environmental Management Programme	Low	Low
Archaeology (Negative Impact)	No Archaeology impacts are expected. Chance finds should be reported when encountered.	Implement the requirements of the Environmental Management Programme.	Low	Low
Heritage (Negative Impact)	No Archaeology impacts are expected. Chance finds should be reported when encountered.	Implement the requirements of the Environmental Management Programme.	Low	Low
Land use (Negative Impact)	Land-use will be changed from Agricultural to Residential 1.	Implement the requirements of the Environmental Management Programme.	Low	Low
Socio-Economic Environment (Positive Impact)	The proposed development will occur within the existing footprint of the property. No additional land will be required. Construction vehicles will remain on the existing road networks, and the construction camp and materials storage areas will be situated within the property boundaries. Damage to adjacent properties is therefore not likely to occur. The social and economic impacts will be largely positive: Local economic boost by spending on local retail. Job opportunities may be created during the construction phase albeit these will be of a temporary nature.	Implement the requirements of the Environmental Management Programme.	Low Negative Moderate Positive	Low Negative Moderate Positive

Item	Impact Description	Mitigation measures	Impact Significance	
			Without mitigation	With mitigation
Noise Impact (Negative Impact)	It is expected that the temporary construction noise will be negligible.	Implement the requirements of the Environmental Management Programme.	Low	Low
Visual Impact (Negative Impact)	No visual impact is expected.	Implement the requirements of the Environmental Management Programme.	Low	Low
Traffic Impacts (Negative Impact)	During the construction phase, construction vehicles will make deliveries to site. The materials delivery associated with the proposed development are not expected to cause traffic impacts.	Implement the requirements of the Environmental Management Programme.	Low	Low
Water efficiency (Positive Impact)	The use of water using the best available technology not entailing excessive cost (BATNEEC), to minimise waste of water through evaporation and irresponsible use will be applied. Therefor the waste of water, discharge and not utilising technology to minimise and optimise the use of water as a scarce resource will be addressed. The long-term effect will, however, only be evident during the operational phase.	During the construction phase, water-efficient devices will be installed for all taps, shower-heads, wet closet valves and plumbing fixtures. Through the rules of association, all residents will be encouraged to make use of grey water and rainwater harvesting for irrigation purposes. Residents will also be encouraged to make use of drip irrigation opposed to sprinkler irrigation. The installation of a borehole for irrigation of the common property will be considered.  Various techniques such as xeriscaping and mulching will be encouraged through the homeowners association, as part of the final landscaping.	Medium	Low
Electricity utilisation (Positive Impact)	Utilisation of non-renewable resources relying on coal fired electricity and disregard for carbon neutral resources, energy efficient technology to enhance heating, cooling, cooking and other uses of electricity. The main effect will cumulate during the operational phase.	Design of the residential homes will incorporate the latest green building techniques to make use of natural light and heat. Residential homes will be equipped with solar energy for lights and general usage and gas energy for water heating and cooking. As far as possible, electricity usage will be limited to night times and times when the other types of energy cannot be used. Installation of solar energy for	Medium	Low

Item	Impact Description	Mitigation measures	Impact Significance	
			Without mitigation	With mitigation
		lighting the common property and operating the guard house and entrance and exit gates.		
Waste Management (Positive Impact)	Waste management via the standard waste management principles i.e., Minimisation including recycling during construction and post construction.	Through the rules of association, all residents will be requested to divide their residential waste into categories i.e., plastic, glass, paper and other. A waste area within the boundaries of the development will be demarcated with bins for each category of waste. Residents will be requested to deposit their waste according to each category into these bins. Waste will be disposed of to ensure re-use, reduction, recovery and recycling.	Medium	Low
Design/Layout (Positive Impact)	Land not optimally utilised in terms of design and layout resulting in fragmented and inefficient land use planning. The influence will affect the operational phase.	The layout and orientation of the development have been designed to ensure that the available land area is used optimally for the purpose of residential living and to minimise any waste in respect of land, services, and resources. The location of the development is ideal in that it is close to all amenities such as taxi and bus routes, schools, churches, shopping centres etc. Given the design and layout, the development will support resource efficiency.	Medium	Low
Materials (Positive Impact)	Use of non-renewable resources such as aggregates and other materials that could be sourced as recycled materials during construction.	Although the use of recycled/reused materials will be limited, the developer intends to use as far as possible recycled/reused materials during the construction and post-construction phases of the development. This includes the use of recycled aggregates, plastics, and metal for the construction of the development's infrastructure as well as upkeep of the development post construction.	Medium	Low



Item	Impact Description	Mitigation measures	Impact Significance	
			Without mitigation	With mitigation
Drainage (Positive Impact)	A stormwater management plan will be designed to deal with stormwater run-off in the development.	<p>The plan will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>• Minimize the generation of surface run-off through the design of the residential properties and common property.</li> <li>• Through the rules of association, encourage residents to use techniques such as storm water harvesting and the planting of natural grasses and erosion preventative plants.</li> <li>• Where possible, incorporate natural grass-lined channels and stone-filled filtration ditches opposed to conventional channels and ditches.</li> <li>• Consider the use of permeable paving for the access road into the development.</li> </ul>		

Table 15: Summary of the Impact Assessment

## 8 Environmental Management Programme (EMPr)

The following mitigation measures shall be adhered to during the construction phase of the development and will constitute an EMPr. The contractor appointed to construct the residential units will be responsible to ensure that conditions to the EMPr are being adhered to.

### 8.1 Preconstruction Phase

#### 8.1.1 Mitigation of loss of floral and faunal habitat and species diversity

Prior to the commencement of construction activities and AIP Management/Control Plan should be compiled for implementation:

- Removal of alien invasive species should preferably commence during the pre-construction phase and continue throughout the construction and operational phases.
- AIPs should be cleared within the study area before any vegetation clearing activities commence, thereby ensuring that no AIP propagules are spread, or oils contaminated with AIP seeds during the construction phase; and
- An AIP Management/Control Plan should be implemented by a qualified professional. No chemical control of AIPs to occur without a certified professional.
- The Developer will appoint a Competent Person for the design of a site-specific storm water management plan. The plan will be designed and implemented to meet the requirements of the City of Joburg's storm water bylaws and will be submitted to JRA and EISD for approval.
- The layout and orientation of the development have been designed to ensure that the available land area is used optimally for the purpose of residential living and to minimise any waste in respect of land, services and resources. The location of the development is ideal in that it is close to all amenities such as taxi and bus routes, schools, churches, shopping centres etc. Given the design and layout, the development will support resource efficiency.
- Although the use of recycled/reused materials will be limited, the developer intends to use as far as possible recycled/reused materials during the construction and post-construction phases of the development. This includes the use of recycled aggregates, plastics and metal for the construction of the development's infrastructure as well as upkeep of the development post construction.
- A stormwater management plan will be designed to deal with stormwater run-off in the development. The plan will include, but not be limited to, the following:
- Minimize the generation of surface run-off through the design of the residential properties and common property.
- Where possible, incorporate natural grass-lined channels and stone-filled filtration ditches opposed to conventional channels and ditches.
- Consider the use of permeable paving for the access road into the development.

## 8.2 Construction Phase

### 8.2.1 Mitigation of energy inefficiency

- Design of the residential homes will incorporate the latest green building techniques to make use of natural light and heat.
- Residential homes will be equipped with solar energy for lights and general usage and gas energy for water heating and cooking.

### 8.2.2 Mitigation of loss of floral and faunal habitat and species diversity

- Where possible/ feasible, any natural areas or landscaped locations worked into the layout should utilise indigenous vegetation;
- Smaller species that are not as readily able to move out of an area ahead of ground clearing activities such as scorpions and reptiles will be less mobile during rainfall events and cold days (winter). As such should any be observed in the construction site during clearing and construction activities, they are to be carefully and safely moved to an area of similar habitat outside of the disturbance footprint.
- Construction personnel are to be educated about these species and instructed not to kill them. Smaller scorpion species and harmless reptiles should be carefully relocated by a suitably nominated construction person. For larger venomous snakes, a suitably trained specialist, or on-site personnel, should be contacted to carry out the relocation of the species, should it not move off on its own;
- No collection of floral or faunal species may be allowed by construction personnel;
- No hunting or trapping of faunal species is to be allowed by construction personnel;
- Informal fires by construction personnel should be prohibited, and no uncontrolled fires whatsoever should be allowed;
- Care should be taken during the construction and operation of the proposed development to limit edge effects to surrounding natural habitat. This can be achieved by Demarcating all footprint areas during construction activities;
- No construction rubble or cleared alien invasive species are to be disposed of outside of demarcated areas, and should be taken to a registered waste disposal facility;
- All soils compacted as a result of construction activities should be ripped and profiled and reseeded;
- Manage the spread of AIP species, which may affect remaining natural habitat within surrounding areas. Specific mention in this regard is made to Category 1b species identified within the development footprint areas.
- Appropriate sanitary facilities must be provided during the construction of the development and must be removed to an appropriate waste disposal site;
- No dumping of litter, rubble or cleared vegetation on site should be allowed. Infrastructure and rubble removed because of the construction activities should be disposed of at an appropriate registered dump site away from the development footprint. No temporary dump sites should be allowed in areas with natural vegetation. It is advised that waste disposal containers and bins be provided during the construction phase for all construction rubble and general waste. Vegetation cuttings must be carefully collected and disposed of at a separate waste facility;
- If any spills occur, they should be immediately cleaned up to avoid soil contamination that can hinder floral rehabilitation later down the line. Spill kits should be kept on-site within workshops. In the event of a breakdown, maintenance of vehicles must take place with care, and the recollection of spillage should be practised, preventing the ingress of hydrocarbons into the topsoil; and
- Upon completion of construction activities, it must be ensured that no bare areas remain, and that indigenous species be used to revegetate the disturbed area.

### 8.2.3 Mitigation of alien vegetation

- Edge effects arising from the proposed development, such as erosion and alien plant species proliferation, which may affect adjacent natural areas, need to be strictly managed. Specific mention in this regard is made of Category 1b AIP species (as listed in the NEMBA Alien species lists, 2020), in line with the NEMBA Alien and Invasive Species Regulations (2014);
- Ongoing alien and invasive plant monitoring and clearing/control should take place throughout the construction and operational phase of the development, the study area should be regularly checked for AIP proliferation and to prevent spread into surrounding natural areas; and
- Alien vegetation that is removed must not be allowed to lay on unprotected ground as seeds might disperse upon it. All cleared plant material to be disposed of at a licensed waste facility which complies with legal standards.

### 8.2.4 Mitigation of Floral and Faunal SCC (should any occur – though, highly unlikely)

- In the unlikely event that faunal and floral SCC do occur on the site, a suitably qualified specialist should be contacted to determine the most suitable way forward.
- Special measures should be taken to conserve geophytes in the area.
- Should specimens be relocated the relocation success of floral SCC should be monitored during the construction phase to ensure immediate actions can be taken if it becomes evident that relocation is not successful;

- No collection of floral SCC or medicinal floral species must be allowed by construction personnel;
- Edge effect control needs to be implemented to prevent further degradation and potential loss of floral and faunal SCC outside of the proposed development footprint area;
- Should the perimeter be walled in, it is recommended that small opening be left to allow for continuous movement of small mammal species. Such openings must be continuously monitored and cleared of debris to ensure continued movement is possible.
- No trapping or hunting of fauna whatsoever must be allowed.

#### 8.2.5 Mitigation of loss of faunal and floral habitat and species diversity

- Where formal landscaped gardens are envisioned, use should be made of indigenous species or ornamental alien species that are not listed within the NEMBA Alien Species List (2020);
- As part of any landscaping plans, the recreation of habitat for faunal species such as small lizards, arachnids, small mammals, and birds should be considered. Creation of rock gardens, using dead logs and fallen trees in landscape areas should also be considered, as these will provide areas of niche habitat and refuge for small faunal species. Trees can be planted to provide nesting and roosting sites for avifauna while reducing the Urban Heat Island effect; and
- No dumping of litter or garden refuse must be allowed on-site. As such it is advised that vegetation cuttings from landscaped areas be carefully collected and disposed of at a separate waste facility.

#### 8.2.6 Mitigation of Alien Vegetation

- Where formal landscaped gardens are envisioned, use should be made of indigenous species or ornamental alien species that are not listed within the NEMBA Alien Species List (2020);
- As part of any landscaping plans, the recreation of habitat for faunal species such as small lizards, arachnids, small mammals, and birds should be considered. Creation of rock gardens, using dead logs and fallen trees in landscape areas should also be considered, as these will provide areas of niche habitat and refuge for small faunal species. Trees can be planted to provide nesting and roosting sites for avifauna while reducing the Urban Heat Island effect; and
- No dumping of litter or garden refuse must be allowed on-site. As such it is advised that vegetation cuttings from landscaped areas be carefully collected and disposed of at a separate waste facility.

### 8.3 General - Construction Phase

- Under no circumstances shall any natural area on neighbouring properties (outside the development site) be impacted, degraded, cleared, or affected in any manner.
- The development site shall be demarcated by permanent fencing at the onset of construction to prevent accidental or unwarranted access of personnel and/ or vehicles to any neighbouring property.
- Cleared vegetation and debris that has not been utilised must be collected and disposed of at a suitable waste disposal site. Under no circumstances shall any vegetation be burned on site.
- No painting or marking of rocks, trees, or vegetation to identify locality or other information shall be allowed, as it will disfigure the natural setting. Marking shall be done by steel stakes with tags, if required. All temporary markings will be removed upon completion of the construction.
- Collection of branches, wood (dead or alive), shrubs or any vegetation for fire making purposes is strictly prohibited.
- Develop and implement an Alien and Invasive Flora Management Programme is recommended.
- Prevent all open fires on site.
- The irresponsible use of welding equipment, oxy-acetylene torches, and other naked flames, which could result in veld fires, or constitute a hazard should be guided by safe practice guidelines.
- The burning of general waste material is not to be allowed.
- Provide demarcated fire-safe zones, facilities, and suitable fire control measures;
- Provide temporary and suitable on-site ablution, sanitation, litter and waste management and hazardous materials management facilities until such time that all materials can be removed to an approved waste management facility;
- Under no circumstances shall areas of natural vegetation or veld for ablution or waste storage purposes be permitted;
- Prevent contamination of surrounding, natural habitat from any source of pollution, notably from hydrocarbon spillages, runoff and contamination from transformed area;
- The Developer plans to incorporate the latest green-building techniques and energy-saving devices during the construction phase of the development.

### 8.4 Vehicles and small equipment

- It must be ensured that all hazardous storage containers and storage areas comply with the relevant South African Bureau of Standards (SABS) standards to prevent leakage. All vehicles must be regularly inspected for leaks;
- Re-fuelling are not allowed take place on site;
- Small equipment can be re-fuelled on site on an impermeable layer to prevent ingress of hydrocarbons into the topsoil;

- In the event of a vehicle breakdown, maintenance of vehicles must take place with care and the recollection of spillage should be practiced near the surface area to prevent ingress of hydrocarbons into topsoil and subsequent habitat loss;
- All spills should they occur, should be immediately cleaned up and treated accordingly. Records of spills and waste removal should be kept by the responsible contractor.

## 8.5 Operational Phase

- The Developer plans to incorporate water-efficiency techniques such as rainwater harvesting, grey water reuse and water-efficient devices into the rules of the development, which all residents will need to abide to.
- Various techniques such as xeriscaping and mulching will be encouraged through the home-owners association, as part of the final landscaping;
- Residents be encouraged to make use of grey water and rainwater harvesting for irrigation purposes;
- Residents will also be encouraged to make use of drip irrigation opposed to sprinkler irrigation;
- The installation of a borehole for irrigation of the common property will be considered;
- As far as possible, electricity usage will be limited to night times and times when the other types of energy cannot be used. Installation of solar energy for lighting the common property and operating the guard house and entrance and exit gates;
- Through the rules of association, all residents will be requested to divide their residential waste into categories i.e., plastic, glass, paper and other;
- A waste area within the boundaries of the development will be demarcated with bins for each category of waste;
- Residents will be requested to deposit their waste according to each category into these bins. Waste will be disposed of to ensure re-use, reduction, recovery, and recycling. This includes the use of recycled aggregates, plastics and metal for the construction of the development's infrastructure as well as upkeep of the development post construction;
- Through the rules of association, encourage residents to use techniques such as storm water harvesting and the planting of natural grasses and erosion preventative plants.

## 9 Stakeholder Engagement

The principles that govern communication with society at large are best embodied in the principles of the Environmental Management Act (NEMA) (Act 107 of 1998, Chapter 1), South Africa's overarching environmental law. Public Participation for environmental authorisation is guided by the Amendments to the EIA Regulations of 2014 as amended in 2017.

Public participation is the involvement of all parties who potentially have an interest in a development or project, or may be affected by it, directly or indirectly. It is a process leading to a joint effort by stakeholders, technical specialists, the authorities, and the proponent/developer to work together to produce better decisions towards the proposed development.

The objectives of public participation in an EIA are to provide sufficient and accessible information to stakeholders in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded;
- Contribute relevant local information and knowledge to the environmental assessment;
- Verify that their issues have been considered in the environmental investigations;
- Comment on the findings of the specialist reports and other documentation submitted.

Table 16 lists the steps to be undertaken for the public participation process. The stakeholder list (database), Comments and Response Report and copies of all relevant correspondence, are provided in Annexure F. The Final Document will contain the full and updated list of all requirements.

No	Public participation tasks undertaken during Impact Assessment Phase in accordance with Plan of Study	Reference/comment
1	Site Notice.	Refer to <b>Annexure F</b> for the site notice displayed at the gate of the property where the proposed development is to take place.
2	Newspaper advertisement.	Refer to <b>Annexure F</b> for the advertisements / notices placed in the Roodepoort Northsider in print during July 2021.
3	Continued interaction with I&AP's.	Refer to <b>Annexure F</b> for letter notifying I&APs of the submission of the BAR and reports.
4	Database updated.	Refer to database in <b>Annexure F</b> .
5	Issues and Response Report updated.	All issues and responses that will be received on the Report will be recorded in the Comments and Response Report in <b>Annexure F</b> which will accompany the Final Report to the CA.
6	Request for information to be recorded by the EAP as per continued contact with I&AA's during the course of the Public Participation.	Interactions will be recorded in <b>Annexure F</b> - issues and response report.
7	Meetings held by Impact Assessment Team with key authorities and stakeholders as and when required.	Focus Group Meetings on the Draft Report will be held when necessary and captured as part of <b>Annexure F</b> .
11	Draft Report distributed for public review (30 calendar day review period) prior to submission of final Report to GDARD.	To be completed during July 2021.
12	Report amended in accordance with public review comments after closing of the public participation period.	To be completed August 2021.



13	Registered I&APs notified when the Record of Decision is reached by the CA.	To be undertaken when the CA issued the Record of Decision.
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Table 16: Stakeholder Engagement

I&APs will be advised in writing of the authority decision on the application for the decision of the CA.

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## 10 Concluding Remarks

The following key considerations are presented:

- The proposed development is largely situated within the Gauteng EMF Zone 1: Urban Development zone with only a small section not included and the size of the proposed development is 1.0016ha.
- The proposed development is situated nestled between various urban developments, fences, roads and as such habitat connectivity has been significantly impacted upon.
- The existing habitat at the proposed development has been exposed to various historic and ongoing disturbances resulting in a largely degraded habitat that has low floral and faunal diversity and abundance.
- Vegetation at the proposed development site is dominated by floral species associated with disturbance including alien and invasive plants.
- On site characteristics of the proposed development does not support the Department of Environmental Affairs screening tool medium rating for both plant and animal themes. Based on the specialist report these species sensitivity is an overestimate of the study area based on site specific characteristics.
- The screening tool also indicated a Very High Sensitivity for terrestrial biodiversity theme as it is considered a Critically Endangered Ecosystem and an Ecological Support Area (ESA). As the site is badly degraded as a result of high alien invasive plant abundance, fragmentation, fencing, dumping and historic gravel roads which transverse the study area it is no longer representative of the unit.
- According to the specialist report the fragmented nature of the proposed development site does not promote re-establishment of native fauna and flora and thus has no conservation value.
- During the proposed development's site field assessment, no floral or faunal species of conservation concern were observed within the proposed development footprint, and it is considered unlikely that any such species will occur in the study area given the lack of habitat connectivity, lack of unique or suitable habitat, reduced resources and overall disturbed nature of the area.
- Following the ecological assessment of the biodiversity within the study area, the impacts associated with the proposed development activities were determined. The impacts on the floral and faunal habitat, diversity and SCC are considered to range from medium-low to very low significance impacts prior to the implementation of mitigation measures. With mitigation fully implemented all impacts can be reduced to low to very-low significance impacts.
- Several positive potential environmental impacts were assessed, and the proposed development will enhance the environment not only by protecting the bio-physical environment but also by utilising sustainable resources and optimising the beneficial impacts such as water and energy efficiency, waste minimisation as well as supporting the local residents and society on a small scale as envisaged by the City of Joburg's IDP (2020/21).

Based on the ecological specialist report the current vegetation cover present on the site of the proposed development cannot be classified as indigenous. Current vegetation cover further does not have any floral species of conservation value and the area is believed to not have any conservation value.

The impacts on the receiving environment are low and any anticipated impacts can be mitigated through the implementation of the proposed Environmental Management Programme.

It is proposed that the EMP be implemented during the design, construction, and operational phase of the proposed project. The decommissioning is not envisaged within the next 50 years.

It is recommended that the BAR prepared in terms of the EIA Regulations (2014) as amended in 2017, for the proposed project be approved by the CA.

## 11 Conclusions and Recommendations

- The environmental impacts have been identified and the Environmental Assessment Practitioner (EAP) and where the potential impact was regarded with a potential significant negative impact on the environment such potential impacts were assessed by the relevant specialists.
- The environmental impact of the proposed project is well understood, and it was proposed that an application for a BAR be submitted to the CA i.e., GDARD. A Biodiversity Specialist Report was commissioned to study the area and recommendations of the specialist reports have been incorporated in the preliminary impact assessment and EMPr. This specialist report highlighted that:
  - The Degraded Mountain Bushveld Habitat was identified as having a low and moderate low sensitivity for fauna and flora, respectively. The generally low sensitivity of the study area can be attributed to the extent of fragmentation as a result of fencing, human settlement development and road development and as a result of historic agricultural activities. Development activities within the study area will likely not have a significant impact on the floral and faunal communities found within the study area. During the field assessment, no SCC were located, and it is unlikely that any occur within the study area due to the characteristics of the study area and the surrounding environment.
  - Following the ecological assessment of the biodiversity within the study area, the impacts associated with the proposed development activities were determined. The impacts on the floral and faunal habitat, diversity and SCC are considered to range from medium-low to very low significance impacts prior to the implementation of mitigation measures. With mitigation fully implemented all impacts can be reduced to low to very-low significance impacts. No significant impacts on the biodiversity associated with the study area are thus anticipated for the proposed development.
  - The objective of this study was to provide sufficient information on the biodiversity significance of the area, together with other studies on the physical and socio-cultural environment for the EAP and the relevant authorities to apply the principles of Integrated Environmental Management (IEM) and the concept of sustainable development. The need for conservation as well as the risks to other spheres of the physical and socio-cultural environment need to be compared and considered along with the need to ensure sustainable economic development of the country.
  - It is the opinion of the ecologists that this study provides the relevant information required in order to implement Integrated Environmental Management (IEM) and to ensure that the best long-term use of the ecological resources in the study area will be made in support of the principle of sustainable development.
- Most of the negative impacts associated with the project will occur during the construction phase. Where negative impacts are unavoidable, they will be mitigated according to stipulations in the EMPr. Recommendations and mitigations presented in the EMPr will reduce the disturbance to ecosystems and the loss of biodiversity. Where negative impacts are unavoidable, strict management and rehabilitation is recommended to minimise the potential negative impacts.

This process, in preparation of the documentation to be submitted to substantiate the BAR will include the necessary and prescribed public participation component. Notices were advertised and members of the public are to be given an opportunity to register as I&AP's. All authorities are to be notified and will also listed as I&AP's.

The overall significance of the potential impacts has been assessed to be in the order of Low to Very Low. It is recommended that an Environmental Authorization be issued for the proposed project.

## 12 Declaration of Independence

We, the undersigned, acting in a capacity as independent environmental consultants, declare that:

- We acted as independent environmental consultants conducting this environmental screening and preparing the report.
- As professional and active members, we consider ourselves bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP).
- Environamic Environmental Consulting CC (Environamic) is not a subsidiary, legally or financially, of either the applicant (Mr JS van Niekerk) or Urban Devco.
- At the time of completing this report, we did not have any interest, hidden or otherwise, in the proposed development or activity as outlined in this document, other than fair financial compensation for work performed in a professional capacity as specified by the 2014 National Environmental Management Act (No 107 of 1998) Regulations GNR 983 and GNR 986, as amended in 2017.
- Environamic shall not be affected in any manner by the outcome of the BAR, other than being part of the general public.
- We do not necessarily object to or endorse the proposed development but aim to present facts and recommendations based on scientific data and relevant professional experience.
- We do not have any influence over decisions made by the governing authorities.
- We undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2014 (as amended); and
- Upon request, we shall provide the competent authority with access to all information at our disposal regarding the study/ application, whether such information is favourable to the applicant or not.

Should we consider ourselves in conflict with any of the above declarations, we shall formally submit a Notice of Withdrawal to all relevant parties.



MSc. (*Pr Sci Nat*)

Etienne van der Lith - (28 June 2021)

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## **Annexure A – Property Owner**

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## Annexure B – Environamic Company Profile

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## Annexure C – Biodiversity Specialist Report

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## Annexure D – Cultural Historical Specialist Report

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## Annexure E – Township Layout Plans





## Annexure F – Stakeholder Participation Summary

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## Annexure G – Detailed Impact Assessment

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## Annexure H – Notification of Authorisation

To be finalised upon after receipt of authorisation by the Competent Authority

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## End of Report

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