



# Landscape/Visual Impact Assessment

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Proposed Arlington Multiple-use Development  
in Walmer, Gqeberha, Eastern Cape Province

**Prepared for:**

Ms Cherise Coetzee  
Environmental Specialist  
JG Africa  
Tel: 041 390 8700  
Email: coetzeec@jgafrica.com

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Mr Roy de Kock M.Sc (*Pri.Nat.Sc.*)  
*Ecologist and Biodiversity specialist*  
*Blue Leaf Environmental (Pty) Ltd.*  
Cell: + [REDACTED]  
Email: [REDACTED]

Port Elizabeth:

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

East London:

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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## 1. Declaration of independence

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I, Roy de Kock as duly authorized representative of BlueLeaf Environmental (Pty) Ltd, hereby confirm my independence (as well as that of BlueLeaf) as a specialist and declare that neither I nor BlueLeaf have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which BlueLeaf was appointed as environmental specialist in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for worked performed, specifically in connection with Landscape/Visual Assessment for the proposed Arlington MultipleUse Development in Gqeberha in the Eastern Cape. I further declare that I am confident in the results of the studies undertaken and conclusions drawn because of it – as is described in this report.

  
Full Name: Roy de Kock

**Title / Position:** Visual specialist

**Qualification(s):** BSc (Hons) Geology; MSc Botany; Candidate PhD Botany

**Experience (years/ months):** 17 years

**Registration(s):** SACNASP [REDACTED]

**Tel:** +[REDACTED]

**Email:** [REDACTED]

## **2. Expertise of specialist**

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Roy has over 17 years' experience in environmental consulting and specialist services in the EasternCape. Various projects throughout South Africa as well as Africa at larges has also been undertaken. Projects include baseline studies, impact assessments and compliance auditing for various large- scale projects including numerous wind farms, roads (National and Provincial), and infrastructure expansion projects. Roy has also conducted numerous specialist studies including but not limited to Ecological and Botanical assessments, Visual studies, Biodiversity studies, Plant and Animal Search and Rescuer, Fauna and Flora permits, Aquatic Assessments, Agricultural and Soil Assessments and Environmental and Venomous Animals training workshops.

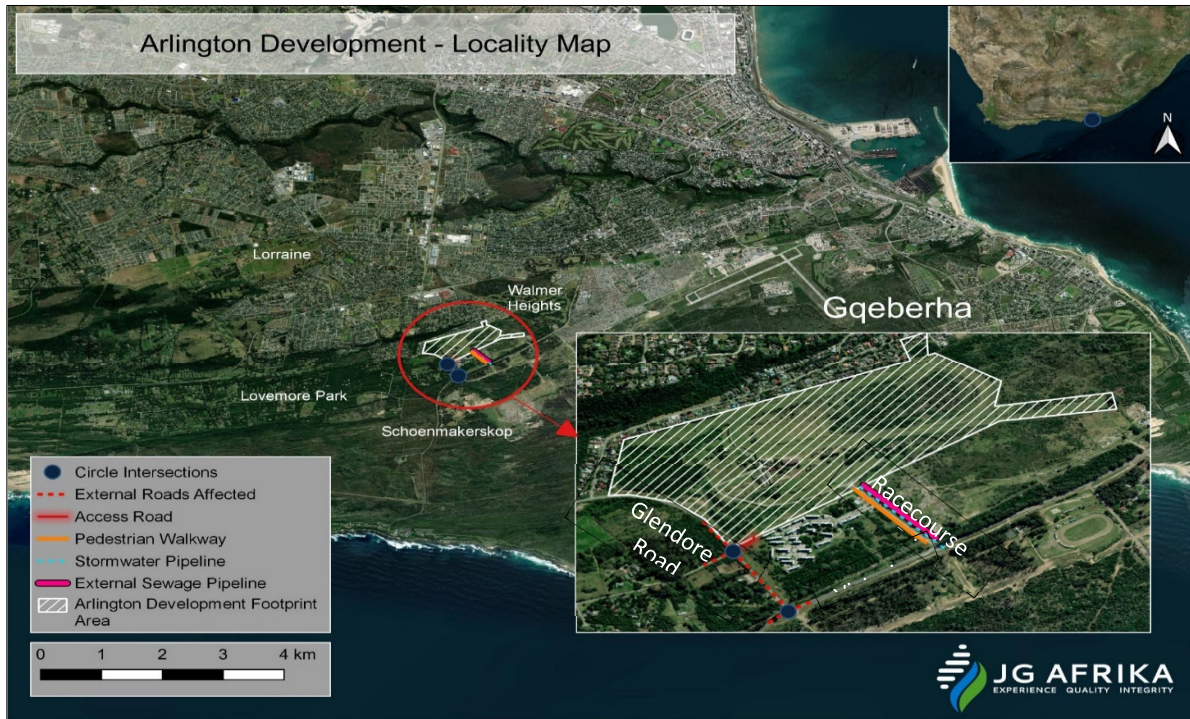
Roy holds a BSc Honours in Geology and an MSc in Botany from the Nelson Mandela University in Port Elizabeth. He is currently busy with his PhD (Doctorate degree) in Botany and Soil Science. He has over 16 years' experience in the environmental consulting focusing on Ecological and Agricultural Assessments, Geological and Geotechnical analysis, Environmental Management Plans, mining applications and various environmental impact studies.

Roy is registered as a professional natural scientist (Pri.Sci.Nat.) with SACNASP (Registration nr: [REDACTED]).

This study complies with the requirements as listed in the Gazetted protocols for a general specialist assessment (GN. R 320 of 2020) and minimum report content requirements.

### 3. Introduction

BlueLeaf Environmental (Pty) Ltd has been appointed by Enviroworks to provide visual input into their proposed Arlington multiple-use development on erven 3988, 4195, and 6991 along Glendore Road in Walmer, Gqeberha, in the Nelson Mandela Bay Municipality, Eastern Cape (Figure 3.1).



**Figure 3.1: Locality Map of the proposed Arlington development in Gqeberha (Source: JG Africa)**

The Applicant intends to establish a multiple-use development, comprising of 25 clusters as well as an internal road network, on erven 3988, 4195 and 6991, along Glendore Road in Walmer. The consolidated development footprint will be 61,4 Ha in extent. Approximately 3 000 residential units are proposed which will be divided amongst nine (9) clusters designated for General Residential Zone 2 and General Residential Zone 4. In addition, 13 clusters designated for both Business Zone 1 and Business Zone 2 are planned, as well as one (1) cluster for Community Purposes and two (2) clusters for Special Purposes Infrastructure (solar power & wastewater treatment).

#### 3.1 Permanent footprints

The development will include the following permanent components (Figure 3.2):

- Retail/Business Infrastructure.
- Office/Storage Facilities.
- Medical Use/Office Facilities.
- Special Use High Tech Industrial facility/infrastructure.
- Warehouse Facilities.
- Community Zone (i.e., child aftercare facilities).
- Mixed-residential Housing Units including Social Housing – approximately 3000 units are proposed.
- Club House and Sport Facilities.
- A Business Incubator / Substation Area.
- Parking/Solar Charging Stations.
- Special Purposes Infrastructure – solar photovoltaic power park & wastewater treatment plant.

- Open spaces.
- Installation of internal infrastructure services, such as water, sanitation, irrigation, stormwater, roads, and electricity, to service the proposed infrastructure. See further details below; and
- Installation of external infrastructure services, such as stormwater and sanitation connection lines as well as a pedestrian walkway along Racecourse Road and two traffic circles along Glendore Road. An additional road will be constructed between the south-western corner of the site and the northern circle.

### 3.2 Temporary footprints

Temporary footprint includes the areas directly affected/disturbed by construction and clearing of land that has taken place at the initial stages of construction but will be rehabilitated after completion of construction activities. The temporary footprint present on site is listed as follows:

1. Clearing of vegetation.
2. Laydown areas for materials and equipment.
3. Construction machinery.
4. Site camp.
5. Parking bays.

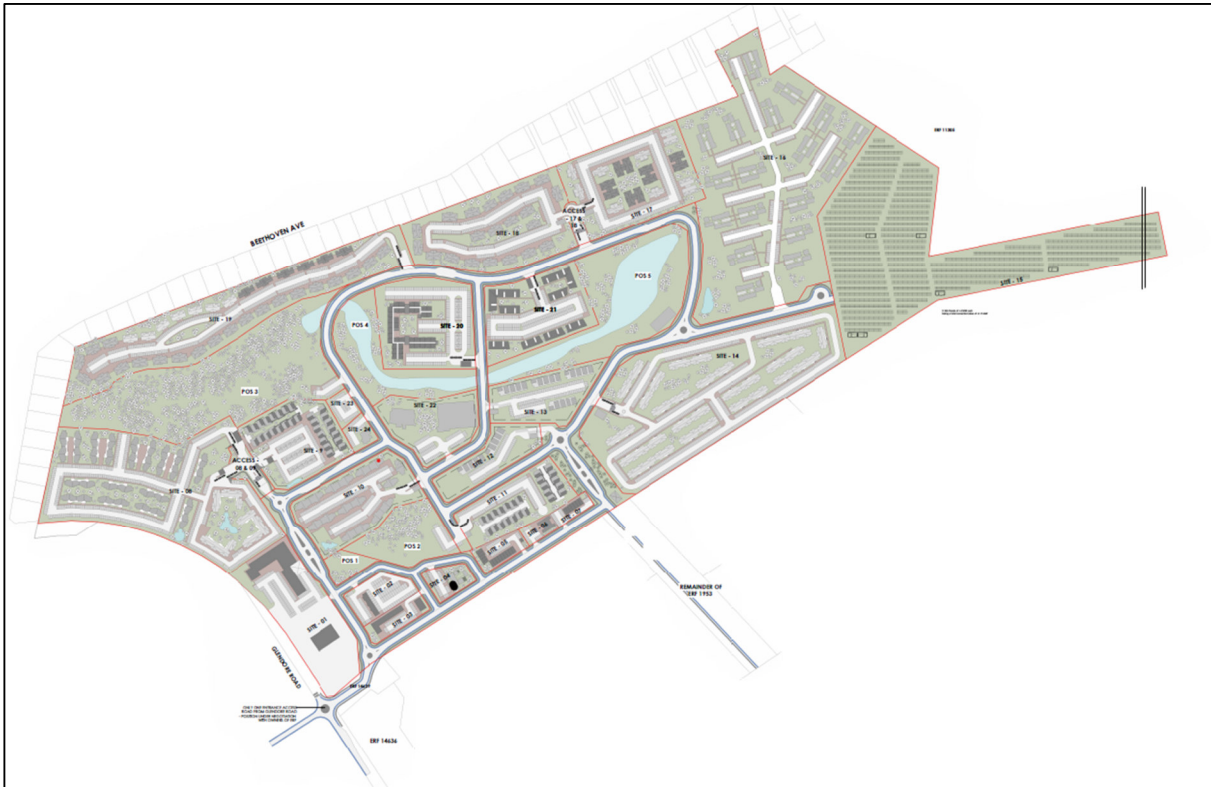


Figure 3.2: Layout map of the proposed development on erven 3988, 4195 and 6991 in Walmer.

### 3.3 Alternatives

The following alternatives are proposed:

#### Site alternatives

The preferred property and site alternative is erven 3988, 4195 and 6991, along Glendore Road in Walmer. No other site alternatives are proposed.



## Design alternatives

The current layout design as shown in Figure 3.2 are proposed. This design may be amended by the outcomes of some of the specialist studies.

## **3.4 Methodology**

This report has been drafted in accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in Terms of Sections 24(5)(a) and (h) and 44 of NEMA (G.N.R. 1150 of 2020) – Site Sensitivity Verification Requirements where a Specialist Assessment is Required but no Specific Assessment Protocol has been prescribed. Appendix 6 of Government Notice Regulation 326 of 7 April 2017 outlines the basic requirements of a Specialist Report.

The Report further adheres to the criteria outlined by the Department of Environmental Affairs and Development Planning (DEA&DP) Guideline for Involving Visual and Aesthetic Specialists in the Environmental Impact Assessment (EIA) process (the DEA&DP Guidelines) (Oberholzer, 2005), which recommends that the following concepts underpin the visual evaluation of the project proposals:

- Understand that **'visual'** implies the full range of visual, aesthetic, cultural and spiritual aspects of the environment, which together contribute to the local character and sense of place.
- Understand that **'impact'** means a noticeable change to the status quo when perceived under normal conditions and this change is not necessarily negative or positive but may contain aspects of both.
- Identify all significant **scenic resources**, including protected areas, scenic drives, sites of special interest and tourist destinations, together with their relative importance within the region.
- Understand the dynamic **landscape processes**, including geological, biological, horticultural, and human settlement patterns, which contribute to landscape character, visual attributes and scenic amenity value.
- Include both **quantitative criteria**, such as visibility, **and qualitative criteria**, such as aesthetic value or sense of place to achieve a balanced perception of visual impact.
- Include **visual input** as an integral part of the project planning and design process, to ensure that the visual findings and recommended measures for mitigation can influence the final design pro-actively, and
- Determine the **value and significance of visual and aesthetic resources** responsibly through a rigorous process, of which participatory public engagement forms an essential component.

To meet these requirements, the following methodology was applied:

1. All the required data were collected, which included data on topography, existing visual character, and quality, plans of the proposed development and other background information.
2. Fieldwork was conducted on the 8 March 2023. The objectives of the fieldwork were to:
  - familiarize the author with the site and its surroundings.
  - to identify key viewpoints/ corridors and visual receptors.
  - ground truth the sensitivity of the landscape, and
  - determine the distance from which visual impacts are likely to become discernible.
3. Landscape characterization was done by mapping the site location and context and describing the landscape character and quality. This considered geological and topographical features, vegetation, and land-use.
4. The landscape quality was described as per the following criteria. Visual quality is high when:
  - The landscape offers dramatic, rugged topography and /or visually appealing water forms are present.
  - Pleasing, dramatic or vivid patterns and combinations of landscape features and vegetation are found.



- The landscape is without visually intrusive or polluting urban, agriculture or industrial development (i.e.it reveals a high degree of integrity), and/or
  - Outstanding or evocative features and landmarks are present, and
  - The landscape/townscape can convey meaning.
5. Visual sampling was undertaken using photography from several viewpoints in a 10 km radius of the site. The location of the viewpoints was recorded with a GPS and mapped on Google Earth Pro and photographs were taken at a depth of field between 45-55mm. A selection of these is used in the assessment phase of the VIA to illustrate the likely zone of influence and visibility.
  6. The zone of influence was determined. The visual zone of influence (viewshed) is defined as the area, including all the major observation sites, from which the proposed activities will be visible. This area varies for each visual intrusion or impact.
  7. ArcGIS Spatial Analyst extension was used to calculate the viewshed making use of a 20m contour interval SRTM Digital Elevation Model (DEM) as the input raster.
  8. Visual concerns and potential impacts were identified.
  9. The potential magnitude of visual impacts was evaluated using the following standard VIA criteria and rating methodologies:

- Visual Absorption Capacity (VAC) of the natural vegetation:

HIGH	MODERATE	LOW
The area is effectively able to screen visual impacts: <ul style="list-style-type: none"> <li>- Undulating or mountainous topography and relief,</li> <li>- Good screening vegetation (high and dense),</li> <li>- Is highly urbanised in character; and</li> <li>- Existing development is of a scale and density to absorb the visual impact.</li> </ul>	The area is partially able to screen visual impacts: <ul style="list-style-type: none"> <li>- Moderately undulating topography and relief,</li> <li>- Some or partial screening vegetation,</li> <li>- A relatively urbanised character, and</li> <li>- Existing development is of a scale and density to absorb the visual impact to some extent.</li> </ul>	The area is not able to screen the visual impacts: <ul style="list-style-type: none"> <li>- A flat topography,</li> <li>- Low growing or sparse vegetation,</li> <li>- Is not urbanized, and</li> <li>- Existing development is not of a scale and density to absorb the visual impact to some extent.</li> </ul>

- Visibility:

NOT VISIBLE	MARGINALLY VISIBLE	VISIBLE	HIGHLY VISIBLE
Proposed activities cannot be seen	Proposed activities are only just visible / partially visible	Proposed activities are visible although parts may be partially obscured	Proposed activities are clearly visible (usually in foreground)

- Visual intrusion

HIGH	MODERATE	LOW
The development/activity results in a noticeable change or is discordant with the surroundings: <ul style="list-style-type: none"> <li>- Is not consistent with the existing land use of the area,</li> <li>- Is not sensitive to the natural environment;</li> <li>- Is very different to the urban texture and layout;</li> <li>- The buildings and structures are not congruent / sensitive to the</li> </ul>	The development/activity partially fits into the surroundings but is clearly noticeable : <ul style="list-style-type: none"> <li>- Is moderately consistent with the existing land use of the area,</li> <li>- Is moderately sensitive to the natural environment,</li> <li>- Is moderately consistent with the urban texture and layout,</li> <li>- The buildings and structures are moderately congruent / sensitive</li> </ul>	The development/activity results in a minimal change to the surroundings and blends in well: <ul style="list-style-type: none"> <li>- Is consistent with the existing land use of the area,</li> <li>- Is highly sensitive to the natural environment,</li> <li>- Is consistent with the urban texture and layout,</li> <li>- The buildings and structures are congruent / sensitive to the</li> </ul>

HIGH	MODERATE	LOW
existing architecture / buildings; and - The scale and size of the activities are different to nearby existing activities.	to the existing architecture / buildings; and - The scale and size of the activities are moderately similar to nearby existing activities.	existing architecture / buildings; and - The scale and size of the activities are similar to nearby existing activities.

- Visual Sensitivity

HIGH	MODERATE	LOW
- Residential areas. - Nature reserves. - Scenic routes / trails.	- Sporting and recreational areas. - Places of work.	- Industrial areas. - Active mining areas. - Visually severely degraded areas.

10. Potential visual impacts were assessed using the methodology below. For each impact, the extent (spatial scale), magnitude (severity of impact) and duration (time scale) is described. These criteria are then considered to ascertain the significance of the impact, firstly in the case of no mitigation and then with the implementation of mitigation measures. Table 3.1 below indicates the scale used to assess these variables and defines each of the rating categories.

**Table 3.1: Extent, magnitude, and duration of impacts.**

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Beyond a 10km radius of the candidate site.
	Local	Within a 10km radius of the candidate site.
	Site specific	On site or within 100m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are severely altered
	Medium	Natural and/ or social functions and/ or processes are notably altered
	Low	Natural and/ or social functions and/ or processes are slightly altered
	Very Low	Natural and/ or social functions and/ or processes are negligibly altered
	Zero	Natural and/ or social functions and/ or processes remain unaltered
Duration of impact	Long-term	More than 10 years after construction
	Medium-term	3-10 years after construction
	Short-term	Up to 3 years after construction
	Construction period	Approximately 2 years

The significance of the impacts is derived by considering the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is described in Table 3.2 below.

**Table 3.2: Impact significance:**

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	- High magnitude with a regional extent and long-term duration. - High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration. - Medium magnitude with a regional extent and long-term duration.
Medium	- High magnitude with a local extent and medium-term duration. - High magnitude with a regional extent and construction period duration or a site-specific extent and long-term duration. - High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration. - Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term.
Low	- High magnitude with a site-specific extent and construction period duration. - Medium magnitude with a site-specific extent and construction period duration. - Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term. - Very low magnitude with a regional extent and long-term duration.
Very Low	- Low magnitude with a site-specific extent and construction period duration. - Very low magnitude with any combination of extent and duration except regional and long term.

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
Neutral	- Zero magnitude with any combination of extent and duration.

The probability of these impacts occurring as well as the confidence in the assessment of the impacts has been determined using the rating system in Table 3.3 below:

**Table 3.3: Probability rating**

PROBABILITY RATING	CRITERIA
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

The significance of the impacts has also been considered in concert with the probability of that impact occurring as described by the confidence ratings in Table 3.4 below:

**Table 3.4: Confidence rating**

CONFIDENCE RATING	CRITERIA
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

And finally, the reversibility of the impact is estimated using the rating system outlined in Table 3.5 below:

**Table 3.5: Reversibility rating**

REVERSIBILITY RATINGS	CRITERIA
Irreversibility	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause or stress is removed.

### 3.5 Objectives

- Identification of issues and values relating to visual, aesthetic, and scenic resources through involvement of I&APs and the public.
- Identification of landscape types, landscape character and sense of place, generally based on geology, landforms, vegetation cover and land use patterns.
- Identification of viewsheds, view catchment area and the zone of visual influence, generally based on topography.
- Identification of important viewpoints and view corridors within the affected environment, including sensitive receptors.
- Indication of distance radii from the proposed project to the various viewpoints and receptors.
- Determination of the visual absorption capacity (VAC) of the landscape, usually based on topography, vegetation cover or urban fabric in the area.
- Determination of the relative visibility, or visual intrusion, of the proposed project.
- Determination of the relative compatibility or conflict of the project with the surroundings, and
- A comparison of the existing situation with the probable effect of the proposed project, through visual simulation, generally using photomontages.

### 3.6 Assumptions and Limitations

1. This report is based on background information provided by JG Africa and is assumed to be accurate and representative of the project.
2. Determination of the viewshed does not consider vegetation and built structures. It therefore represents

an exaggerated visibility and can be considered the maximum theoretical area from which the proposed development may be visible.

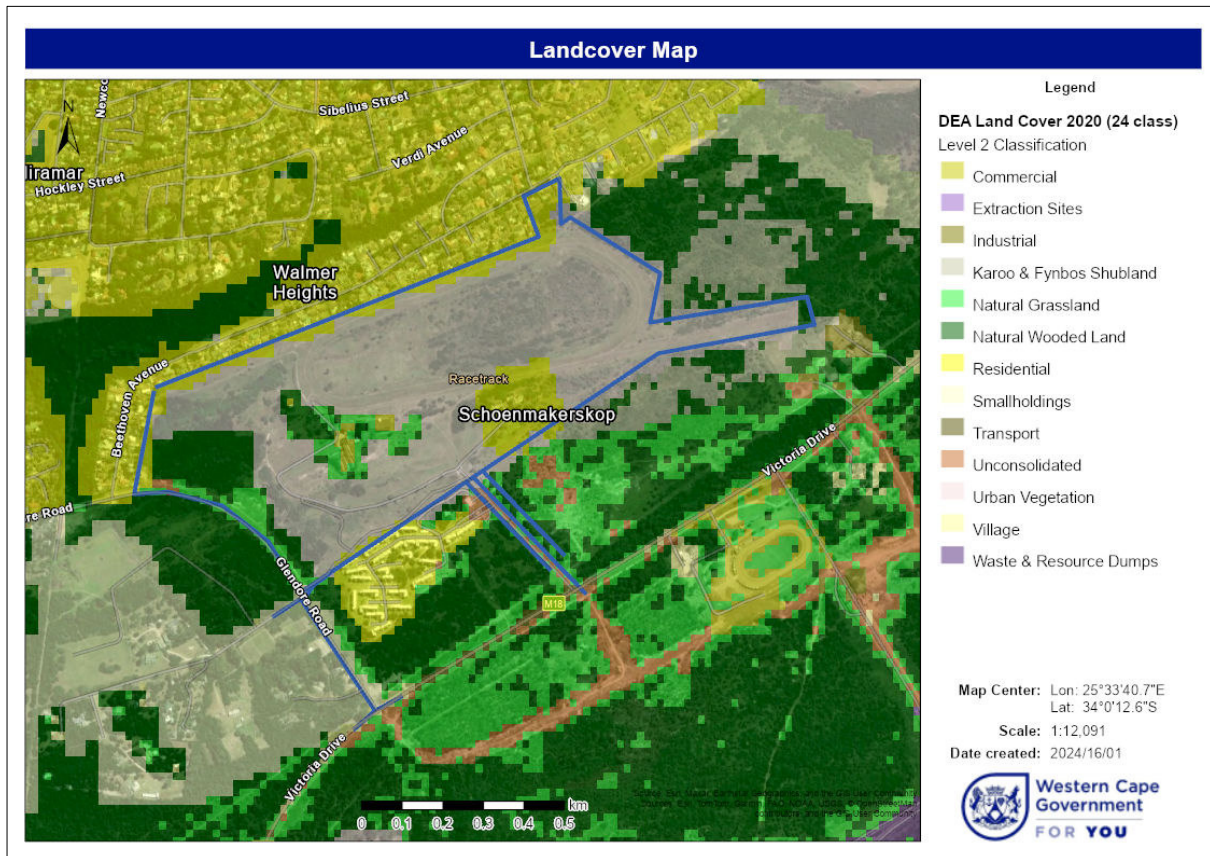
3. Comments and concerns pertaining to visual issues from interested and affected parties (I&APs) have not yet been tabulated and will be considered if required.

#### 4. Project description and Scenic Resources

This section was completed prior to the site visit and consist of a desktop analysis of the site based on available literature, plans, and legislation.

##### 4.1 Current land use

Current land use has been determined and the map in Figure 4.1 shows that the dominant land use for the development site is urban vegetation. The site visit confirmed that footprint consist of urban infrastructure, either building and other built features like walls, stands and roads with isolated patched of naturally wooded land.



**Figure 4.1: Land cover of the study site and surrounding area**

Below is a photo sequence of the study site environment:



The old racetrack is overgrown with grass and shrubs:



Infrastructure remaining on site:



#### **4.2 Receiving environment**

The following are indicators that suggest the need for visual input based on the nature of the receiving environment and the nature of the project.

- Areas with protection status, such as national parks or nature reserves.
- Areas with proclaimed heritage sites or scenic routes.
- Areas with intact wilderness qualities, or pristine ecosystems.
- Areas with intact or outstanding rural or townscape qualities.
- Areas with a recognized special character or sense of place.
- Areas lying outside a defined urban edge line.
- Areas with sites of cultural or religious significance.

- Areas of important tourism or recreation value.
- Areas with important vistas or scenic corridors.
- Areas with visually prominent ridgelines or skylines.

The nature of the project is:

- High intensity type projects including large-scale infrastructure.
- A change in land use from the prevailing use.
- Possible visual intrusion in the landscape.
- Obstruction of views of others in the area.

The nature of the project is NOT:

- A use that conflicts with an adopted plan or vision for the area.
- A significant change to the fabric and character of the area.
- A significant change to the townscape or streetscape.

### **4.3 Sense of place**

The term sense of place captures the identity of places we recognize. It embraces natural and cultural features, the distinctive sights, sounds and experiences to the people residing in or nearby that place. Places with a strong sense of place have a clear identity and character that is recognizable by inhabitants and visitors alike.

Sense of place differs from place attachment by considering the social geographical context of place bonds and the sensing of place, such as aesthetic and a feeling of dwelling. An impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light.

Walmer is a large neighborhood of Port Elizabeth, the largest city in Eastern Cape, South Africa. It was an independent municipality from 1899 to 1965, when it was absorbed by Port Elizabeth (now called Gqeberha and renamed after Walmer Castle, to Walmer).

Gqeberha previously named Port Elizabeth, and colloquially referred to as P.E., is a major seaport and the most populous city in the Eastern Cape province of South Africa. It was founded in 1820 by Sir Rufane Donkin, who was the governor of the Cape at the time. It is the seat of the Nelson Mandela Bay Metropolitan Municipality, South Africa's second-smallest metropolitan municipality by area. It is the sixth-most populous city in South Africa and is the cultural, economic, and financial hub of the Eastern Cape.

Located on the western portion of Algoa Bay along the southeastern coast of South Africa, the city lies 770 km east of Cape Town. It is east of the Garden Route and faces the Indian Ocean. It covers 251 square kilometers of the Nelson Mandela Bay metropolitan area, and is administered by South Africa's sixth-largest metropolitan municipality. The city's warm oceanic climate ranks it among the top cities in the world for pleasant year-round weather. The city is known for many blue-flag beaches along the city's urban coastline; its popularity as an international and local holiday destination; and its rich and diverse cultural heritage. It is a gateway city for the Eastern Cape's adventure, outdoor and African big five game safari tourism.

Gqeberha has many historical landmarks:

1. Cape Recife Lighthouse
2. Donkin Reserve
3. Fort Frederick
4. Nelson Mandela Bay Stadium
5. Horse Memorial
6. The Cenotaph



The development site was historically developed as a horse racetrack. Arlington, previously St Andrews Racing Club, was opened in 1950 with the last race run in 2013. Since then, the land has been vacant with most of the infrastructure becoming decrepit since then and the racetrack itself overgrown with vegetation. No surface water features exist on site. Current land use for the entire site will change to urban development if the projects proceed.

#### 4.4 Approach to the VIA

As per Oberholzer (2005), the category of development influences the level of visual impact to be expected. As is illustrated in Table 4.1 below, a multiple-use development is **considered a category four development**.

**Table 4.1: Key to categories of development (Oberholzer (2005))**

<p><b>Category 1 development:</b> e.g. nature reserves, nature-related recreation, camping, picnicking, trails and minimal visitor facilities.</p> <p><b>Category 2 development:</b> e.g. low-key recreation / resort / residential type development, small-scale agriculture / nurseries, narrow roads and small-scale infrastructure.</p> <p><b>Category 3 development:</b> e.g. low-density resort / residential type development, golf or polo estates, low to medium-scale infrastructure.</p> <p><b>Category 4 development:</b> e.g. medium density residential development, sports facilities, small-scale commercial facilities / office parks, one-stop petrol stations, light industry, medium-scale infrastructure.</p> <p><b>Category 5 development:</b> e.g. high-density township / residential development, retail and office complexes, industrial facilities, refineries, treatment plants, power stations, wind energy farms, power lines, freeways, toll roads, largescale infrastructure generally. Large-scale development of agricultural land and commercial tree plantations. Quarrying and mining activities with related processing plants.</p>
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Table 4.2 below indicates that VIAs become less critical where small-scale development in a high-density urban area where there are areas of medium scenic, cultural, or historic value.

**Table 4.2: Categorization of issues to be addressed by the visual assessment.**

Type of environment	Type of development (see Table 4.1)				
	Category 1 development	Category 2 development	Category 3 development	Category 4 development	Category 5 development
Protected/wild areas of international, national, or regional significance	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected	Very high visual impact expected
Areas or routes of high scenic, cultural, historical significance	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected
Areas or routes of medium scenic, cultural or historical significance	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected
Areas or routes of low scenic, cultural, historical significance / disturbed	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected
Disturbed or degraded sites / run-down urban areas / wasteland	Little or no visual impact expected. Possible benefits	Little or no visual impact expected. Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected

Based on the above, moderate visual impact is expected. The proposed development is considered a low-key development, similar in nature to existing development in the area. A potentially low level of intrusion is expected on landscapes or scenic resources with limited change in the visual character of the area. There will not be a particularly noticeable change within the view of frame and experience of the receptor.

Based on the above considerations, the approach adopted for the Arlington VIA is that prescribed for a development or activity where a minimal visual impact is expected. According to Oberholzer (2005), this will require a **Level 3 Visual Assessment**.

Approach	Type of issue (see Table 4.2)				
	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	Very high visual impact expected
Level of visual input recommended	Level 1 visual input	Level 2 visual input	Level 3 visual assessment	Level 4 visual assessment	

A Level 3 Visual Assessment consist of the following main elements:

- Identification of issues raised in scoping phase, and site visit.
- Description of the receiving environment and the proposed project.
- Establishment of view catchment area and receptors.
- Brief indication of potential visual impacts, and possible mitigation measures.

## 5. Visual Assessment of The Site

The DEA&DP Guideline (Oberholzer (2005) for involving visual & aesthetic specialists in EIA processes provides several criteria that relate specifically to Visual Study namely:

1. Visibility of the project.
2. Visual exposure.
3. Visual sensitivity of the area.
4. Visual sensitivity of receptors.
5. Visual Absorption Capacity (VAC), and
6. Visual Intrusion.

The proposed project was assessed against these criteria to determine a sensitivity to the visual environment. Each criteria are discussed below:

### 5.1 Visibility of the project

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 afar as it is located on a flattened low undulating landscape. This is clearly seen in the Viewshed developed for this project (Figure 5.1).

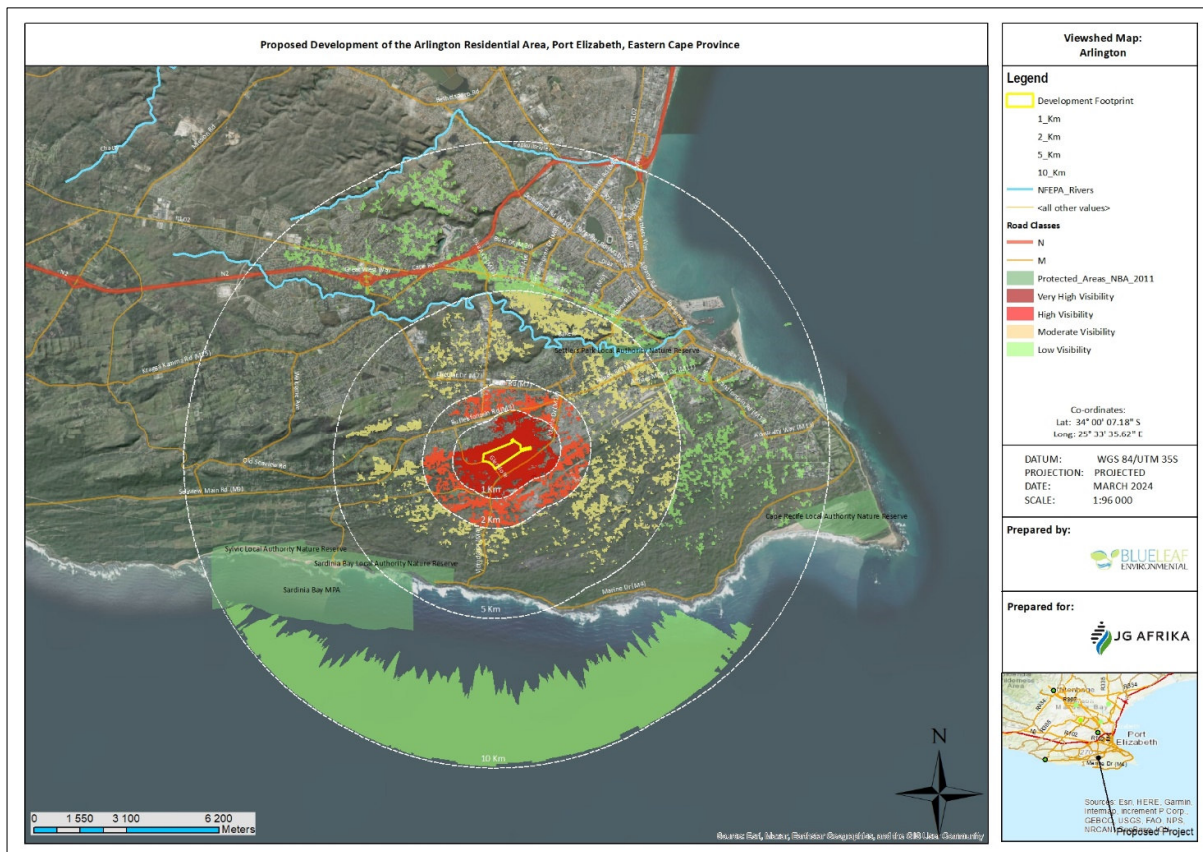


Figure 5.1: Viewshed for the proposed Arlington development in Walmer.

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

### **Zone of visual influence**

The site is situated on a coastal slope within urban areas of the city of Gqeberha. The highest visibility will therefore be within the first 5 km of the site where the proposed development can be partially seen provided there is no screening of vegetation and buildings. After that the visibility declines. Various roads and dwellings also occur in the surrounding environment including multistorey buildings, houses, roads, businesses and shops, telephone masts, lamp poles, tall trees, and dense coastal thickets (vegetation).

### **5.2 Visual receptors**

The level of visual impact considered acceptable, as is dependent on the type of receptors within the surrounding environment:

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

High sensitive receptors of the site include residential within the first 2 km of the site. Various moderate sensitivity receptors like businesses, residential houses, sports areas, and places of work are also scattered throughout up to 5 km away. High residential areas like Walmer Heights and Pari Park occur to the north of the site while low residential and open landscapes are common in the south. Various streets surround the site including Victora Drive located 280 m to the south and Glendore Road located on the western boundary of the site.

### **5.3 Visual exposure**

- **High exposure** – dominant or clearly noticeable
- **Moderate exposure** – recognizable 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 expansion. 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.

The combined result of the viewshed analysis for the proposed Arlington development shows the viewshed of the site and surroundings (Figure 5.1 above). The visibility analysis was undertaken at an average building height of sixteen meters (16 m), to simulate the view from building tops and to indicate prominence of the structures within the landscape. Furthermore, Figure 5.1 indicates proximity radii from the proposed Arlington development as a reference to determine the Visual Absorption Capacity (VAC). It must be noted that the Digital Terrain Model (DTM) utilized from the viewshed analysis does not include the effect of vegetation cover and built structures. These features may influence visual exposure to some degree.

#### **0 km – 1 km (short distance)**

Within the short distance zone, the visual impact is high in all areas. The proposed development will be highly visible over the first hundred meters (100 m) from where the visual impact will be permanent. The area in question consists mainly of dense urban residential development. The proposed development will be visible along Glendore Road as illustrated by Viewpoint 1 situated on the western boundary of the site (0-10 m), from the traffic circle at Victoria Drive as illustrated by Viewpoint 2 (400 m), and from the residences along Beethoven Road located on the northern boundary of the site (0-100m) as illustrated by Viewpoint 3.

#### **1 km – 2 km (short to medium distance)**

Within the short to medium distance zone the visual impact is considered as high in most areas although all these area are screened by urban buildings or dense and high trees. A single Viewpoint (point 4) was identified at the entrance to the Algoa Kart and Motorcycle Club (1.2 km) located to the southwest. Screened visual

receptors include Victoria Drive, Sardinia Bay Road and Skoenmakerskop.

### **2 km – 5 km (medium to long distance)**

Within the medium to long-distance zone the visual impact is heavily diluted by natural landscape screening. This includes vegetation, houses, and topography. A single Viewpoint (point 5) was identified at the entrance to the Plantation along Sardinia Bay Road (3 km) located to the south-southwest. The low visual impact is assigned due to the dense vegetation cover of the study area which results in a high landscape compatibility. Except for the vantage point discussed no further visual impact will occur within the medium to long-distance zone given the dense vegetation cover of the study area coupled with the undulating topography thereof.

### **Greater than 5 km (long-distance)**

Visibility beyond five kilometers (5km) from the proposed Arlington development is expected to be negligible due to the distance between the object and the observer. As per the viewshed analysis the proposed development may be visible within the long-distance zone from Sappers Hoek shown by Viewpoint 6 which is situated just over 5 km to the south. Within the long-distance zone the VAC is predominantly influenced by the dense vegetation cover and undulating topography of the study area.

## **5.4 Visual sensitivity**

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 desktop exercise was undertaken 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 (see Figures 5.3).

### **Vegetation**

According to the 2018 SANBI Vegetation map the site is covered by two vegetation types namely **Algoa Sandstone Fynbos** and **Sardinia Forest Thicket** (Figure 4.2).

**Algoa Sandstone Fynbos** occurs on moderately undulating plains and undulating hills supporting vegetation composed of low, medium dense graminoid, dense cupressoid-leaved shrubland, dominated by renosterbush. There are both grassland and shrubland forms of the renosteveld present, probably depending on grazing and fire regimes. Thicket patches are common on termitaria (heuweltjies are absent) and in fire-safe enclaves. Vegetation is dominated by *Aspalathus nivea* in the post-fire, early seral stages.

A site visit confirmed that alien and invasive vegetation dominate the landscape, both within the study site and in the surrounding landscape.

### **Topography**

Topography refers to the form and structure of a landscape. The terrain is characterized by even topography with a slight slope from the north-east to the south-west towards a watercourse that drains into a dam at the southwestern corner of the site. The average gradient is  $\pm 6\%$ .



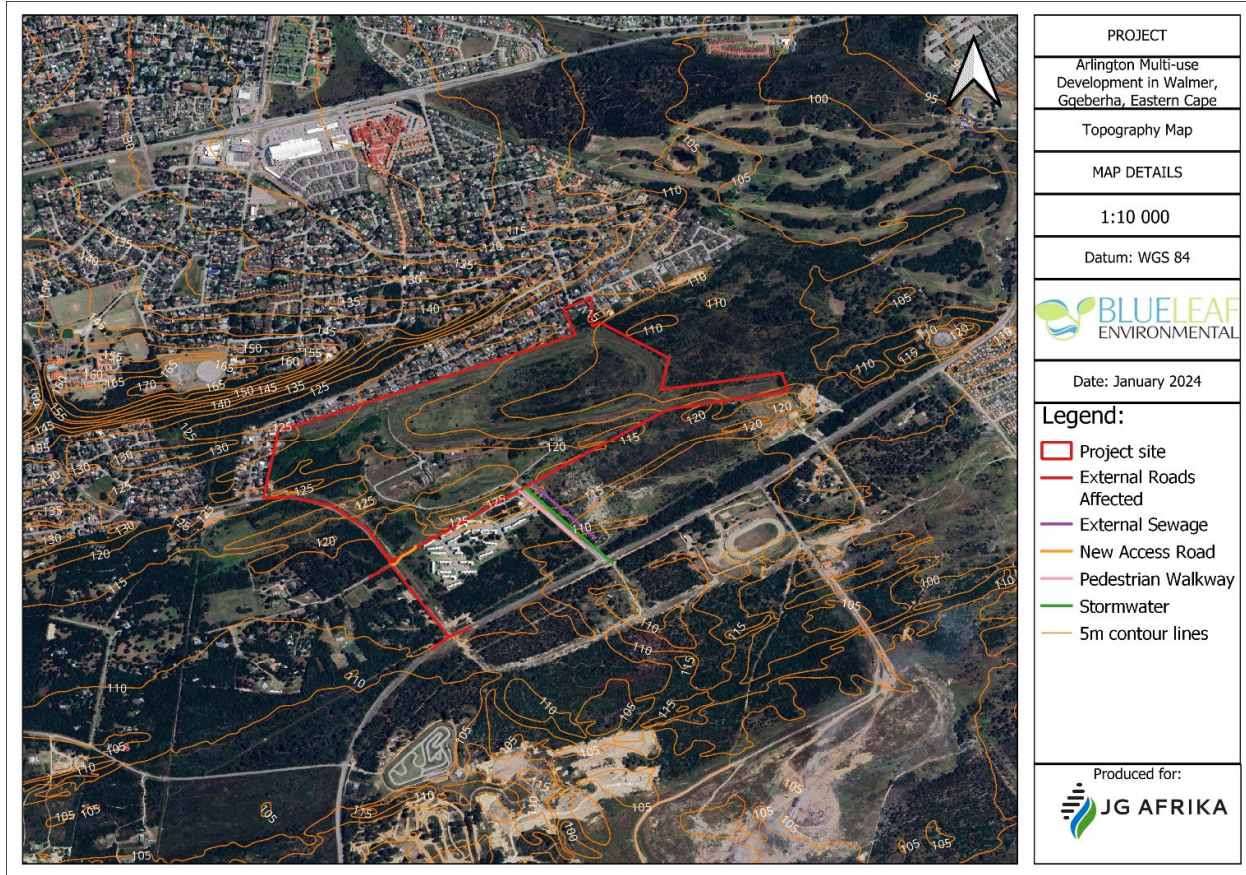


Figure 5.2: Topography of the site and surroundings.

**Screening report**

The screening report does not classify the sensitivity of the visual environment. It does, however, list the study as one of the required specialist studies that must be conducted as part of the BAR process for the proposed project. The aim of this report is to determine sensitivity allocations through a detailed analysis and site verification as per GN R 320 of 2020 (Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on the General Environment).

**Visual sensitivity**

The visual sensitivity of the site is **categorized as medium sensitivity**. This is because the site is located on a relatively flat coastal plateau with the potential of high visual intrusion over long distances. The northern surroundings of the study site are densely developed urban areas with mostly single storey buildings while the south of the site is less densely populated. The landscapes as well as vegetation cover screens the surrounding areas from the development site with high visual intrusion occurring mostly within the first 2 km’s from the site.

**5.5 Visual Absorption Capacity**


Visual Absorption Capacity (VAC) is the potential of the landscape to conceal the proposed project. VAC can be described as:

- **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.






Viewpoint 1 – Glendore Road	Coordinates: 34° 0.382'S; 25° 33.396'E
Distance from site boundary: 0 - 20 m	Direction from site: West
	
High visual exposure	High sensitive visual impact
High visual sensitivity	Low VAC
Moderate visual intrusion	Low visual impact
<p>Glendore Road is immediately adjacent to the project site and will be clearly visible in places. Some large trees do screen the site, even at very close range. A high visual impact is assigned as the new development will stand out in the landscape. The visual impact will be permanent.</p>	


<b>Viewpoint 2</b> – Victoria Drive	Coordinates: 34° 0.385'S; 25° 33.842'E
Distance from site boundary: 380 m	Direction from site: South
	
Moderate visual exposure	High sensitive visual impact
High visual sensitivity	Moderate VAC
Moderate visual intrusion	Low visual impact
<p>Victoria Drive is immediately south of the study site and will be clearly visible in places. It is a busy road connecting Skoenmakerskop with the rest of Gqeberha. Some large trees do screen the site. A low visual impact is assigned as the development will blend in with the landscape. The visual impact will be permanent.</p>	



<b>Viewpoint 3</b> – Residential houses along Beethoven Drive	Coordinates: 33° 59.984'S; 25° 33.576'E
Distance from site boundary: 0 - 100 m	Direction from site: North
	
High visual exposure	High sensitive visual impact
High visual sensitivity	Low VAC
High visual intrusion	High visual impact
<p>Beethoven Drive is a road connecting residential houses along the northern boundary of the site. The entire site can be seen from the houses on the southern line of the road. Sensitivity is high with little to no screening (low VAC).</p>	

<b>Viewpoint 4</b> – Entrance to Algoa Kart Racetrack	Coordinates: 34° 0.808'S; 25° 33.311'E
Distance from site boundary: 800 m	Direction from site: Southwest
	
Low visual exposure	High sensitive visual impact
Low visual sensitivity	High VAC
Low visual intrusion	No visual impact
No visual impact will occur from this vantage point given the high VAC of the viewpoint. The VAC is predominantly influenced by dense vegetation cover.	



<b>Viewpoint 5</b> – Along Sardinia Bay Road near The Plantation	Coordinates: 34° 0.792'S; 25° 32.417'E
Distance from site boundary: 1.5 km	Direction from site: Southeast
	
Low visual exposure	High sensitive visual impact
Low visual sensitivity	High VAC
Low visual intrusion	No visual impact
No visual impact will occur from this vantage point given the high VAC of the viewpoint. The VAC is predominantly influenced by dense vegetation cover.	

<b>Viewpoint 6 – Sappers Hoek</b>	Coordinates: 34° 2.401'S; 25° 32.801'E
Distance from site boundary: 5 km	Direction from site: South-southwest
	
Low visual exposure	High sensitive visual impact
Low visual sensitivity	High VAC
Low visual intrusion	No visual impact
No visual impact will occur from this vantage point given the high VAC of the viewpoint. The VAC is predominantly influenced by dense vegetation cover.	

## 6. Potential Impacts

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### 6.1 Impact Assessment Methodology

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.

### 6.2 Nature of impacts

The following impacts have been identified:

#### 1. Construction phase:

1.1: The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users.

1.2: The excavation and construction of infrastructure shall result in disturbance and an unsightly character.

#### 2. Operational Phase:

2.1: The development of the proposed development will cause a visual intrusion to observers within a 1 km radius from the proposed development.

2.2: The development of the proposed development will cause a visual intrusion to observers within a 2 km radius from the proposed development.

### 6.3 Summary of impacts

The following table summarizes each visual impact identified and its respective ratings for each criteria:



Impacts identified	Alternative	Mitigation	Criteria						
			Extent of impact	Magnitude of impact	Duration of impact	Significance	Probability	Confidence	Reversibility
<b>Construction phase</b>									
Movement of construction vehicles	Alternative 1	Without mitigation	Site specific	High	Construction period	High	Definite	Certain	Reversible
		With mitigation	Site specific	High	Construction period	High	Definite	Certain	Reversible
Excavation and construction of infrastructure	Alternative 1	Without mitigation	Site specific	High	Construction period	High	Probable	Certain	Reversible
		With mitigation	Site specific	High	Construction period	High	Probable	Certain	Reversible
<b>Operational phase</b>									
Visual intrusion to observers within a 1 km radius	Alternative 1	Without mitigation	Site specific	High	Permanent	High	Definite	Certain	Irreversible
		With mitigation	Site specific	High	Permanent	High	Definite	Certain	Irreversible
	Alternative 1	Without mitigation	Site specific	Medium	Permanent	Medium	Definite	Certain	Irreversible
		With mitigation	Site specific	Medium	Permanent	Medium	Definite	Certain	Irreversible
Visual intrusion to observers within a 2 km radius	Alternative 1	Without mitigation	Site specific	High	Permanent	High	Definite	Certain	Irreversible
		With mitigation	Site specific	High	Permanent	High	Definite	Certain	Irreversible
	Alternative 1	Without mitigation	Site specific	Medium	Permanent	Medium	Definite	Certain	Irreversible
		With mitigation	Site specific	Medium	Permanent	Medium	Definite	Certain	Irreversible
		With mitigation	Local	Low	Permanent	Very low	Definite	Certain	Irreversible

## 7. Mitigations

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Several mitigation measures can be recommended to reduce the potential visual impact and visual intrusion potential of the proposed Arlington development. The development will bring landscape change to the parts of the landscape in the areas from which it is able to be viewed and this factor can be partly mitigated.

The following mitigations are proposed during the construction phase of the proposed Arlington development:

### 7.1 Movement of construction vehicles

Lighting at the plant could potentially exert a visual impact, especially if floodlight-type lighting is used. The following mitigation measures should be implemented with regards to lighting:

- Schedule the movement of construction vehicles and machinery so that they do not interfere with the normal working operations of the town.
- Only work during daylight time (06h00 to 17h00, Monday to Friday).
- Schedule deliveries so that delivery vehicles do not cause an unnecessary nuisance and so that the number of delivery vehicles is limited as far as possible.

### 7.2 Excavation and construction of infrastructure

- Prohibit excessive signage outside the construction area.
- Keep construction camp lighting to a minimum and prevent the use of flood type lighting as far as possible.
- Ensure that the site is kept neat and clean. Collect and dispose of litter appropriately to prevent any potential wind-blown litter on or off the site.
- Limit site clearing to within the minimum footprint required for construction.
- Retain existing trees along the boundaries of the property where possible.
- Rehabilitate areas as soon as possible following construction.
- Ensure working occur during daylight hours (08h00-17h00) and on weekdays only.

The following mitigations are proposed during the operational phase of the proposed Arlington development:

### 7.3 Visual intrusion to observers within a 1 km, 2km, 5 km and 10 km radius

- Mitigation to minimize lighting impacts include the following:
  - Shielding the sources of light by physical barriers (walls, vegetation, or structures itself).
  - Limit mounting heights of lighting fixtures, or alternatively using footlights or bollard level lights.
  - Make use of downward directional lighting fixtures.
  - Make use of minimum lumen or wattage in lights, and
  - Use motion sensors to activate lighting ensuring light is available when needed.
- Rehabilitation and post-closure measures:
  - All temporary above-ground structures should be removed, safely disposed of, or possibly recycled for use elsewhere.

## **8. Conclusions and recommendations**

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The proposed development will be highly visible over the first km from where the visual impact will be permanent. The immediate surrounding area consists of a residential development with retail and businesses especially to the north. The visual impact will be permanent from all identified viewpoints, especially existing roads. The proposed development will be visible along Glendore Road and Victoria Drive as illustrated by viewpoints 1 and 2 while it will only be partially seen further away up to 2 to 3 kms. Greater distances are screened by vegetation, topography and existing urban infrastructure and will be indistinguishable from the surrounding built environment. A low visual impact is assigned given the high VAC.

## **9. References**

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