

Our ref: 2000261

Your ref: PO0011044: Wastewater Treatment Plant

30 Junie 2021

Robben Island Museum  
Nelson Mandela Gateway  
Victoria & Alfred Waterfront  
Cape Town  
8001

Attention: Mr Vusimuzi Bali

## **Progress and Activity Report No. 4: Robben Island Wastewater Treatment Plant**

### **Project overview**

This project entails the design and implementation of a wastewater treatment plant on Robben Island to treat residential sewerage effluent before discharging treated effluent to the sea.

The PSP was notified of PO0011044 via email.

### **Project Team**

Various stakeholders from the RIM and PSP are listed below:

- Vusimuzi Bila RIM
- Linda Penicela RIM
- Jeanette Daniels RIM
- John Sherriff ECE
- Izak Olivier ECE

**EXECUTIVE DIRECTORS:** • F DE V RYKE (CEO) PrEng • PA ROSSOUW PrTechEng • NP MANTUNGWA ND (Civil) • ET WALTERS Pr Eng • SBL DYANTYI PrTechniEng

**NON-EXECUTIVE DIRECTORS :** • JA TURNER (CHAIRMAN) PrEng • S LAKHI • Y MOHAMED • MMA SHEZI • BG ZIETSMAN PrEng



## Site Description



Figure 1: Robben Island with main sewerage collection point on the eastern-central side



Figure 2: Main sewerage collection point (pump station) and proposed position of WWTP

## **Activities:**

### Kick-off meeting (Zoom)

A kick-off meeting was held on 2020/10/20. The project scope and potential Normal Engineering Services were discussed. It was envisaged that ECE focus on the following Stages:

- Stage 3: Review existing design information and re-do partial design
- Stage 4: Documentation and Procurement
- Stage 5: Contract Administration
- Stage 6: Close-out

### Information received to date

The following information related to the WWTW was received:

- Inception report
- Preliminary Design Report
- Basic Assessment Report
- Effluent discharge permit (2000)
- Laboratory results showing determinants in sewage inflow for the periods July – December 2019 and October 2020 to February 2021

### Site visit

ECE was accompanied by Linda on a visit to the WWTW site on Robben Island on 2020/11/20, 28/04/2021 and 24/05/2021 to inspect the existing infrastructure.

### Request for information and delay

ECE requested record / “as-built” information for the existing infrastructure (dimensions of sumps and manholes, information on type and size of pipelines installed at the existing outfall pump station, information on the installed macerator and outfall sewer pumps).

Without the “as built” information planning, final designs and tender documentation cannot be completed. Clarity on how water is conveyed to the final pump station is imperative as this will determine the necessity of for example an additional pump station or not. It will also provide the necessary information to decide on where trial holes can be dug and where proposed infrastructure can be placed.

All available resources have been exhausted without avail.

It started off by trying to obtain information from the technical team on 28/04/2012 during a site visit. At the site visit, the contact details of Me A Petersen was provided who was e-mailed on 30/04/2021 to request assistance with “as built” information. After various discussions Me A Petersen suggested that we meet her previous supervisor Mr. A Marais on site for him to explain how the existing infrastructure interlink. We could only meet him on site for the first time on 24/05/2021. Unfortunately, Mr. Marais could not provide the relevant information and we were still without clarity re the way the gravity mains and pump stations join up with the final pump station. Mr Marais provided us with the contact details of Me E Van Helsdingen who works in the planning department of DPW. She was contacted on 1 June 2021 and asked if she could search for any “as built” plans or information in their Pretoria plans office. She has not come back to us yet with any information.

Therefore, as discussed with RIM we have requested quotes for the use of ground penetrating radar and received two quotes already with the last expected today. We have appointed the surveyor but want the two contractors to work together on site. This work will start next week.

Considering the timelines discussed above it is clear that trying to obtain the necessary “as built” has caused a substantial delay.

Furthermore, the staff in the office of the project team, from Element Consulting Engineers, were infected with Covid 19. The absence of staff and the office closure further delayed the project by another 3 weeks.

### Work Breakdown Structure

ECE submitted a proposed work breakdown structure to show the potential professional fees for the project. This was discussed in an information session on 2020/12/01 and formalized and forwarded (2020/12/03) for scrutiny and approval by RIM. RIM approved the proposed professional fees (WBS) on 2020/12/15.

### Design Report

ECE submitted the draft Design Report on 05/03/2021. This report was discussed during a Teams meeting on 08/03/2021, after which a revised draft Design Report was submitted on the same day.

The Design Report discusses the following:

- Capacity of the proposed WWTW;
- type of WWTW to be installed;
- layout of proposed WWTW;
- re-use of treated effluent;
- project cost estimate;
- proposed program.

RIM approved the Design Report On 23 March 2021 and the detail design of the proposed works is underway.

The design will be completed/amended as soon as the ground penetrating survey, the topographical survey and the geotechnical investigation is completed.

The documentation will be completed as per our discussion based on the template we provided. We will use the RIM database of contractors and indicate the CIDB Grading, the contractor will be required to have carried out work of similar nature and have contactable references. The document will be completed as soon as the design is done.

We will appoint the Health and Safety Consultant for the project and RIM will facilitate the environmental side of the project directly.

### Potential risks

The potential risks are listed below:

1. The layout and position of existing infrastructure is still unknown and could have an impact on the design and layout of proposed infrastructure, with associated costs.
2. The existing ground conditions are still unknown and can have a substantial impact on the estimated cost of the project.
3. The power supply to the proposed works and the additional low lift pump station must be confirmed.
4. If any further delays are experienced funding might not be spent and will have to be rolled over.

## Estimated project expenditure

The table below shows the estimated project expenditure for this project.

Description	Amount (R)
<b>Construction Costs</b>	
M&E capital cost, including delivery, installation, commissioning and training	2 596 000
Civil works (excavation, inlet works, septic tank, clarifier, contact channel)	2 606 000
Lifting pump station (Civil and mechanical)	800 000
Disinfection infrastructure	30 000
Effluent reuse, booster pump	75 000
Effluent reuse, rising main	493 000
Electrical supply and control	240 000
Security / fencing of site (allow for 200 m of 2.4 m high Clearvu-type fence)	418 000
	7 258 000
Contingencies (10%)	725 800
Sub-Total, Construction Cost	7 983 800
<b>Indirect Costs</b>	
Professional fees, normal services stage 3-6 (based on R 7 m construction cost)	650 000
Additional services	
Construction supervision (R 45 000 per month x 6 months)	270 000
Health & Safety (specifications and safety agent)	40 000
Environmental (specification and environmental control officer)	70 000
Geotechnical survey	60 000
Topographical survey	15 000
Recoverable expenses (plotting, printing and binding)	32 000
Travelling & parking (allowing that ECE does not have to pay for ferry crossings)	10 000
Sub-Total, Indirect Costs	1 147 000
Total Project Cost (excluding VAT)	9 130 800.00
15% VAT	1 369 620.00
<b>TOTAL PROJECT COST (INCLUDING VAT)</b>	<b>10 500 420.00</b>

### Proposed project program

The table below shows the proposed program for this project.

<b>Activity</b>	<b>Milestone Date</b>
Design Report Submitted	5 March 2021
Design Report Approved	23 March 2021
Detail Design Commences	24 March 2021
Tender Documentation Preparation Commences	26 March 2021
Tenders Advertised (determined by dates of survey, Geotech and EA)	13 August 2021
Tenders Close (5-week tender period)	17 September 2021
Tender Evaluation Report Submitted	1 October 2021
Appointment of Contractor	29 October 2021
Commencement of Construction Contract	12 November 2021
Construction Completed	3 June 2022

### Total amounts claimed to date

The table below shows the accounts submitted to date for this project.

<b>Account Number</b>	<b>Date</b>	<b>Stage</b>	<b>Service Provider</b>	<b>Amount (excl. VAT)</b>
1	14 December 2020	3 - Design Development	Indirect costs	R 14 830.43
2	11 March 2021	3 - Design Development	Indirect costs	R 70 444.57
3	30 April 2021	3 – Design Development 4- Documentation and procurement	Indirect cost	R 129 618.00