DESKTOP VISUAL IMPACT ASSESSMENT SCREENING FOR THE PROPOSED WASTE WATER TREATMENT WORKS, ROBBEN ISLAND, WESTERN CAPE, SOUTH AFRICA

PREPARED BY:

Lourens du Plessis

LOGIS

PREPARED FOR:

WSP Group Africa (Pty) Ltd

DATE:

May 2022

TABLE OF CONTENTS

LIST OF TABLES **2**
LIST OF FIGURES **2**
DOCUMENT CONTROL **3**
DECLARATION **4**
1. INTRODUCTION **5**
1.1. QUALIFICATION AND EXPERIENCE OF THE PROFESSIONAL TEAM 5
1.2. LEGAL FRAMEWORK 5
1.3. INFORMATION BASE 5
1.4. ASSUMPTIONS AND LIMITATIONS 5
1.5. LEVEL OF CONFIDENCE 6
2. METHODOLOGY **7**
3. PROJECT DESCRIPTION **7**
4. THE AFFECTED ENVIRONMENT **8**
5. POTENTIAL VISUAL EXPOSURE **9**
6. VISUAL IMPACT ASSESSMENT **15**
1.1. METHODOLOGY 15
7. CONCLUSION AND RECOMMENDATIONS **18**
8. REFERENCES **21**

LIST OF TABLES

Table 1: Level of Confidence 7
Table 2: Impact table summarising the significance of the visual impacts of the WWTW on sensitive visual receptors in close proximity 16
Table 3: Impact table summarising the significance of visual impacts on landscape character and sense of place within the region 17

LIST OF FIGURES

Figure 1: Schematic layout of the main components of the WWTW 8
Figure 2: Typical example of the WWTW 8
Figure 3: Regional context 10
Figure 4: Layout plan 11
Figure 5: Site photographs from points (a) and (b) 12
Figure 6: Site photographs from points (c) and (d). 13
Figure 7: Site photographs from points (e) and (f) 14
Figure 8: Proposed Mitigation 20

DOCUMENT CONTROL

Report Name:	DESKTOP VISUAL IMPACT ASSESSMENT SCREENING FOR THE PROPOSED WASTE WATER TREATMENT WORKS, ROBBEN ISLAND, WESTERN CAPE, SOUTH AFRICA
VIA Specialists:	**LOGIS** **531A Witogie Street, Die Wilgers, Pretoria** **Contact Person:** Lourens du Plessis Tel: 082 922 9019 Email: lourens@logis.co.za
Report prepared by:	This report was prepared by Peter Velcich on behalf of LOGIS. **Contact Person:** Peter Velcich Tel: 082 4420220 Email: peter@nuleafsa.co.za **Expertise:** Peter Velcich is a *Professional Landscape Architect* registered with The South African Council for Landscape Architectural Profession (SACLAP), and specialises in Environmental management and Visual Impact Assessments (VIA).
Report reviewed by:	**Contact Person:** Lourens Plessis Tel: 082 922 9019 Email: lourens@logis.co.za **Expertise:** Lourens du Plessis (t/a LOGIS) is a *Professional Geographical Information Sciences (GISc) Practitioner* registered with The South African Geomatics Council (SAGC), and specialises in Environmental GIS and Visual Impact Assessments (VIA). He has been involved in the application of Geographical Information Systems (GIS) in Environmental Planning and Management since 1990. He has extensive practical knowledge in spatial analysis, environmental modeling and digital mapping, and applies this knowledge in various scientific fields and disciplines. His GIS expertise are often utilised in Environmental Impact Assessments, Environmental Management Frameworks, State of the Environment Reports, Environmental Management Plans, tourism development and environmental awareness projects.
EAP:	WSP Group Africa (Pty) Ltd
Report date:	23 May 2022
Report number:	03

DECLARATION

I, **Lourens du Plessis**, as an independent consultant reviewed this Desktop Screening Visual Impact Assessment and declare that it correctly reflects the findings made at the time of the report's compilation. I further declare that I, act as an independent consultant in terms of the following:

- Do not have any financial interest in the undertaking of the activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act107 of 1998);
- Undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act,1998 (Act 107 of 1998);
- Based on information provided to me by the project proponent, and in addition to information obtained during the course of this study, will present the results and conclusion within the associated document to the best of my professional judgement.

_____

Lourens du Plessis

……

1. INTRODUCTION

1.1. QUALIFICATION AND EXPERIENCE OF THE PROFESSIONAL TEAM

LOGIS, specialising in Visual Impact Assessments, undertook the desktop screening visual assessment for the proposed development.

The team undertaking the visual assessment has extensive practical knowledge in spatial analysis, environmental modelling and digital mapping, and applies this knowledge in various scientific fields and disciplines. The expertise of these practitioners is often utilised in Environmental Impact Assessments, State of the Environment Reports and Environmental Management Plans.

The visual assessment team is familiar with the "Guidelines for Involving Visual and Aesthetic Specialists in EIA Processes" (Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning) and utilises the principles and recommendations stated therein to successfully undertake visual impact assessments. Although the guidelines have been developed with specific reference to the Western Cape Province of South Africa, the core elements are more widely applicable.

LOGIS has been appointed as an independent specialist consultant to undertake the visual impact assessment. Neither the author, nor LOGIS will benefit from the outcome of the project decision-making.

1.2. LEGAL FRAMEWORK

The following legislation and guidelines have been considered in the preparation of this report:

- The Environmental Impact Assessment Amendment Regulations, 2017;
- Guideline on Generic Terms of Reference for EAPs and Project Schedules (DEADP, Provincial Government of the Western Cape, 2011).
- Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (DEADP, Provincial Government of the Western Cape, 2005).

1.3. INFORMATION BASE

This assessment was based on information from the following sources:

- Topographical maps and GIS generated data were sourced from the Surveyor General, Surveys and Mapping in Mowbray, Cape Town;
- A desktop review of aerial photography and site photographs (taken by others, and extracted from Google Street View 12/2014);
- Detailed construction drawings supplied by the client;
- Professional judgement based on experience gained from similar projects; and
- Literature research on similar projects.

1.4. ASSUMPTIONS AND LIMITATIONS

This report has been prepared by LOGIS on behalf of, and at the request of WSP Group Africa (Pty) Ltd to provide an independent specialist assessment. Unless otherwise agreed by LOGIS in writing, LOGIS does not accept responsibility or legal liability to any person other than WSP Group Africa (Pty) Ltd for the contents of, or any omissions from, this report.

To prepare this report, LOGIS utilised documents and information provided by WSP Group Africa (Pty) Ltd, or any third parties directed to provide information and documents by WSP Group Africa (Pty) Ltd. LOGIS has not consulted any other documents or information in relation to this report, except where otherwise indicated. The findings, recommendations and conclusions given in this report are based on the author's best scientific and professional knowledge, as well as, the available information. This report is based on survey and

assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken. LOGIS and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field, or pertaining to this investigation.

Although LOGIS exercises due care and diligence in rendering services and preparing documents, LOGIS accepts no liability, and WSP Group Africa (Pty) Ltd, by receiving this document, indemnifies LOGIS and its directors, managers, agents and employees against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If this report is used as part of a main report, the report in its entirety must be included as an appendix or separate section to the main report.

This assessment was undertaken during the planning stage of the project and is based on information available at that time. It is assumed that all information regarding the project details provided by WSP Group Africa (Pty) Ltd and the Applicant is correct and relevant to the proposed project. No public participation had been undertaken at the time of this desktop screening VIA Report. This desktop screening Visual Impact Assessment and all associated mapping has been undertaken according to the worst-case scenario without any layout provided.

1.5. LEVEL OF CONFIDENCE

Level of confidence[1] is determined as a function of:

- The information available, and understanding of the study area by the practitioner:
    - **3**: A high level of information is available of the study area and a thorough knowledge base could be established during site visits, surveys etc. The study area was readily accessible.
    - **2**: A moderate level of information is available of the study area and a moderate knowledge base could be established during site visits, surveys etc. Accessibility to the study area was acceptable for the level of assessment.
    - **1**: Limited information is available of the study area and a poor knowledge base could be established during site visits and/or surveys, or no site visit and/or surveys were carried out.

- The information available, understanding of the project and experience of this type of project by the practitioner:
    - **3**: A high level of information and knowledge is available of the project and the visual impact assessor is well experienced in this type of project and level of assessment.
    - **2**: A moderate level of information and knowledge is available of the project and the visual impact assessor is moderately experienced in this type of project and level of assessment.
    - **1**: Limited information and knowledge is available of the project and the visual impact assessor has a low experience level in this type of project and level of assessment.

These values are applied as follows:

[1] Adapted from Oberholzer (2005).

	Information on the project & experience of the practitioner			
Information on the study area		**3**	**2**	**1**
	3	9	6	3
	2	6	4	2
	1	3	2	1

Table 1: Level of Confidence

The level of confidence for this assessment is determined to be **9** and indicates that the author's confidence in the accuracy of the findings is High:

- The information available, and understanding of the study area by the practitioner is rated as **3**
- The information available, understanding and experience of this type of project by the practitioner is rated as **3**

2. METHODOLOGY

The approach utilised to identify potential issues related to the visual impact included the following activities:

- A desktop screening was undertaken using aerial photography (Google Earth 2022) and site photographs (Google Street View 2014), combined with recent site photographs undertaken by WSP during a site visit dated September 2021.
- The sourcing of relevant spatial data. This includes cadastral features, vegetation types, land use activities, topographical features, site placement, etc.
- An understanding of the nature and scale of the proposed WWTW and its propensity to cause negative visual impact.
- The identification of sensitive receptors upon which the proposed WWTW could have a potential visual impact.
- The determination of the possible visual exposure and the potential of the environmental features to absorb the visual impact.

This report (desktop screening) sets out to identify the possible visual impacts related to the proposed WWTW.

3. PROJECT DESCRIPTION

The Applicant is proposing the development of a Wastewater Treatment Plant on Robben Island, Table Bay, Cape Town. The Waste Water Treatment Works (WWTW) will have a treatment capacity of 108,000 m^3 per annum with all the effluent generated on the island discharged via a marine outfall into the coastal environment after treatment. The design allows for a maximum discharge volume of 300m^3 per day. The WWTW covers a total footprint area of approximately 1070m^2.

The primary components of the WWTW includes:

- **An Inlet Structure**
  Raw sewage will flow through a simple civil concrete inlet structure upstream of the primary settling tank with a hand rake screen which provides a facility to remove un-organic objects from the sewage.
- **Primary Settling Tank (Anaerobic and Anoxic Reactor)**
  After screening, raw sewage will flow into a septic tank.
- **Rotating Biological Contactors (Aerobic Reactor)**
  From the septic tank, the sewage will gravitate to the covered Rotating Biological Contactors (RBCs) within the aerobic reactor.
- **Secondary Settling Tank (Humus Tank)**

From the RBC, sewage will gravitate to the secondary settling tank or humus tank.

- **Disinfection**
  The effluent from the secondary settling tank will gravitate to the chlorine contact channel where it will be dosed with a disinfectant.
- **Rising Main for Final Effluent Reuse**
  A 75 mm diameter by 1.4 km welded HDPE rising main (existing underground pipe) to convey the treated effluent from the existing sewage collector sump at the proposed WWTW site to the connection point near the desalination plant, using the existing sewer pump.

  Treated effluent will gravitate to the existing sewage collector sump at the proposed WWTW site from where it will be pumped along the existing outfall sewer pipeline to discharge through a diffuser 465m offshore.

A schematic layout of the proposed WWTW is presented below.

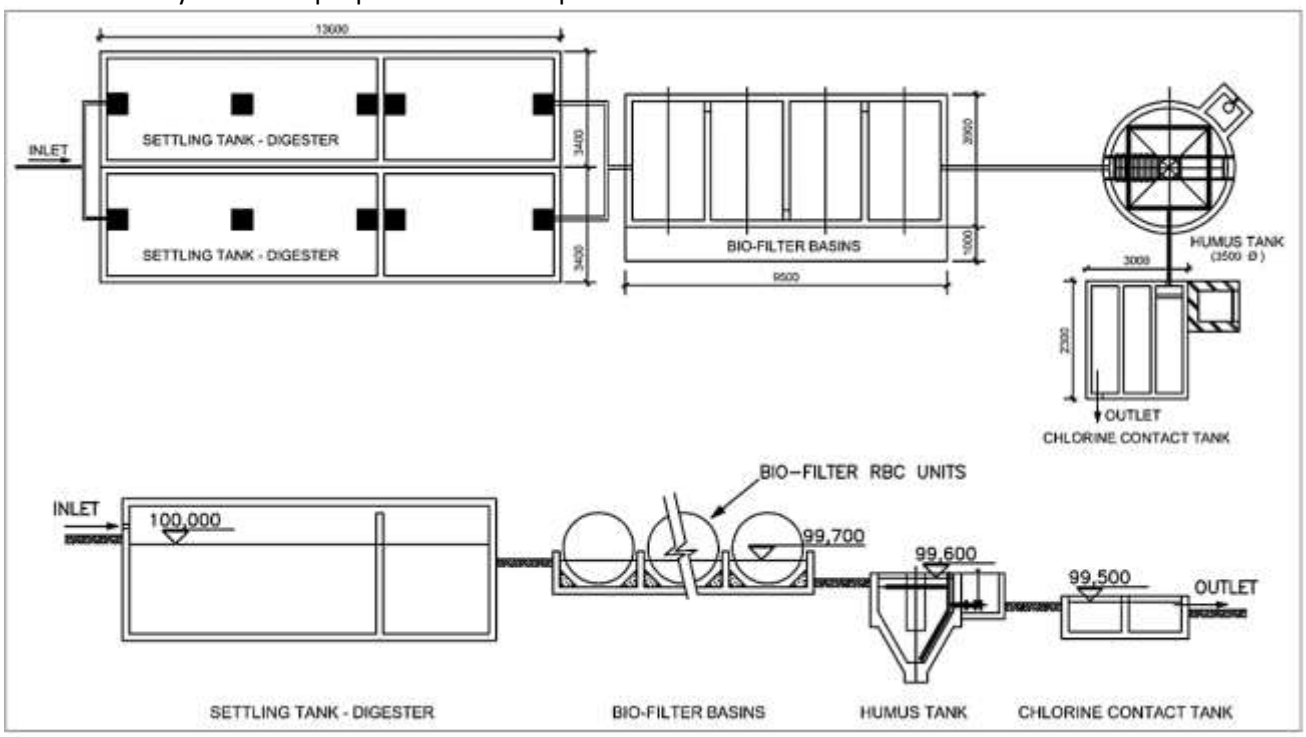

Figure 1: Schematic layout of the main components of the WWTW

Figure 2: Typical example of the WWTW

4. THE AFFECTED ENVIRONMENT

Robben Island is a UNESCO World Heritage site and is frequented by local and international tourists. The site is located on the eastern side of the island, immediately south of Robert Sobukwe House, approximately 70m from the eastern shoreline of the island, and at an elevation of 6m. See Figure 3.

The topography is flat. Land cover consists primarily of low scrubland, alien grass species, and variety of alien or invasive tree species (mostly *Acacia cyclops*) and *Searsia* spp.

The site and immediate environs is heavily disturbed, with alien invasive plant species, and anthropogenic disturbance, including old water tanks, septic tank manholes, electrical boxes, disused telephone line poles, and informal 2-spoor tracks. The latter appear to be short-cut links that have developed over time.

Robert Sobukwe House is a national monument and is the quarters where struggle icon Robert Sobukwe was kept in solitary confinement during his imprisonment on the island from 1963 to 1969.

The Church of the Good Shepherd, a national heritage site, is located approximately 80m south of the site. The church was built by lepers in 1895 to the designs of the distinguished architect Sir Herbert Baker.

A main tourist road (Murray Bay Road) runs north-south, 45m to the west of the site, linking Murray's Bay Harbour in the north to Robert Sobukwe House and the Church of the Good Shepherd in the south. This road is used extensively by bus tours taking visiting tourists around the island. A visitor Walking Tour route passes close by the site, but not within view of the site (see Figure 3).

Other infrastructure further afield includes Robben Island Museum, Murray's Bay Harbour and the Robben Island residential area.

See Figures 4, 5, 6, 7.

5. POTENTIAL VISUAL EXPOSURE

The potential for visual disturbance is relatively low, given the limited development envelope size and vertical height of the WWTW. That said, the facility is positioned immediately adjacent to a national monument (Robert Sobukwe House) and in close proximity to a heritage site (The Church of the Good Shepherd). Both the aforementioned are considered sensitive visual receptors. Considering also that Robben Island is a UNESCO World Heritage Site, welcoming thousands of visitors annually, the potential visual impact of any development on the island must be considered and mitigated where at all possible. The island is essentially an open air museum and any further development on the island will affect the historical integrity of the island.

The vegetation on-site will play a role in screening the facility from certain angles, most notably from the shoreline, which is heavily treed. It is therefore anticipated that the only sensitive receptors of concern are the Robert Sobukwe House, the church, and the main tourist road connecting the aforementioned i.e. a visual exposure or Zone of Visual Influence of less than 100m. The extent of visual exposure within this zone is expected to be high (<50m) to low (>50m).


FIG. 3: REGIONAL CONTEXT
Atlantic Ocean
MURRAY'S BAY HARBOUR
ROBBEN ISLAND MUSEUM
ROBERT SOBUKWE HOUSE
WWTW SITE
ROBBEN ISLAND
ADMINISTRATION
RESIDENTIAL
Atlantic Ocean
Walking Tour Route
Bus Tour Route
0
500
1000 m
N
W
E
S
LOGIS


FIG. 4: LAYOUT PLAN
Atlantic Ocean
Robert Sobukwe House
Septic Tanks
Above ground water tanks
Proposed WWTW development envelope
1 Sludge Drying beds
2 Secondary clarifier
3 Bio-filter
4 Septic Tank
2-spoor track
2-spoor track
Murray Bay Rd
Church of the Good Shepherd
Site photographs
0
25
50m
N
W
E
S

View from point (a) looking south with the existing septic tanks in the foreground. The approximate development envelope is illustrated in red.

View from point (b) looking south-east . The approximate development envelope is illustrated in red.

Figure 5: Site photographs from points (a) and (b).

View from point (c) looking north. The approximate development envelope is illustrated in red.

View from point (d) looking east. The approximate development envelope is illustrated in red.

Figure 6: Site photographs from points (c) and (d).

View of Robert Sobukwe House from point (e). The approximate development envelope is illustrated in red.

View of the Church of the Good Shepherd from point (f).

Figure 7: Site photographs from points (e) and (f).

6. VISUAL IMPACT ASSESSMENT

1.1. METHODOLOGY

The previous section of the report identified specific areas where likely visual impacts would occur. This section will attempt to quantify these potential visual impacts in their respective geographical locations and in terms of the identified issues related to the visual impact.

The methodology for the assessment of potential visual impacts states the nature of the potential visual impact (e.g., the visual impact on users of major roads in the vicinity of the proposed infrastructure) and includes a table quantifying the potential visual impact according to the following criteria:

Extent - How far the visual impact is going to extend and to what extent it will have the highest impact. In the case of this type of development the extent of the visual impact is most likely to have a higher impact on receptors closer to the development and decrease as the distance increases.

- (1) Very low: Long distance > 150m
- (2) Low: Medium to long 100-150m
- (3) Medium: Short distance 50 - 100m
- (4) High: Very Short < 50m

Duration - The timeframe over which the effects of the impact will be felt.

- (1) Very short: 0-1 years
- (2) Short: 2-5 years
- (3) Medium: 5-15 years
- (4) Long: >15 years
- (5) Permanent

Magnitude - The severity or size of the impact.

- (0) None
- (2) Minor
- (4) Low
- (6) Moderate
- (8) High
- (10) Very High

Probability - The likelihood of the impact actually occurring.

- (1) Very improbable: Less than 20% sure of the likelihood of an impact occurring
- (2) Improbable: 20-40% sure of the likelihood of an impact occurring
- (3) Probable: 40-60% sure of the likelihood of an impact occurring
- (4) Highly probable: 60-80% sure of the likelihood of that impact occurring
- (5) Definite: More than 80% sure of the likelihood of that impact occurring

Significance - The significance weighting for each potential visual impact (as calculated above) is as follows:

- (0-12) Negligible:
  Where the impact would have no direct influence on the decision to develop in the area. The impact would be of a very low order. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap, and simple.
- (13-30) Low:

Where the impact would have a very limited direct influence on the decision to develop in the area. The impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both.

- (31-60) Moderate:
  Where the impact could influence the decision to develop in the area. The impact would be real but not substantial. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible.
- (61-80) High:
  Where the impact must have an influence on the decision to develop in the area. The impacts are of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these.
- (81-100) Very High:
  Where the impact will definitely have an influence on the decision to develop in the area. The impacts are of the highest order possible. In the case of negative impacts, there would be no possible mitigation and / or remedial activity possible.

The **significance** of the potential visual impact is equal to the **consequence** multiplied by the **probability** of the impact occurring, where the consequence is determined by the sum of the individual scores for magnitude, duration and extent (i.e., **significance = consequence (magnitude + duration + extent) x probability**).

Status – The perception of Interested and Affected Parties towards the proposed development.

- Positive
- Negative
- Neutral

Reversibility – The possibility of visual recovery of the impact following the decommissioning of the proposed development

- (1) Reversible
- (3) Recoverable
- (5) Irreversible

1.1.1. POTENTIAL VISUAL IMPACT ON SENSITIVE VISUAL RECEPTORS IN CLOSE PROXIMITY TO THE FACILITY

The visual impact on *any potential* sensitive visual receptors in close proximity to the proposed infrastructure (i.e. within 50m) is expected to be of **moderate** significance, and could be mitigated to **negligible.** The table below illustrates this impact assessment.

Table 2: Impact table summarising the significance of the visual impacts of the WWTW on sensitive visual receptors in close proximity

Nature of Impact: Visual impact of the associated infrastructure on visitors to the Robert Sobukwe House, visitors to or users of the church, as well as the main tourist road providing access to these sites, especially within a 50m (and potentially up to a 100m) radius of the proposed infrastructure		
	No mitigation	***Mitigation considered***
Extent	High **(4)**	High **(4)**
Duration	Long **(4)**	Long **(4)**
Magnitude	High **(8)**	Low **(4)**
Probability	Probable **(3)**	Very Improbable **(1)**
Significance	Moderate **(48)**	Negligible **(12)**
Status (positive or negative)	Negative	Negative
Reversibility	Recoverable **(3)**	Recoverable **(3)**

Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation / Management: Site development & Operation: ➢ Retain / re-establish and maintain large indigenous trees, natural features and noteworthy natural vegetation in all areas outside of the activity footprint. ➢ Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint. ➢ Plan ancillary infrastructure in such a way and in such a location that clearing of vegetation is minimised. Consolidate existing infrastructure as much as possible, and make use of already disturbed areas rather than pristine sites wherever possible. ➢ Keeping infrastructure at design heights. ➢ Introducing landscaped screening measures such as vegetated earth mounds, (see 7. Conclusions and Recommendations. ➢ Avoid the use of highly reflective material. Construction: ➢ Rehabilitate all construction areas, when no longer required. ➢ Keep vegetation clearing to a minimum. Operations: ➢ Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint. ➢ Maintain the general appearance of the facility as a whole (i.e. repaint when required). ➢ Monitor rehabilitated areas, and implement remedial action as and when required. Decommissioning: ➢ Remove infrastructure not required for the post-decommissioning use of the site. ➢ Rehabilitate all areas to a natural state. Consult an ecologist regarding rehabilitation specifications. ➢ Monitor rehabilitated areas post-decommissioning and implement remedial actions as may be required or proposed by an ecologist.		
Residual impacts: The visual impact will be removed after decommissioning, provided the facility and ancillary infrastructure is removed. Failing this, the visual impact will remain.		

1.1.2. POTENTIAL VISUAL IMPACT ON THE VISUAL CHARACTER OF THE LANDSCAPE AND SENSE OF PLACE OF THE REGION

Sense of place refers to a unique experience of an environment by a user based on his or her cognitive experience of the place. Visual criteria and specifically the visual character of an area (informed by a combination of aspects such as topography, level of development, vegetation, noteworthy features, cultural / historical features, etc.) play a significant role.

A visual impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light.

In general, the landscape character of the development site and environs presents as transformed and disturbed. The visual quality of the area is generally low due in large part to the presence of alien plant species, derelict and disused utility infrastructure, and other man-made structures. However, the island has distinct sense of place and visual character that is tied to the many cultural historic sites and structure, and that must be protected. Therefore, the study area is considered sensitive to visual impacts due to its cultural historic significance.

The anticipated visual impact on the visual character and sense of place of the study area is expected to be of **moderate** significance. However, effective mitigation is possible within this environment and for a facility of this scale. The table below illustrates this impact assessment.

Table 3: Impact table summarising the significance of visual impacts on landscape character and sense of place within the region

Nature of Impact: Visual impact of the proposed development on the visual quality of the landscape and sense of place of the region		
	No mitigation	***Mitigation considered***
Extent	Low **(2)**	Low **(2)**
Duration	Long **(4)**	Long **(4)**
Magnitude	High **(8)**	Low **(4)**
Probability	Probable **(3)**	Very Improbable **(1)**
Significance	Moderate **(42)**	Negligible **(10)**
Status (positive or negative)	Negative	Negative
Reversibility	Recoverable **(3)**	Recoverable **(3)**
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation / Management: Planning: ➢ Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint. ➢ Plan ancillary infrastructure in such a way and in such a location that clearing of vegetation is minimised. ➢ Wherever possible, use materials, coatings, or paints that have little or no reflectivity and blends with the natural environment. ➢ Commercial messages, symbols and/logos are not permitted on structures (with the exception of 'no-entry' signage on perimeter fencing) Construction: ➢ Rehabilitate all construction areas. ➢ Ensure that vegetation is not cleared unnecessarily to make way for infrastructure. Operations: ➢ Maintain the general appearance of the facility as a whole. ➢ Monitor rehabilitated areas for plant growth, evidence of erosion etc., and implement remedial action as and when required. Decommissioning: ➢ Remove infrastructure not required for the post-decommissioning use of the site. ➢ Rehabilitate all areas. Consult an ecologist regarding rehabilitation specifications. ➢ Monitor rehabilitated areas post-decommissioning and implement remedial actions.		
Residual impacts: The visual impact will be removed after decommissioning, provided the facility and ancillary infrastructure is removed. Failing this, the visual impact will remain.		

7. CONCLUSION AND RECOMMENDATIONS

Robben Island is a UNESCO World Heritage Site, and welcomes over 1000 tourists every day. It is therefore incumbent on the custodians of this site to ensure that any further development of the island, regardless of size, is subjected to an environmental impact assessment process that endeavors to protect the environmental, cultural historic and aesthetic integrity of the island.

Although the proposed WWTW is a relatively small and unobtrusive structure, the construction and operation of the WWTW will have a visual impact on sensitive visual receptors, but only on those receptors in very close proximity to the WWTW (i.e. within a 50m radius of the proposed project development site). The visual receptors include tourists travelling along the Murray Bay Road, as well as those visiting the Church of the Good Shepherd and Robert Sobukwe House. Whilst the majority of visitors may accept this as part and parcel of required infrastructural development on the island, best environmental practice would require that attempts are made to screen this facility from direct view of tourists, and retain the pre-1995 look and feel of the island.

Various generic mitigation procedures have been described above, but it is submitted that the most effective way to ameliorate the impact and would be by using all spoil material salvaged from the construction works to create a planted earth mound along the western, southern and northern perimeter of the development envelope. This mound should be organically designed to resemble a natural topographic feature ('dune

shaped') and planted with hardy indigenous vegetation. At a planted height of 1.5m, the planted earth mound will effectively screen any view of the WWTW from the aforementioned sensitive receptors. A local botanist should be consulted for advice on an appropriate indigenous planting palette.

It is further recommended that the general site be cleared of other disused and derelict structures, such as telephone poles which litter the area. These mitigation measures are graphically presented on Figure 5 overleaf.


FIG 5: PROPOSED MITIGATION
Atlantic Ocean
Robert Sobukwe House
Septic Tanks
Above ground water tanks
Proposed WWTW development envelope
1 Sludge Drying beds
2 Secondary clarifier
3 Bio-filter
4 Septic Tank
1
2
3
4
2-spoor track
2-spoor track
Vegetated earth mound / plant bed (using spoil from construction works)
Murray Bay Rd
Church of the Good Shepherd
LOGIS
0
25
50m
N
S
E
W

8. REFERENCES

DEADP, Provincial Government of the Western Cape, 2011. Guideline on Generic Terms of Reference for EAPS and Project Schedules.

Oberholzer, B. (2005). Guideline for involving visual and aesthetic specialists in EIA processes: Edition 1.