

The Hillside Development
Farm 1638 and Remainder Portion 82
of the farm Ruygte Vally 205, Knysna
Sedgefield

Visual Impact Assessment
Final Draft Report ver. 1.3
November 2015

Prepared for:
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c/o VPM Planning cc
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Table of Contents

| | |
|--|----|
| CURRICULUM VITAE OF VISUAL SPECIALIST | 4 |
| DECLARATION OF INDEPENDENCE | 7 |
| EXECUTIVE SUMMARY | 9 |
| 1. INTRODUCTION | 12 |
| 1.1 BACKGROUND TO THE REPORT | 12 |
| 1.2 TERMS OF REFERENCE | 12 |
| 1.3 METHODOLOGY | 13 |
| 1.4 ASSUMPTIONS AND LIMITATIONS | 13 |
| 2. THE PROPOSED DEVELOPMENT | 14 |
| 2.1 SITE LOCATION | 14 |
| 2.2 DEVELOPMENT DESCRIPTION | 16 |
| 2.2.1 THE PREFERRED ALTERNATIVE, THE HILL LAYOUT 11 | 16 |
| 2.2.2 ALTERNATIVE 1: THE HILL - LAYOUT 4 | 17 |
| 2.2.3 ALTERNATIVE 2: THE HILL - LAYOUT 9 | 18 |
| 2.3 APPLICABLE POLICIES, PLANS AND GUIDELINES | 19 |
| 2.3.1 THE WESTERN CAPE PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK (PSDF) | 19 |
| 2.3.2 THE KNYSNA SPATIAL DEVELOPMENT FRAMEWORK (SDF) 2008 | 19 |
| 2.3.3 THE COMPATIBILITY RULING MADE BY THE KNYSNA MUNICIPALITY SPECIFICALLY RELATED TO 'THE HILL' IN TERMS OF THE SDF. | 19 |
| 2.3.4 DEA&DP GUIDELINE FOR MANAGEMENT OF DEVELOPMENT ON MOUNTAINS, HILLS & RIDGELINES | 20 |
| 2.3.5 THE ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF) FOR THE GARDEN ROUTE | 20 |
| 2.3.6 HERITAGE AND SCENIC RESOURCES: INVENTORY AND POLICY FRAMEWORK FOR THE WESTERN CAPE | 21 |
| 3. VISUAL ASSESSMENT OF THE SITE AND PROPOSED DEVELOPMENT | 22 |
| 3.1 DESCRIPTION OF THE AFFECTED AREA AND THE SCENIC RESOURCES | 22 |
| 3.2 VISIBILITY OF THE PROPOSED DEVELOPMENT | 25 |
| 3.2.1 VIEW CATCHMENT | 25 |
| 3.2.2 ZONE OF VISUAL INFLUENCE | 26 |
| 3.3 RECEPTORS | 27 |
| 3.4 VISUAL EXPOSURE | 28 |
| 3.4.1 VIEW CORRIDORS | 28 |
| 3.5 VISUAL SENSITIVITY | 30 |
| 3.5.1 TOPOGRAPHY | 30 |
| 3.5.2 LANDFORMS | 31 |
| 3.5.3 VEGETATION COVER | 31 |
| 3.5.4 SETTLEMENT PATTERNS | 33 |
| 3.5.5 VISUAL SENSITIVITY | 34 |
| 3.6 VISUAL ABSORPTION CAPACITY | |
| 3.7 VISUAL INTRUSION | 38 |
| 4. POTENTIAL VISUAL IMPACTS OF THE PROPOSED DEVELOPMENT | 39 |
| 4.1 NATURE OF THE IMPACT | 39 |
| 4.2 IMPACT ASSESSMENT CRITERIA | 40 |
| 4.2.1 EXTENT OF THE IMPACT | 40 |
| 4.2.2 THE DURATION OF THE PROJECT | 40 |
| 4.2.3 THE INTENSITY OF THE IMPACT | 40 |
| 4.2.4 PROBABILITY OF THE IMPACT | 40 |

| | | |
|------------|--|-----------|
| 4.2.5 | REVERSIBILITY | 41 |
| 4.2.6 | IRREPLACEABLE LOSS OF RESOURCES | 41 |
| 4.2.7 | CUMULATIVE EFFECT | 41 |
| 4.2.8 | SIGNIFICANCE | 41 |
| 4.3 | SUMMARY OF VISUAL IMPACT RATINGS | 42 |
| 4.3.1 | SUMMARY OF IMPACTS DURING THE PRE-CONSTRUCTION PHASE | 42 |
| 4.3.2 | SUMMARY OF IMPACTS DURING THE CONSTRUCTION PHASE | 42 |
| 4.3.3 | SUMMARY OF IMPACTS DURING THE OPERATIONAL PHASE | 43 |
| 5. | MITIGATION MEASURES AND MONITORING PROGRAMMES | 47 |
| 5.1 | SITING OF DEVELOPMENT ON LESS VISUALLY SENSITIVE AREAS. | 48 |
| 5.2 | CAREFUL REFORMING OF THE LANDSCAPE FOR DEVELOPMENT | 48 |
| 5.3 | LIMITING FOOTPRINTS AND HEIGHTS OF UNITS | 48 |
| 5.4 | DEVELOPMENT AND ARCHITECTURAL GUIDELINES | 49 |
| 5.5 | RETAINING WOODLAND | 49 |
| 5.6 | LANDSCAPING | 50 |
| 5.7 | EXTERNAL LIGHTING CONTROLS | 50 |
| 5.8 | MONITORING PROGRAMME | 50 |
| 5.8.1 | PLANNING PHASE: | 50 |
| 5.8.2 | CONSTRUCTION PHASE: | 51 |
| 5.8.3 | OPERATION PHASE | 51 |
| 6. | CONCLUSIONS | 52 |
| 7. | REFERENCES | 53 |
| | APPENDIX 1. – COMPUTER GENERATED SIMULATIONS | 54 |
| | APPENDIX 2. – ASSESSMENT CRITERIA | 55 |

Acronyms used in the Report

| | |
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| EAP | Environmental Assessment Practitioner |
| ECO | Environmental Control Officer |
| EMF | Garden Route Environmental Management Framework |
| HWC | Heritage Western Cape |
| PSDF | Provincial Spatial Development Framework |
| SANP | South African National Parks |
| VAC | Visual Absorption Capacity |
| VIA | Visual Impact Assessment |
| ZVI | Zone of Visual Influence |

Curriculum Vitae of Visual Specialist

Megan Anderson is a self employed Landscape Architect who has been consulting in the Western Cape since 1991, to clients from the public and private sector.

Projects range from:

- visual impacts assessments (VIA's) of proposed developments for EIA and HIA processes
- environmental and landscape policy and planning
- upgrading and rehabilitation of natural systems,
- planning and implementation in heritage and cultural precincts,
- planning, design and landscape development in residential and urban areas and community projects.

| | | |
|-------------------------|-----------------------------|--|
| PRINCIPAL AGENT: | Megan Anderson (PrLArch) | Registered Professional Landscape Architect BLArch (UP) 1983 MILASA |
|-------------------------|-----------------------------|--|

REGISTRATION OF PRINCIPLE AGENT

| | |
|------|---|
| 1994 | South African Council for Landscape Architect Professionals (94063) |
| 1992 | Institute of Landscape Architects of South Africa (P217) |

QUALIFICATIONS

1983 University of Pretoria Bachelor of Landscape Architecture

SELECTED PROJECT LIST SPECIFIC TO VISUAL IMPACT ASSESSMENTS

Visual Impact Assessments undertaken include for a variety of developments including industrial, energy (wind and solar farms), residential and mixed use at different scales and predominantly in the western cape with some projects in Mozambique and Uganda.

- Capetel, Wemmershoek Mast, Level 2 VIA for Municipal authority.
- La Motte Affordable Housing, Franschhoek, VIA for HIA, 2015
- Elandskloof Community Re-settlement VIA for HIA, 2015
- La Motte, S24 Visual Statement, 2014
- Zanddrift Residential Development, South Paarl, VIA, 2014.
- Cedar Park Residential Development, Sir Lowry's Pass, 2014
- R44 between Somerset West and Stellenbosch, Upgrade of 3 Intersection, 2014
- Philippi Urban Edge Ammendment, Visual Statement, 2014
- Val De Vie, Paarl, Residential Development, 2014
- Preekstoel Residential development, Stilbaai, 2014
- Zandrif Residential Development, Paarl, 2014
- Philippi Urban Edge Amendment, Cape Town, 2014
- Louisvale Winery , Stellenbosch, 2014
- Elandskloof Historic settlement, Citrusdal, 2014
- NBG: Bettys Bay, Worcester, Kirstenbosch and Niewoudtville – New Admin Buildings, 2014
- Vredenheim Mixed Use Development, Stellenbosch, 2014
- Proposed Boutique Lifestyle Centre, Stellenbosch, 2013
- Namaqualand Mall, Springbok, 2013
- Stellenbosch Mediclinic Development, Extension to building, 2013
- Bosjesmansdam Valley, Worcester, Accommodation, chapel and wine tasting facility, 2013
- Natures Path Lifestyle Village, Keurboomstrand, 2013
- Brakkekloof and Donkergats Rivier Solar Farms, Atlantis, West Coast (2012)
- Erf 2003 Melkbosstrand, Cape Town Mixed use development, 2011
- Proposed wind energy farm at Clover Valley Farm, Darling on West Coast Plain (2011)
- Jacobsbaai Tortoise Reserve – residential resort development on the west coast of West Cape (2011)
- Proposed Development of a Wind Energy Project at Langefontein Farm near Saldanha Bay (2011)

- Four proposed windfarms in the Garden Route area (2010 – 2011)
- The Hill, Sedgefield – VIA of proposed housing development on dunes north of N2, Sedgefield (2009)
- Leukenberg, Gordons Bay - VIA of proposed mixed use development on urban edge (2009)
- Seawinds, Saldanha Bay – VIS of proposed new industrial Area at Blouwaterbaai, Saldanha (2008)
- Skoongesig, St Helena Bay – VIA of proposed new electricity line and sub-station (2008)
- Tullow Oil, Uganda, 2007
- The Point, Kalk Bay – Visual sensitivity assessment to inform development (2001)
- Erf 24, St Helena Bay – VIA of proposed housing development on hillside above west coast town (2005)

2012 VIA's

- Paarl Boys High School, Paarl – sport fields development
- Plattebosch, Stilbaai – residential development – VIA review
- Rheebooskloof Farm, Paarl – proposed residential development
- Groot Parys, Paarl - Residential development

2011 VIA's

- Proposed Overberg Windfarm (2010 – 2011)
- County fair chicken farm, Fisherhaven – (2011)
- Visual statement for Kalbaskraal Solar Project
- Somerset College, Somerset West – new sports facilities

2010 VIA's

- Ascot Residential Development, Port Elizabeth
- Caledon Residential Development
- Constantia Nek Residential Development
- Erf 29 + 30, Clifton, apartments development
- 3 Vodacom masts – Hermanus, Villiersdorp and Klipdale
- De Hoek, power transmission lines

2009

- Klipland, Paarl – VIA of proposed housing development on N1 adjacent to Paarl – 2009
- Salmonsvlei, Paarl – VIA of proposed housing development on N1 adjacent to Paarl – 2009
- Swartland Mall – VIA of proposed mixed use development on urban edge of country town of Malmesbury – 2009

2008

- Dassenberg, Noordhoek – VIA of proposed housing development on hillside adjacent to Ou Kaapse Weg and TMNP – 2008
- Dewaldorf, Stellenbosch – VIA of proposed mixed use development along R44 and on urban edge – 2008
- Gevonden, Stellenbosch - VIA of proposed mixed use development on urban edge – 2008
- Gordons Bay Mall – VIA of proposed commercial development outside urban edge – 2008
- Klappmuts, Winelands – VIA of proposed mixed use development on urban edge – 2008
- Stellenbosch Wine and Country Estate – VIA of proposed upgrading of an agricultural unit to create a Wine Estate development with residential and tourism opportunities – 2008
- Paarl Waterfront - VIA of proposed mixed use development on Berg River, Paarl – 2008
- The Estates, Stellenbosch – VIA of proposed wine tasting and restaurant facility on the R44 – 2008
- Voelklip, Hermanus – VIA of housing development on Main Road, Hermanus – 2008
- Voortrekker Camp, Wemmershoek – VIA of proposed conference and camp facility development – 2008
- Oudemolen Development – VIA of redevelopment for mixed use purposes, Pinelands -2008
- McGregor, WC - VIA of proposed housing development - 2008

2007

- Glencairn Erf 1 – residential development (2007)
- Glencairn Erf 3410 – residential development (2007)
- Herolds Bay – residential development (2007)
- Rheebooskloof – resort development (2007)
- Hawston – Afdakrivier – residential development (2007)

2006

- Brandwacht farm No. 1049, Stellenbosch – Visual spatial analysis of historic farm 'werf' and proposed development, (2006)
- Proposed Eskom Mast, Perdekop, Farm 215, Baardskeerdersbos – Visual Impact Assessment of proposed Eskom Mast, (2006)
- Flaminkberg Vodacom Tower – VIA of proposed tower adjacent to N7 on mountain top in Knersvlakte (2006)

2000 - 2005

- Berg River Farm 913 - Visual impact assessment of proposed development of farm on Berg River, (2005)
- La Cotte – Visual impact assessment of proposed development of historic farm, Franschhoek (2003)
- Xai Xai Export Facility (harbour) visual Assessment, Mozambique (2003)
- Linden Farm, Hout Bay – VIA of proposed development on historic farm (2003)
- Siemens Communication mast – Kirstenbosch (2003)
- Somerset West Vodacom Tower – Visual assessment of three options (2001)
- Bloubergstrand East-West Arterial Road – VIA of four alternative proposed routes. (1999)
- Blaauberg City - roads and housing development, 2000
- Sonop Winery, Paardeberg – Visual Review of Development (2000)
- 'Die Dam' Vodacom tower – visual impact assessment (2000)
- Versfeld Park, Piketberg – visual impact assessment of conference facility and housing development (2000)
- Worcester Casino – Visual Impact Assessment of Proposed Development (2000)
- Hout Bay Main Road – Visual Scoping of proposed alternative routes (2000)
- R300 Ring Road – Visual sensitivity of proposed route (2000)
- Die Dam - Vodacom mast along Overberg coastline, West Cape (2000)
- Paapekuilsfontein – Struisbaai, Visual Impact Assessment of Proposed residential and commercial development in this coastal Village in Western Cape (2000),
- Dido Park, Simonstown, Cape Town - VIAs for further development of this coastal area (2000)
- Pringle Cove Abalone Farm – Visual Assessment for scoping phase of proposed development (2000)

Pre 2000

- Cape **Metropolitan Area - visual sensitivity/significance mapping, 1999 – 2000, 2002**
- Coega IDZ, Port Elizabeth - supplementary VIA of Coega harbour, 1998
- Soetwater and Millers Point – visual resource mapping for development opportunities, 1999
- Blaauwberg - tourist development, 1998 – visual sensitivity mapping of the area to inform development
- Capricorn Landmark - proposed landmark, 1998
- Kenilworth Race Course housing developments (1998)
- Milnerton Golf Hotel - proposed hotel development on Woodbridge Island, 1998
- Vredeloof – Vodacom mast VIA of proposed mast (1998)
- Farm 234 – Milnerton, VIA of the proposed housing development on Diep River (1997)
- Fish Hoek By-Pass – Visual Assessment of proposed road (1990)
- Outeniqua Pass Road – visual assessment of proposed upgrade (1990)
- Du Toit's Kloof – Visual Assessment of Proposed upgrade (1989)



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

| | |
|------------------------|-------------------------|
| | (For official use only) |
| File Reference Number: | 12/12/20/ or 12/9/11/L |
| NEAS Reference Number: | DEA/EIA |
| Date Received: | |

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

The Hill, Sedgefield

| | |
|--------------------------------------|--|
| Specialist: | Megan Anderson Landscape Architect |
| Contact person: | Megan Anderson |
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| Project Consultant: | Cape EA prac |
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| Telephone: | 044-8740365 |
| E-mail: | sian@cape-eaprac.co.za |

4.2 The specialist appointed in terms of the Regulations_

I, Megan Anderson, declare that –

General declaration:

I act as the independent specialist in this application;

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;

I will comply with the Act, Regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

M. Anderson
Signature of the specialist:

Megan Anderson Landscape Architects
Name of company (if applicable):

4 November 2015
Date:

EXECUTIVE SUMMARY

Megan Anderson Landscape Architect has been appointed to update the specialist Visual Impact Assessment of the proposed The Hill residential development in Sedgefield. This visual Impact Report will inform the Environmental and LUPO processes being managed by Cape EAPrac and VPM Planning cc respectively.

A number of policy and guideline documents have been referred to, these generally 'flag' the proposed site as a sensitive site both topographically and visually, which is something that has been identified in the 2009 and again this VIA report.

The proposed site of development is on top of a hill ('fossil' dune), immediately north of Sedgefield and the N2.

Three Alternative Proposals will be assessed namely:

1. The Preferred Alternative (Layout 11);
2. Alternative 1 (Layout 9) – a lower density development; and
3. Alternative 2 (Layout 4) – a higher density development.

The **scenic resource** of the area can be described as a combination of wilderness, natural, rural and village development and are **rated as High**.

The Zone of Visual Impact is restricted to an area of approximately 2 km south, 5 km west and north and 1 km to the east. According to the specific criteria for visual impact assessments the **visibility of the site is local**, being visible from the area less than 5kms away.

The receptors within the ZVI include residents of Sedgefield, the N2 tourist, scenic route, the Wilderness National Park and rural areas to the north of the site and **are rated as HIGHLY sensitive**.

The visual sensitivity of the site ranges from High, through Medium to Low. The highly sensitive areas are the ridgelines and steep slopes. The moderately sensitive areas are convex and steep slopes. The least sensitive areas are the valleys.

| Summary of inherent visibility and visual sensitivity of the site | | |
|---|------------------------|--------------------|
| | Visibility of the area | Visual Sensitivity |
| <i>Topographic elevation</i> | Minimal - High | Low – High |
| <i>Landforms</i> | Minimal – High | Low- High |
| <i>Vegetative cover</i> | Minimal – High | Low – High |
| <i>Settlement/ Land use Patterns</i> | High | High |
| <i>Visual sensitivity</i> | Minimal – High | Low – High |

Being situated on an elevated landform, the site is visually exposed to the surrounding area and therefore has a low Visual Absorption Capacity (VAC). However, the proposed position of the development on flatter slopes and the existing tall vegetation will provide partial screening.

The VAC of the site to the proposed development is moderate.

The **visual intrusion will be moderate to high** as it is an extension of Sedgefield development but on a predominantly unbuilt hill; the proposed development **will partially fit into its surroundings but will be clearly noticeable**.

The **Visual Impacts** of the proposed development will include:

- **Visual scarring of the landscape as a result of clearing vegetation and construction earthworks;**
- **Change in character of the area from one that is a 'wooded' unbuilt site to a built site;**
- **Visibility from a scenic, tourist route;**
- **Visibility from sensitive receptors namely Wilderness National Park and residents in Sedgefield; and**
- **Light pollution.**

For the preferred Alternative Layout 11, the visual impact significance will be medium to high before mitigation and low to medium after mitigation.

For Alternative 1, Layout 4, the visual impact significance will be medium to high before mitigation and medium to low after mitigation.

For Alternative 2, Layout 9, the visual impact significance will be medium before mitigation and low after mitigation.

| SUMMARY IMPACTS | The Preferred Alternative Layout 11 | | Alternative 1: Layout 4 | | Alternative 2 Layout (| |
|---|-------------------------------------|------------------|-------------------------|------------------|------------------------|------------------|
| | BEFORE MITIGATION | AFTER MITIGATION | BEFORE MITIGATION | AFTER MITIGATION | BEFORE MITIGATION | AFTER MITIGATION |
| Vegetation clearing | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM-HIGH | LOW-MEDIUM |
| Visual scarring of the landscape resulting from earthworks (cut and fill) | MEDIUM-HIGH | LOW-MEDIUM | HIGH | MEDIUM | MEDIUM | LOW |
| Change in visual character from a natural landscape to a built landscape | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM | LOW |
| Visibility from scenic routes, view sites and the surrounding residential areas | MEDIUM-HIGH | LOW | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM | LOW |
| Visibility from sensitive receptors – residential areas of Sedgefield and a section of the Wilderness National Park | MEDIUM-HIGH | LOW-MEDIUM | MEDIUM-HIGH | MEDIUM | MEDIUM | LOW |
| Night Lighting | MEDIUM | LOW-MEDIUM | MEDIUM-HIGH | MEDIUM | LOW-MEDIUM | LOW |

Mitigation measures include:

- Siting of the proposed development units according to the inherent site sensitivity as has generally been done in the Preferred Alternative Layout 11 and Alternative 2 Layout 9;
- Limiting heights and footprints of units;
- Appointing a Landscape Architect during design development phase of a project and together working with the Architects and Engineers to achieve minimal visual impacts;
- Sensitive earthworks for roads and building platforms;
- Providing development and architectural guidelines;
- Retaining as many of the existing large Pine and Gum trees as possible and phasing these out once indigenous vegetation screens the area;
- Extensive landscaping along streets and between buildings; and
- External lighting restrictions and guidelines.

A Landscape Architect, Environmental Officer and the Local Authority will be required to monitor the implementation of these mitigation measures.

1. INTRODUCTION

1.1 Background to the Report

A residential development is proposed on Remainder Portion 82 of the Farm Ruygte Valley 205 and Erf 1638, Sedgefield.

CapeEAPrac have been appointed to complete the Environmental Process in terms of the NEMA regulations and VPM Planning cc is undertaking the LUPO process.

Megan Anderson Landscape Architect has been appointed by the client to update the specialist Visual Impact Assessment, undertaken in 2009, of the proposed 'The Hill' residential development.

1.2 Terms of Reference

With reference to the DEA&DP VIA guidelines for visual specialists and 2014 NEMA regulations, and bearing in mind that a comprehensive Visual Assessment of the site was undertaken in 2009, the following has been considered and undertaken for this study and report:

- Reviewing of existing information including:
 - the former Visual Impact Assessment Report;
 - the revised residential development layouts; and
 - applicable government policies and plans, guidelines, environmental management instruments and other decision making instruments;
- A site reconnaissance visit and photographic survey;
- A desk top study and draft Visual Impact Assessment Report:
 - Review and if necessary update the description and assessment of the scenic resources/visual character of the area in general;
 - Review and if necessary update, viewsheds and zones of visual influence information;
 - Review and if necessary update viewpoints, receptors and visual sensitivity of site (by describing the slope grades, landforms, vegetation, special features and land use);
 - Indicate potential visual impacts using established criteria, including potential lighting impacts at night;
 - Describe alternatives, mitigation measures and monitoring programmes; and
 - Complete 3D modeling and simulations.

1.3 Methodology

The method followed to produce this visual assessment has been to:

- a) Review the existing VIA undertaken in 2009;
- b) Review the new layout proposals including services;
- c) Review applicable government policies and plans, guidelines, environmental management instruments and other decision making instruments and identify relevant information, and incorporate this into this report;
- d) Visit the site and update the photographic survey – **this was done in Mid August 2015 and early November (as well as a couple of times in 2009 when preparing the original VIA)**, this being the period in which the report was being drawn up;
- e) Assess the proposed project alternatives against the visual impact criteria (visibility, visual exposure, sensitivity of site and receptors, visual absorption capacity and visual intrusion).
- f) Identify potential visual impacts and evaluate these against visual criteria.
- g) Recommend measures to mitigate negative visual impacts and enhance positive impacts.

1.4 Assumptions and Limitations

- This visual assessment assumes that the information provided is correct.
- The visual study relies on 1:250 000 and 1:50 000 Topo-cadastral and a visit to the site to determine the View Catchment and Zone of Visual Influence.
- No details of proposed housing and development style and lighting has been provided. In drawing up the computer simulated models of the proposed development, simple block like units have been used to illustrate the proposed development.
- The layout plans and engineering services do not provide information on the proposed terracing, platforms and 'cut and fill' details which will be required to widen roads and build units other than typical details for the access and internal roads. Assumptions have been made with regards to this based on previous experience.
- The provided Preferred Alternative Plan 11 states that the sizes and dimensions of the properties are approximate and subject to a final survey.
- The 1m intervals on the layout plan are based on aerial photographs.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

The site is located on Erf 1638 and on the Remainder Portion 82 of the farm Ruygte Valley 205. It is immediately north of the town of Sedgefield, and the N2 National Road, in the Municipality and Division of Knysna, in the Province of the Western Cape, South Africa.

The site is approximately 2.5 km from the Indian Ocean. Surrounding the hill to the west is the Swartvlei, which forms part of the Wilderness National Park.

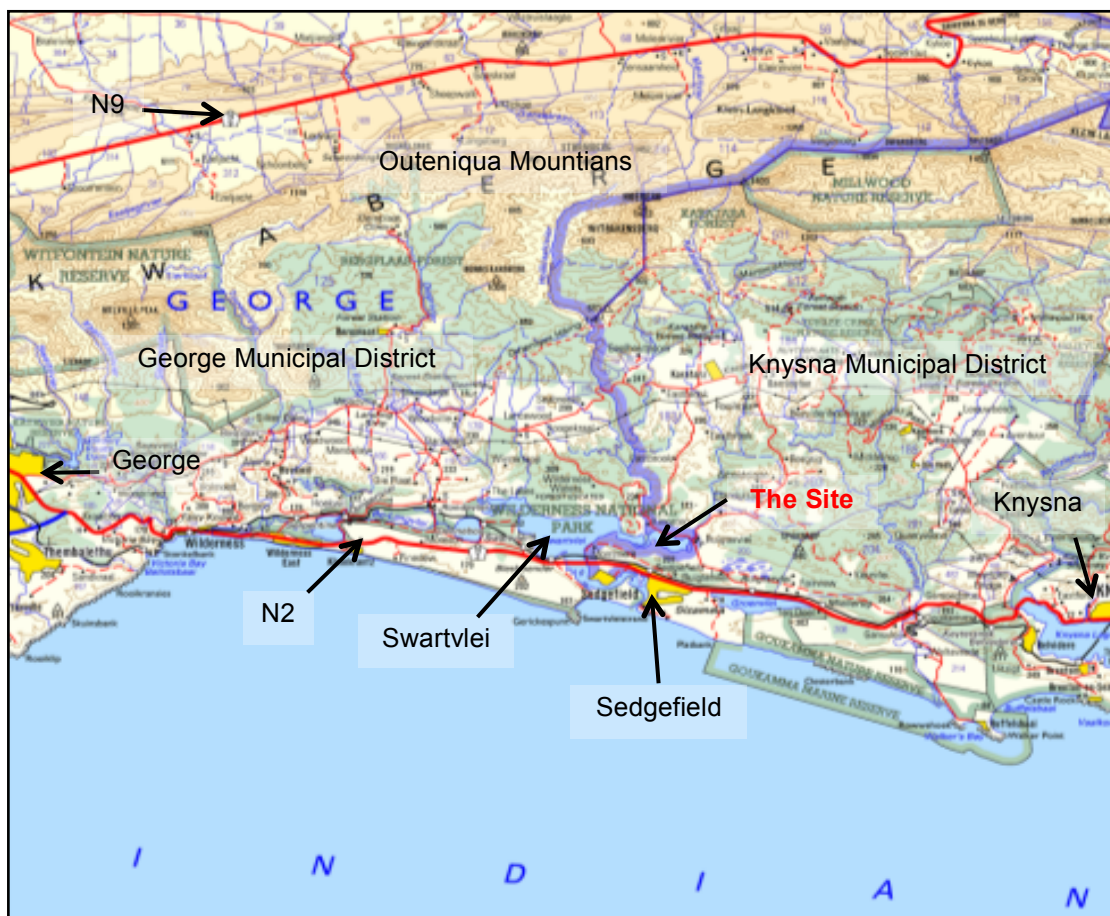


Figure 1: Location of the site on a 1:250 000 topo-cadastral map

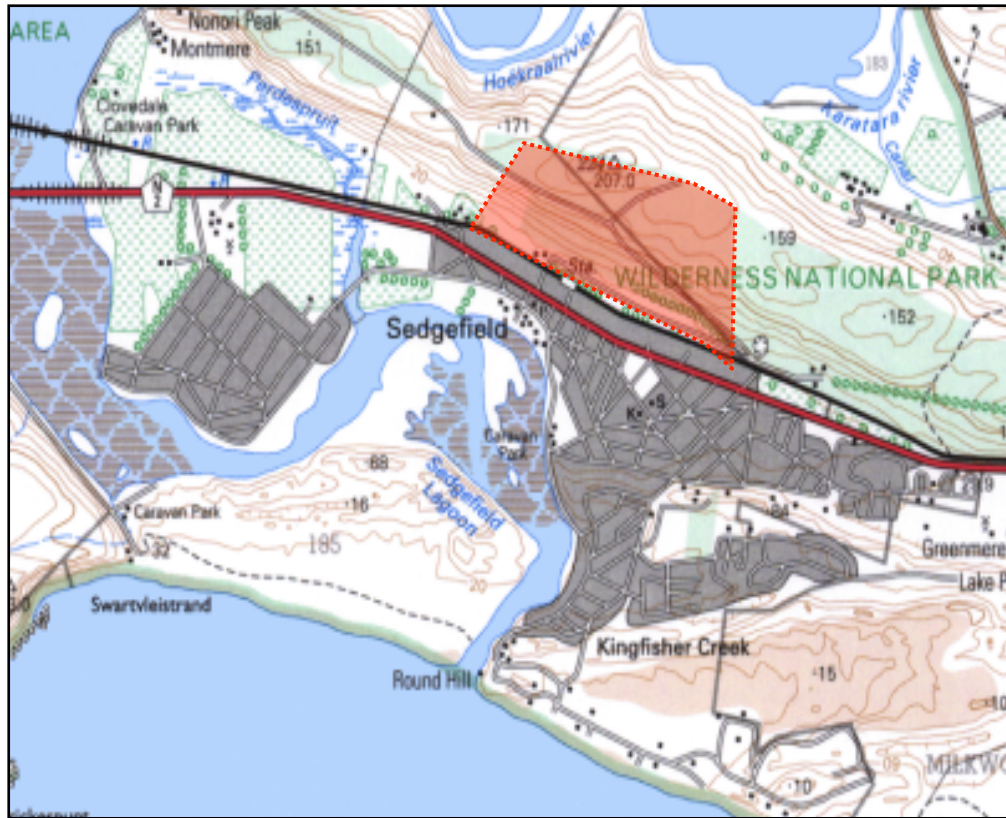


Figure 2: Location of the site on 1:50 000 Topo-cadastral

2.2 Development Description

The proposed development is primarily for residential development. Three Alternative Layouts will be assessed.

2.2.1 The Preferred Alternative, The Hill Layout 11

This alternative consists of the following:

- 130 single residential erven;
- Group-housing (30 large, 40 medium & 40 small) (medium density housing);
- One commercial site;
- Membrane Bio-Reactor (MBR) sewerage package plant;
- Upgrade of the main access road, from Egret/N2 intersection to the development;
- Two water storage reservoirs (700kl each), 13m in diameter, 3 meters high, half buried;
- Dual water supply system (for treated water & potable water);
- Associated service infrastructure (water, electricity, stormwater, road network etc.); and
- Private Open Space, with recreational amenities (hiking/walking trails, lookout points etc.).

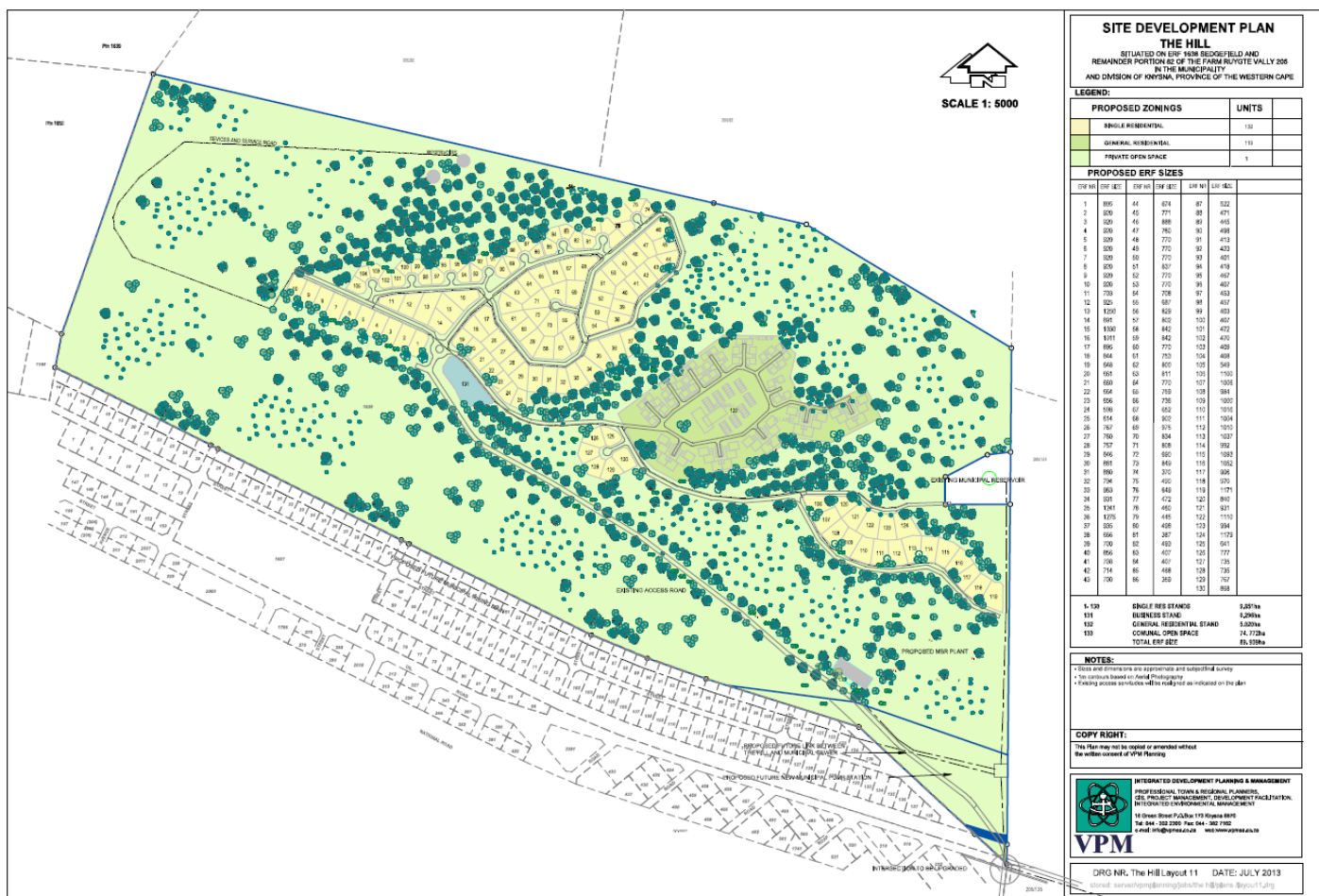


Figure 3: The Hill Development Layout 11: Preferred Proposal (source: VPM)

Figure 4: The Hill Development Layout 4: Alternative Proposal 1 (source: VPM)

- 265 Single Residential erven;
- 10 group housing;
- 2 Commercial stands;
- a large nature area (70% of site);
- roads; and
- a reservoir site.



Figure 4: The Hill Development Layout 4: Alternative Proposal 1 (source: VPM)

2.2.3 Alternative 2: The Hill - Layout 9

This layout reflects a lower density of development with 40 single residential units on larger erven, surrounded by natural area, serviced by roads, with the existing municipal reservoir.



Figure 5: The Hill Development Layout 9: Alternative Proposal 2 (source: VPM)

2.3 Applicable Policies, Plans and Guidelines

A number of government policies and plans, guidelines, environmental management instruments and other decision-making instruments are applicable to the site and development and have been reviewed. These include:

2.3.1 The Western Cape Provincial Spatial Development Framework (PSDF)

Makes provision for:

- the protection and sustainable use of Landscape and Scenic Resources,
- the protection, management and enhancement of the provinces Sense of Place, Heritage and Cultural Landscape

2.3.2 The Knysna Spatial Development Framework (SDF) 2008

Recognizes:

- Sedgefield as a secondary node in the municipality and a major tourist and holiday destination;
- The N2 as an important scenic corridor,
- Indicates the area including the site for 'future development direction';
- earmarks the site for 'Core Productive Area' and 'Core Natural Area'. (This is discussed in the next reference);
- the 'fossil' dune is identified as a core conservation area and ecological corridor (between Swartvlei and Groenvlei along it's north face), with unique natural character contributing to Sedgefields attractiveness;
- the ridgelines along the N2 scenic routes are sensitive and should be avoided or where inevitable the buildings within 5m thereof should be single storey and not exceed 6m, building design must comply with accepted principles to reduce visual impact and consult provincial policy on ridegeline development.

2.3.3 The Compatibility Ruling made by the Knysna Municipality specifically related to 'The Hill' in terms of the SDF.

The compatibility of the proposed development with the Knysna SDF is discussed. Of relevance to the VIA is point 6 and the acknowledgement that the establishment of a sustainable village at Ruigtevlei should be investigated with consideration being given to extending the urban edge to include properties to the north of the N2 and that care must be taken in the form and placement of development along the ridgeline north of the N2. This area includes the site of the proposed development.

Key decision making criteria regarding development on mountains, hills and ridges, relevant to this VIA, are:

- to avoid inappropriate development (i.e. intrusive and consumptive development) on mountains, hills and ridges taking into account the character of the existing environment;
- to ensure that where development does take place, that its layout and design takes account of sensitive features and environmental constraints, thereby promoting environmentally sensitive development of projects on mountains, hills and ridges where development is authorized;
- to preserve landform features through ensuring that the siting of facilities is related to environmental resilience and visual screening capabilities of the landscape;
- to ensure that the scale, density and nature of the developments are harmonious and in keeping with the sense of place and character of the area.

Criteria to be evaluated in this VIA include:

- Density of development;
- Aesthetics (design, scale, layout);
- Location;
- Value in terms of 'sense of place';
- Character and nature of adjacent land use;
- Character of the general area; and
- Cumulative environmental impacts.

Environmental characteristics such as steep slopes (steeper than 1:4) and development on the crest of a mountain, hill or ridge will serve as key indicators of environmental sensitivity.

The development pattern/s and the character of the area within which the proposed development will be situated must be described.

2.3.5 The Environmental Management Framework (EMF) for the Garden Route

This document provides baseline data on the Topographical, Visual and 'Sense of Place' aspects in the Garden Route, the sensitivity, constraints and development guidelines for the area assist in informing decision-making. Management Guidelines are provided for Ecologically Sensitive Geographical Areas.

Of particular reference to this report are the guidelines for development in:

- Topographically Sensitive Geographical Areas;
- Conservation and Protected Areas; and
- Visually Sensitive Landscape Geographical Areas.

Risks include:

- Erosion of steep slopes;
- The potential for visual and light pollution;

- Destruction of visual topographical quality;
- Development impact of sensitive topographical features and landscapes;
- Inappropriate large scale development;
- Sprawling urbanization; and
- Large scale change of land use developments outside of the urban edge.

Objectives include:

- Maintain the integrity of the Garden Route Landscape;
- Limit development on steep slopes;
- Enhance and protect the topographical landscape backdrop to the Garden Route;
- Manage development on steep slopes, discouraging development;
- Limit development densities;
- Retain the 'sense of place' of villages and hamlets;
- Enforce building control and aesthetics;
- Protect the 'sense of place' of the Garden Route;
- Protect and enhance the visual quality of prominent tourism routes, meanders and nodes;
- Protect the visual integrity of the South African National Park asset, as well as provincial nature reserves; and
- Limit and prohibit development on prominent visually sensitive and exposed features.

2.3.6 Heritage and Scenic Resources: Inventory and Policy Framework for the Western Cape

(Compiled for the PSDf discussed in 2.3.1 above)

The study provides input on cultural and scenic resources and provides a guide for the identification and conservation of these resources. The study focuses on the broader regional scale rather than the local landscapes or individual site scales, and is therefore an overview rather than a detailed inventory of cultural and scenic resources.

This VIA makes several references to this document.

3. VISUAL ASSESSMENT OF THE SITE AND PROPOSED DEVELOPMENT

The DEA&DP Guideline for involving visual & aesthetic specialists in EIA processes Document provides a number of criteria that relate specifically to Visual Impact Assessments namely:

- Visibility of the project;
- Visual exposure;
- Visual sensitivity of the area;
- Visual sensitivity of receptors;
- Visual Absorption Capacity; and
- Visual Intrusion.

It is recommended that the proposed project should be assessed against these criteria before attempting to assess the visual impact of the proposed development.

3.1 Description of the Affected Area and the Scenic Resources

Sedgefield and the site of the proposed development are situated in the 'Garden Route', in the south eastern extent of the Western Cape. The area is a scenic, coastal area with a rich, visual diversity.

This diverse and beautiful coastal area is a landscape formed over millions of years and numerous sea level changes. The Outeniqua and Tsitsikama mountains, which consist of hard and folded Table Mountain Quartzite (TMQ), form a majestic backdrop to a coastal platform, in the north.

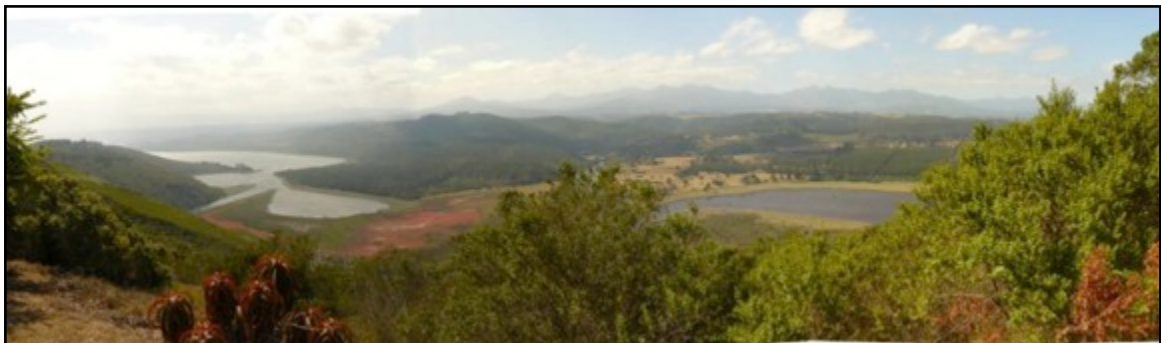


Photo Plate 1 Views north across the Swartvlei (left) and Ruitevlei (right), the farmed and planted coastal platform (midground) to the Outeniqua and Tsitsikama mountains (background).

The undulating coastal platform falls relatively gently towards the ocean and is drained by numerous rivers that either find their way to the ocean through steep sided gorges, where the substrate is TMQ, or via estuaries where the substrate is softer.

The coastline is again diverse with half heart bays, with headlands of hard TMQ and sandy beaches, estuaries and sand dunes or cliffs and river gorges.

Dunes and lakes form the landscape of The Wilderness and Sedgefield. The site is situated on a fossil dune, between Ruigtevlei and Swartvlei to the north and Swartvlei Estuary, other smaller dunes and the sea to the south.



Photo Plate 2 View from west of the site, southwards across Sedgefield village, Swartvlei estuary and the Indian ocean beyond

The proposed site of development overlooks the village of Sedgefield, which has developed over the smaller dunes to the south, the Swartvlei estuary and the ocean beyond.

Development has occurred as coastal villages, towns on the coastal platform and at the foot of the mountains, and farms and plantations on the coastal platforms. Large areas are under conservation managed by either SANP or Cape Nature.

The scenic resource of the area can be described as wilderness, natural, rural and village development and is rated as High.

From: Oberholzer and Winter, Western Cape Provincial Spatial Development Framework – Heritage and Scenic Resources: Inventory and Policy Framework (May 2013) DRAFT

The proposed site of development falls in the Eden Area, as follows:

The Cape Fold Mountains, predominantly the Langeberg and Outeniqua ranges, continue east from the Overberg as far as Plettenberg Bay (and even further to Port Elizabeth). Between the mountains and the coast, the well known 'Garden Route' traverses a series of estuaries, lakes and forests of scenic value between Mossel Bay and Plettenberg Bay. The northern boundary of the Eden District is defined by the impressive Swartberg Mountains, a range consisting of the same Table Mountain Group sandstones, reaching over 2100m in places, and often covered by snow in winter.

Inland of the Langeberg and Outeniqua ranges, undulating Bokkeveld shales re-occur, but being in a rain shadow behind the mountains, the area is semi-arid and supports mainly sheep farming and fruit farming in the irrigated valleys. This is the Little Karoo, stretching from the town of Barrydale in the west to Willowmore in the east.

In the middle of the 'Klein' Karoo, within the Olifants River Basin, lies the town of Oudtshoorn, straddling an interesting limestone formation, which gave rise to the extensive Cango Caves, a Provincial Heritage Site. The Little karoo is generally of geological and palaeontological significance, while the coast in particular has a number of important archaeological sites, such as at Pinnacle Point (Provincial Heritage Site), Robberg Peninsula, Blombos Cave and Matjies River Cave (Keurboomstrand).

Agricultural towns were established at Heidelberg, Riversdale, Calitzdorp, Ladismith, Uniondale and Oudtshoorn in the 1800s, usually based on a grid pattern, and often with allotment gardens. The late 1900s saw the rapid growth of a number of coastal towns, such as Still Bay, Mossel Bay, Wilderness, Sedgefield, Knysna and Plettenberg Bay.

The mountain passes linking the coast with the interior date back to the 1800s and are of major scenic and heritage significance. These include the Montagu Pass (near George), Robinson Pass and Garcia Pass.

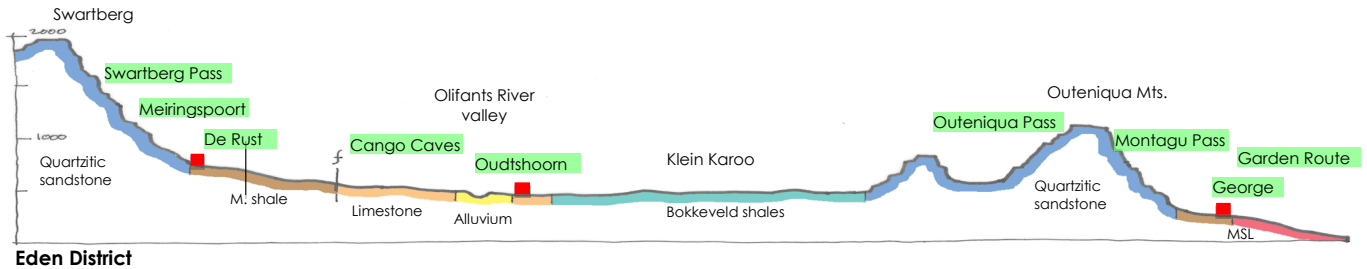


Figure 6: Cross Section through the Eden Area (source: Oberholzer and Winter)

From the EMF:

The landscape of the Garden Route comprises an intricate mosaic of landforms, which further supports its diverse ecological features. These features extend from coastal features, through to the lake system, framed by the backdrop of the high Outeniqua mountains. The area is similarly dissected by numerous rivers draining the highlands to the coast. The coastal landscape is characterised by sensitive foredune systems which are prone to erosion, and which perform critical ecological functions, and which similarly are sought after for residential property development. The area is characterised by cover sands on steep slopes surrounding the lakes and estuaries, which are unstable and unsuitable for development activity.

and

The Garden Route has been named as such due to the visual and aesthetic quality attached to the region. Similarly, the region is considered as one of the most scenic in the country, attracting significant numbers of domestic and international tourist throughout the year. This asset is unfortunately one of the regions limiting factors. Due to the perceived high - quality of life associated with the region underpinned by scenic topography, quaint villages and hamlets, large tracts of natural open space systems supported by an extensive national park system (Garden Route National Park); the Garden Route has become the ideal location of retired individuals from the larger cities, as well as a growing international interest. This insatiable demand for development land for residential and tourism use is limited by the biophysical, physical and aesthetic constraints of the area. It is indeed the case of the "exact reasons for the attraction could become its downfall".

3.2 Visibility of the proposed development

3.2.1 View Catchment

The geographical area from which the project will theoretically be visible, known as the view catchment area, is dictated primarily by topography.

The geographical area from which the project will theoretically be visible, or view catchment area, is dictated primarily by topography, and is often related to the catchment area of a river(s) and its watershed. Theoretically, the site could be seen from the Karatara catchment in the east to the Touwsriver catchment in the west.

However, distance, development, vegetation and topography will reduce the actual zone of visual influence that the site and project will have, to a much smaller area.

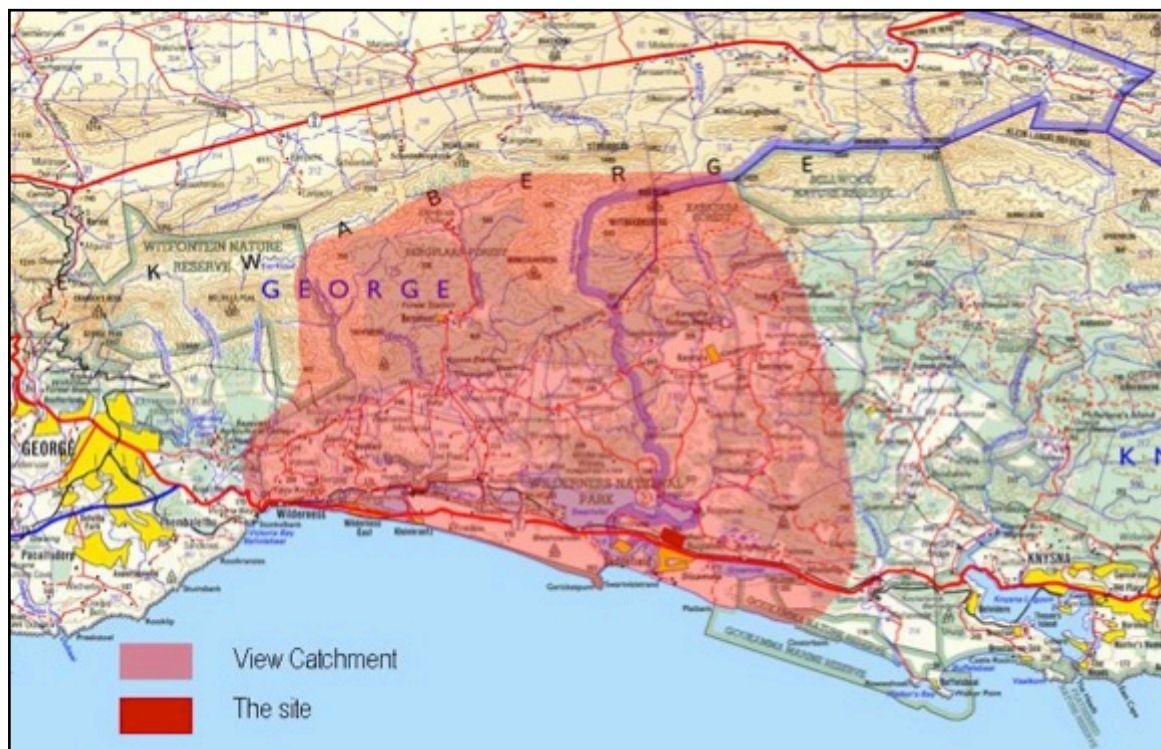


Figure 7: The Hill site - View Catchment Area

3.2.2 Zone of Visual Influence

The site is situated on an east-west orientated fossil dune and is predominantly on the south facing slopes thereof, extending up to the ridgeline. As a result the site is less visible from the north and more visible from the south and west. Ridges of smaller, lower landforms and clumps of trees further restrict views of the site.

The ZVI for the whole site of the proposed development is illustrated in Figure 7. It spans an area of approximately 2 km south, 5 km west and north and 1 km to the east.

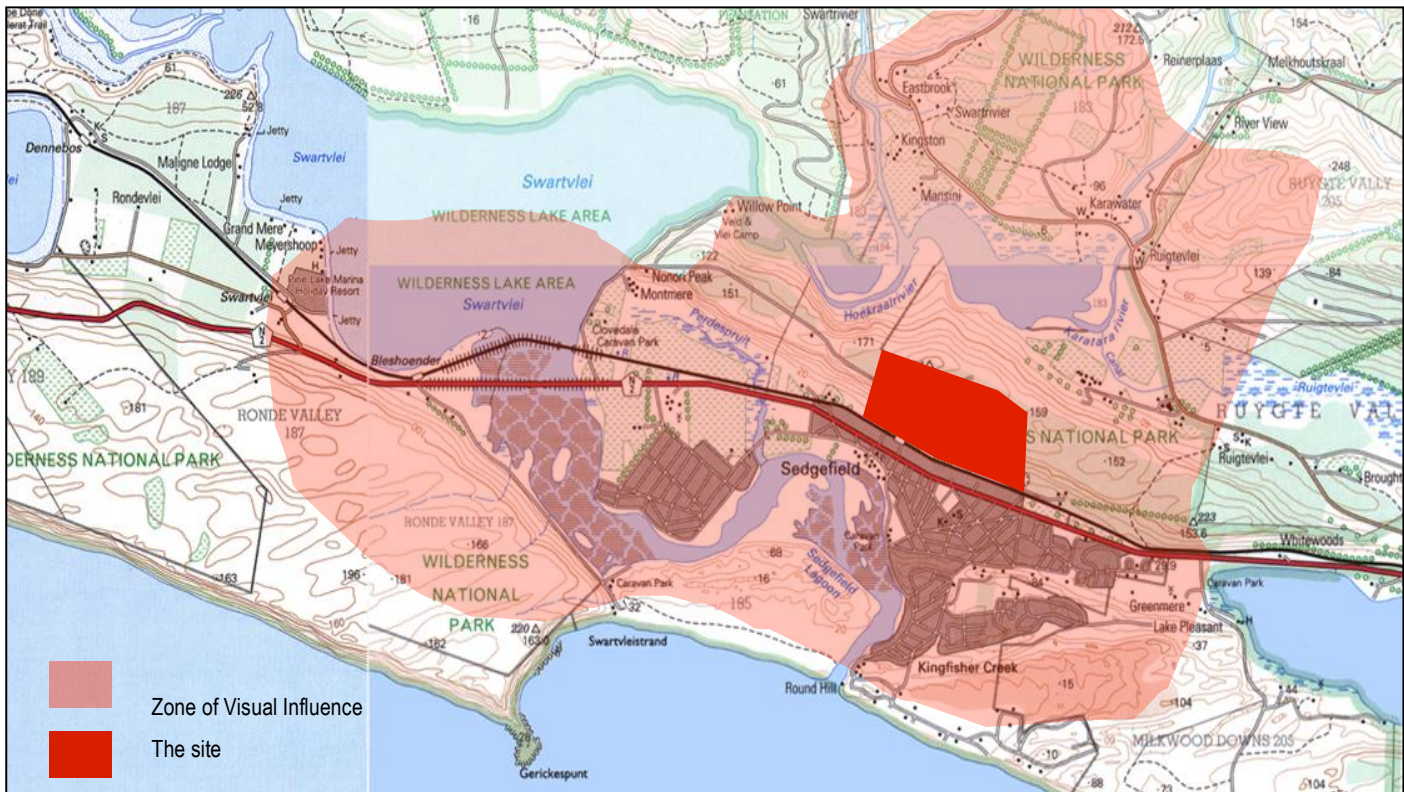


Figure 8: The Hill - Zone of Visual Influence

According to the specific criteria for visual impact assessments the visibility of the site is local, being visible from the area less than 5kms away.

3.3 Receptors

The level of visual impact considered acceptable is dependent on the type of receptors.

- ***High sensitivity – e.g. residential areas, nature reserves and scenic routes or trails;***
 - ***Moderate sensitivity – e.g. sporting or recreational areas, or places of work;***
 - ***Low sensitivity – e.g. industrial, or degraded areas.***

Highly sensitive receptors of the site and proposed development include the the residential areas of Sedgefield, the N2 tourist, scenic route, the Wilderness National Park and rural areas to the north of the site. The commercial areas within Sedgefield would be moderately sensitive receptors.



Photo Plate 3 Receptors of the site include the residents of Sedgefield, centre left and right (The Island) and the Wilderness National Park



Photo Plate 4 (left): The Swartvlei Estuary, a nature reserve has sight of the site

Photo Plate 5 (centre): The N2, a scenic tourist route, passing over the Swartvlei, is a highly sensitive receptor

Photo Plate 6 (right): The rural and conservation areas to the north, west and east are highly sensitive receptors

The receptors within the ZVI are rated as HIGHLY sensitive, excepting the commercial areas of Sedgefield that are rated as MODERATELY sensitive.

3.4 Visual Exposure

High exposure – dominant or clearly noticeable;
Moderate exposure – recognisable to the viewer;
Low exposure – not particularly noticeable to the viewer;

Within the Zone of Visual Influence - view corridors, viewpoints and receptors will experience “Visual Exposure” to the site and proposed development. Based on distance from the project to selected view corridors, viewpoints or receptors, the ‘visual exposure’ or visual impact tends to diminish exponentially with distance.

3.4.1 View Corridors

The N2 is a view corridor to the south of the site, traversing the ZVI, carrying numerous tourists and commuters all year round. It is aligned roughly parallel to the site, which is on the east – west orientated vegetated dune.

3.4.1.1 Views from the West

Traveling from west to east, views of the site from this N2 corridor occur 7kms away, between Rondevlei and Swartvlei, where the N2 curves around a ridge from the high point of an adjacent dune. Views continue until one enters Sedgefield.

Views are prominent as one crosses the Swartvlei as the N2 is directly facing the site. This aspect continues until the road curves away from and runs parallel to the dune and site, where the speed limit is reduced to 60km/h, i.e. as one enters the town. The visual exposure varies from low in the far west to high at the entrance to the town. See photos below.



Photo Plate 7 (left): Rondebosch -Low exposure – 7km away Photo Plate 8 (right): Low exposure – 5km away



Photo Plate 9 (left): Moderate exposure – 2km away Photo Plate 10(right): High exposure – 1 km away

3.4.1.2 Views from the corridor when adjacent to the site

As one drives through the village of Sedgefield, the N2 is parallel to the site rendering the site less visible although it can still be seen. The lower portion of the site is clearly visible although interrupted by nearby vegetation, commercial activity and residential buildings.



Photo Plates 11 - 16: Views from corridor when adjacent to the site.

3.4.1.3 Views from the East

From the east, views occur from approximately 1,5km away. The N2 traverses a small saddle between Groenvlei and Sedgefield at this point. The site is visible to the right side of the road. The orientation of the landform is slightly away from the road so the site is less visible from this approach than from the western approach. Visibility of the site is low to high. (The latter as one gets closer to the site, not illustrated.) See photograph below and computer-generated models in Appendix 1.



Photo Plate 17: View from the east.

The inherent visibility of the sites' landscape is usually determined by a combination of topography, landform, vegetation cover, settlement pattern and special features. This translates into visual sensitivity.

- **High visual sensitivity – highly visible and potentially sensitive areas in the landscape,**
- **Moderate visual sensitivity – moderately visible areas in the landscape,**
- **Low visual sensitivity – minimally visible areas in the landscape**

A mapping exercise was undertaken in 2009 whereby each of topography, landform, vegetation cover, settlement patterns and special features was mapped for the site and rated from low to high. These maps are overlaid and the combined areas are assimilated to provide an overall sensitivity.

3.5.1 Topography

The topography and elevation of the site, which is situated on a hill, surrounded by low lying areas including lakes, is from 30m amsl to 120m amsl. The lower portions of the site will be less visible than the upper part of the site, with visual sensitivities varying from low in the case of the former to high in the case of the latter.

The gradient varies with the upper part of the site being predominantly flatter than 1:4, and therefore less visually sensitive as cut and fill operations will be limited and there will be less visual scarring than on the lower portions of the site, where gradients are steeper than 1:4 and subsequently more visually sensitive.

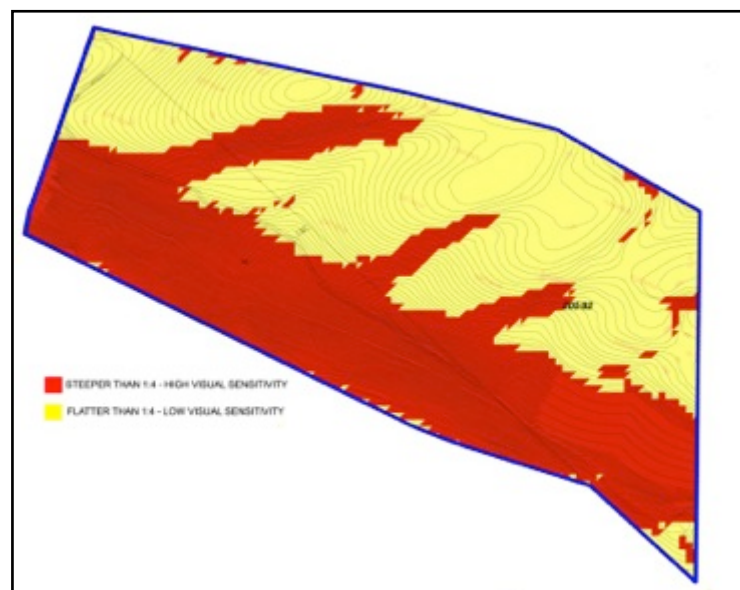


Figure 9: Slope Analysis Map (VPM Planning)

3.5.2 Landforms

The landform on which the site is located is a fossil dune that resembles a hill in that it is stable and vegetated. This hill/dune has been identified as a Topographically Sensitive Geographic area in the Garden Route EMF for both slope and visual reasons.

The dune has relatively steep side slopes and a broad, flatter hill top/dune crest. A ridgeline is discernable and is punctuated by a couple of koppies along its length.

The ridgeline and koppies are of high visual sensitivity; the concave slopes are of moderate visual sensitivity; the uniform slopes are of low – moderate visual sensitivity; and the valleys are of low visual sensitivity.

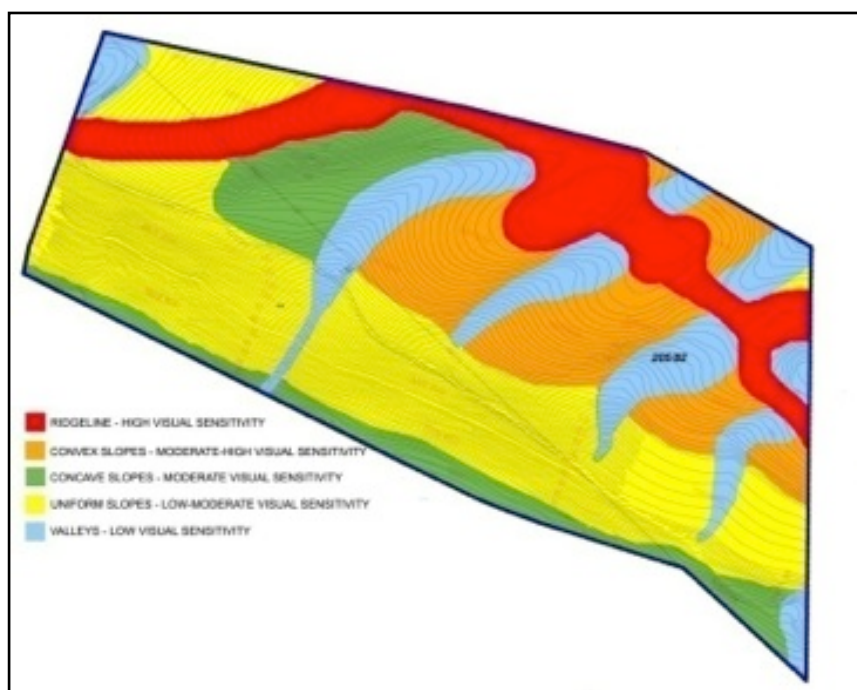


Figure 10: Landform Sensitivity Map

3.5.3 Vegetation cover

"The vegetation found on Sedgefield Erf 1638, Knysna Municipality consists of eucalypt tree stands (80%) with small pockets of pine trees (10%) and Fynbos remnants (10%)." *1

For the purposes of a visual assessment, the screening value of the vegetation is considered and not the ecological value thereof. i.e. tall vegetation provides screening while lower (<1m) vegetation does not provide screening.

The eucalypt tree stands and pine trees are between 6 and 10 meters on average and have the potential to visually screen residential buildings if retained. The areas of the site covered by these trees will have a low visual sensitivity.

The fynbos remnants vary between 1m and 3m tall so provide little screening to moderate screening. The areas of the site covered by this vegetation will have a high visual sensitivity.



Photo Plates 18 and 19 Vegetation cover on site includes tall exotic pines, gums and wattles (left) with pockets of remnant fynbos which reaches heights of up to 3m.

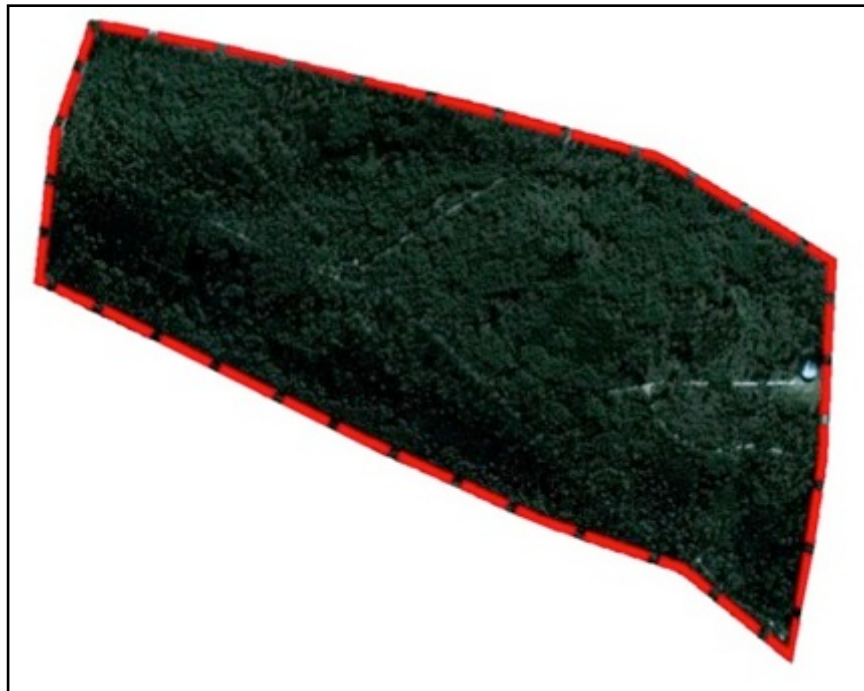


Figure 11: Aerial photograph of the vegetation on site

*1 Campbell, E.E. 2006. The vegetation of Sedgefield Erf 1638, Knysna Municipality. Confidential report to Pieter Badenhorst Professional Services, Department of Botany, Nelson Mandela Metropolitan University, Port Elizabeth. 21 pp.

3.5.4 Settlement Patterns

A few residential buildings are found scattered on top of the dune, separated by dense exotic vegetation, such that they are not visible to each other.

These sparsely situated residences will not provide any visual enclosure nor screening to the proposed development, rendering the site highly visually sensitive.

3.5.5 Visual Sensitivity

The visual sensitivity of the site, categorized as High, Medium and Low, is illustrated on Figure's 12a, b and c below. The visual sensitivity figure is superimposed on all 3 proposed alternatives. The dashed line indicates the point from where development will (south thereof) and will not (north thereof) be seen from the N2.

The High Visual Sensitivity areas are characterized by Ridgelines and Steep slopes

The Medium Visual Sensitivity areas are characterized by Convex slopes and Steep slopes

The Low Visual Sensitivity areas are characterized by Valleys

The Preferred Layout 11 is an adaption from the previous higher density Layout 3 assessed in 2009. Units have been moved onto the less and moderately sensitive sites, with no development, except for the two reservoirs, being on the highly sensitive ridgeline.



Figure 12 a: Visual Sensitivity of the site – Preferred Proposal – Layout 11

The Alternative 1 Layout 4, the high density Option, is very similar to the previous Layout 3 assessed in 2009. Units are found on all levels of sensitivity, some on low, moderate and some on the higher lying, sensitive ridgelines. It is expected that the proposed development will be highly visible due to both the high density of development as well as the units being on areas with a high and moderate sensitivity.



Figure 12 b: Visual Sensitivity of the site – Alternative Proposal 1 – Layout

The Alternative 2 Layout 9 is a low-density option with only 50 units (as opposed to the +- 200 and 288 of layouts 11 and 4), and while the erven straddle all levels of sensitivity, the units are generally on low and moderately sensitive areas and will therefore be less to moderately visible.

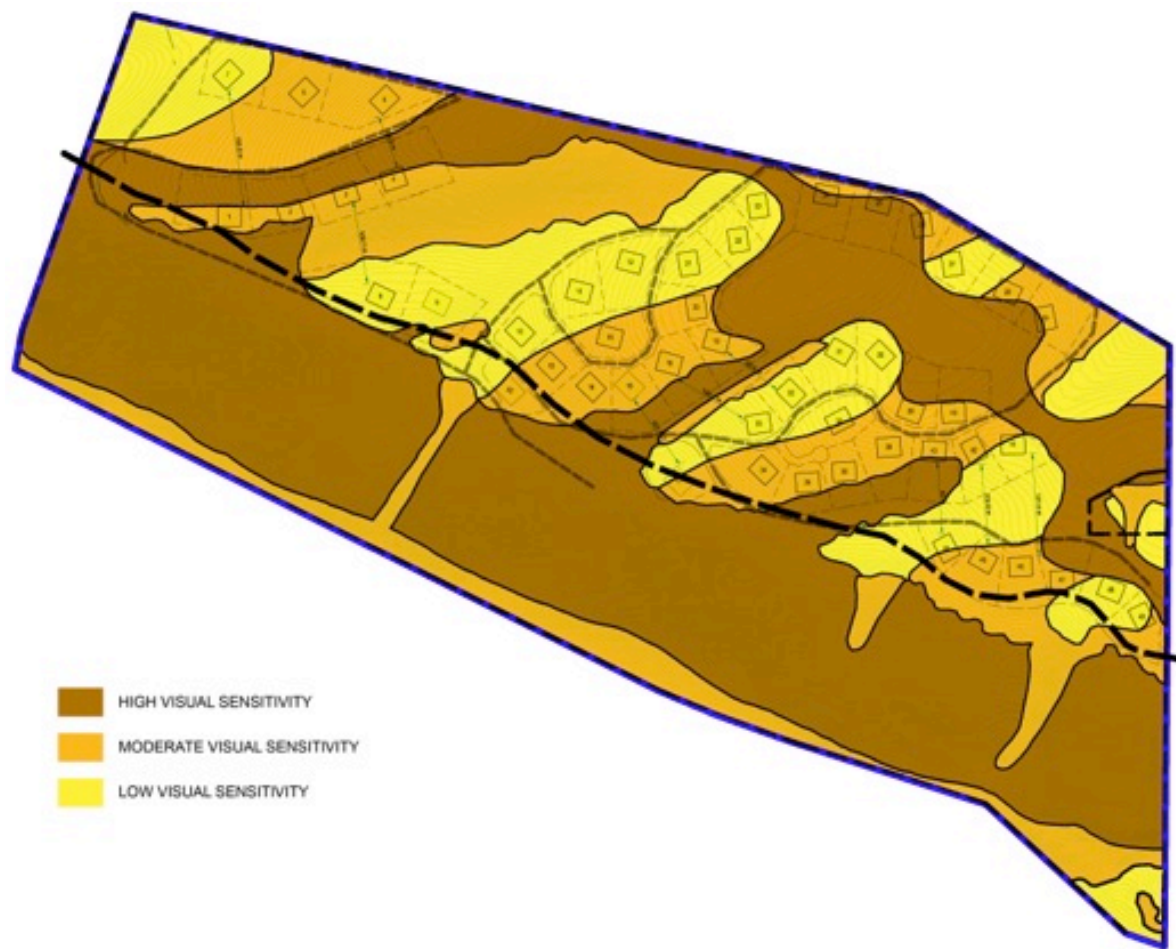


Figure 12 c: Visual Sensitivity of the site – Alternative Proposal 2 – Layout 9

Table 1: Visual Sensitivity

| Summary of inherent visibility and visual sensitivity of the site | | |
|---|------------------------|--------------------|
| | Visibility of the area | Visual Sensitivity |
| Topographic elevation | Minimal - High | Low – High |
| Landforms | Minimal - High | Low- High |
| Vegetative cover | Minimal - High | Low to high |
| Settlement/ Land use Patterns | High | High |
| Visual sensitivity | Minimal to High | Low to High |

Visual Absorption Capacity is the potential of the landscape to conceal the proposed project

- **High VAC** – e.g. effective screening by topography and vegetation;
- **Moderate VAC** - e.g. partial screening by topography and vegetation;
- **Low VAC** - e.g. little screening by topography or vegetation.

Visual Absorption Capacity (VAC) is the capacity for the landscape to conceal the proposed development. The VAC of a landscape depends on its topography and on the type of vegetation that occurs in the landscape. The size and type of the development also plays a role.

The potential of the landscape of the sites and the surrounding areas to conceal the development, varies from low to high. Being situated on an elevated landform results in the site being visually exposed to the surrounding area and therefore has a low VAC.

However, the proposed position of the development on flatter slopes and the tall trees could provide some screening to development on the less sensitive/exposed areas of the site.

The VAC of the site to the proposed development is low to moderate (low due to topography and high due to vegetation).



Photo Plates 20 and 21: Two of the existing residences on the hilltop partially screened by exotic vegetation on the left and indigenous vegetation on the right. The pictures were taken with a zoom lens. With the natural eye, the house on the left was not particularly visible, while the house on the right was partially identifiable.

Visual Intrusion is defined as the level of compatibility or congruence of the project with the particular qualities of the area, or its 'sense of place'. This is related to the idea of context and maintaining the integrity of the landscape or townscape.

- ***High visual intrusion*** – results in a noticeable change or is discordant with the surroundings;
- ***Moderate visual intrusion*** – partially fits into the surroundings, but clearly noticeable;
- ***Low visual intrusion*** – minimal change or blends in well with the surroundings.

The proposed development is an extension of the residential development of Sedgefield, which is to the south, and is as such compatible with the particular qualities of the area. However, because it will not be directly adjacent to the existing development and will be elevated above the existing development, on a predominantly vegetated and undeveloped site, it will be clearly noticeable.



Photo Plates 22, 23, 24 and 25 : The proposed development will be elevated above the adjacent development

The visual intrusion will be moderate to high; the proposed development will partially fit into its surroundings but will be clearly noticeable.

4. POTENTIAL VISUAL IMPACTS OF THE PROPOSED DEVELOPMENT

The assessment of visual impacts is based on a synthesis of criteria including: nature of impact, extent, duration of the impact, intensity, probability of occurrence, reversibility, Irreplaceable loss of resources, cumulative effect and level of significance.

4.1 Nature of the impact

The nature of the visual impacts will be the visual effect the activity would have on the receiving environment. These visual impacts will be:

The following aspects collectively constitute the visual impact of the proposed development:

Pre-construction phase:

- Removal of some vegetation will be required for earthworks. Some tall trees (mostly exotic Gums and Pines) would also be cleared for building thereby increasing the visibility of the site and resulting in a loss of the 'wooded' visual resource.

Construction phase:

- During construction, earthworks would create cut and fill of slopes and would result in visual scarring of the landscape.

Operational phase:

- The site is currently undeveloped and covered in vegetation. Development would result in a change in visual character from a 'wooded' unbuilt landscape to a built landscape.

The existing site is currently unused except for a couple of roads and tracks traversing the site, a water reservoir bordering the eastern boundary with an underground pipeline from the reservoir to Sedgefield across the south eastern section of the site, and overhead power lines also running along the eastern boundary of the site.

The site is wooded with large exotic and alien invasive trees, namely Pine, gum and an assortment of alien Acacia trees. The proposed development will result in part of the site being developed for residential development and the remaining portion being rehabilitated to natural vegetation.

There will be a visual change from wooded area to houses with fynbos scrub. The Preferred Layout 11 will result in less built area than Alternative 1 Layout 4 and arguably Alternative 2 Layout 9. The latter development is less dense but more extensive than Layout 11.

- The proposed development would be visible from scenic routes –
The proposed site of development will be potentially visible from the N2 tourist, scenic route, particularly if the large exotic trees are removed.

When approaching from the west, as one crosses the Swartvlei and approaches Sedgefield and drives through Sedgefield the most southern units of all 3 development alternatives will be partially visible. Because there are more units in Layout 4, there will be more buildings seen. Because there are fewer units in Layout 9, there will be fewer units seen. (See Photomontages Appendix 1)

When approaching from the east, one will see the eastern most units if the exotic vegetation is cleared. This will be relevant to all 3 Layouts. (See Photomontages Appendix 1)

- The proposed development would be visible from sensitive receptors such as the residential areas of Sedgefield (See Photomontages Appendix 1) and the Wilderness National Park to the south west of the development, and
- Night Lighting
The proposed development will require lighting which will have a visual impact at night. This will be visible to the surrounding areas and sensitive receptors in these areas.

The following section should be read in conjunction with the impact Summary tables (4.3.1.1 to 4.3.3.4)

4.2 Impact Assessment Criteria

Refer to Appendix 2 for more detailed information on these Impact assessment criteria.

4.2.1 Extent of the impact

The spatial or geographic area of influence of the visual impact: the extent of each impact for all three layouts is local.

4.2.2 The Duration of the Project

The predicted life-span of the visual impact: the duration of impacts for each of the three layouts ranges from short – term to permanent.

4.2.3 The Intensity of the Impact

The magnitude of the impact on views, scenic or cultural resources: the intensity of the impacts for:

- The Preferred Alternative Layout 11 ranges from low-medium to medium-high;
- Alternative 1 Layout 4 ranges from medium to medium-high; and
- Alternative 2 Layout 9 ranges from low to medium.

4.2.4 Probability of the Impact

The degree of possibility of the visual impact occurring: the probability of the impacts for:

- the Preferred Alternative Layout 11 ranges from probable to definite;
- Alternative 1 Layout 4 ranges from highly probable to definite; and
- Alternative 2 Layout 9 ranges from improbable to definite.

4.2.5 Reversibility

The reversibility of the impacts for:

- the Preferred Alternative Layout 11 ranges from partly-completely reversible to irreversible;
- Alternative 1 Layout 4 ranges from partly reversible to irreversible; and
- Alternative 2 Layout 9 ranges from partly-completely reversible to irreversible.

4.2.6 Irreplaceable loss of resources

The loss of resources resulting from each of the three layouts

- ranges from marginal to significant.

4.2.7 Cumulative effect

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development.

The cumulative impacts before mitigation for:

- the Preferred Alternative Layout 11 range from medium to medium-high;
- Alternative 1 Layout 4 range from medium to medium-high; and
- Alternative 2 Layout 9 range from low to medium-high.

After mitigation, the cumulative impacts for:

- the Preferred Alternative Layout 11 range from low to medium;
- Alternative 1 Layout 4 range from low-medium to medium; and
- Alternative 2 Layout 9 range from low to low-medium'

4.2.8 Significance

Significance of impacts are determined through a synthesis of the assessment criteria.

The significance of impacts before mitigation for:

- the Preferred Alternative Layout 11 ranges from medium to medium-high;
- Alternative 1 Layout 4 ranges from medium-high to high; and
- Alternative 2 Layout 9 ranges from medium to medium-high.

After mitigation, the cumulative impacts for:

- the Preferred Alternative Layout 11 ranges from low to low-medium;
- Alternative 1 Layout 4 ranges from low-medium to medium; and
- Alternative 2 Layout 9 ranges from low to low-medium.

4.3 Summary of Visual Impact Ratings

4.3.1 Summary of impacts during the pre-construction phase

4.3.1.1 Vegetation clearing:

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|---|---------------------------|---------------------------|
| Nature of impact: | Removal of some vegetation will be required for earthworks. Some tall trees (mostly exotic Gums and Pines) would also be cleared for building thereby increasing the visibility of the site and losing the 'wooded' visual resource. | | |
| Extent and duration of impact: | Local, permanent | Local, permanent | Local, permanent |
| Intensity: | Low-medium | Medium | Low |
| Probability of occurrence: | Definite | Definite | Definite |
| Degree to which the impact can be reversed: | Irreversible | Irreversible | Irreversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Marginal - significant | Marginal-significant | Marginal - significant |
| Cumulative impact prior to mitigation: | Medium - High | Medium - High | Medium - High |
| Significance rating of impact prior to mitigation: | MEDIUM – HIGH | MEDIUM – HIGH | MEDIUM - HIGH |
| Degree to which the impact can be mitigated: | Moderate | Moderate | Moderate |
| Proposed mitigation: | <ul style="list-style-type: none"> Restrict extent of disturbance to only those areas to be developed, i.e. retain large exotic trees below the access road as well as those in the developable areas that will not be in the way of proposed roads/services and houses. Demarcate no-go areas to prevent damage to vegetation (e.g. establish Pines and Gums) beyond works areas | | |
| Cumulative impact post mitigation: | Low-medium | Medium | Low |
| Significance rating of impact after mitigation: | LOW-MEDIUM | LOW –MEDIUM | LOW - MEDIUM |

4.3.2 Summary of impacts during the construction phase

4.3.2.1 Visual scarring of the landscape resulting from earthworks (cut and fill):

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|--|---------------------------|---------------------------|
| Nature of impact: | During construction, earthworks would create cut and fill of slopes would constitute visual scarring of the landscape. | | |
| Extent and duration of impact: | Local, short term | Local, short term | Local, short term |
| Intensity: | Low -Medium | Medium | Low – Medium |
| Probability of occurrence: | Definite | Definite | Definite |
| Degree to which the impact can be reversed: | Barely reversible | Barely reversible | Barely reversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Marginal | Marginal | Marginal |
| Cumulative impact prior to mitigation: | Medium | Medium | Low – Medium |
| Significance rating of impact prior to mitigation: | MEDIUM - HIGH | HIGH | MEDIUM |
| Degree to which the impact can be mitigated: | Medium | Medium | Medium |
| Proposed mitigation: | <ul style="list-style-type: none"> Site buildings on less visually sensitive slopes Limit extent of damage, keeping cut and fill to a minimum Note: additional mitigation should be implemented during the operational phase: landscape cut/fill slopes/terraces/retaining walls and use natural finishes and/or colours on retaining walls | | |
| Cumulative impact post mitigation: | Low | Low - Medium | Low |
| Significance rating of impact after mitigation: | LOW - MEDIUM | MEDIUM | LOW |

4.3.3 Summary of impacts during the operational phase

4.3.3.1 Change in visual character from a natural landscape to a built landscape:

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|--|---------------------------|---------------------------|
| Nature of impact: | The site is currently undeveloped and covered in wooded vegetation. Development would result in a change in visual character from a natural unbuilt landscape to a built landscape. | | |
| Extent and duration of impact: | Local, long term | Local, long term | Local, long term |
| Intensity: | Medium - high | Medium-high | Medium |
| Probability of occurrence: | Definite | Definite | Definite |
| Degree to which the impact can be reversed: | Barely reversible | Barely reversible | Barely reversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Significant | Significant | Significant |
| Cumulative impact prior to mitigation: | Medium - High | Medium-high | Medium |
| Significance rating of impact prior to mitigation: | MEDIUM - HIGH | MEDIUM-HIGH | MEDIUM |
| Degree to which the impact can be mitigated: | High | High | High |
| Proposed mitigation: | <ul style="list-style-type: none"> • Retain Woodland of Gum and Pine trees between erven and southern boundary and northern boundary • Limit height of buildings • Terrace/step housing units and limit upper story to 50% of house print • Draw up and enforce development and architectural guidelines • Establish landscaping including large indigenous trees that will screen development, phase Gums and Pines out • Implement architectural design guidelines aimed to reduce visual impact of dwellings • Roof colour to be dark grey, walls and structures to be muted earth colours | | |
| Cumulative impact post mitigation: | Medium | Medium | Low |
| Significance rating of impact after mitigation: | LOW-MEDIUM | LOW -MEDIUM | LOW |

4.3.3.2 Visibility from scenic N2 route:

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|--|---------------------------|--------------------------------|
| Nature of impact: | The proposed development would be visible from the N2 scenic tourist route, approaching Sedgefield. | | |
| Extent and duration of impact: | Local, medium term | Local, long term | Local, medium term |
| Intensity: | Medium | Medium - High | Low - Medium |
| Probability of occurrence: | Highly probable | Highly probable | Highly probable |
| Degree to which the impact can be reversed: | Partly – Completely reversible | Partly reversible | Partly – Completely reversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Significant | Significant | Marginal |
| Cumulative impact prior to mitigation: | Medium | Medium | Low |
| Significance rating of impact prior to mitigation: | MEDIUM - HIGH | MEDIUM - HIGH | MEDIUM |
| Degree to which the impact can be mitigated: | High | High | High |
| Proposed mitigation: | <ul style="list-style-type: none"> • Retain Woodland of gum and pine trees between erven and southern boundary and northern boundary • Limit height of buildings to 6,5m • Terrace/step housing units and limit upper story to 50% of house print • Draw up and enforce development and architectural guidelines • Establish landscaping including large indigenous trees that will screen development, phase Gums and Pines out • Implement architectural design guidelines aimed to reduce visual impact of dwellings • Roof colour to be dark grey, walls and structures to be muted earth colours | | |
| Cumulative impact post mitigation: | Low-medium | Medium | Low |
| Significance rating of impact after mitigation: | LOW | LOW-MEDIUM | LOW |

4.3.3.3 Visibility from sensitive receptors – residential areas of Sedgfield and section of the Wilderness National Park:

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|---|---------------------------|--------------------------------|
| Nature of impact: | The proposed development would be visible from the surrounding residential areas and a section of the Wilderness National Park to the south west | | |
| Extent and duration of impact: | Local, medium term | Local, long term | Local, medium term |
| Intensity: | Medium | Medium-high | Low-medium |
| Probability of occurrence: | Probable | Highly probable | Probable |
| Degree to which the impact can be reversed: | Partly reversible | Partly reversible | Partly – Completely reversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Significant | Significant | Marginal |
| Cumulative impact prior to mitigation: | Medium | Medium | Low |
| Significance rating of impact prior to mitigation: | MEDIUM- HIGH | MEDIUM-HIGH | MEDIUM |
| Degree to which the impact can be mitigated: | High | High | High |
| Proposed mitigation: | <ul style="list-style-type: none"> Retain Woodland of Gum and Pine trees between erven and southern boundary and northern boundary Limit height of buildings to 6,5m Terrace/step housing units, limit upper storey to 50%. Draw up and enforce guidelines. Building colours to be muted earth colours, roof to be dark grey | | |
| Cumulative impact post mitigation: | Low - medium | Medium | Low |
| Significance rating of impact after mitigation: | LOW-MEDIUM | MEDIUM | LOW |

4.3.3.4 Night Lighting:

| | Preferred Proposal Layout 11 | Alternative 1 Layout 4 | Alternative 2 Layout 9 |
|---|--|---------------------------|---------------------------|
| Nature of impact: | The proposed development will require lighting which will have a visual impact at night. This will be visible to the surrounding areas and sensitive receptors in these areas. | | |
| Extent and duration of impact: | Local, medium term | Local, long term | Local, medium term |
| Intensity: | Medium | Medium-high | Low-medium |
| Probability of occurrence: | Highly Probable | Highly probable | Highly probable |
| Degree to which the impact can be reversed: | Partly reversible | Partly reversible | Partly reversible |
| Degree to which the impact may cause irreplaceable loss of resources: | Significant | Significant | Significant |
| Cumulative impact prior to mitigation: | Medium | Medium-high | Low-medium |
| Significance rating of impact prior to mitigation: | MEDIUM | MEDIUM-HIGH | LOW-MEDIUM |
| Degree to which the impact can be mitigated: | Medium - High | Medium - High | Medium - High |
| Proposed mitigation: | <ul style="list-style-type: none"> • Limit external lighting on buildings, use low spill lighting • Street lighting to be low spill bollard lighting • Retain woodland and landscape new development, and • Draw up and enforce development and architectural guidelines | | |
| Cumulative impact post mitigation: | Low-medium | Medium | Low-medium |
| Significance rating of impact after mitigation: | LOW-MEDIUM | MEDIUM | LOW |

5. MITIGATION MEASURES AND MONITORING PROGRAMMES

The Preferred Alternative, Layout 11 and Alternative 2, Layout 9 (lower density) both have a lower visual impact than Alternative 4, as development in general has been sited in the less visually sensitive areas of the site, i.e. off ridgelines and steep slopes, and there are fewer units.

This being said, the group housing site in The Preferred Alternative Layout 11, in particular the central cluster, does fall on some steep slopes and development here will potentially result in major earthworks which will be highly visible if not mitigated.

Similarly the reservoirs of the Preferred Alternative (Layout 11) that are on the ridgeline, a highly visually sensitive area, and those units on moderately visually sensitive areas, will be visible and will need mitigation.

In Alternative 2, Layout 4, the units on highly and moderately visually sensitive areas will be visible.

Each of the three proposed development Alternatives will be partially visible from the N2 to the west and east of Sedgefield, from parts of the Wilderness National Park and other conservation areas and from residents of, and holidaymakers visiting, the village of Sedgefield, particularly between the N2 and northern dune ridge.

There is a line running from east to west on the site, indicated on the Visual Sensitivity maps, which indicates from where the development will be seen from the N2 directly below the site. Above, north of this line, development will not be seen from the N2 immediately below the site. Any development below, south of this line, will be seen from the N2 immediately below the line. No development, other than the access road upgrade and the small water treatment plant, should be allowed below this road.

Mitigation measures will assist in mitigating the visual impact, namely :

- Siting of the proposed development units according to the inherent site sensitivity as has generally been done in the Preferred Alternative Layout 11 and Alternative 2 Layout 9;
- The physical reforming of the landscape for development, such as terracing and cut – to fill for roads and buildings, must be designed in such a way to minimise the visual impact, to this end a Landscape Architect must be employed at the early stages to work with the Engineers developing this plan;
- Limiting heights and footprints of units;
- Providing development and architectural guidelines
- Retaining as many of the existing large Pine and Gum trees as possible;
- Extensive landscaping along streets and between buildings; and
- External lighting restrictions and guidelines

5.1 Siting of development on less visually sensitive areas.

In the Preferred Alternative Layout 11 and Alternative 2 Layout 9, the visibility and resulting visual impact of the proposed development has been mitigated to an extent by siting of the various components on less visually sensitive sites. However, there are still elements such as reservoirs (Layout 11) and units (Layout 9) sited on highly visually sensitive areas with some units in Layout 11 on moderately sensitive areas that will be visible.

In Alternative 2 and in the Group Housing Areas in The Preferred Alternative, building platform positions for these erven have been specified on the plans. This should be done for all erven on the moderately visually sensitive sites as well.

Buildings/reservoirs located on ridgelines and 'koppies' need particular attention because of the High Visual Sensitivity and their potentially significant visual intrusion. The reservoirs will need to be partially buried and landscaped to screen these.

5.2 Careful reforming of the landscape for development

In the preferred alternative, Layout 11, the central cluster of buildings and roads to be developed are situated on areas that are moderately visually sensitive. The area will require earthworks for development. The design development by the Engineers must be undertaken in consultation with a Professionally Registered Landscape Architect who is well experienced and will be able to guide this development such that the visual impact thereof, and the future buildings, will be significantly reduced.

This is also relevant for the other development clusters in the Preferred Alternative, which are on less visually sensitive slopes and landforms, as well as the roads. The widening of roads with their required cut and fill slopes must be designed in conjunction with the Landscape Architect.

Similarly, if Alternatives 4 or 9 are approved, the above applies.

5.3 Limiting footprints and heights of units

Visual impact can be further reduced by limiting the footprint of the building and hardscaping as well as the heights of buildings. Limiting the footprint of units will help to provide more greening areas inbetween buildings which will assist with screening and visual absorption of the units.

By reducing the height of the buildings to maximum 6,5m, with the upper storey being limited to 50% of the ground floor and terracing/stepping units up or down the slope, the visual impact can be further mitigated.

5.4 Development and architectural guidelines

Development and building guidelines need to address procedural, planning and aesthetic considerations required for the successful design and development of the property and the architectural ethos of the development.

The purpose of design guidelines is to protect and safeguard the environment and scenic resources and guide appropriate architectural character to protect the investment value of the development.

The guidelines should not be restrictive conditions but should promote an overall design sensitivity whilst allowing flexibility for individual expression. The buildings should aim to be as visually recessive as possible. Of importance to visual impact aspects will be height, finishes and form, with grouping of components in separate but linked forms providing a better visual impact than one larger component. Orientation, materials, low pitch roofscape will all contribute to visual mitigation. Colours of walls should be muted earth colours excluding white, beige and cream. Roof colour should be dark grey.

Windows should be recessed with overhangs to prevent reflection of the sun.

5.5 Retaining Woodland

By retaining large Gum and Pine trees below, above and between the development pockets, the construction activities and new buildings, including new reservoirs, will be screened to a significant degree, visually softening the development. To this end, prior to the design development, a survey of large trees should be undertaken and with the assistance of an arborist and landscape architect, trees and groups of trees that are healthy and of good visual value (screening/enclosing) should be retained. The arborist should advise with regards to the feasibility of removing some trees and leaving others and how this will effect the stability of the remaining trees. Similarly, the arborist must advise on tree root protection with respect to road and building excavations and resultant pruning of roots.

The woodland of Gums and Pines between the development and both southern and northern boundaries should be retained. Retaining the trees to the south will help screen the development from the N2 and Sedgefield residents while retaining the trees to the north will provide a backdrop to the development, reducing the chance of the upper units breaking the skyline.

This may mean that detail design of roads, for example, may need to include reducing the cut and fill slopes by using retainers such as gabions or walls to ensure these screening trees are retained.

Of utmost importance, is the fact that the retention of these trees must be communicated to the future residents of the development as well as agents selling the properties who should make owners aware of these restrictions.

5.6 Landscaping

A Landscape Plan must be drawn up by a professionally registered Landscape Architect.

The objective of the Landscape Plan must be:

- To identify and retain existing exotic and indigenous trees and shrubs that will visually screen the development;
- To provide a planting plan of indigenous trees and shrubs for streets and open spaces that will allow for the medium - longterm visual screening of the development and enhance the living environment of the owners and residents;
- To draw up a management plan for phasing in indigenous trees and phasing out exotic trees such that the proposed development will always be screened from sensitive receptors, by trees. The plan should include planting of fast growing, pioneer type trees (Virgilia species), trees with a medium growth rate and those that have a slower growth rate. This management plan should be for a minimum of 20 years and should be monitored and revised every 5 years.
- To provide Landscape Guidelines for homeowners. Planting of lawn alone exacerbates the visibility of the units. The mix of lawn, shrubs and trees should be carefully designed with the importance of trees and large shrubs emphasized, to provide further greening of the built environment.
- To draw up a Landscape Operational Maintenance Plan for the Home Owners Association to manage the shared open spaces beyond individual erf boundaries.
- To provide guidelines on visually permeable boundary treatments, using fencing for the most part and walls at entrances only. No precast concrete walls.

5.7 External lighting controls

Light pollution and its subsequent visual impact can be effectively mitigated through:

- use of effective yet low spill light measures,
- low bollard or pole top street lighting if required,
- limiting and control of external light use on houses and commercial areas.

To this end guidelines must be drawn up by an electrical/ lighting expert.

5.8 Monitoring Programme

The potential visual impacts and proposed mitigation thereof will need to be monitored as follows:

5.8.1 Planning phase:

During this stage, a Landscape Architect must be appointed as part of the design team (including engineers and architects). The Landscape Architect should be professionally registered and well experienced in projects such as this, with a minimum of 10 years experience. This appointment of the Landscape Architect, and their performance, will need

to be monitored by the Environmental Control Officer (ECO)/Environmental Assessment Practitioner and or the Local Authority.

The Brief of the Landscape Architect (LA) must include:

- the LA consulting with both Engineers and Architects to ensure that sensitive earthwork and buildings design development occurs, that will allow for reducing the construction and operation phase visual impacts;
- the LA working with the Surveyor, arborist and planners in establishing which trees are to remain on site for visual screening and taking this information into the design development of the civil and building works;
- preparation of a Landscape Plan, design development thereof and monitoring implementation and thereafter maintenance. The plan must include the tree survey and what trees are, and indigenous vegetation is, to be retained (large pines and gums and indigenous scrub), what is to be removed, the planting of indigenous trees and phasing out of exotic trees in areas between development, new tree and shrub planting along roadways and in open spaces in the built areas and a Guideline document for private gardens within the development;
- The LA must prepare a Landscape Operation Plan for the ongoing management of the whole sites landscape development and must be retained for a minimum of 15 years to advise the homeowners and ensure the Landscape Principles are well understood and entrenched before handing over to the landscape management to the landowners.

The Architect is appointed to draw up guidelines for the building development to ensure that the architecture is recessive and reduces the visual impact of the development.

5.8.2 Construction Phase:

During this phase, the appointment of a Landscape Architect is to continue to monitor the management of the trees, the earthworks and the implementation of the Landscape Plan and establishment thereof. The retention and performance of the LA will need to be monitored by the ECO/EAP.

The building guidelines are to be implemented and monitored by the Architect and ECO – this must happen at plan approval stage and during construction.

5.8.3 Operation Phase

The Landscape Architect is to be retained for minimum 15 years to monitor the Landscape Development on both Private erven and Private Open Space and to advise landowners on landscape and visual aspects. This appointment and performance is to be monitored by the ECO/EAP/Environmental Authority.

6. CONCLUSIONS

The proposed residential development on The Hill in Sedgefield can be described as 'well flagged' in the PSDF, the Knysna SDF, the Garden Route EMF and the Provincial Guideline For The Management Of Development On Mountains, Hills And Ridges Of The Western Cape, due to its situation on a sensitive landform, a unique 'fossil' dune' and its ridgeline.

The potential visual impacts are visual scarring as a result of clearing vegetation and earthworks during construction, change from a wooded site to a built site, visibility from scenic routes (N2), sensitive receptors including the residents on Sedgefield and parts of the Wilderness National Park and lighting at night.

The proposed Preferred Alternative (Layout 11) development will have a medium-high visual impact before mitigation, particularly to the Sedgefield residential area to the south, the N2 to the west of the Sedgefield and from parts of the Wilderness National Park. After mitigation, these visual impacts can be reduced to low to low-medium. The extent of this visual impact will be limited to the area south of the site which is local.

The Proposed Alternative 1 (Layout 4) development will have a medium-high to high visual impact before mitigation. After mitigation these impacts will be reduced to low-medium to medium.

The Proposed Alternative 2 (Layout 9) development results in mainly medium visual impacts with vegetation clearing being potentially medium-high before mitigation. With mitigation, the visual impacts can be reduced to mainly low, with vegetation clearing being low – medium.

The visual impact has been mitigated in The Preferred Alternative Layout 11 and Alternative 2 Layout 9 through siting of most of the components of the development in the less visually sensitive areas, however development on the moderately sensitive visual areas of the site will need to be managed to prevent visual impacts, e.g. earthworks, building heights and footprints.

Further mitigation measures will include retaining existing large trees which will initially screen the development, detailed, sensitive and limited earthworks, extensive landscaping which will ultimately screen the development, and development and architectural guidelines which should strive to guide development such that it enhances the visual environment and not detract from it.

These mitigation measures will need to be implemented and monitored throughout the planning, design development, construction, maintenance and operation of the development if the mitigation of the visual impact of this development is to be significantly and successfully achieved.

7. REFERENCES

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Appendix 2. – Assessment Criteria

4.2 Impact Assessment Criteria

4.2.1 Extent of the impact

The spatial or geographic area of influence of the visual impact, i.e.:

- *Site-related: extending only as far as the activity;*
- *Local: limited to the immediate surroundings;*
- *Regional: affecting a larger metropolitan or regional area;*
- *National: affecting large parts of the country;*
- *International: affecting areas across international boundaries.*

4.2.2 The Duration of the Project

The predicted life-span of the visual impact:

- *Short term (e.g. duration of the construction phase);*
- *Medium term (e.g. duration for screening vegetation to mature);*
- *Long term (e.g. lifespan of the project);*
- *Permanent where time will not mitigate the visual impact.*

4.2.3 The Intensity of the Impact

The magnitude of the impact on views, scenic or cultural resources

- *Low, where visual and scenic resources are not affected;*
- *Medium, where visual and scenic resources are affected to a limited extent;*
- *High, where scenic and cultural resources are significantly affected.*

4.2.4 Probability of the Impact

The degree of possibility of the visual impact occurring:

- *Improbable, where the possibility of the impact occurring is very low;*
- *Probable, where there is a distinct possibility that the impact will occur;*
- *Highly probable, where it is most likely that the impact will occur; or*
- *Definite, where the impact will occur regardless of any prevention measures.*

4.2.5 Reversibility

- *Completely reversible – the impact can be reversed with the implementation of minor mitigation measures.*
- *Partly reversible – the impact is reversible but more intense mitigation measures are required*
- *Barely reversible – the impact is unlikely to be reversed even with intense mitigation measures*
- *Irreversible – the impact is irreversible and no mitigation measures exist*

4.2.6 Irreplaceable loss of resources

Describes the degree to which resources will be irreplaceably lost due to the proposed activity. It can be

- *no loss of resources,*

- marginal loss,
- significant loss or
- complete loss of resources.

4.2.7 Cumulative effect

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development. The cumulative effect can be:

- Negligible – the impact would result in negligible to no cumulative effect
- Low – the impact would result in insignificant cumulative effects
- Medium – the impact would result in minor cumulative effects
- High – the impact would result in significant cumulative effects

4.2.8 Significance

Significance of impacts are determined through a synthesis of the assessment criteria and is described as –

- Low negative – where it would have negligible effects and would require little or no mitigation
- Low positive – the impact will have minor positive effects
- Medium negative – the impact will have moderate negative effects and will require moderate mitigation
- Medium positive – the impact will have moderate positive effects
- High negative – the impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact
- High positive – the impact will have significant positive effects
- Very high negative – the impact will have highly significant effects and are unlikely to be able to be mitigated adequately
- High positive – the impact will have highly significant positive effects