Proposal:

Visual impact statement for portion 79 of 205, Sedgefield

Reference: DS190124

Prepared for: Daniel Sevenster

Revision: 0

Date: 19 January 2025

Proposal details

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Document control					
Proposal title		Visual impact statement for portion 79 of 205, Sedgefield			
Proposal status		Final proposal	**Proposal number**	DS190124	
Client		Daniel Sevenster	**Client contact**	Daniel Sevenster	
Rev	**Date**	**Author**			
0	19 January 2025	Paul Buchholz			

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1. Introduction

Visual, scenic and cultural components of the environment can be a resource and, similar to any other resource (which has a value to individuals), can add significant value to both the society and economy of a region. Also, this resource may have a scarcity value, be quickly degraded and is often irreplaceable.

The way the built environment is developed has an immense impact on the intrinsic and systemic value of that environment. Thus, developmental integrity is determined by the level of sensitivity practised in integrating development into the context in which it is to be located.

An iterative design approach enables the site planning and detailed design of a project to be informed by and respond to the ongoing environmental impact assessment, as the environmental constraints and opportunities are taken into consideration at each stage of decision-making.

Visual impact assessments are an important part of an iterative design process because, at the early concept stage of a project, they can play a significant role in helping to formulate design alternatives, as well as minimising visual impacts.

The following specific concepts should be considered during visual input into the Environmental Impact Assessment process:

- An 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.
- The consideration of both the natural and the cultural landscape, and their inter-relatedness.
- The identification of all scenic resources, protected areas and sites of special interest, together with their relative importance in the region.
- An understanding of the landscape processes, including geological, vegetation and settlement patterns, which give the landscape its particular character or scenic attributes.
- The need to include both quantitative criteria, such as 'visibility' and qualitative criteria, such as aesthetic value or sense of place.

The objective of the assessment would be to assess the potential visual impacts of the proposed development on portion 79 of 205, Sedgefield.

2. Methodology

The method to determine the level of the visual impact of the proposed project involves, in the first instance, a consideration of the existing visual environment. This includes a consideration of the existing landscape setting and how the planned infrastructure is seen from various viewing locations. In this way, the visual character of the landscape baseline, as well as the visual sensitivity of the different viewing locations can be determined.

Secondly, the visual modification of the planned infrastructure is determined by considering the visual characteristics of the proposed infrastructure in the context of the landscape within which it is seen. The proposed infrastructure will have certain visual features associated with it. These elements will express themselves regarding form, shape, line, colour, and to a lesser extent, texture. An understanding of this visual character will provide an appreciation of how various infrastructure elements will be seen in the landscape.

A combined consideration of both visual sensitivity and visual modification determines the impact and gives some direction on mitigationstrategies.

The methodology that will be employed during the preparation of the visual assessment will include the following components:

- Characterisation of the existing landscape and visual setting;
- Identification of points with potential views of the proposed project;
- Examination of the main components and activities of the proposed project;
- The illustration of possible landscape or visual impacts using photographs and maps; and
- Qualitative assessment of impacts,including:
    - Visual modification at key viewpoints–*How does the proposed development contrast with the landscape character of the surrounding setting?*
    - Visual sensitivity at key viewpoints – *How sensitive will viewers be to the proposed development?*
    - The development of mitigation and management measures.

The results from the various visual impact assessment components will be combined to provide the input for the compilation of the following documents:

- Visual impact assessmentreport
- Mitigation plan

The methodology employed by this visual assessment is based on the following methods:

- The United States Department of Agriculture: Forestry Service - *Landscape Aesthetics*;
- The United States Bureau of Land Management *Visual Resources Management*;
- The Landscape Institute and the Institute of Environmental Management & Assessment - *Guidelines for Landscape and Visual Impact Assessment; and*
- *The Provincial Government of the Western Cape's (South Africa) Guideline for involving visual and aesthetic specialists in EIA processes* and the Guidelines for Landscape.

3. Application of the methodology

It is the nature of visual and aesthetic resources to include abstract qualities and connotations that are by their nature difficult to assess or quantify as they often have cultural or symbolic meaning. It is necessary therefore to include both quantitative criteria (such as viewing distances) and qualitative criteria (such as sense of place) in visual impact assessments.

An implication of this is that impact ratings cannot simply be added together. Instead, the assessment relies on the evaluation of a broad range of considerations, both objective and subjective, including the context of the proposed project within the surrounding area. The phrase “beauty is in the eye of the beholder” is often quoted to emphasize the subjectivity in undertaking a visual impact assessment.

The use of the basic elements of form, line, colour and texture has become the standard in describing and evaluating landscapes. Modifications in a landscape that repeat the landscape’s primary design elements are said to be in harmony with their surroundings. Changes that do not harmonize, often look out of place and are said to contrast or stand out in unpleasing ways.

For a visual impact to be experienced, landscape alterations resulting from a project need to be visible. Visibility of the planned infrastructure from adjoining view locations will be determined by viewing the proposed infrastructure boundaries from a range of potential viewpoints.

There will be areas near the proposed project that will be visually impacted by various levels. For the purposes of the visual impact assessment, some sites within key areas of the planned infrastructure boundaries will be selected as representative key viewing locations. The sites are selected with reference to field assessments and aerial photographs to determine the visibility of the planned infrastructure. While there will be some variation in the impacts on specific viewing locations, an overall evaluation of the visual impact on the selected areas will be representative of most of the views experienced.

The visual sensitivity of various viewing areas will be determined by a review of aerial photography, plans of the proposed infrastructure, and topographic plans of the surrounding areas. This will include land use, viewing distances and the general level of screening available from topography, buildings and vegetation.

The assigned sensitivities will also be evaluated based on field data and other study data. The visual modification of the planned infrastructure on external viewpoints will be determined by a review of the proposed infrastructure and photomontages.

The visual impact of the planned infrastructure will be determined by considering both visual modification and visual sensitivity which, when considered together, determine impact levels.

It must be noted that the methodology is not intended to be the only means of resolving these impacts and should be used as a guide, tempered by common sense, to ensure that every attempt is made to minimize potential visual impacts.

4. Visual mitigation and management

The purpose of mitigation is to avoid, reduce, and where possible remedy or offset any adverse effects on the environment arising from the proposed development. The ideal strategy for identifiable adverse impacts is one of avoidance. If this is not possible, alternative strategies of reduction and remediation and should be explored.

Mitigation measures may be considered under two categories:

- Primary mitigation measures that intrinsically comprise part of the identification of proposed development through an iterative process. This form of mitigation is generally the most effective.
- Secondary mitigation measures are designed to specifically address the remaining (residual) adverse effects arising from the proposed development.

Primary mitigation measures focus on minimizing visual impacts at the design and project layout phase. The visual specialist will engage with the relevant engineers, architects and town planners during the design phase of the development to investigate various layout and design options to minimize the visual impact.

Secondary mitigation measures are specifically designed to mitigate the adverse impacts of the proposed development and are considered in the assessment of the landscape and visual impacts. These may take the form of remedial measures such as colour and textural treatment of a built structure to better blend into the surrounding landscape.

5. Assumptions and limitations

It should be noted that the 'experiencing' of visual impacts is subjective and largely based on the perception of the viewer or receptor. The presence of a receptor in an area potentially affected by a development does not thus necessarily mean that a visual impact would be experienced.

Value can be placed in a landscape regarding its aesthetic quality, or regarding its sense of identity or sense of place with which it is associated. If no such values are held concerning a landscape, there is less likely to be a perception of a visual impact if the landscape becomes subject to visual alteration. Development within a landscape may not be perceived negatively at all if the development is associated with progress or upliftment of the human condition.

The perception of visual impacts is thus highly subjective and thus involves 'value judgements' on behalf of the receptor. The context of the landscape character, the scenic / aesthetic value of an area, and the types of land use practised tending to affect the perception of whether landscape change (through development) would be considered an unwelcomeintrusion.

The landscape values can be interlinked, but can also be conflicting, e.g. amenity values associated with a landscape held by a particular group of people as described above may conflict with economic values related to the market or development possibility of the landscape that is held by others. It is in this context that visual impact associated with a potential development often arises as an issue in environmental impact assessments.

5.1 Data

A visual impact assessment entails a process of data sourcing (collection of data during fieldwork and from various data custodians), spatial analysis, visualisation and interpretation. Geo-information technology is utilised which includes operations relating to Geographic Information Systems (GIS), Global Positioning System (GPS) and remote sensing technology.

The best currently and readily available data sets will be utilised for the visual impact assessment. It is important to note that variations in the quality, format and scale of available data sets could limit the scientific confidence levels of the visual impact assessment outcomes.

5.2 Viewshed analysis

Slope and aspect are significant in the context of views. Topography expressed in the form of slope and aspect can perform a major role in limiting views or 'focusing' views in a particular direction. Viewers located low down within an enclosed valley would experience a limited visual envelope or viewshed, as the rising topography around them would prevent wider views of the surrounding terrain beyond the immediate valley.

Similarly, an object placed lower down in such an enclosed valley would have a limited viewshed, being shielded or partly shielded by the terrain surrounding it. A viewer located on a hill slope with a certain aspect would only be able to view the surrounding terrain in the direction of the aspect of the slope. Conversely, a viewer on a higher- lying interfluve will be exposed to potentially wide-ranging views over the surrounding terrain, and large objects placed in these terrain settings could similarly be visible from a wide area.

The micro-topography within the landscape setting in which the viewer and object are located is also important; the presence of micro-topographical features and objects such as buildings or vegetation that would screen views from a receptor position to an object can remove any visual impact factor associated with it.

Fischer (1995) has analysed the effects of data errors on view-sheds calculated by Geographic Information Systems and has shown that the calculations are extremely sensitive to small errors in the data and the resolution of the data and the errors in viewer location and elevation. Other studies have also shown that a view-shed calculated

using the same data but with eight different Geographic Information Systems can produce eight different results.

Hankinson (1999) also states that viewshed are never accurate and they contain several sources of error and may not always be feasible to separate these errors or to estimate their size and potential effects. It is, therefore, better to describe a view-shed analysis as a probable view-shed that must be subjected to subsequent field testing and verification.

A probable viewshed can be based on topography only that shows areas that will be screened by intervening hills, mountains, etc. A probable topographic view-shed does not consider heterogeneous and complex natural and man-made elements in the surrounding landscape. Intervening vegetation, buildings or small variations in topography, such as road cuttings are therefore not considered.

Therefore, it is a conservative assessment of those areas that may be visually impacted by the planned infrastructure. Increasing sophistication/accuracy of the probable view-shed by the addition of data on complex natural and man-made elements in the landscape is desirable, but it will introduce further errors of detail and interpretation in the view-shed analysis.

5.3 Visualisation

It must be remembered that any visualisation (3D models, photomontages, photos and maps) of complex natural and man-made elements produce perceptions, interpretations and value judgements that are not always consistent with those that would be produced by actual encounters with the elements represented. Visualisations should, therefore, be considered an approximation of the three-dimensional visual experiences that an observer would receive in the field and must be subjected to subsequent field testing and verification

A photomontage is the superimposition of an image onto a photograph to create a realistic representation of proposed or potential changes to any view. The overall aim of photography and photomontage is to represent the landscape context under consideration and the proposed development, both as accurately as is practical. It must be kept in mind that the human eye sees differently when compared to a camera lens both optically and figuratively.

The focusing mechanisms of human eyes and camera lenses are different; human eyes move, and the brain integrates a complex mental image; human vision is binocular and dynamic, compared to a camera that tends to flatten an image.

6. Project team

The project team that will be involved in the project is as follows:

Table 1: Project team

Team member	Project role	Qualification / Specialisation
Paul Buchholz	Environmental & Visual impact assessment specialist	Master's degree in environmental management Registered Professional Geographical Information Science Practitioner (PGP 1323)

Paul Buchholz is a visual impact assessment and environmental specialist with more than 20 years of experience working on multidisciplinary environmental and engineering projects. He worked as a geographic information science and environmental specialist for two international multi-disciplinary engineering firms. He is currently an independent environmental and geographic information science consultant servicing a wide range of clients through consulting and project management support. Paul has provided specialist input and project management support on projects in South Africa, Nigeria, Tanzania, Lesotho, Kenya, Malawi, Zimbabwe, Mauritius and Mozambique. He holds a master's degree in environmental management from the University of Stellenbosch and is a registered Professional Geographical Information Science Practitioner with The South African Geomatics Council.

7. Project schedule

The time frame required to complete the project is estimated to be 2 weeks. The proposed project schedule is provided in Table 2 below.

Table 2: Project Schedule

Activity Description	Month
	January
Visual impact statement for portion 79 of 205, Sedgefield	

8. Cost estimate

The total cost is anticipated to be ZAR 20,260.00 (no VAT applicable – not VAT registered). The cost breakdown is as follows:

Table 3: Cost breakdown

Task	Total (no VAT applicable)
Visual impact statement for portion 79 of 205, Sedgefield	ZAR 20,260.00

9. Standard terms of business

- Work will only commence upon receiving a formal appointment in writing and payment as per the schedule of payment (Table 4).
- The following schedule of payment (invoicing) will apply to the project.

Table 4: Schedule of payment

Description	Percentage of the total budget	Sub-Total
Percentage payable on formal appointment	50%	ZAR 10,130.00
The percentage payable on submission of the report	50%	ZAR 10,130.00

- The above price is based on the scope and information made available before the submission. Should any new information or requirements arise that result in any additions to the scope of work the following hourly rates will be applied: 850 ZAR/Hr.
- All information relating to the proposed development and the spatial dimensions must be provided before any analysis can commence. This includes the footprint and vertical dimensions of structures and infrastructure. Any changes to this information during or after the visual impact report's completion may lead to a revision order to redo analyses and update all relevant maps, tables, and reports.
- No 3D modelling is included in the proposal.
- The information/data furnished in the document is confidential and competitive information proprietary to Paul-Werner Buchholz, the release of which would harm the competitive position of Paul-Werner Buchholz.
- All project deliverables, including the reported results, comments, and recommendations, are based on Paul-Werner Buchholz's professional knowledge and available information.
- 50% of the quotation total is due immediately upon appointment.
- The final payment is due on delivery of the report.
- The ownership of all project deliverables will remain with Paul-Werner Buchholz and may not be used for any purposes by the client until all payments have been received as per the payment schedule (Table 4).
- In order to proceed with this process, we would require a letter of appointment stating your acceptance of both the brief and the quote. If you have any queries regarding the above, please contact the undersigned so that we can discuss it in more detail. Please complete and send back the next page of this document should the quote be accepted.

10. Closing remarks

Thank you very much for the opportunity to submit this proposal.

Should you require any further information or have any queries, please contact me.

Yours faithfully

Paul Buchholz

C +27 79 881 4447
E p.buchholz@outlook.com

LETTER OF APPOINTMENT

Paul-Werner Buchholz is hereby appointed by the **Applicant** (entity that wishes to obtain the necessary approvals and/or that will undertake the actual activity)

Applicant name:……

To provide a specialist service with regards to visual impact assessments for portion 79 of 205, Sedgefield. The Applicant hereby accepts the amount specified in this proposal as well as the standard terms of business.

Signature by / on behalf of the Applicant

Date of Appointment

Paul-Werner Buchholz bank details:

Bank: Capitec George
Branch code: 470010
Account No.: 146 1184 329
Account name: Mr P Buchholz

PLEASE COMPLETE AND SEND THIS PAGE TO PAUL-WERNER BUCHHOLZ