

PROPOSED LIGHT INDUSTRIAL DEVELOPMENT

on **Portion 130, 131 & 132** of the farm Gwayang no 208, division
George, George, Western Cape, South Africa

High-level

VISUAL IMPACT ASSESSMENT

SEPTEMBER 2020

REV 2

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1. INTRODUCTION

NewUrban Architects and Urban designers were appointed by George Aerotropolis (Pty)Ltd to do a high-level Visual Impact Assessment (VIA) as a requirement for the Environmental Impact Assessment (EIA). This VIA is done according to the Guidelines for Involving Visual and Aesthetic Specialists in EIA Processes (Edition 1) as compiled by the Provincial Government the Western Cape Department of Environmental Affairs and Development Planning dated June 2004.

The project falls within in the George Municipality and the property under discussion is located opposite to the George Airport, on portion 130,131 & 132 of farm 208. The urban design vision prepared NEWURBAN Architects & Urban Designers was done for the full Airport support zone. The VIA is site specific and is compiled taking into consideration a Category 4 development which entails a possible high visual impact according to the Guideline for Involving Visual and Aesthetic Specialists in EIA Processes.

The outcome of the visual impact of the Category 4 development relates to the type of environment and is assessed in the study.

2. SCOPE OF PROJECT

The high-level VIA should form an integral part of the EIA and Township Application. Comments and objections that were received through the EIA process should also be addressed if it relates to be Visual impact. No direct comments regarding the Visual Impact were submitted during the EIA process.

The scope of work included in this Visual Impact Assessment:

- Criteria used in the assessment of the affected area
- Description of the proposed project and receiving environment.
- Determine of the Area affected by the development.
- Propose possible Mitigating Measures
- Viewpoints of 3D model

The overall objective of the Visual Impact Assessment (VIA) is to assess the significance of the visual impact that will be caused by the proposed development.

The VIA should be read in conjunction with:

- Proposed EIA (Basic Assessment process will be followed)
- Gwayang Local Spatial Development Framework (2015)
- Portion 130, 131 & 132 of the farm Gwayang no 208, division George, George municipality application for subdivision & rezoning.
- VIA of Portion 4 of the farm Gwayang no 208
- VIA of Portion 139 of the farm Gwayang no 208

Delimitation of scope of work.

- Monitoring programmes and urban design guidelines
- Impact of potential night lighting

3. METHODOLOGY & APPROACH

This VIA is done according to the Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (Edition 1) as compiled by the Provincial Government the Western Cape department of environmental affairs and development planning. The following sequence was employed in this Visual Assessment Report:

The desktop survey made use of various aerial photographs. These were used to identify landforms and landscape patterns, as well as to determine the view shed of the area. The view shed for the development based on the maximum height of 2 storeys based on an 8-22m high impact.

In order to model the decreasing visual impact of the development, concentric diameter zones with distance of 1km to 5km from the proposed site were superimposed on the view shed to determine the level of visual exposure. The closest zone to the proposed development indicates the area of most significant impact, and the zone 2 - 5km indicates the area of least impact.

A photographic survey of the site and surrounding areas was conducted which determine the visibility of the proposed development.

Potential visual impacts were identified using standard criteria such as geographic view shed and viewing distance, as well as qualitative criteria such as importance to surrounding land users and compatibility with the existing landscape.

Possible mitigation measures were identified.

4. ASSESSMENT CRITERIA

The below assessment criteria will be used to assess the relevant viewpoints relating to the proposed developments. The assessment criteria are used to identify the overall visual impact the development will have on the existing environment.

VIEWPOINTS AND VIEW CORRIDORS

Viewpoints have been selected based on prominent viewing positions in the area. The selected viewpoints and view corridors are used as a basis for determining potential visual ability and visual impacts of the proposed development activities. 8 viewpoints were identified based on sensitivity and visual impact of the area.

VISUAL EXPOSURE

Visual exposure is based on distance from the project to selected viewpoints. Visual exposure or visual impact tends to diminish exponentially with distance. The visibility or visual exposure of any structure or activity is the point of departure for the visual impact

assessment. It stands to reason that if the proposed development activities and associated infrastructure were not visible, no visual impact would occur. Visual exposure is determined by the view shed or the view catchment being the area within which the proposed development will be visible.

VISUAL SENSITIVITY

Visual sensitivity can be determined by several factors together such as prominent topographic or other scenic features, including:

- High points, ridges and spurs (visible from a greater distance and determines the horizon effects);
- Steep slopes (tends to be more prominent and visible from a distance);

LANDSCAPE INTEGRITY

Landscape integrity is represented by the following visual qualities, which enhance the visual and aesthetic experience of the area:

- Intactness of the natural and cultural landscape;
- Lack of visual intrusions or incompatible structures;
- Presence of a 'sense of place'.

VISUAL ABSORPTION CAPACITY (VAC)

The ability of elements of the landscape to "absorb" or mitigate the visibility of an element in the landscape. Visual absorption capacity is based on factors such as vegetation height (the greater the height of vegetation, the higher the absorption capacity), structures (the larger and higher the intervening structures, the higher the absorption capacity) and topographical variation (rolling topography presents opportunities to hide elements in the landscape and therefore increases the absorption capacity).

5. DESCRIPTION OF THE AFFECTED AREA

This section of the report provides a description of the current status of the environment. This provides a baseline context for assessment of the proposed development.

SITE LOCATION & DESCRIPTION

The location of the site (Portion 130, 131 & 132 of The Farm Gwayang no 208 AIRPORT SUPPORT ZONE) is opposite the George Airport with the R404 running to the east of the site and the R102 to the north of the site. The airport is situated to the south west with a quarry to the south east of the proposed development. Access to the site from George is either via the N2 or the R102 connecting via the R404. The GPS co-ordinates for the centre of the proposed development are 33°59'48.4"S 22°22'56.8"E.

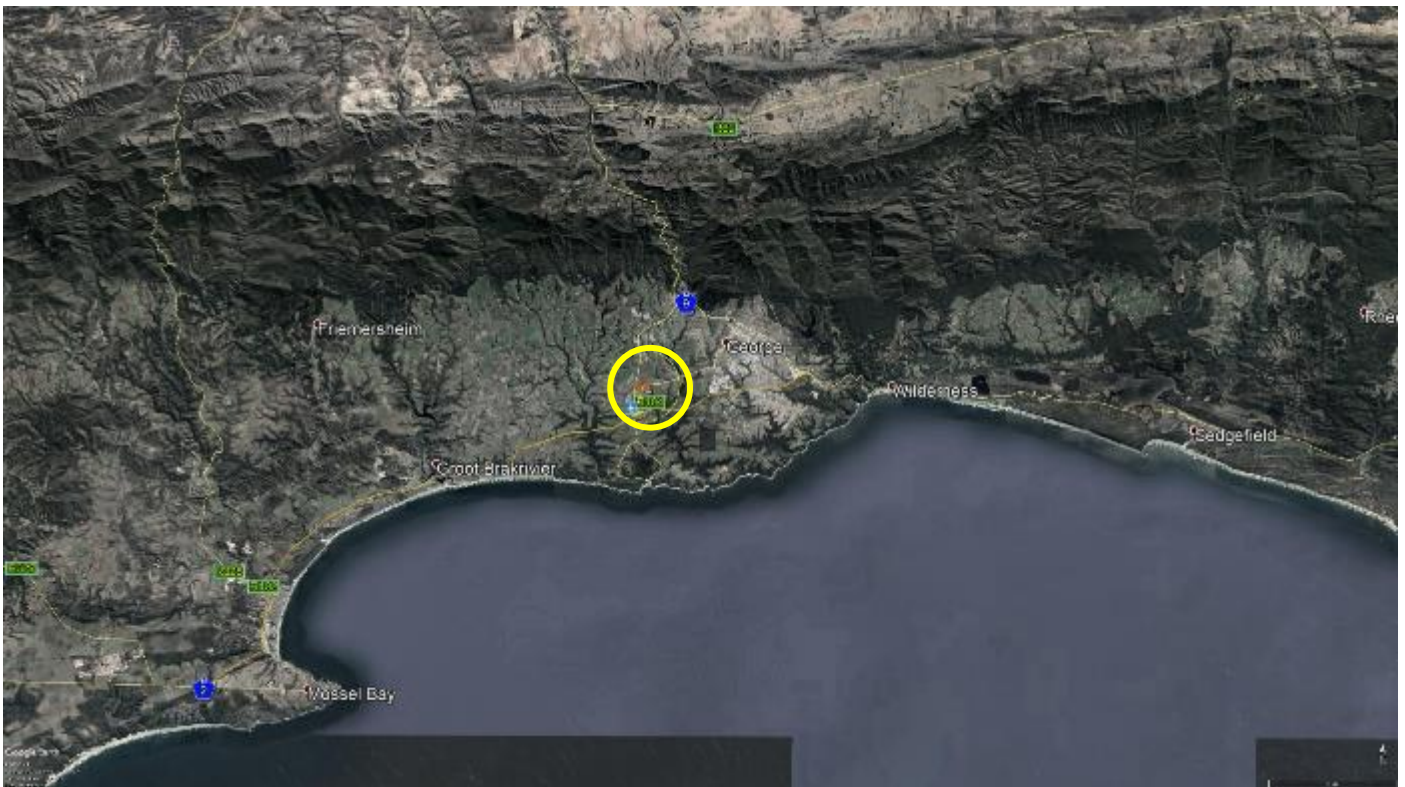


Figure 1: Macro Locality Plan indicating 2,5km radius from the site.



Figure 2: Mirco Locality Plan of Portion 130,131 & 132, The Farm Gwayang no 208



Figure 3: Aerial image of Portion 130,131 & 132, of Farm The Farm Gwayang no 208

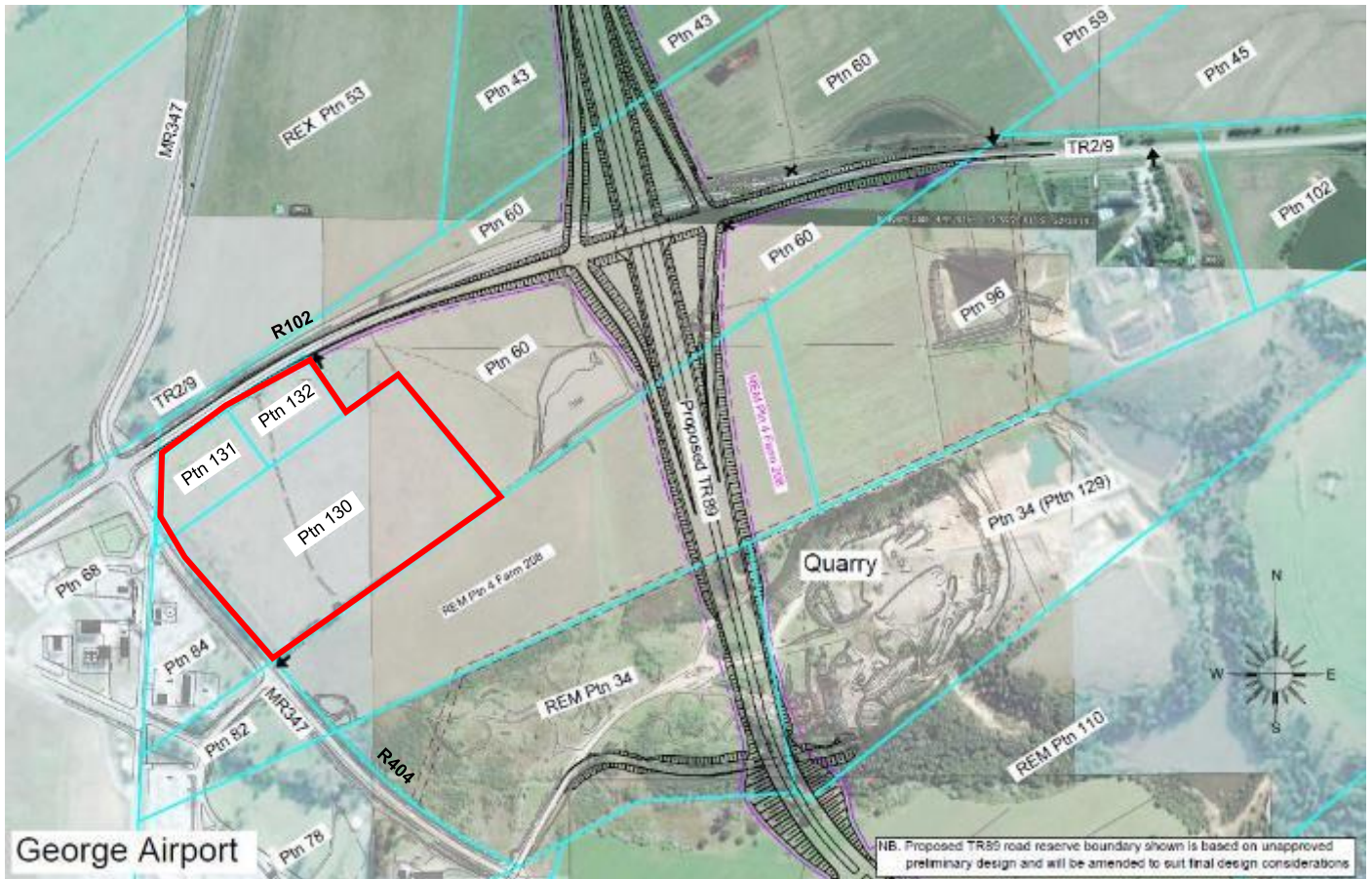


Figure 4: Cadastral layout of Portion 130, 131 & 132, The Farm Gwayang no 208

SURROUNDING AREA

The airport is the most prominent structure in the immediate area occupying a large portion of the land viewed for the R102 (Below). From other approaches the quarry is out of sight due to the high density of trees around surrounding it as well as the approach being lower than the quarry. The outlying areas beyond the 1km radius from the proposed site are primarily farmlands.



View of the proposed site from the C/O R102 and R404 traveling from the west (Towards George Airport).



View of Portions 130,131 & 132 at the T intersection when leaving the airport entrance on the R404.



View of the proposed site from the intersection of George Airport entrance and R404. Tree line interface is prominent across the R404.



View travelling west along R102 traveling towards the airport. The airport tower can be seen in the distance.



View from the R102. Looking toward the George airport.



View of Portions 130,131 & 132 just before the R102 & R404 intersection. The airport tower and car rental buildings are visible in the landscape.



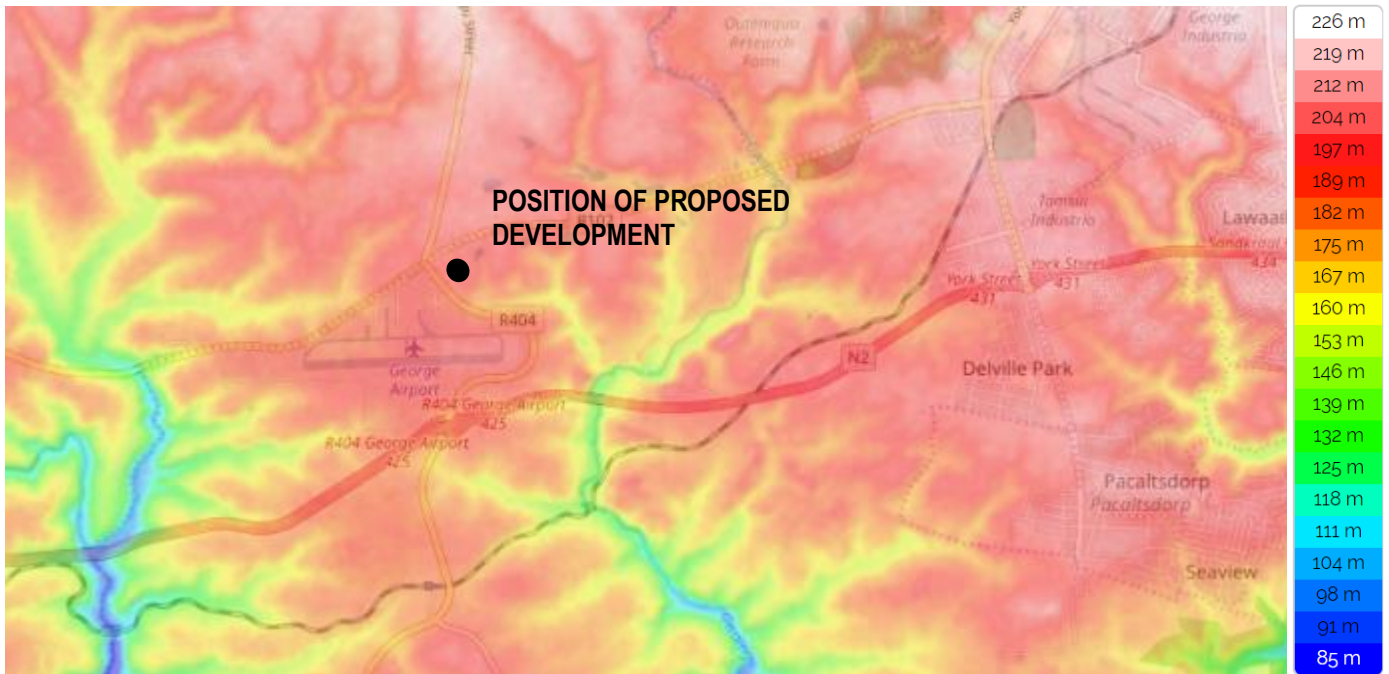
View from the R102 of the existing structure on portion 139 (10m Height) next to Portion 130,131 & 132.



TOPOGRAPHY

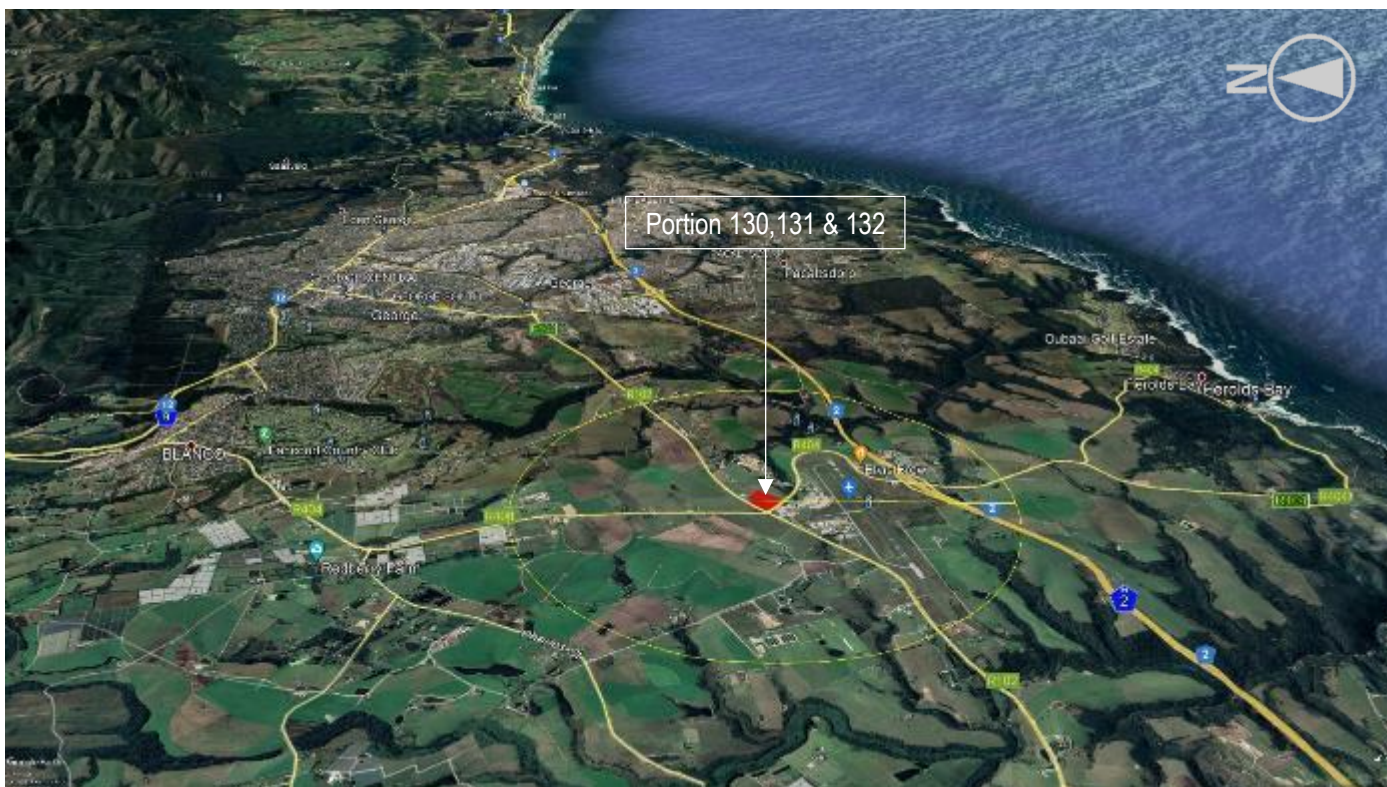
An overview of the topography of the area noting the proposed site is in a similar level to the airport with low lying valleys to the south and south east of the site. The topography to the north increases in height above sea level while to the south drop in height toward the ocean. This plays a specific role in the view sheds and visibility of the proposed development.

According to Marike Vreken Urban and Environmental Planners, a 5m Contour Plan and Slope (Degree) Plan indicates that the topography is very flat and slope of 0-5 degree covers the proposed development area.



LAND COVER

Land cover varies in the immediate area. The airport contributes to a large area of disturbed land cover with the quarry also contributing to the disturbed natural landscape. Farmlands are the consistent land cover north of the R102 and again south of the N2.



For the purpose of this assessment, land cover is categorised into classes that represent natural habitat and land use categories that contribute to habitat degradation. Areas that are characterised by high levels of transformation and habitat degradation are generally accepted as being suitable for development purposes as it is unlikely that the development will further affect the biodiversity attributes of sensitivities. Conversely, areas that are characterised by extensive untransformed and pristine habitat are generally not regarded suitable options for development purposes. There are currently no CBAs identified on the site in terms of the Garden Route BSP. However, the drainage area is part of an ESA.

The area comprises of extensive transformed habitat that resulted from agriculture, airport development and landing strip and the nearby quarry. The landcover on the area of the proposed development is Improved Grassland, the property is currently used for grazing purposes. The Crop Census (2013) illustrate that property consist of planted pastures (Lucerne). (Vreken.M, August 2018)



SENSE OF PLACE

The airport occupies a large land portion east of the proposed site and form part of the cultural landscape. The airport has a control tower that forms a landmark and is highly visible when approaching from any direction on the R404 and R102.

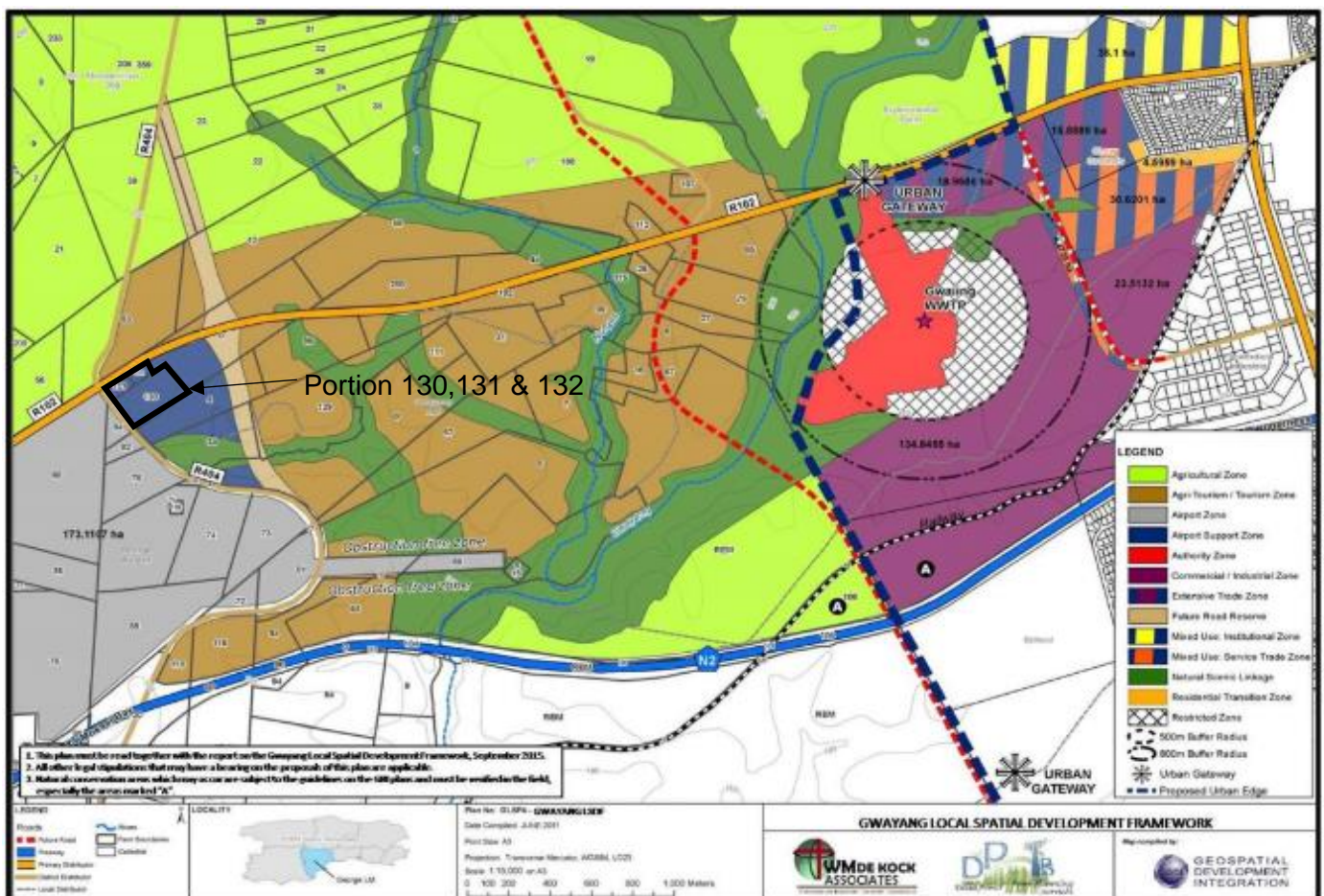
Farmland and disturbed landscape form the other major sense of place.

PROPOSED DEVELOPMENT

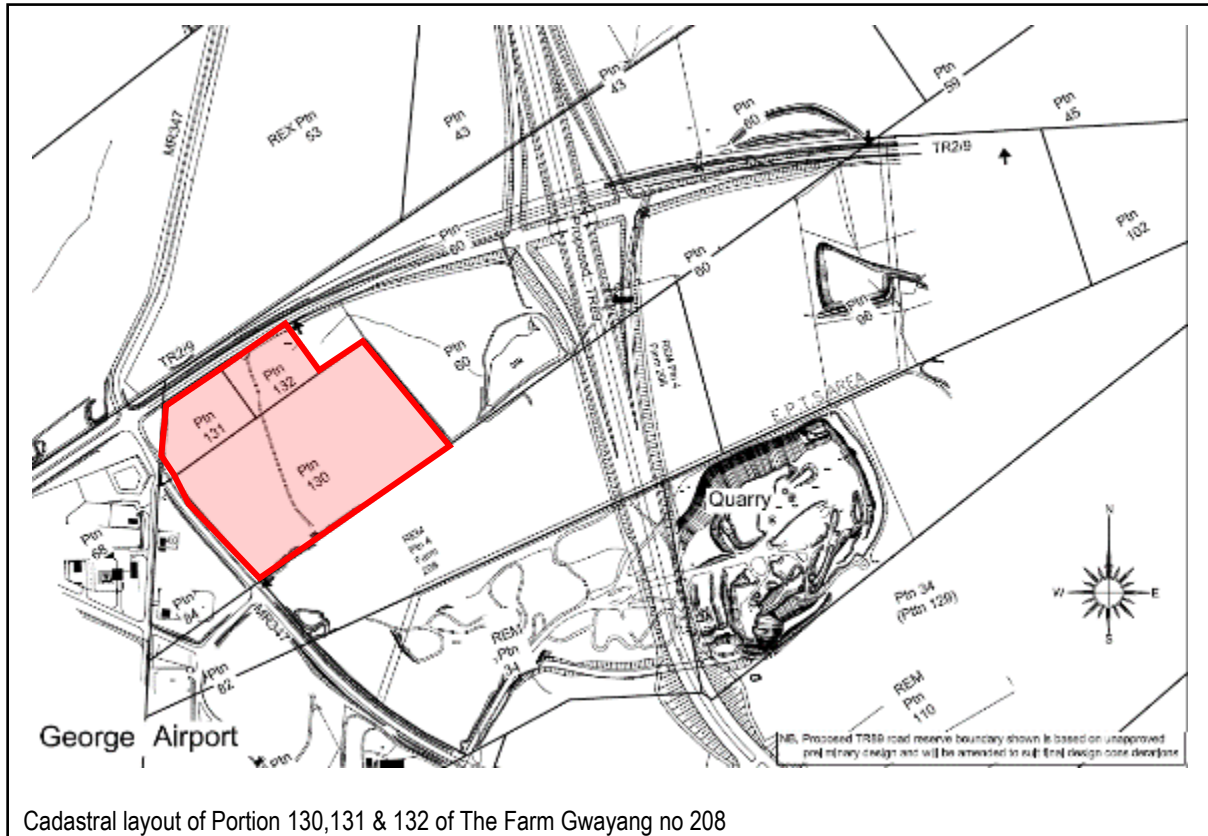
The proposed site and development are positioned to the east of the existing airport and will form an extension of the existing airport. With the R102 to the north, R404 to the west, existing quarry & natural scenic linkage to the south and a proposed future road to the East of the site, the development is contained within these infrastructures and natural elements.

The proposed development vision as done by NewUrban Architects and Urban Designers considers height and storey restrictions of 2 storeys for light industrial and office use up to 22 meter height.

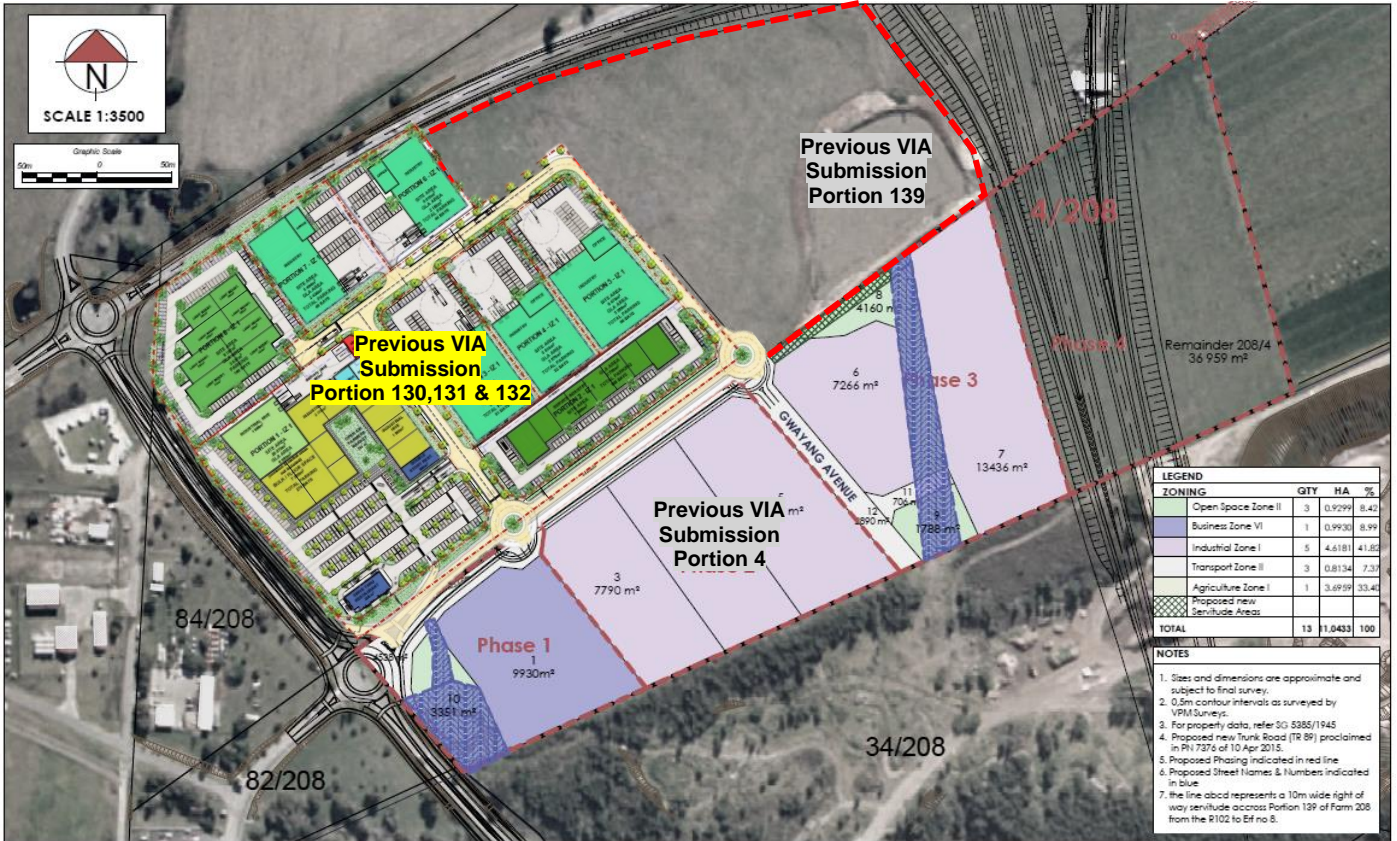
The proposed site falls within the airport support zone in the spatial development framework as seen below.



The below images shows the proposed development highlighted within the landscape.



Town planning submission plan of Portion 130,131 & 132 , The Farm Gwayang no 208 indicating the entire

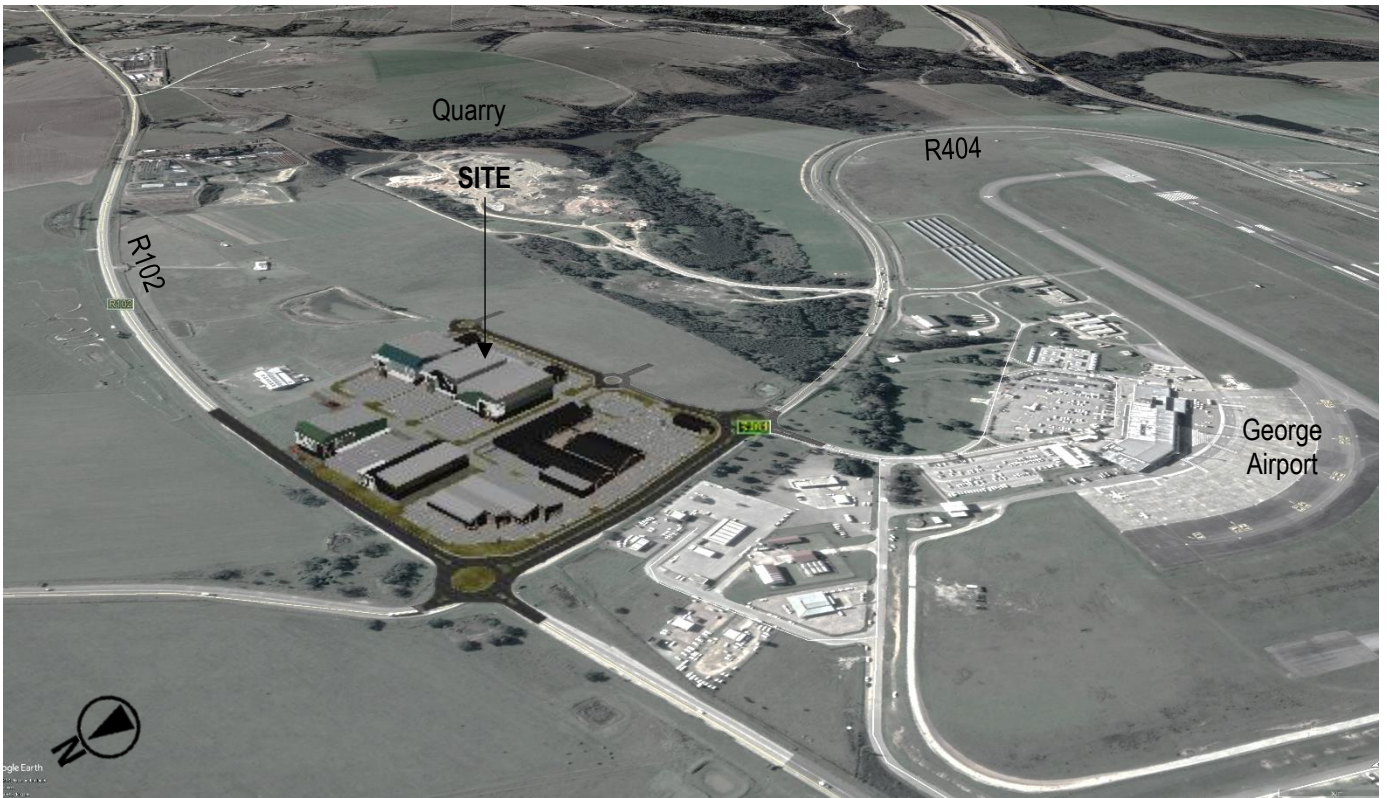




Satellite image of the Proposed development on Portion 130,131 & 132 of Farm 208, expanding on the Airport support zone.



3D View of the Proposed Development on Portion 130, 131 & 132 of Farm 208 with George CBD in the background, the ocean to the right and the George Airport to the right.



3D View of the Proposed Development on Portion 130,131 & 132 of Farm 208, View from the West.



3D View of the Proposed Development on Portion 130,131 & 132 of Farm 208. View from the East.

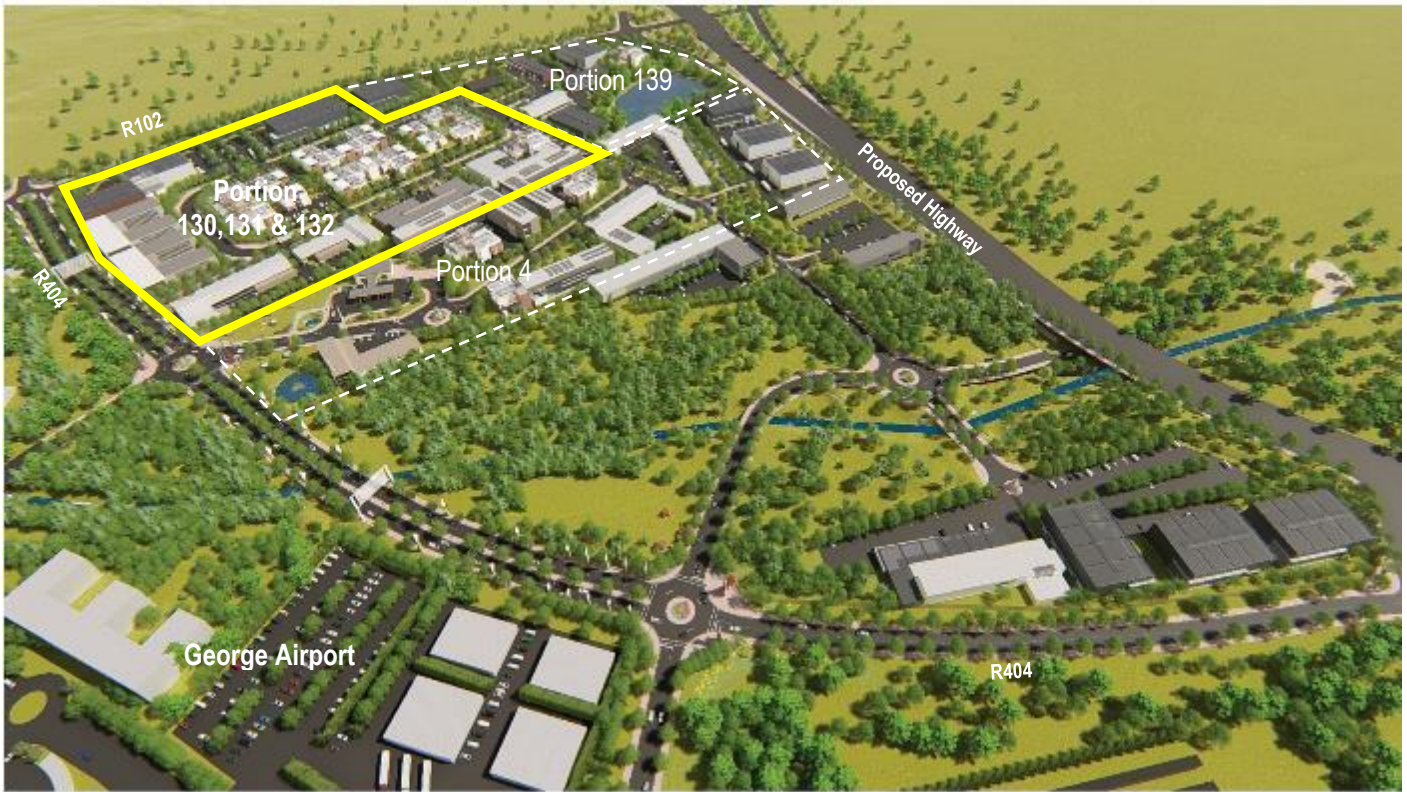
The below image indicates the vision of the proposed entrance to the development across from the existing airport entrance as per previously submitted VIA for Portion 4 of The Farm Gwayang no 208. Please see final road masterplan for the updated layout as the below image only shows the intent of the entrance and not the final design.



The below image indicates the vision of the proposed gateway and traffic circle at the existing airport entrance as per previously submitted VIA for Portion 4 of The Farm Gwayang no 208.



The below image shows the proposed total development vision of the airport support zone indicating Portion 130,131 & 132. As per previously submitted VIA for Portion 4 of The Farm Gwayang no 208. Please see final road masterplan for the updated layout as the below image only shows the intent of the precinct and not the final design.



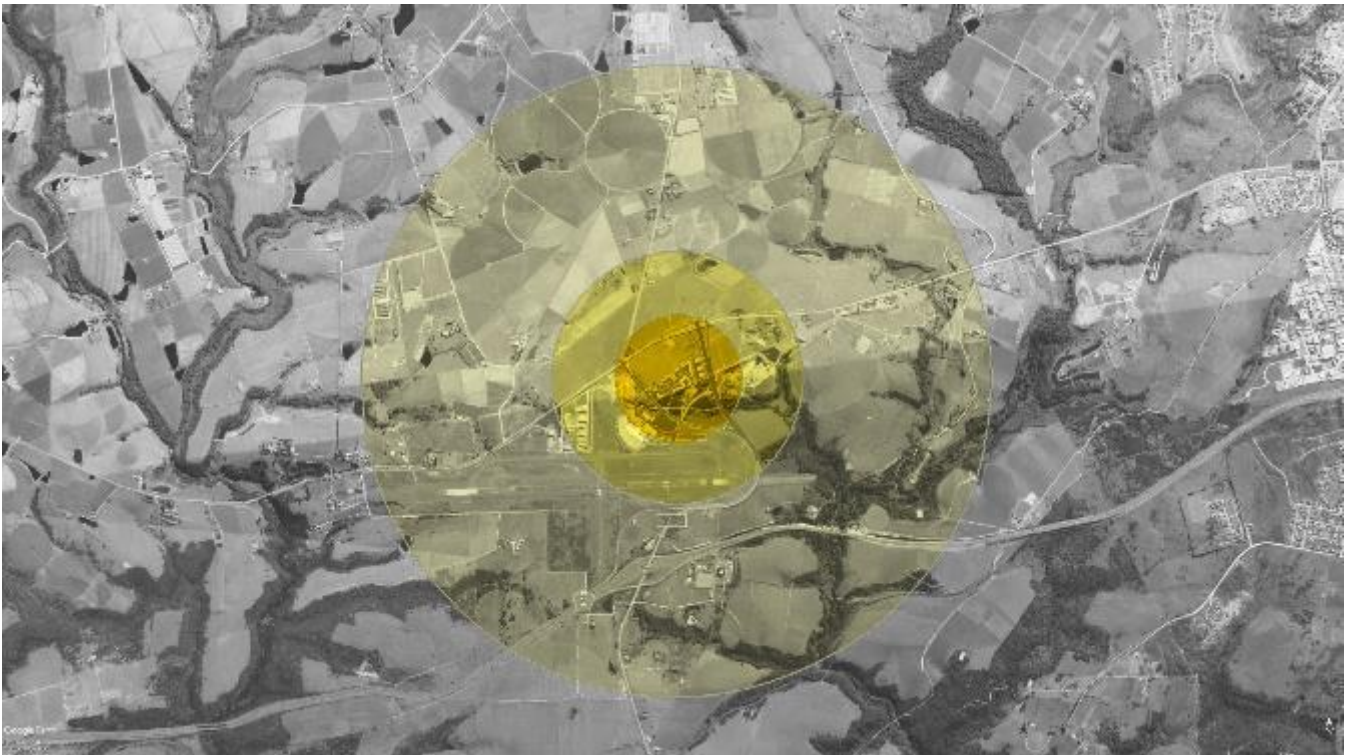
6. VIEW SHED & VISIBILITY STUDY

EXPOSURE ZONES

The exposure zones of the zones have been defined below and take into consideration distance only. Exposure zones form part of the visual exposure assessment below.

- <1 km (high)
- 1 - 2 km (moderate - high)
- 2 - 5 km (low - negligible). (Excluded form high-level assessment)

Viewpoints within the zones have been identified along primary approaches to the site and are identified in the assessment.



VIEW SHED VISIBILITY

The proposed site is considered as a baseline for the assessment. The viewsheds and visibility are taken at levels relative to the specific site and highlighted within the different exposure zones. Areas highlighted in yellow below are either at the same level as the site or higher in elevation. The viewshed does not take into consideration manipulated landscapes, existing building and trees. The elements will be considering as part of the VAC and Visual Exposure assessments.

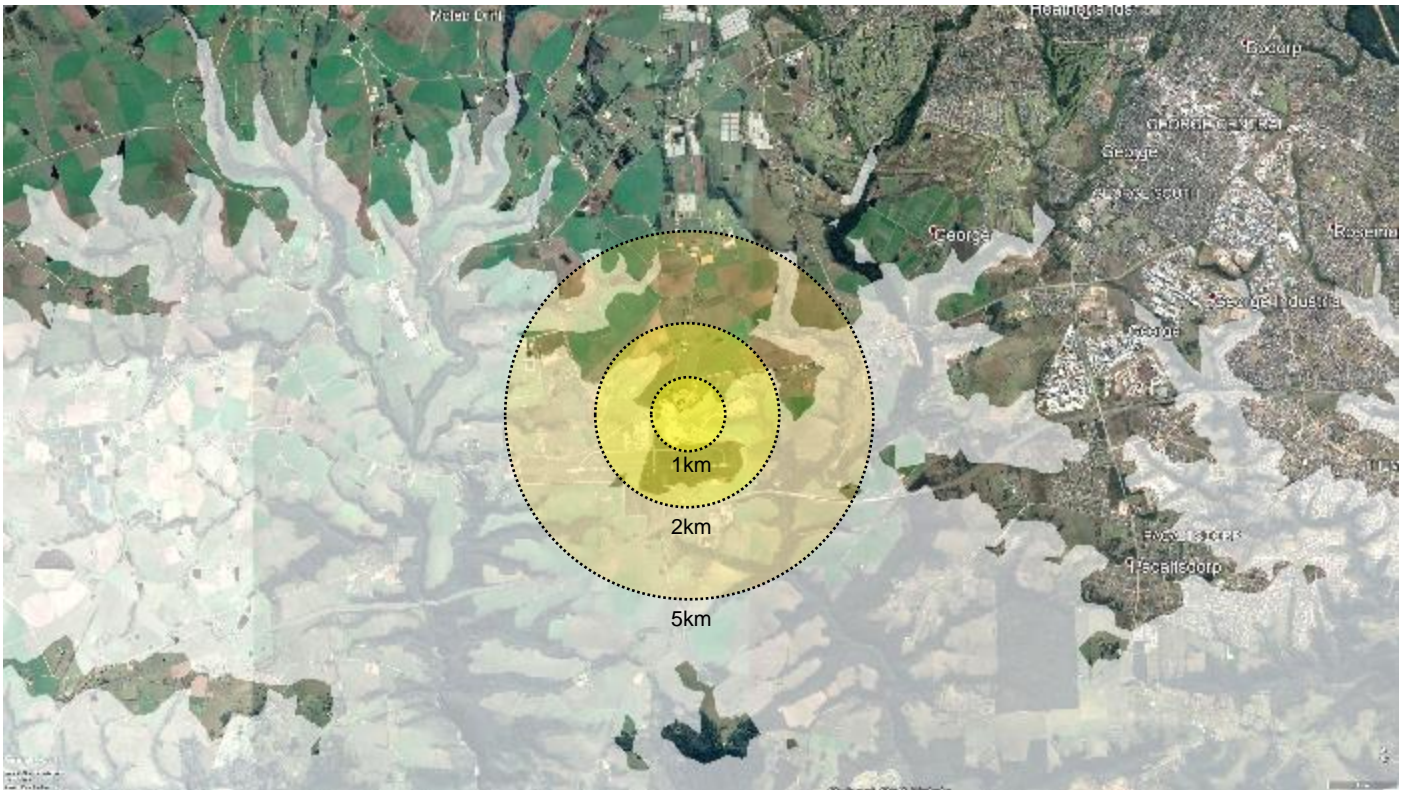


Figure: Base line assessment.

The viewshed visibility for the theoretical impact of the proposed development is based on an **8m high structure** below. The development would be visible from a larger area within the immediate surroundings compared to an undeveloped site, not taking into account trees, existing structures or buildings or any other artificial landform such as berms, dams etc. The largest area of influence is north of the site due to the rising topography.

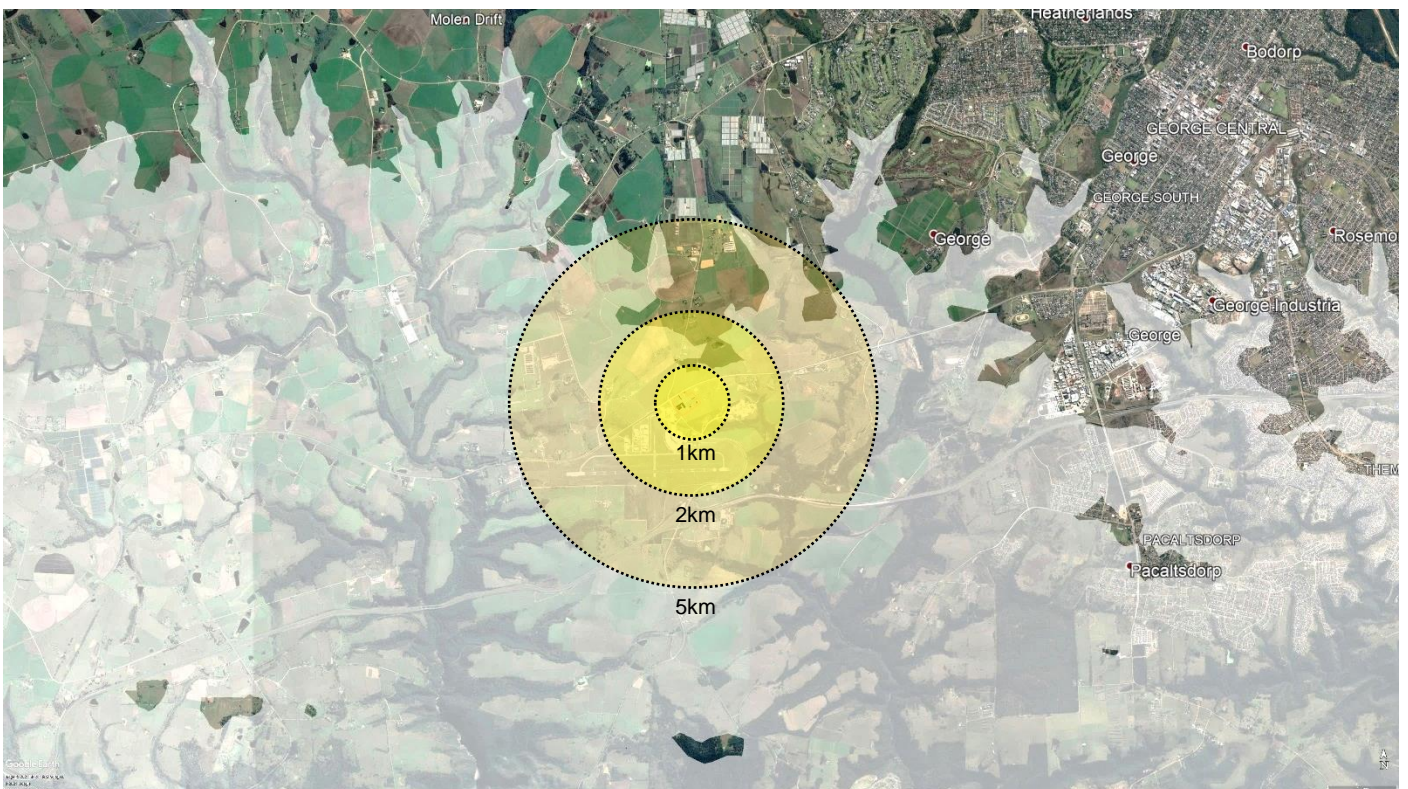
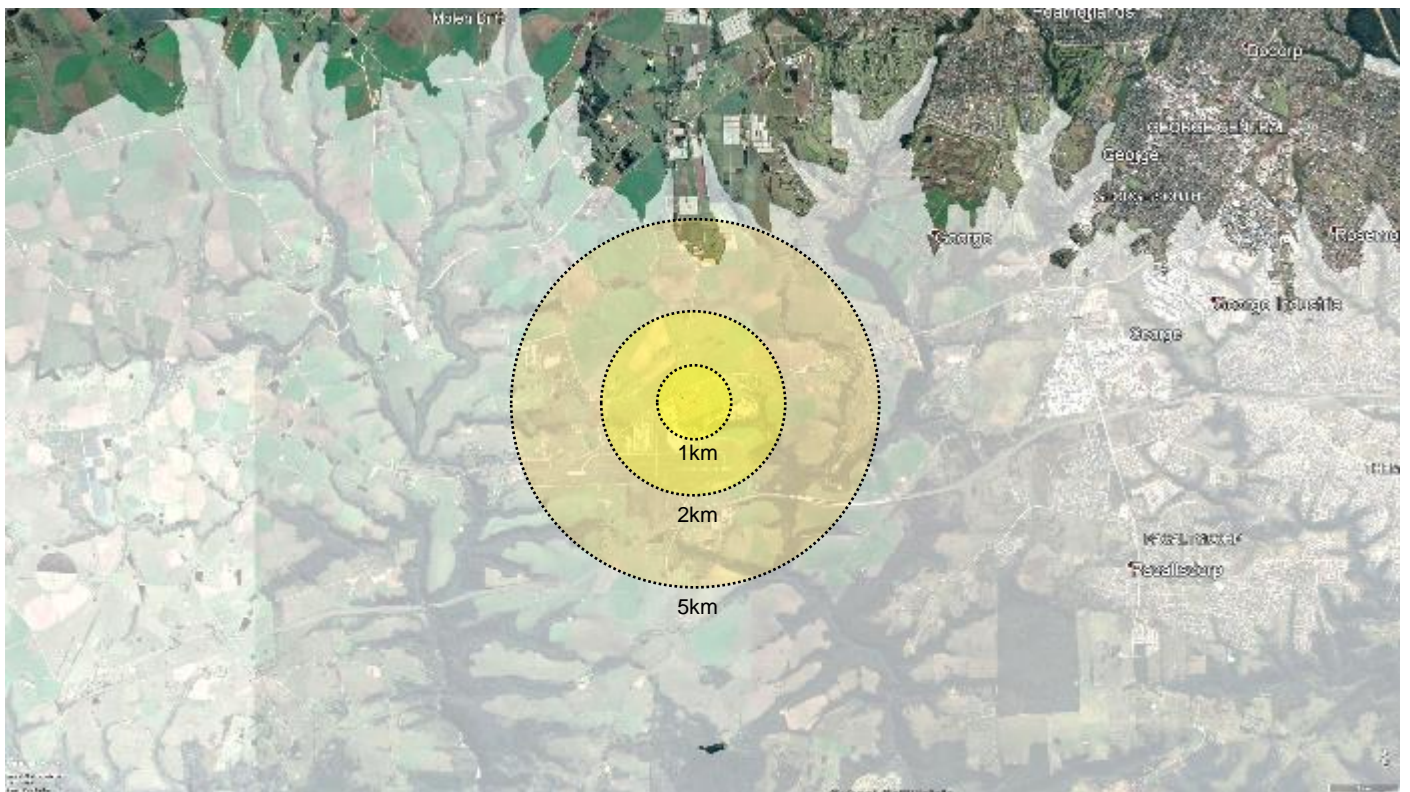
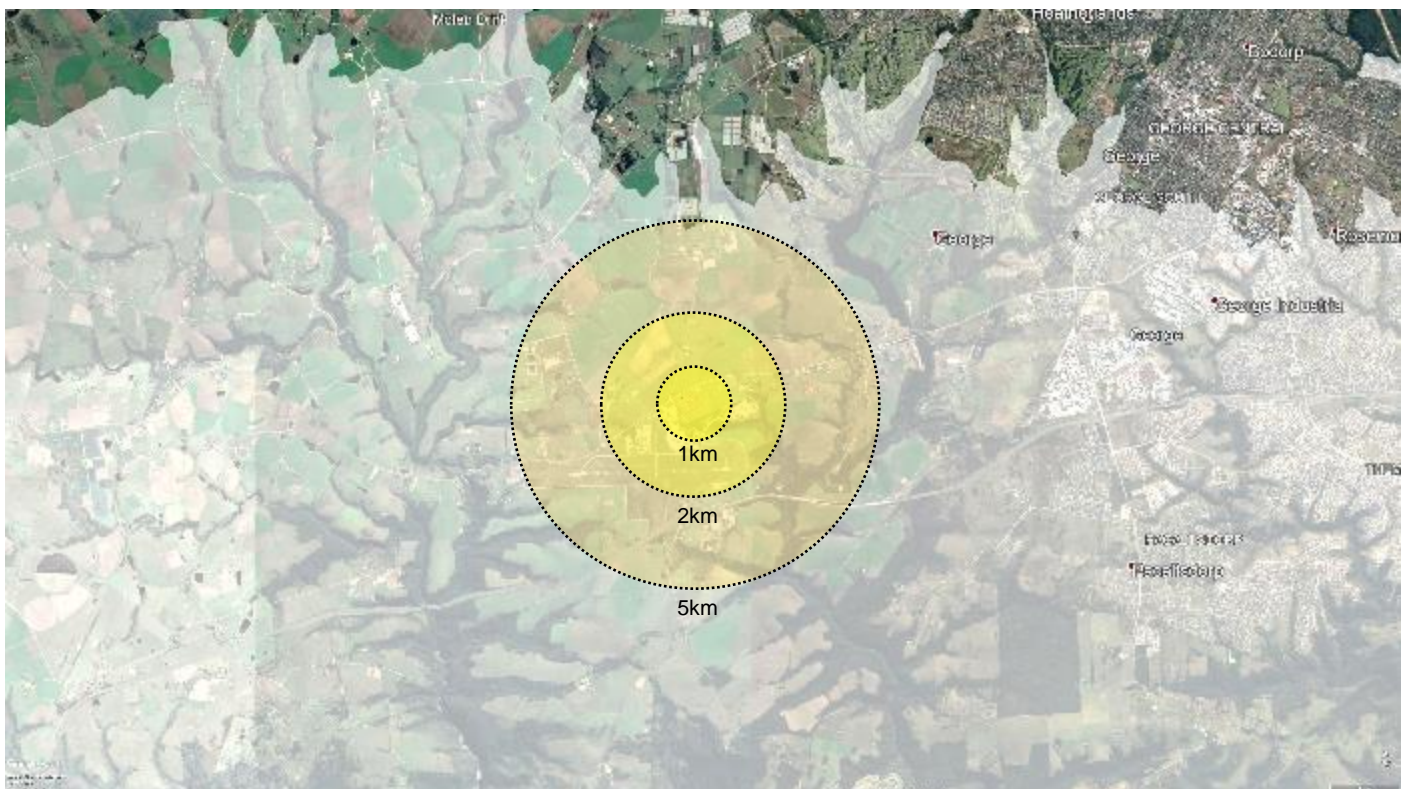


Figure: Assessment at 8m height.

Assessment at 18m Height



Assessment at 22m Height



7. VISUAL IMPACT ASSESSMENT

It is expected that the development will be a **Category 4 development** which entails a possible **high visual impact** according to the Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (Edition 1) in the immediate surroundings.

Category 4 developments are expressed as; medium density residential development, sports facilities, small-scale commercial facilities / office parks, one-stop petrol stations, light industry, medium-scale infrastructure.

The development forms an extension of the existing airport within the airport support zone and should not be taken in isolation as a standalone development as described in the guideline.

VISUAL EXPOSURE

The level of visual exposure takes into consideration the distance at which the development is viewed from, visibility items of the viewsheds and any existing obstructions such as trees or existing development.

- High exposure – fully exposed
- Moderate exposure – partially exposed
- Low exposure – little to no exposure

VISUAL SENSITIVITY

The visibility of sites is determined by a combination of topography, landform, vegetation cover, settlement pattern and special features and existing development.

- High visual sensitivity – highly visible and potential sensitive areas in the landscape
- Moderate visual sensitivity – moderately visible in the landscape
- Low visual sensitivity – minimal visible in the landscape

LANDSCAPE INTEGRITY

Landscape integrity is represented by the following visual qualities, which enhance the visual and aesthetic experience of the area:

- High landscape integrity – Intact natural and cultural landscape with no visual intrusions or incompatible structures.
- Moderate landscape integrity – Intact natural or cultural landscape with minimal visual intrusions or incompatible structures.
- Low landscape integrity – Disturbed natural and cultural landscape with visual intrusions or incompatible structures.

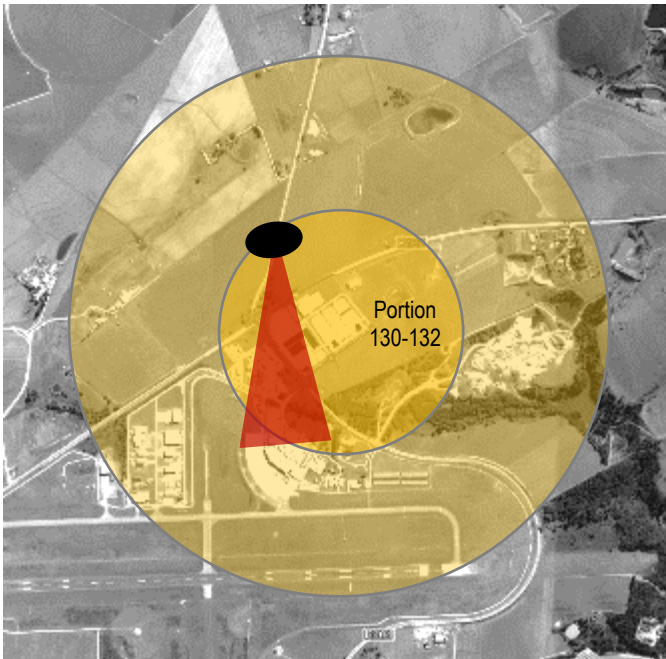
VISUAL ABSORPTION CAPACITY

The ability of elements of the landscape to “absorb” or mitigate the visibility of an element in the landscape.

- High VAC – effective screening by topography and vegetation and existing structures.
- Moderate VAC - partial screening by topography and vegetation and existing structures.
- Low VAC - little or no screening by topography or vegetation and existing structures.

VIEWPOINTS

Viewpoint 1A

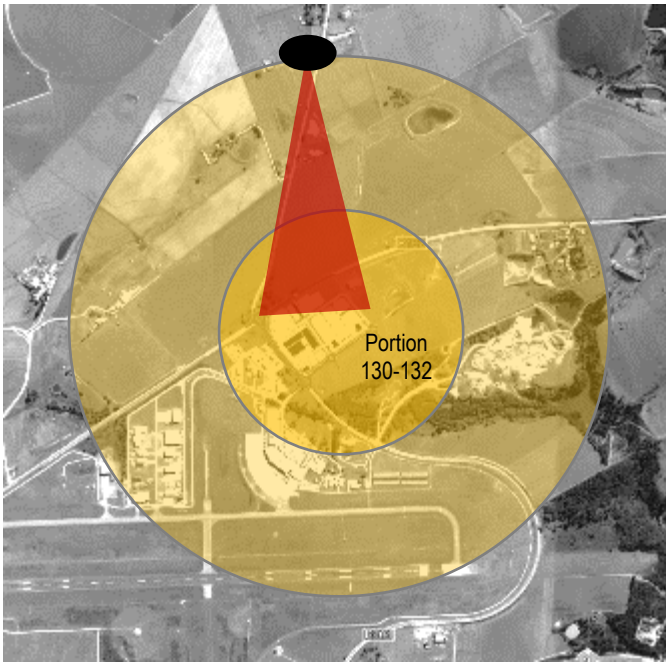


Viewpoint 1A is taken along the R404 at 500m approaching the proposed development from the north.



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
HIGH	HIGH	MODERATE	LOW
The site is highly exposed at this point due to the proximity and elevation of the viewpoint.	Highly visible in the landscape, not within sensitive area.	The natural landscape is not considered intact.	Little or no screening by topography or vegetation and existing structures. New proposed vegetation will need to form part of mitigating factor to screen off the development.

Viewpoint 1B

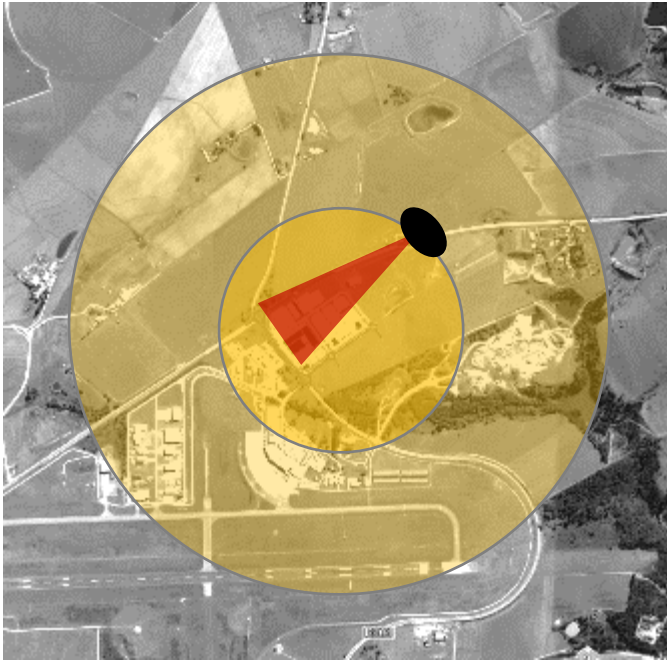


Viewpoint 1B is taken along the R404 at 1000m approaching the proposed development from the north.



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
MODERATE	MODERATE	MODERATE	MODERATE
The site is exposed at this point due to the elevation, however minimum exposed due to the distance	moderately visible in the landscape, not within sensitive area.	The natural landscape is not considered intact.	partial screening by topography and vegetation and existing structures.

Viewpoint 2A

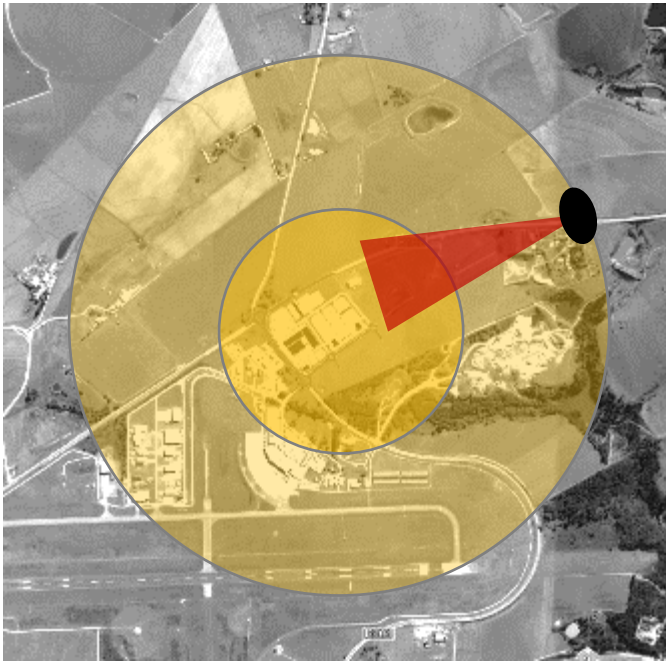


**Viewpoint 2A is taken along the R102 at 500m
Approaching the proposed development from the east.**



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
HIGH	MODERATE	MODERATE	LOW
The site is exposed due to the proximity of the viewpoint.	moderately visible in the landscape, not within sensitive area.	The natural landscape is not considered intact. Airport is visible from the viewpoint/	Little screening by topography and vegetation or existing structures. The future proposed road would screen the development from the viewpoint.

Viewpoint 2B

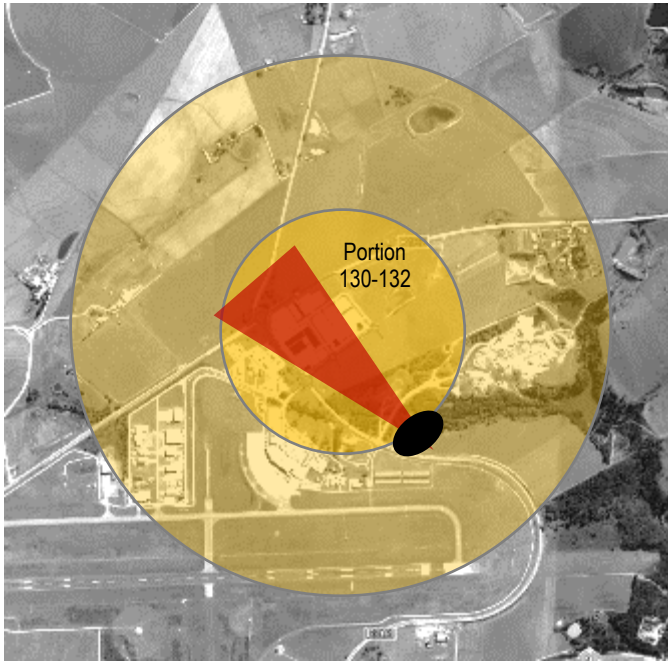


Viewpoint 2B is taking along the R102 at 1000m approaching the proposed development from the east.



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
MODERATE	MODERATE	MODERATE	MODERATE
The site is moderately visible in the landscape due to the proximity for the viewpoint.	Moderately visible in the landscape, not within sensitive area.	The natural landscape is not considered intact. Predominantly grasslands and agriculture.	Partial screening by topography and vegetation and existing structures.

Viewpoint 3A

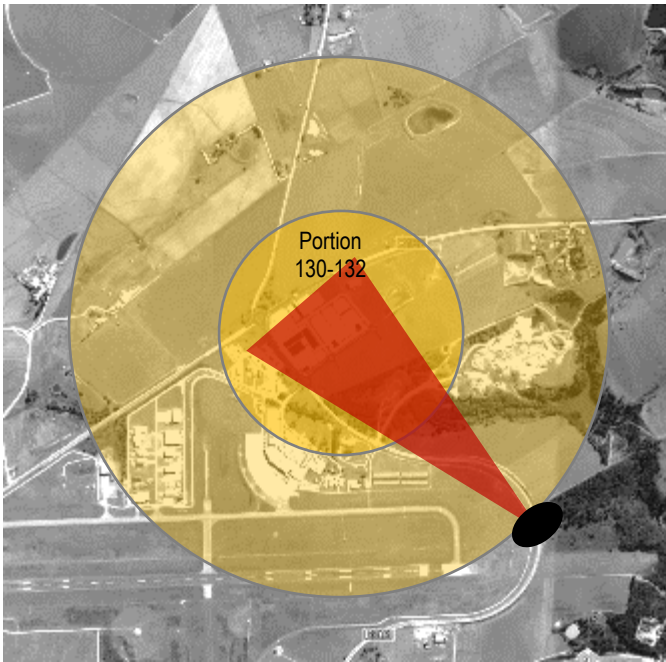


Viewpoint 3A is taking along the R404 at 500m approaching the proposed development from the south.



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
LOW	LOW	LOW	HIGH
industrial or degraded areas prominent if the form of airport and quarry.	Minimally visible in the landscape	Disturbed natural and cultural landscape with visual intrusions or incompatible structures.	Effective screening by topography and vegetation and existing structures.

Viewpoint 3B

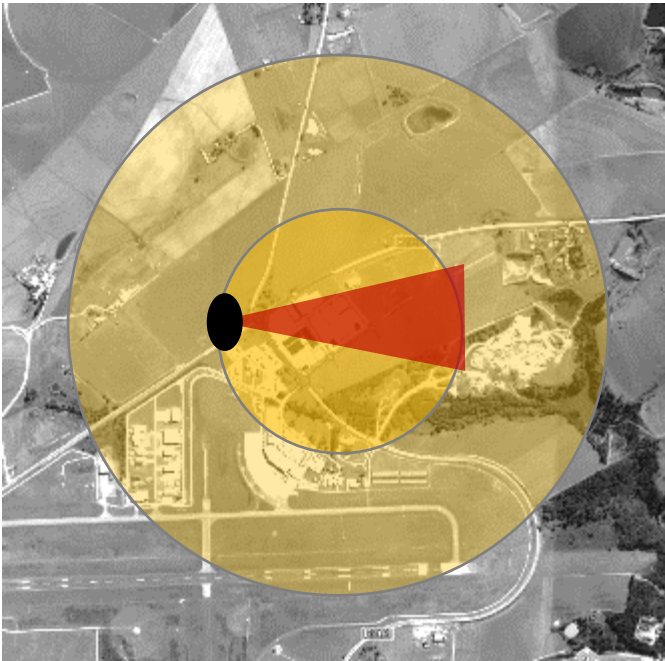


Viewpoint 3B is taking along the R404 at 1000m approaching the proposed development from the south.



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
LOW	LOW	LOW	HIGH
Exposure of the site is low due to the proximity of the viewpoint, with degraded areas prominent with the landing strip in view.	minimally visible in the landscape	Disturbed natural and cultural landscape with visual intrusions or incompatible structures.	Effective screening by topography and vegetation and existing structures.

Viewpoint 4A

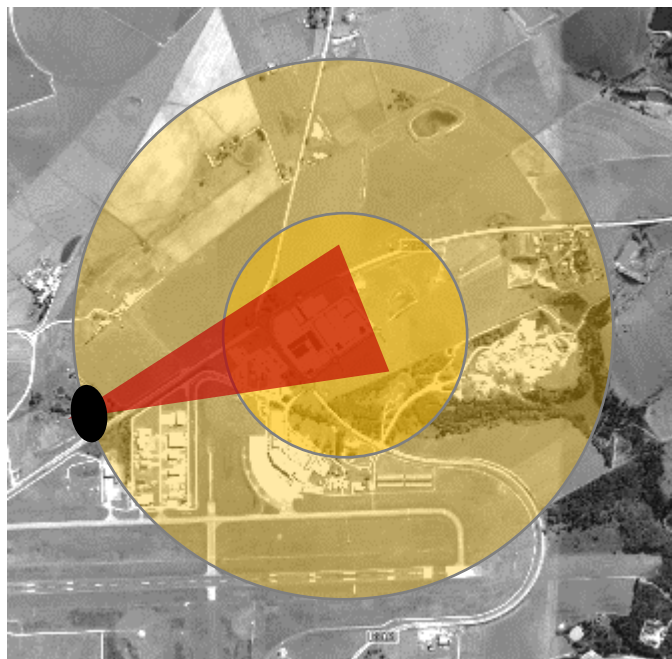


Viewpoint 4A is taking along the R102 at 500m approaching the proposed development from the west



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
HIGH	MODERATE	MODERATE	LOW
The site is exposed due to the proximity of the viewpoint.	moderately visible in the landscape, not within sensitive area.	The natural landscape is not considered intact. Predominantly grasslands and agriculture.	Little or no screening by topography or vegetation and existing structures. New proposed vegetation will need to form part of mitigating factor to screen off the development.

Viewpoint 4B



Viewpoint 4B is taking along the R102 at 1000m approaching the proposed development from the west



VISUAL EXPOSURE	VISUAL SENSITIVITY	LANDSCAPE INTEGRITY	VISUAL ABSORPTION CAPACITY
LOW	LOW	LOW	HIGH
Exposure of the site is low due to the proximity of the viewpoint, with existing development obstructing the site line.	Minimally visible in the landscape, not within sensitive area.	Disturbed natural and cultural landscape with visual intrusions or incompatible structures.	Effective screening by topography and vegetation and existing structures.

The visual exposure from viewpoints within 500m from the site are relatively high. It is however predominantly the case when viewing the site from the north due to the increase in elevation from the site. Overall, the visual exposure is moderate to low due to the capacity of the environment to absorb the visual impact of the development.

Visual sensitivity and landscape integrity are consistently moderate to low due to the surrounding environment being disrupted by the airport which can be seen from most of the viewpoints as well as the quarry being visible from the eastern approach on the R102 and southern approach on the R404.

Due to the underlying topography, existing trees and development, the environment has a moderately high capacity to absorb the visual impact of the development.

Based on the assessment of the viewpoints, taking into consideration the assessment criteria it is clear that the environment as defined by Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (Edition 1) in the table below, is **an area of**

route of low scenic, cultural, historical significance and is disturbed. Therefore, based on a category 4 development, a moderate visual impact can be expected. Degraded/wasteland areas such as the quarry may reduce the impact further.

Table below refers to the categorisation of issues to be address in the assessment. The mitigating measures are based on the moderate visual impact.

Type of environment	Type of development (see Box 3) Low to high intensity				
	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

8. MITIGATING MEASURES

Mitigating measures have the potential to manage and reduce the impact of the development on the surrounding environment. Due to the moderate outcome of the impact the mitigation measures are more prevalent for close distance mitigation. The types of mitigation measures that should be considered are:

MATERIALITY

Material selection should be considered as part of any design in order to ensure the proposed buildings/structures are in harmony with the surrounds as far as possible. Natural materials can be used to identify with the local landscape. Signage needs to be done with care on the R102 and R404 road.

COLOUR

Colour selection should be sensitive to the environment and cultural landscape. Preferably dark green, dark grey and dark brown walls but roof can be white for sustainability purposes. The development should also avoid the use of reflective surfaces in the design.

BULK & BUILDING FORM

The scale, bulk and building form can be used to articulate the buildings in order to mitigate or reduce the impact of the specific industrial typology.

HEIGHT & SCALE

The height and scale of the buildings should be minimised where possible, this will reduce the overall impact of the development from the surrounding environment. The 8-22m height should be mitigated by use of setbacks and screens to reduce the scale of the buildings. Larger buildings should be placed central to the development and step down towards the street edges (R102 & R404). It is suggested that the 18-22m structures be placed in the centre of the development and be screened by the lower 8-18 m structures.

SCREENING

Screening through the planting of indigenous trees should be a priority. Addition of screens where landscape elements are not possible should be used to screen off any unsightly areas. The placement of these screens will be most effective along the boundary and or roadside. Screening has a strong potential to reduce the impact of the development on the surrounding areas, but should be as natural as possible.

URBAN DESIGN GUIDELINES

Mitigating measures should be included in the Urban Design Guidelines and should be described in more detail.

9. CONCLUSION

The proposed development on Portion 130,131 & 132 forms an extension of this existing airport. Due to the extent of the existing Airport, the impact of this development within the landscape is much less of an impact than the Airport. The current site forms a portion of the total proposed Airport Support Zone as defined in the SDF and LSDF.

Although the development will have a moderate impact on the immediate area, it is however not considered degradation of the exiting landscape, but an extension of the current airport existing developed area. The airport support zone is contained by the existing structures and proposed roads and high way, as well as the natural topography which will avoid urban sprawl. Once the new Western Bypass (Blue TR 59) has been constructed by the Western Cape Government this will mitigate a lot of the view lines and obstruct views of the new development. The new elevated ($\pm 5m$) on and off ramps from and to the R102 and Western Bypass will also assist in screening off the proposed airport support zone from the East (Approach from George CBD). This will also limit the total feasible development area of the support zone.

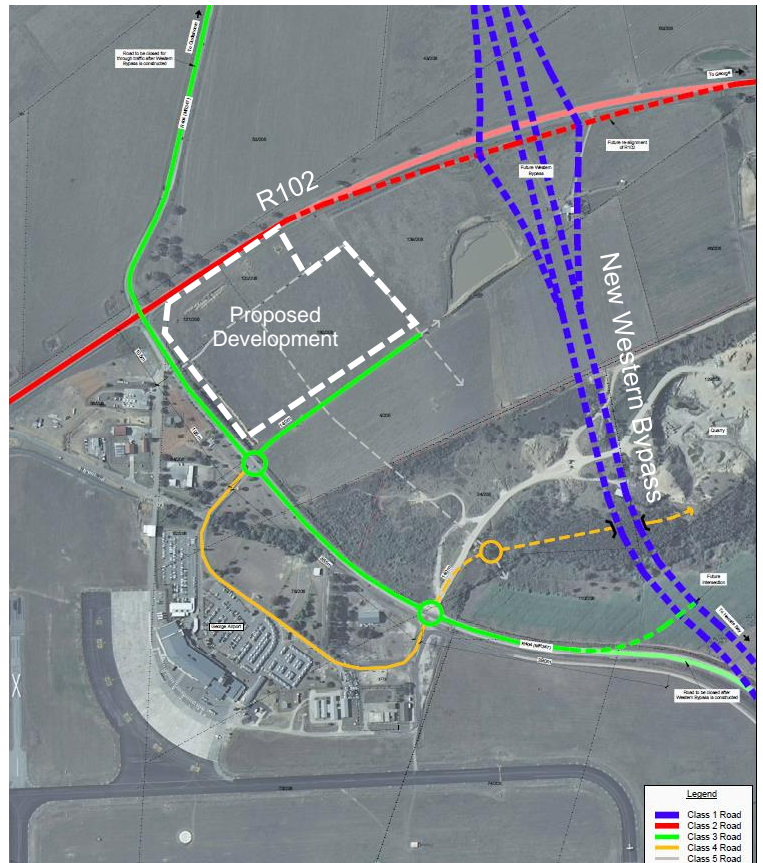


Image Above: Proposed new Western Bypass by Western Cape Government. (ITS Engineers)

As the Airport is a major gateway for the ever-growing tourism industry in the Garden Route, the celebration of the Gateway is an opportunity that can enhance the sense of the place and create a memorable experience.

In order to soften the possible visual impacts, certain mitigation principles have been proposed. In addition to this, architectural and urban design guidelines for the development could be done in terms of; building form, proportion, scale, architectural elements and finishes and interface with the roads and natural environment. This will ensure the impact is managed and consistent throughout the development.