

**HANS MOES KRAAL
PRT 112 OF FARM 202, GEORGE
CELLULAR MAST**

VISUAL ASSESSMENT

For consideration in the Basic Assessment

For

EnviroAfrica

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Final Report

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Relevant Qualifications & Experience of the Author

Ms Sarien Lategan holds an Honours Degree in Geography as well as a Masters Degree in Town and Regional Planning from the University of Stellenbosch. She has 7 years experience as Town planner at a local government, 3 years with South African National Parks as planner and project manager of various GEF and World Bank managed, tourist facilities in the Table Mountain National Park and since 2004 as private practitioner involved in inter alia Site Analysis and Visual Impact assessments for various types of developments ranging from housing, tourism to infrastructure developments.

Ms Lategan is registered as a professional Town and Regional Planner as well as Environmental Assessment Practitioner.

Declaration of Independence

I, Sarah C. Lategan, declare that I am an independent consultant to EnviroAfrica and, has no business, financial, personal or other interest in the proposed project or application in respect of which I was appointed, other than fair remuneration for work performed in connection with the application. There are furthermore no circumstances which compromise my objectivity in executing the task appointed for.



SC Lategan

17-05-2019

EXECUTIVE SUMMARY

Sarien Lategan was appointed to undertake the visual impact assessment of a 25m monopole-tree tower, to accommodate cell antennae, on portion 112 of farm 202, Hans Moes Kraal, George, as input to the Basic Assessment in terms of the National Environmental Management Act, 1998 (Act no. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2017, undertaken by EnviroAfrica. The site is situated next to the gravel road Nr 1591 from Pacaltsdorp to Gwaingrивermouth, behind a cluster of trees.

The aim of the assessment is to identify view receptors and assess the impact of the development on these receptors as well as the impact on the sense of place of the environment.

The site is located in an area characterized by small holdings with small scale and limited high intensity dairy farms. The area host forest/plantation areas with inter alia large Eucalyptus and Pine trees. Other surrounding land uses include a coastal nature reserve, municipal holiday resort at the river mouth and a luxury residential estate.

The topography is characterized by hills and valleys, which provide a high level of visual absorption. The site is surrounded by large trees up to approximately 15 to 20m in height. It is therefore significantly screened from the surrounding landscape.

Due to the topography and landscape elements, the area displays a high absorption level. The assessment of the potential receptors indicated that the overall impact is low and well within acceptable levels of change.

1 BACKGROUND

Sarien Lategan was appointed to undertake the visual impact assessment of a 25m monopole-tree tower, to accommodate cell antennae, on portion 112 of farm 202, Hans Moes Kraal, George, as input to the Basic Assessment in terms of the National Environmental Management Act, 1998 (Act no. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2017, undertaken by EnviroAfrica. The site is situated next to the gravel road Nr 1591 from Pacaltsdorp to Gwaingrивermouth, behind a



Figure 1: Locality

2 TERMS OF REFERENCE

The applicant intends to construct a 25m high monopole-tree mast to accommodate cell antennae, on a portion 112 of farm 202, Hans Moes Kraal, George.

The objective of the Visual Impact assessment is to determine the significance of any visual impact which may result from the construction of the proposed cellular mast. This assessment will indicate whether from a visual perspective the development constitute an

VIA: Hans Moes Kraal cellular mast

acceptable level of change and if so what potential mitigation measures can reduce any visual impact.

To determine the potential extent of the VIA required, the following broad criteria are considered.

Table 1: Requirements for visual assessment

Areas with protection status, e.g. nature reserves	Lalavuga Coastal Reserve i.e. a residential estate under the auspices of a reserve. It is only zoned private open space (conservation) but does not have other legal protection other than the Coastal Management Act.
Areas with proclaimed heritage sites or scenic routes	None
Areas with intact wilderness qualities, or pristine ecosystems	River areas along the coast. Fairly fragmented
Areas with intact or outstanding rural or townscape qualities	None
Areas with a recognized special character or sense of place	Potentially
Areas with sites of cultural or religious significance	A heritage study indicates that some dilapidated structures exist in the area but none of high significance.
Areas of important tourism or recreation value	Yes. Gwaing river mouth resort
Areas with important vistas or scenic corridors	The coastal plateau.
Areas with visually prominent ridgelines or skylines.	The coastal plateau and river gorges

Table 2: Nature of intended development

High-intensity type projects including large-scale infrastructure	Medium to small scale
A change in land use from the prevailing use	Yes.

VIA: Hans Moes Kraal cellular mast

A use that is in conflict with an adopted plan or vision for the area	None known
A significant change to the fabric and character of the area	Unlikely
A significant change to the townscape or streetscape	Potentially
Possible visual intrusion in the landscape	Potentially
Obstruction of views of others in the area	Potentially

From the above, it is clear that the receiving environment holds certain visual elements which may be impacted upon by development of the site.

It is thus clear that the potential exists that the construction of the cell mast may have a visual impact. In order to assist authorities thus to make an informed decision, the input of a specialist is required to assist in the project design and assess the visual impact of the preferred project proposal.

The term visual and aesthetic is defined to cover the broad range of visual, scenic, cultural, and spiritual aspects of the landscape. The terms of reference for the specialist are to:

- Provide the visual context of the site with regard to the broader landscape context and site-specific characteristics.
- Provide input in compiling layout/design alternatives.
- To describe the affected environment and set the visual baseline for assessment
- Identify the legal, policy and planning context
- Identifying visual receptors
- Predicting and assessing impacts
- Recommending management and monitoring actions

3 Methodology and principles

3.1 Methodology

Table 4: Summary of methodology

Task undertaken	Purpose	Resources used
A screening of the site and environment	To obtain an understanding of the site and area characteristics and potential visual elements	Photographs Site visits
Identify visual receptors	To assess the visual impact from specific viewpoints	Photographs, profiles
Contextualize the site within the visual resources	To present an easy to understand context of the site within the visual resource baseline	Specialist: S Lategan Graphic presentation Superimposed photo's
Propose possible mitigation measures	To present practical guidelines to reduce any potential negative impacts.	Specialist: S. Lategan

Throughout the evaluation the following fundamental criteria applied:

- Awareness that "visual" implies the full range of visual, aesthetic, cultural and spiritual aspects of the environment that contribute to the area's sense of place.
- Consideration of both the natural and cultural (urban) landscape, and their inter-connectivity.
- The identification of all scenic resources, protected areas and sites of special interest, as well as their relative importance in the region.
- Understanding of the landscape processes, including geological, vegetation and settlements patterns which give the landscape its particular character or scenic attributes.
- The inclusion of both quantitative criteria, such as visibility and qualitative criteria, such as aesthetic value or sense of place.
- The incorporation of visual input as an integral part of the project planning and design process, so that the findings and recommended mitigation measures can inform the final design and quality of the project.
- To test the value of visual/aesthetic resources through public involvement.

3.1.1 Principles

The following principles to apply throughout the project:

- The need to maintain the integrity of the landscape within a changing land use process
- To preserve the special character or 'sense of place' of the area
- To minimize visual intrusion or obstruction of views
- To recognize the regional or local idiom of the landscape.

3.1.2 Fatal flaw statement

A potentially fatal flaw is defined as an impact that could have a "no-go" implication for the project. A "no-go" situation could arise if the proposed project were to lead to (Oberholzer, 2005):

1. Non-compliance with Acts, Ordinance, By-laws and adopted policies relating to visual pollution, scenic routes, special areas or proclaimed heritage sites.
2. Non-compliance with conditions of existing Records of Decision.
3. Impacts that may be evaluated to be of high significance and that are considered by the majority of stakeholders and decision-makers to be unacceptable.

The screening of the site and initial project intentions did not reveal any of the above issues which may result in a fatal flaw.

3.1.3 Gaps, limitations and assumptions

The assessment is based on the information provided by the developer.

3.1.4 Assessment explained

The assessment of visual impact is done on two levels namely the absorption rate of the receiving environment and the individual view receptors. The absorption rate of the receiving environment is determined by various elements e.g. topography, land use etc. and the assessment will focus on the acceptable level of change of the area.

Visual receptors are assessed individually based on the sensitivity of the receptor, exposure to the development and intrusion rate.

VIA: Hans Moes Kraal cellular mast

The following framework is used in order to assess view receptors:

Criteria	High	Moderate	Low
Exposure	Dominant, clearly visible	Recognizable to the viewer	Not particularly noticeable to the viewer
Sensitivity	Residential, nature reserves, scenic routes	Sporting, recreational, places of work	Industrial, mining, degraded areas
Intrusion/Obstructive	A noticeable change, discordant with surroundings	Partially fits but clearly visible	Minimal change or blends with surroundings

A sensitive receptor with low exposure and/or low intrusion rate can be regarded as a low significance rating. A receptor of low sensitivity but with high exposure can be of high significance if the intrusion rate is also high but is reduced if the intrusion rate is medium or low.

The overall significance, therefore, depends not only on the sensitivity of the receptor but also on the exposure and intrusion rate and thus a combination of the criteria.

3.2 Legal Framework, Guidelines and policies

3.2.1 National Environmental Management Act, 107, 1998 and relevant Guidelines:

An assessment in terms of any activity that requires an EIA or Basic Assessment may be subjected to a specialist visual assessment in order to determine the significance of the potential impacts to result from a proposed activity.

3.2.2 Western Cape PSDF

No specific references on this scale of development

3.2.3 George Local Spatial Development Framework

The Local Spatial Development Framework which applies to the PACALTS DORP AREA AND RURAL AREA OF HANS-MOES-KRAAL as adopted by the George Municipality in terms of section 9(1) of the Land Use Planning By-Law for the George Municipal area indicate the specific area in which the proposed cell site is located as a special investment area. The SDF does not indicate the DR 1591 as of particular interest as a scenic route but it is anticipated that this route will be upgraded to provide access to more tourist facilities in future.

4 Development Proposal

The mast and supporting infrastructure will be positioned on the northern boundary of the site, behind the trees.



Figure 2: Position of mast on site

The mast consists of a 25m high monopole with artificial pine tree finish. The mast will accommodate the necessary navigation lights. The site consists of an 8m x 8m area to be enclosed with a clearvue fence.

VIA: Hans Moes Kraal cellular mast

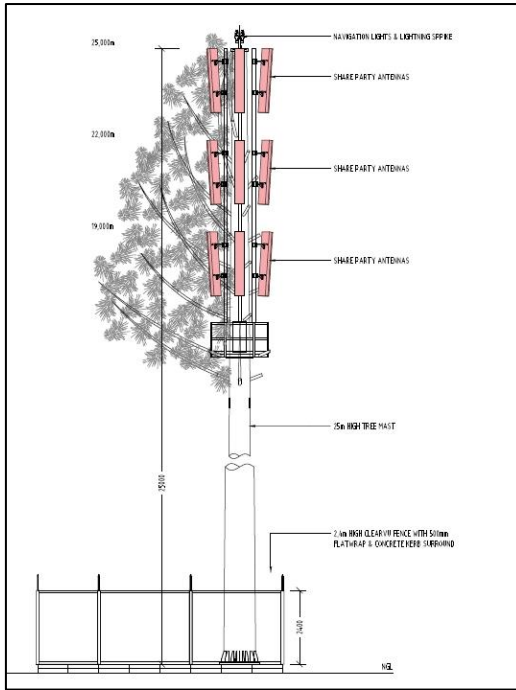


Figure 3: Mast side view

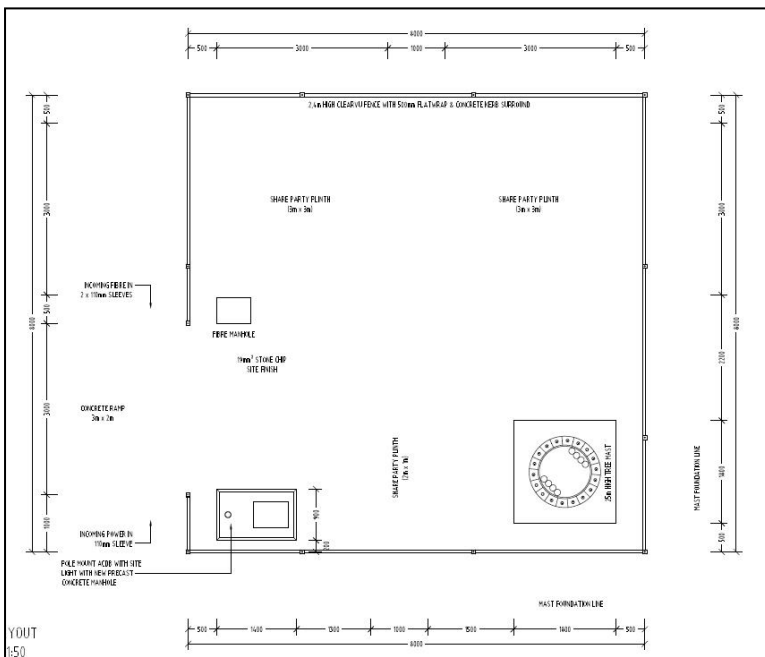


Figure 4: Site components

VIA: Hans Moes Kraal cellular mast

4.1.1 Operational elements

Only occasional maintenance is required. The site is serviced with a light delivery vehicle and potentially climbers to access equipment on the mast.

4.2 Construction elements

For the construction of the mast, typically LDV or small trucks and cranes may be required.

Construction process entails:

- clearing and levelling of the site,
- construction of mast
- fitting of antenna and equipment
- Fencing and security infrastructure
- Construction of support facilities such as a container, etc.

5 RECEIVING VISUAL ENVIRONMENT

5.1 Description

Understanding the potential impact of a proposed development, an understanding of the receiving environment is important. In this regard, the main elements of the receiving environment relate to the character of the current surrounding land use and the absorption capacity of the area. The character of the area entails the sense of place created by the current land use and the scale and type of infrastructure or physical elements within the immediate area. The absorption capacity relates to the density of physical elements and topographical variations of the landscape, which will determine the catchment area. The human eye will observe the horizon on a perfectly flat surface at a distance of 30km. This is however significantly reduced by landscape elements which obstruct the view or increased if the viewer is elevated above the site.

5.1.1 Catchment area

The site is situated in a rural area with small scale agricultural activities on small holdings. The area thus display a typical rural small holding character with small scale infrastructure dotted through the landscape. The catchment area consists of hillsides, deep valleys, a steep coastal escarpment and large trees, with a range of small scale infrastructure related to the agricultural activities.

VIA: Hans Moes Kraal cellular mast

The catchment area is significantly restricted by the above elements. The site is however located on the upper part of the plateau area. The site is at approximately 175m with the highest point on this plateau is approx. 180m There are limited areas where a viewer would be elevated above the site. Figure 5 illustrates this potential catchment area based on the topography. The catchment is significantly restricted to the north, by large trees and only the entrance access road provide a break in this barrier. The catchment towards the south is however less restricted but the slope of the coastal escarpment reduce any views from this are towards the site.

VIA: Hans Moes Kraal cellular mast



Figure 5: Potential Viewshed

VIA: Hans Moes Kraal cellular mast



Figure 6: Actual view catchment based on landscape elements

5.1.2 Sense of Place:

The site is situated in mix agriculture – natural area with a rural character. Landscape can be regarded a continuum from high density and activity urban development through production, agricultural and rural landscape towards a wilderness landscape. An assessment of the site and surrounds clearly demonstrates that the site is located well in such production landscape to rural landscape with significant wilderness pockets remaining.



Figure 7: Production landscape

6 VISUAL RECEPTORS

Visual receptors are those positions from where the development site is potentially visible. Based on the character of the locality of the receptor its sensitivity can be rated. Generally, residential areas and tourism-related destinations and routes are sensitive to visual intrusions as they relate to the well-being of residents and the tourism quality of the area.

6.1 Potential Receptors

The following potential visual receptors have been identified:

- A - Approach from Pacaltsdorp
- B - Approach from Le Grande Estate
- C - Houses directly abutting site
- D - View from Across western valley
- E - View from Lalavuga Coastal reserve

VIA: Hans Moes Kraal cellular mast



Figure 8: Potential Receptors

6.2 Assessment of Receptors

6.2.1 Approach from Pacaltsdorp

When approaching from Pacaltsdorp the site remain out of sight and only comes into view approx. 100m from the site. The topography of the area and the route the road follows, restrict views to the minimum and at no point is view over the larger area possible. This view is furthermore restricted by landscape elements such as large trees. The profiles from various points along the route demonstrate that the site, even with a object of 25m in height remains out of view.

At the first point when the mast becomes visible, the tree backdrop reduces the obtrusiveness and the impact is low. Once you reach the site the mast is screened from the road and out of view. Duration of view is thus short.



Figure 9: Pacaltsdorp approach at intersection

VIA: Hans Moes Kraal cellular mast



Figure 10: Pacaltsdorp approach from Lalavuga entrance

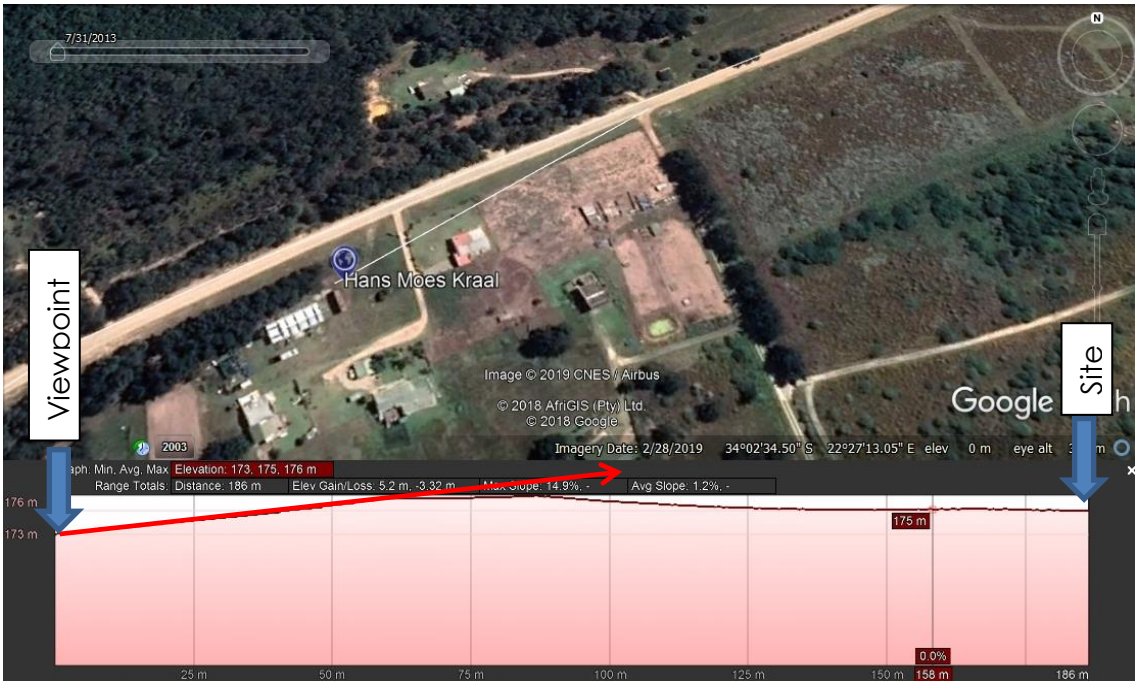


Figure 11: Pacaltsdorp approach from 115m distance

VIA: Hans Moes Kraal cellular mast



Photo 1: Pacaltsdorp approach

Criteria	High	Moderate	Low
Exposure	dominant, clearly visible	recognizable to the viewer	not particularly noticeable to the viewer
Sensitivity	residential, nature reserves, scenic routes	sporting, recreational, places of work, national road	industrial, mining, degraded areas
Intrusion/Obstructive	noticeable change, discordant with surroundings	Partially fits but clearly visible	minimal change or blends with surroundings
Duration			short

The overall visual significance is low to moderate without mitigation. The mitigation measure i.e. using a tree-type mast, reduce the impact related to the sensitivity of the area. The tree is in context with its surroundings and would thus result in a low impact.

6.2.2 Approach from Le Grande Estate

Approaching the site from the southeast i.e. Le Grand Estate, the site stays out of sight due to the topography as well as the stand of trees that screen the site. It may be possible that the very top of the mast may be visible or at night the navigation lights. However the road turn away from the site, leaving the mast in the traveler's peripheral view.

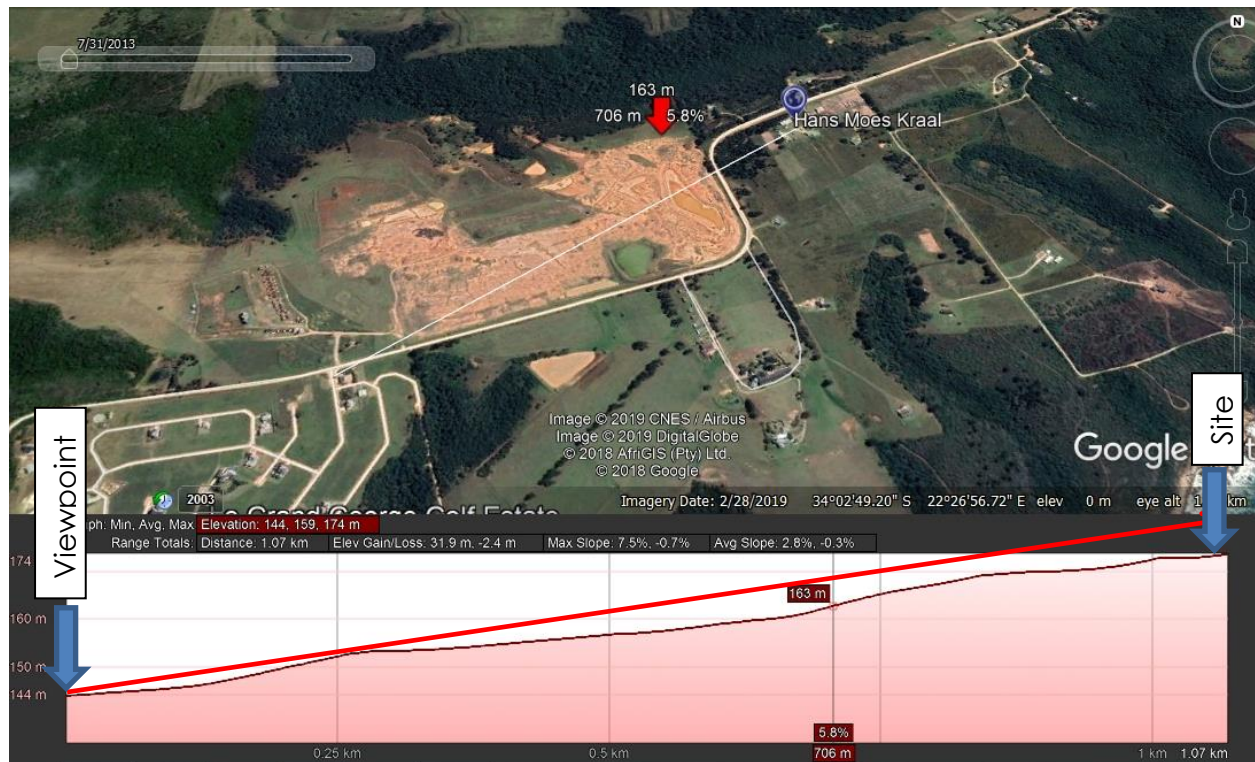


Figure 12: Profile from Le Grand Estate entrance gate

Due to the topography, the site would be visible from the entrance gate of Le Grand Estate. It is possible that the navigation lights may be visible in the distance. However due to the various site elements, it is unlikely that a traveler will even notice the top tip of the mast.

From the western corner of Le Grand Estate, the view and conditions similar to that of from the entrance gate. However due to the lower position of this western corner, the top of the mast will not be visible, most probably neither the navigation lights at night.

VIA: Hans Moes Kraal cellular mast

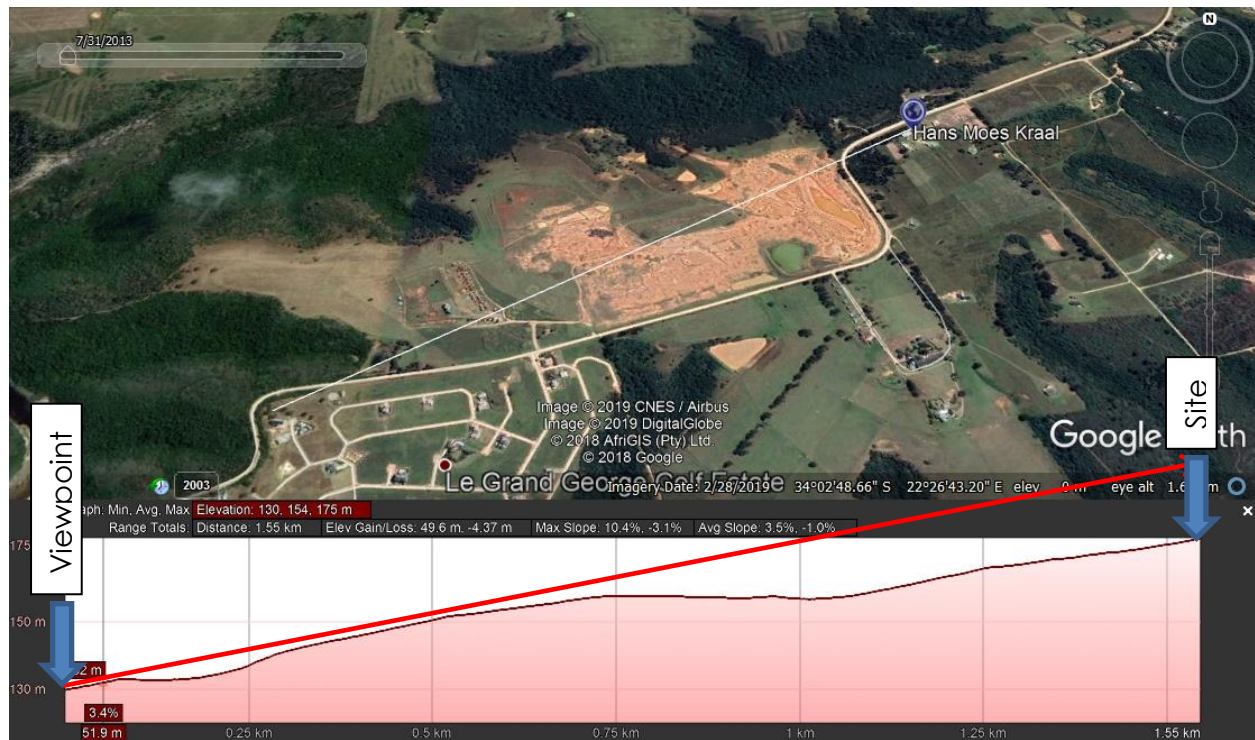


Figure 13: Le Grand Estate western corner view

The most southern area of Le Grand Estate is at a height of approximately 60m which will make view of the site and even a structure of 25m in height impossible.

As a traveler approach the site, the topography is such that the site does not come into view until you are in close proximity of the site. Even then the mast site is screened by various landscape elements of which the most significant the stand of trees on the perimeter of the property.

At about 400m from the site, the road make a 90° turn at which point the travelers view is directed towards the site and there is a brief gap in the tree line. The traveler may observe the mast for a brief moment before it is screened again by the trees. As the traveler approach the site from this point, the dense stand of trees completely screen the site and even as the traveler pass the mast site, it is mostly unlikely that the mast will come into view as it is screened by the trees, the road is slightly lower than the property boundary and the site will be in the peripheral view.

VIA: Hans Moes Kraal cellular mast

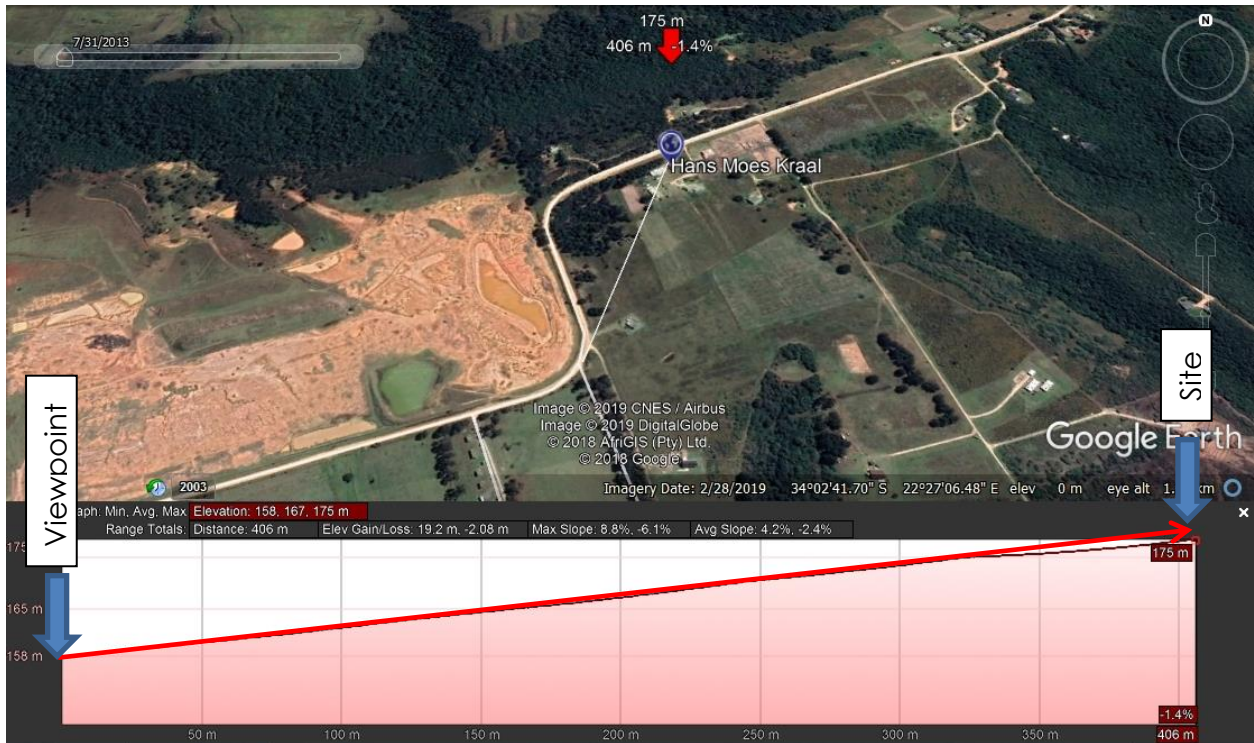


Figure 14: Approach from Le Grand Estate



Photo 2: Le Grand Estate approach

Table 3: Le Grand Estate approach

Criteria	High	Moderate	Low
Exposure	dominant, clearly visible	recognizable to the viewer	not particularly noticeable to the viewer
Sensitivity	residential, nature reserves, scenic routes	sporting, recreational, places of work, national road	industrial, mining, degraded areas
Intrusion/Obstructive	noticeable change, discordant with surroundings	Partially fits but clearly visible	minimal change or blends with surroundings
Duration			short

The duration is fleeting as the driver's attention is not distracted by the mast as it simply gets absorbed by all the other elements in the landscape. The overall visual significance is low. The fact that the proposed mast is 'n tree type, the sensitive nature of the area is respected as the tree design is within the area context.

6.2.3 Houses directly abutting site

When the site is entered, which is also an entrance to a number of small holdings/houses directly abutting the application property, the mast will be clearly visible. On exiting the property, the tree will be in direct view of the observer. This will however be brief. The houses closer to the escarpment are already on a height below the view line.

**Photo 3: On-site view**

Table 4: On-site assessment

Criteria	High	Moderate	Low
Exposure	dominant, clearly visible	recognizable to the viewer	not particularly noticeable to the viewer
Sensitivity	residential, nature reserves, scenic routes	sporting, recreational, places of work, national road	industrial, mining, degraded areas
Intrusion/Obstructive	noticeable change, discordant with surroundings	Partially fits but clearly visible	minimal change or blends with surroundings
Duration			short

The visual significance is rated as moderate. For residents of the house on the property as well as the house to the immediate north, the mast would be a permanent element in the landscape. Other observers only using the entrance road, the duration of view would be short. The sensitive tree design reduces the impact of the mast as it compliment the context of the landscape elements.

6.2.4 View from across western valley

Due to the deep river gorges, the mast may be visible from adjoining plateaus.



Figure 15: View across river

Without any site elements the mast will be visible in the distance, however given the distance it would be an almost insignificant element. The navigation lights may be visible

VIA: Hans Moes Kraal cellular mast

at night. Site elements will most probably however screen the mast and due to the fact that a tree design is proposed, the mast will blend in with the surrounding trees.

Criteria	High	Moderate	Low
Exposure	dominant, clearly visible	recognizable to the viewer	not particularly noticeable to the viewer
Sensitivity	residential, nature reserves, scenic routes	sporting, recreational, places of work, national road	industrial, mining, degraded areas
Intrusion/Obstructive	noticeable change, discordant with surroundings	Partially fits but clearly visible	minimal change or blends with surroundings
Duration	Constant		short

6.2.5 Lalavuga Coastal Reserve Estate

The houses on the estate are located within stands of natural vegetation, mostly forest which screen them from the surrounding landscape. The reserve is also situated in a valley and due to the topography the cell site is not visible. The site is also not visible from the Estate's entrance gate

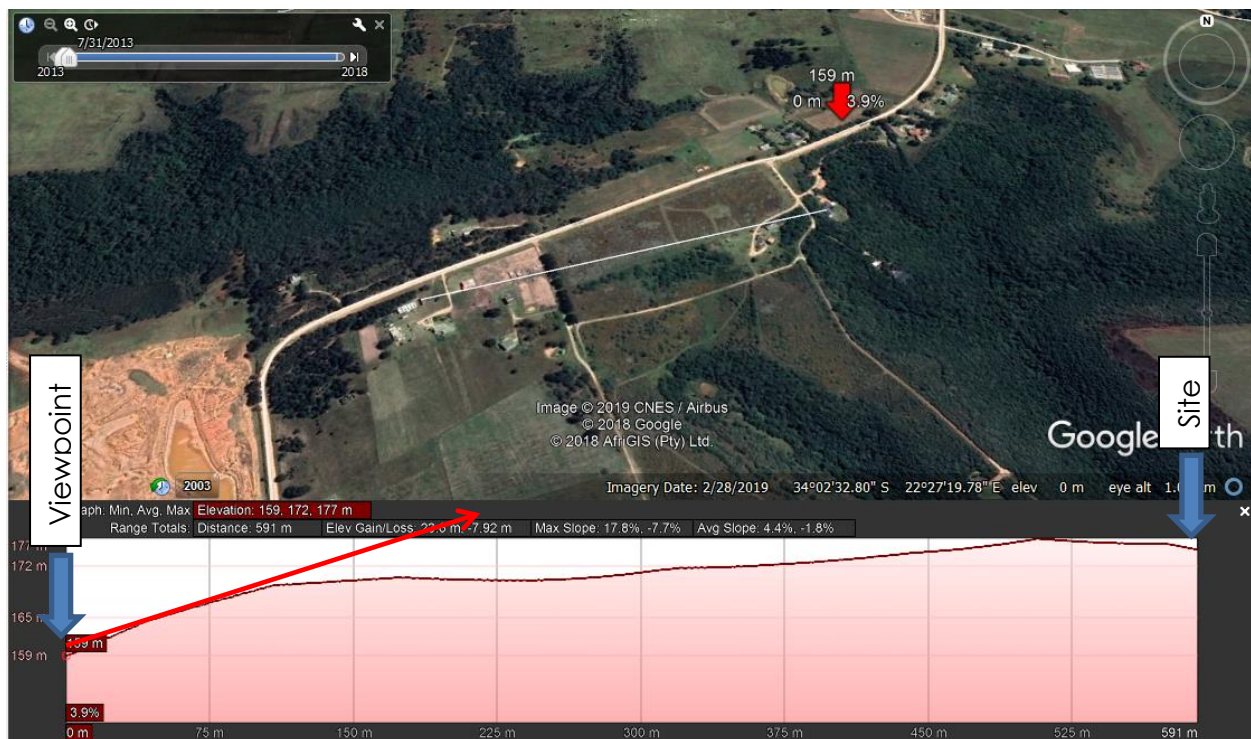


Figure 16: Lalavuga Coastal Reserve Estate



Photo 4: View from Lalaguva Coastal Reserve Entrance gate

7 CUMULATIVE IMPACT

The Department of Environment and Tourism issued a guideline document in terms of which cumulative impacts should be assessed.¹ This guideline document identifies types and characteristics of different cumulative effects as summarized in the table below.

Table 5: Types and characteristics of cumulative effects

TYPE	CHARACTERISTIC	IDENTIFY POTENTIAL IMPACT
Time Crowding	Frequent and repetitive effects.	Activity remains at same pace, frequency and intensity over time. No time crowding impacts.
Time Lags	Delayed effects.	No time lag impacts.

¹ DEAT (2004) Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7, Department of Environmental Affairs and Tourism (DEAT), Pretoria

VIA: Hans Moes Kraal cellular mast

Space Crowding	High spatial density of effects.	No other masts observed within close proximity.
Cross-boundary	Effects occur away from the source.	No impact
Fragmentation	Change in landscape pattern.	No impact.
Compounding Effects	Effects arising from multiple sources or pathways.	No compounding impacts.
Indirect Effects	Secondary effects.	No impact
Triggers and Thresholds	Fundamental changes in system functioning and structure.	No fundamental changes to urban or ecological systems or structures

The cumulative impact of this cell mast within the existing landscape, is low.

8 CONSTRUCTION

During construction, various types of vehicles and equipment will be transported to the site and work on the site. This will impact on the general experience of viewers. This impact is however temporary and not uncommon during construction of infrastructure. Communities have fairly high tolerance levels for such activities if it contributes to the infrastructure of the area.

Rating: Low

9 FINDINGS

The proposed cellular mast appears to have an overall low visual impact without mitigation. The impact is overall within acceptable levels of change.

The most significant impact is the direct on-site impact, however this is also within acceptable levels given the tree design which fits with other landscape elements.

10 MITIGATION MEASURES

The assumption was made that a tree design mast will be constructed. The low impact is partially due to this design coupled with the existing stand of trees which provide effective screening of the mast. It is therefore proposed that the stand of trees should not be removed. Should the trees be removed, the visual impact may increase to a moderate level.