DE HOOP

ERF 90, DE HOOP, OUDTSHOORN

CELLULAR MAST

VISUAL ASSESSMENT

For consideration in the Basic Assessment

For

EnviroAfrica

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Final Report

17 May 2019

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Report history:

Version	Date	Amendments
Final Report Ref GEO-90-01.01	17/05/2019	
Revision 1	27/05/2019	Incorporation of Heritage Screening information

Report to be cited: Visual Impact Assessment for Cellular Mast at De Hoop, Oudtshoorn, 2019

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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
27-05-2019

EXECUTIVE SUMMARY

Sarien Lategan was appointed to undertake the visual impact assessment of a 35m monopole tower, to accommodate cell antennae, on Erf 90, De Hoop, Oudtshoorn, 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 on an erf located in Bondstreet, close to the church.

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 the hamlet of De Hoop, which displays a rural village. A prominent feature in the town, is the abandoned church of sandstone. Although the historical elements holds value, the church has not been declared a national heritage site and only protected under the National Heritage Resources Act (Act 25 of 1999) as a building older than 60 years.

The town is located on a spur between the Wynands- and Olifants rivers. The topography is characterized by a terraced slope towards both rivers, which results in a potential high exposure levels at the ridge of the spur but also with a high absorption level on the side slopes of the spur. The natural vegetation is low and provides little if any screening opportunities.

The overall visual impact is rated moderate to high and no mitigation measures can be proposed to reduce the high impact aspects. Should the heritage significance of the church as well as the church as a townscape element be confirmed as less than assumed in this report, the visual impact can be re-assessed.

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1 BACKGROUND

Sarien Lategan was appointed to undertake the visual impact assessment of a 35m monopole tower, to accommodate cell antennae, on Erf 90, Bondstreet, De Hoop, Oudtshoorn, 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 on a residential property in Bondstreet, De Hoop, close to the historical church.

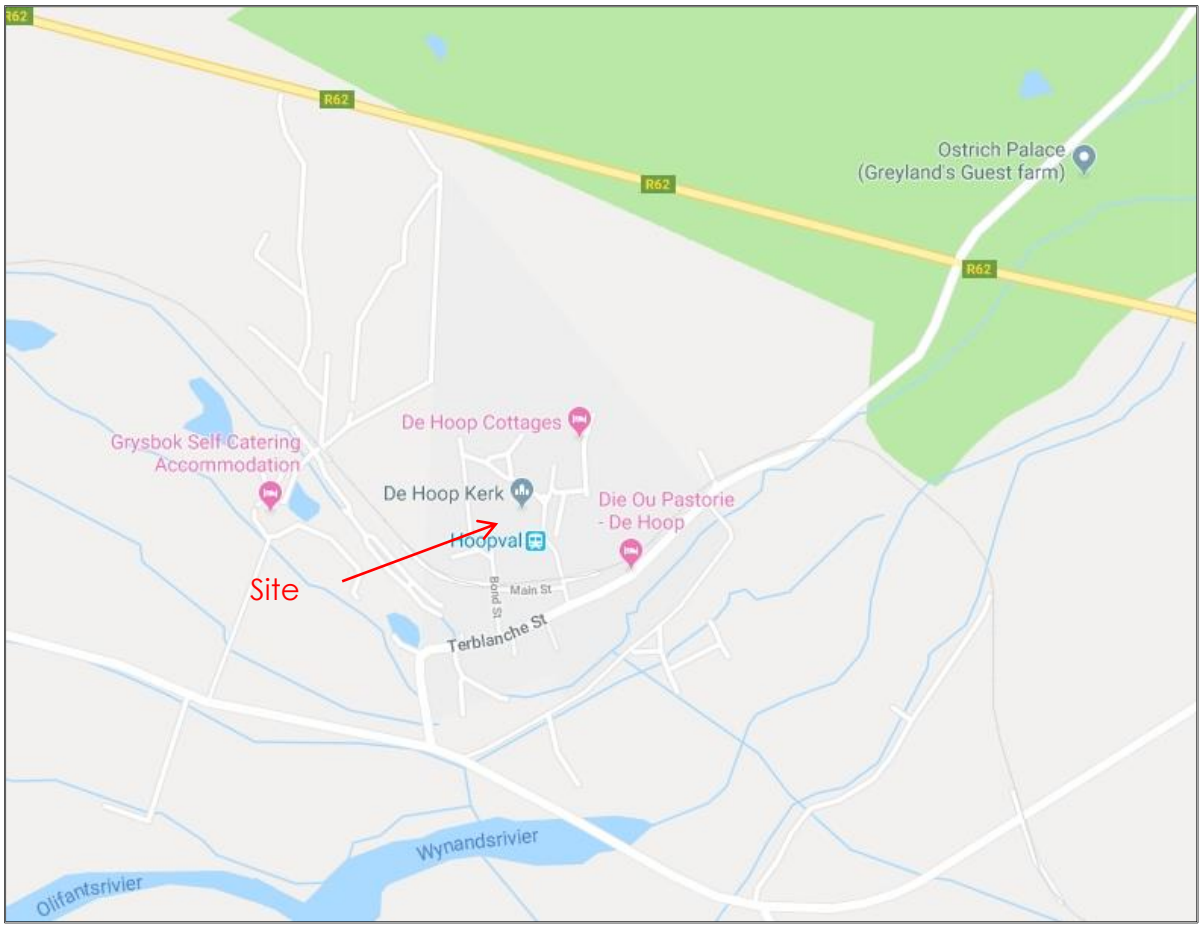

Figure 1: Locality

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2 TERMS OF REFERENCE

The applicant intends to construct a 35m high monopole mast to accommodate cell antennae, on erf 90, De Hoop, Oudtshoorn.

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 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	None
Areas with proclaimed heritage sites or scenic routes	R62 is earmarked as tourism route. Church is protected under Act 25 of 1999
Areas with intact wilderness qualities, or pristine ecosystems	None
Areas with intact or outstanding rural or townscape qualities	The town holds potentially some qualities
Areas with a recognized special character or sense of place	Potentially
Areas with sites of cultural or religious significance	The church is abandoned i.e. not in regular use by a congregation
Areas of important tourism or recreation value	R62 as tourist route
Areas with important vistas or scenic corridors	The town is situated on a spur.
Areas with visually prominent ridgelines or skylines.	Valley sides

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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.
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	Potentially
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

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3 Methodology and principles

3.1 Methodology

Table 4: Summary of methodology

Task undertook	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.

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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.

With regard to the heritage significance of the church it was assumed that since the building is protected in terms of the Heritage Resources Act, nr 25 of 1999 and a significant element in the townscape, this element be respected as such. However, the church is abandoned and no known plans exist to conserve or protect the church. Should this assumption be reviewed by a heritage specialist, the visual impact on the church may need to be can be re-assessed.

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

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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.

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 Greater Oudtshoorn Spatial Development Framework, 2015

Proposals and guidelines in the SDF which pertain to the assessment of the cell tower are –

- Protect and retain the historic and place-making elements including the church, "ou pastorie", primary school building and Hoopvol railway siding

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4 Development Proposal

The mast and supporting infrastructure will be positioned on the northern western corner of the property.

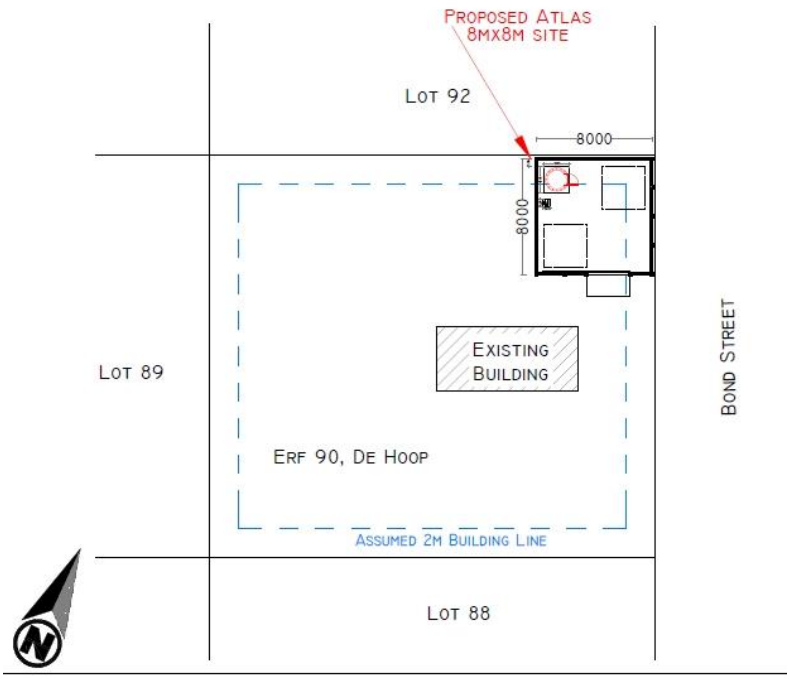

Figure 2: Position of mast on site

The mast consists of a 35m high monopole. The mast will accommodate the necessary navigation lights. The site consists of an 8m x 8m area to be enclosed with a clearvue fence.

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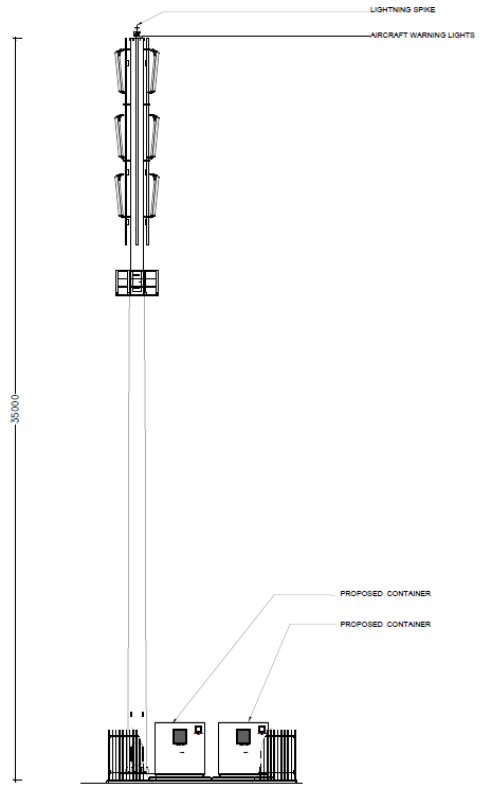

Figure 3: Mast side view

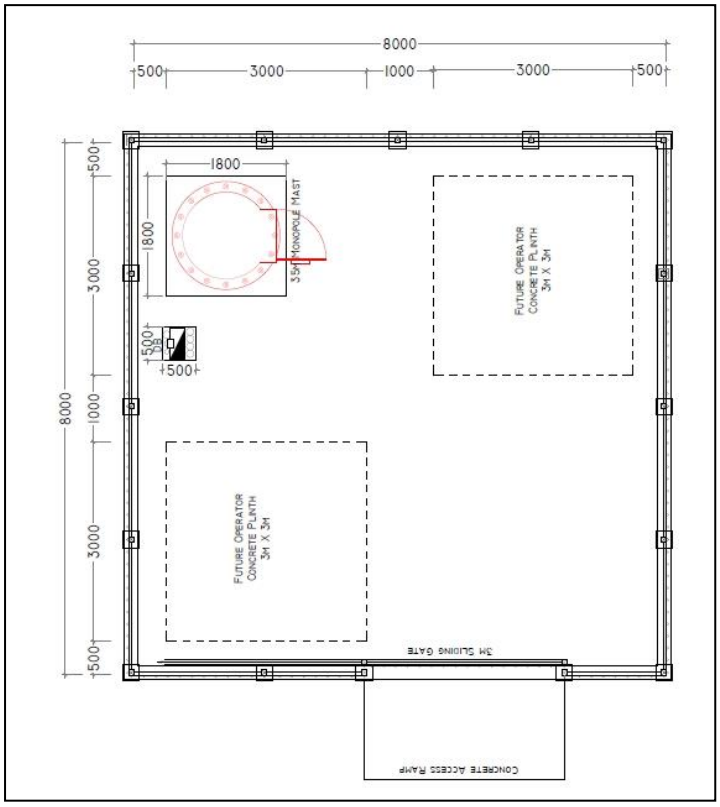

Figure 4: Site components

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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 town surrounded by mixed agricultural activities. The area thus display a typical rural character with small scale infrastructure dotted through the landscape. The abutting valley displays a typical production landscape character. The catchment area consists of the town and valley with a range of small scale infrastructure related to the agricultural activities.

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The position of the town on a spur between the two rivers, does expose the the town to a large extend, however, the sudden change in slope gradient and direction, create a moderate level of visual absorption and this reduces the viewshed based on the exact position of elements on the spur.

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Figure 5: Potential Viewshed

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5.1.2 Sense of Place:

The site is situated in a rural hamlet, above two valleys which are primarily used for agricultural purposes. The valleys can be characterized as production landscapes with the plain areas above the valleys displaying a more natural landscape. The town is thus within the transition from natural to production landscape. The overall sense of place can be described as low intensity rural town.

Figure 6: 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 – De Hoop Cottages
- B – "Ou Pastorie"
- C -Bondstreet
- D – Grysbok Accommodation
- E – Southern Entrance
- F – R62
- G – Eastern valley approach

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Figure 7: Potential Receptors

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6.2 Assessment of Receptors

6.2.1 De Hoop Cottages

As De Hoop cottages are situated elevated above the mast site, it is anticipated that the mast would be in view. Had there been no obstructing elements in the direct line of site, this would have been the case, however the church in itself provide screening from the mast. The dimension and height of the main church building, create sufficient screening that if an observer is within area A (refer Fig 9), a structure of 35m in height at the proposed site, would be totally screened off by the church. Only a structure of more than 40m will be visible above the church roof. When the observer is however outside of this area, the mast will be visible.

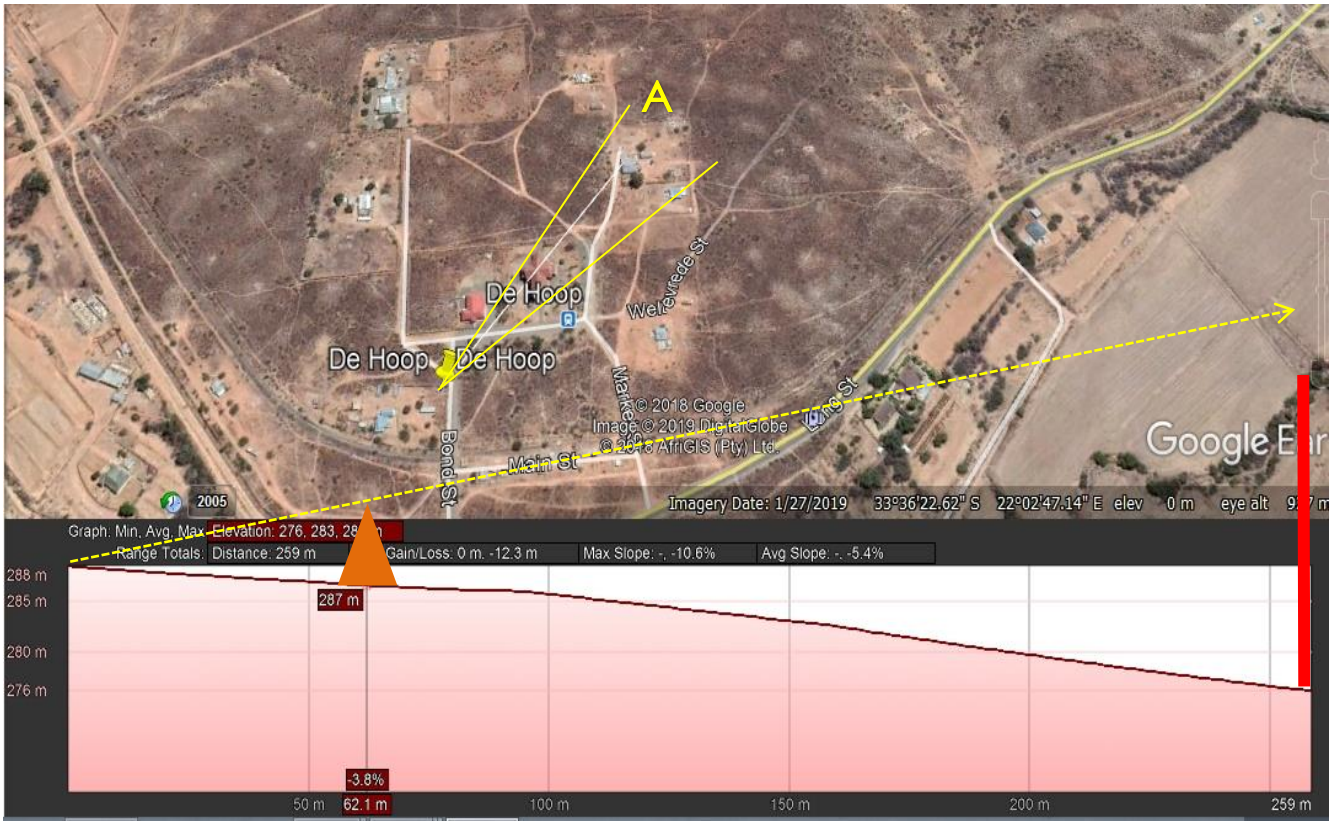

Figure 8: View from De Hoop cottages

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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. To mitigate the view when outside the shadow of the church, the mast should be painted in a greyish colour as to blend with the sky as it would be edged against the sky as background.

6.2.2 "Ou Pastorie" Guesthouse

The "Ou Pastorie" Guesthouse is situated well below the mast site. From the Ou Pastorie the top of the church tower is barely visible. However the mast of 35m in height would be visible above the skyline...

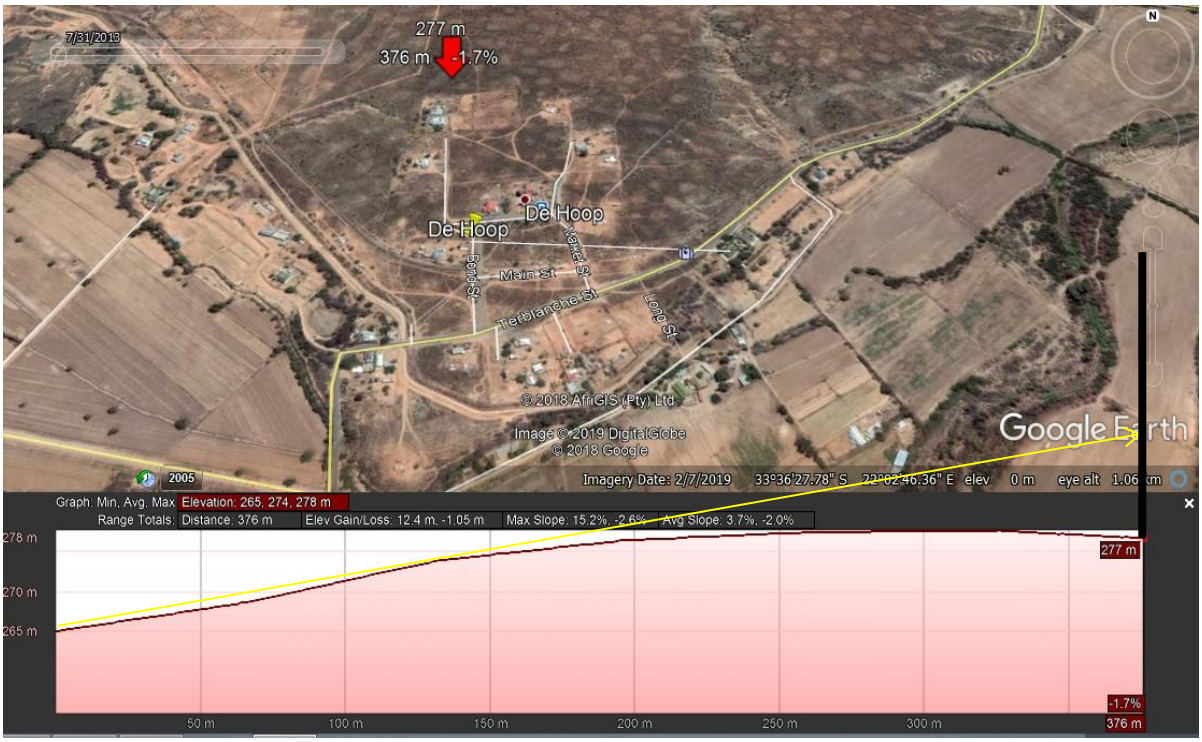

Figure 9: Viewline from Ou Pastorie

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Photo 1: View from Ou Pastorie

From the Ou Pastorie the cell tower will most definitely be visible above the skyline, but due to the presence of other distribution poles, and the distance that the mast would be from the observer, the impact is in fact low to moderate.

Table 3: Assessment from Ou Pastorie

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

Patrons to the guesthouse will most probably not even notice the mast, since their attention would be towards the house and the recreational area of the guesthouse is in the backyard away from the street.

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6.2.3 Bondstreet

When turning into Bondstreet the church is in clear view and the focus point for the visitor. The mast site is slightly to the left.

Photo 2: Bondstreet view

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Table 4: Bondstreet 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 high. The tower does compete with the church as a focus point. The only suggested mitigation measure is to reduce the height of the tower. The change of tower design will not reduce impact since a tree type of tower will be out of context with the surrounding landscape and a lattice mast will have little if any less impact than a monopole tower.

As photo comparison (refer Photo 3) illustrates, changing the colour of the tower (e.g. to brown which mimic the church sandstone and dominant landscape colour), will not make a significant difference in the overall impact.

6.2.4 Grysbokkie guestfarm and western approach

The mast would be in direct line of sight from Grysbokkie Guestfarm. However due to the distance from the site and the small diameter of the mast, the visibility would be significantly reduced to such a level that it would be barely visible.

Approaching the town from the east, the mast is in the peripheral view and due to the distance, the small diameter of the mast and site elements, it will be almost invisible.

Table 5: Assessment from Grysbokkie Guestfarm and western valley 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	Constant		short

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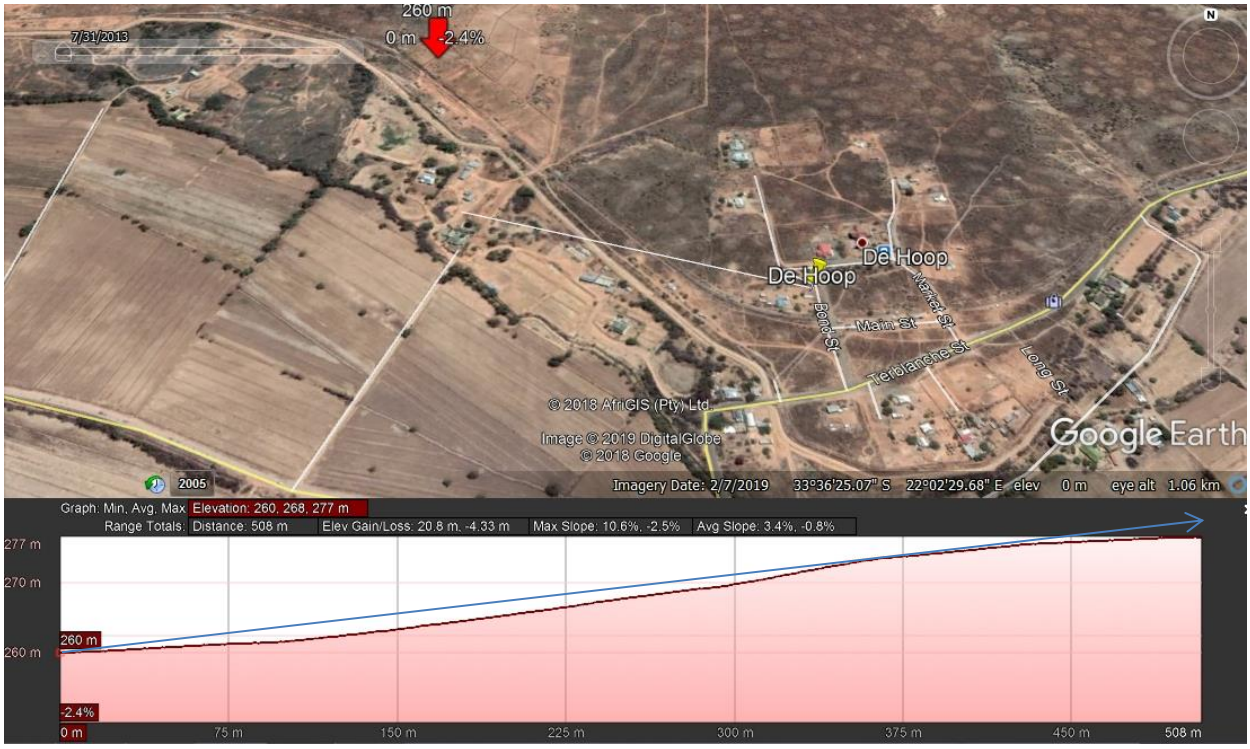

Figure 10: Profile from Grysbokkie Guestfarm

Photo 3: Western valley approach

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6.2.5 Southern Entrance

At the turn off the church is not visible and the neither would the mast. This is due to the observer's close proximity to an embankment which screens the view. As the traveler enters the town the mast only becomes visible for a brief moment when crossing the channel. The site is however in the observer's peripheral view.

Photo 4: View from southern entrance approach at channel crossing

6.2.6 View from R62

When travelling on the R62 in both directions, the Church tower is visible for brief moments. The town is however in the peripheral view of the observer. The cell tower will thus also be visible but due to the distance and diameter of the tower, it would be a vague line. The significance of such view is thus low.

6.2.7 Eastern Valley approach

When approaching the town from the eastern side, the church is on the crest of the spur, but the mast is just on the downslope to the west. Due to the distance from the mast, the mast diameter and the landscape elements the mast would not be noticeable. The impact is thus insignificant.

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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 6: 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.
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

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

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9 FINDINGS

The proposed cellular mast appears to have an overall moderate to high visual impact without mitigation, due to the proximity to the church. Various mitigation measures have been considered but the most profound impact is on the Bondstreet approach where the tower competes with the church as focal point.
Heritage Western Cape issued a permit stating that the proposed mast development will not have a negative impact on the heritage resources.
The level of impact thus relates to the urban and townscape context on a visual level.

10 MITIGATION MEASURES

To lessen the distant view of the mast, the monopole should be of a greyish colour. The close view e.g. from Bondstreet cannot be mitigated to reduce the impact significantly. The only option to reduce the on-site/close view impact is to reduce the height of the mast below the height of the church which may not be a feasable option for the communication objectives.

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