

PROPOSED CONSTRUCTION OF A SEWAGE TREATMENT PLANT AT CAPE POINT, TABLE MOUNTAIN NATIONAL PARK

FULL SCOPING AND EIA PROCESS

ENVIRONMENT IMPACT REPORT - EXECUTIVE SUMMARY

1 INTRODUCTION

SANParks proposes, as a key element of a wider infrastructure upgrading scheme for the Cape Point precinct, the installation of new sewage treatment plant to meet the demands of the growing numbers of visitors to the site. The proposed plant will be designed to treat approximately 20 000 m³ of effluent per annum and therefore exceeds the threshold listed in the NEMA EIA Regulations as requiring environmental authorisation. Procedurally the NEMA EIA Regulations stipulate that a full Scoping and EIA process must be undertaken. SANParks has appointed Nick Steytler EAP to undertake the full Scoping and EIA Process. Owing to the fact that the proposed development is located in a National Park the National Department of Environmental Affairs and Tourism (DEAT) is the appropriate authority delegated with making decisions in respect of environmental applications.

2 FULL SCOPING AND EIA PROCESS

2.1 Legal and Procedural Framework

The NEMA EIA Regulations provide the legislative framework regulating developments that may detrimentally affect the environment. For the proposed development there is an applicable listed activity that requires that a full Scoping Study and EIA¹ be undertaken. The applicable activity is as follows:

1. *The construction of facilities or infrastructure, including associated structures or infrastructure, for –*
 - (p) *The treatment of effluent, waste water or sewage with an annual throughput of 15 000 cubic metres or more*

The full Scoping and EIA process is currently at the Impact Assessment Phase. The overall aim of the Impact Assessment Phase is to undertake an assessment of the project's key potential impacts and identify mitigation measures to minimise the potentially significant negative impacts.

3 DESCRIPTION OF AFFECTED ENVIRONMENT

Cape Point is located within the Cape of Good Hope section of Table Mountain National Park (TMNP). The proposed site for the new sewage treatment plant is immediately adjacent and to the west at the parking area that serves the restaurant, shops and funicular at Cape Point.

¹ Activities listed in GN 387 are required to follow the procedures for a Scoping study and EIA as described in Sections 37-36 of the NEMA Regulations.

Most of the site comprises tarred paving which is bordered with natural stone finishes. Buildings within the Cape Point precinct include the following:

- A visitors Information Centre/TMNP staff office/concessionaire office combined into one building which is located to the north west of the parking area;
- A restaurant which is located to the north of the parking area (the roof of which is at the same level as the parking area);
- A small shop which is located to the east of the parking area; and
- Ablutions which are located to the south east of the parking area (the roof of which is also at the same level as the parking area).

All buildings are of a similar design with flat planted roofs and plastered with aggregate to minimize their visual intrusion in the landscape. A paved walkway extends to the south east which provides access to the funicular which transports tourists to viewing sites nearer the point and the site of the old lighthouse. Bordering the transformed zone is natural vegetation comprising mostly dense thicket vegetation.

As the site is situated within TMNP the predominant land use is nature conservation. Being situated on the southernmost tip of the Cape Peninsula the site is virtually surrounded by the Atlantic Ocean. Beyond the boundary and to the north west of the Cape of Good Hope section of TMNP lie several privately-owned farms including the Cape Point Ostrich Farm which is a popular tourist attraction. The nearest human settlements to Cape Point are Simons Town, Red Hill Informal Settlement and Scarborough with Simons Town being the largest town. The Cape Town CBD is located at the northern-most extreme of the Cape Peninsula, some 50 km away.

4 MOTIVATION FOR AND DESCRIPTION OF ACTIVITY

4.1 Motivation

Cape Point is the most frequented visitor site in all national parks in South Africa with annual visitor numbers in the 2007/2008 year being reported as 855 739 with this number rising steadily from year to year. Many visitors make use of the facilities at Cape Point which include the ablutions which generate significant volumes of sewage. Added to this is the operation of a restaurant which is very popular with visitors to Cape Point, which also generates significant volumes of liquid effluent. To date this effluent has been directed via a gravitational reticulation system to a system of conservancy tanks and soak-aways. This system is effective in treating effluent and disposing the treated liquid by-product ("treated effluent") at relatively low volumes. However when volumes of effluent generated increase then more "advanced" methods of effluent treatment and disposal become necessary and this is the case at Cape Point.

Based on visitor number projections, effluent estimates indicate that the capacity of the current system will be exceeded in the short-term and therefore an improved system is urgently required. The new proposed "package" sewage treatment plant has a proven track record, has capacity to treat greater volumes of effluent and has the ability to treat the effluent to meet the standard required by the Department of Water Affairs and Forestry in permitting the disposal of the treated effluent in the environment. SANParks considers the "package" plant as the most appropriate means of treating effluent at Cape Point, particularly given the space constraints and sensitivity of the potentially affected environment.

4.2 Description of the Proposed Activity

The proposed development will entail the construction of the new package treatment plant and associated infrastructure (vehicular access ramp for servicing, planted roof, etc) in an area of 20 X 20 m. The existing reticulation system and system of conservancy tanks and soak-aways will remain unchanged.

The proposed sewage treatment plant will be designed to treat approximately 20 000m³ of sewerage per annum with a maximum flow estimated at 44 Kl/day. The treatment process is the activated sludge method, common with many large sewage treatment works, with the exception that the various components of this system are contained within a package plant (see Figure 1).

5 ALTERNATIVES

In terms of the NEMA EIA Regulations the applicant is required to demonstrate that reasonable alternatives have been described and investigated in sufficient detail. In addition to the preferred alternative as described above (i.e. package sewage treatment plant), the following additional alternatives are being considered in this EIA process:

- The "No-Go" or "No Development" alternative;
- Connecting to the municipal sewerage reticulation system;
- Two site alternatives within the Cape Point precinct.

5.1 The "No-Go" alternative

The "No-Go" or "No Development" alternative assumes that the current system of effluent treatment, the system of conservancy tanks and soak-aways, will remain in place. The assessment of the "No-Go" alternative is particularly informative as it demonstrates the merits of upgrading the effluent treatment system at Cape Point.

5.2 Connecting to Municipal Network

A logical alternative to constructing a new sewage treatment plant is the option of connecting to the Municipal sewerage network. This will then allow the effluent generated at Cape Point to be treated at one of the City of Cape Town's large Wastewater Treatment Works (WWTW). This option would necessitate the construction of a new sewerage pipeline from the Cape Point precinct to the nearest connection point in the Municipal reticulation, assumed to be at either Scarborough or Simon's Town some 20 km away by road. As it is common practice to align services in road reserves one can assume that approximately 20 km of new pipeline would be required. Also, owing to local topographic conditions, gravitational feed would not be

possible along the entire length of the pipeline therefore necessitating one or more pumpstations.

5.3 Site Alternatives

In selecting the preferred site immediately west of the existing parking area, SANParks considered two additional alternative sites within the Cape Point precinct. Both are located within the existing footprint of the parking area. This being the case both options would entail constructing the proposed plant beneath the paved surface. Site alternative A, located in the northern extreme of the parking area, would necessitate a reconfiguration of the precinct's sewerage reticulation and would also require the relocation of the system of conservancy tanks and soak-aways from their current location approximately 100 m due south west of the parking area to a site to the north of the access road and parking area (so as to allow treated effluent to feed by gravity). Site alternative B is located near the preferred site with the difference that it is at a slightly higher elevation and would be situated underneath the paved parking surface. Utilising this site would not require a major reconfiguration of the precinct's sewerage reticulation but effluent generated at the ablutions further to the south west would need to be pumped up to this point owing to the elevations. Site alternative A would also be situated beneath the paved parking surface.

6 PUBLIC PARTICIPATION PROCESS

Table 1 provides a summary of the PPP activities undertaken to date.

Table 1: Schedule of PPP activities undertaken to date

Activity	Date
Scoping phase:	
Advertisement of the process in the regional and local media	25 September 2008
Placement of on-site notice	25 September 2008
Circulation of Scoping Report Executive Summary to IAPs	25 September 2008
Release of Scoping Report for comment	25 September – 25 October 2008
Impact Assessment phase:	
Circulation of EIR Executive Summary to IAPs	24 April 2009
Release of EIR for comment	24 April – 24 May 2009

The Environmental Impact Report (EIR) is currently available for review by registered IAPs. IAPs have been asked to submit written comment on or before **24 May 2009**. All comment received will be responded to. A full record of the comments and responses will be included in a Comments and Responses Report (Impact Assessment phase) which will be submitted along with the EIR to DEAT for a final decision as to whether to authorise the proposed development. As a result the comment will be considered by DEAT in deciding whether or not to approve the proposed sewage plant at Cape Point in terms of the NEMA EIA Regulations (2006).

7 ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS

The following potentially significant impacts associated with the proposed sewage treatment plant have been identified by the EAP and project team:

- Construction phase impacts:
 - Socio-economic benefits;
 - Visual impacts;
 - Ecological impacts; and
 - Nuisance impacts (including noise and dust).
- Operational phase impacts:
 - Soil and groundwater contamination; and
 - Visual impacts.
- Closure and decommissioning phase impacts:
 - Soil and groundwater contamination; and
 - Nuisance impacts (including noise and dust).

Sections 7.1 - 7.4 provide an assessment of the project's key potential impacts. Only an assessment of the preferred alternative is provided in this Executive Summary. For an assessment of the impacts associated with the alternatives contemplated in the EIA, please refer to the full Environmental Impact Report.

7.1 Socio-economic benefits

The construction phase of the project would result in a positive spending injection into the area that would lead to increased economic activity and positive social impacts associated with employment. Preliminary estimates indicate that a total of approximately R2 Million would be spent during the 6 month construction phase on the construction of the new sewage treatment plant. The development will therefore have a positive impact on commercial activity but this impact would only be local in extent (i.e. within Cape Town) as the appointed contractor would in all likelihood purchase goods and services in the immediate surrounding areas.

It is estimated that during the construction phase approximately 19 new construction jobs would arise. The majority (>80%) of jobs would be in the unskilled and semi-skilled categories while the remainder would be skilled and managerial positions. The total expenditure on construction phase labour is estimated to be R300 000.

The significance of the socio-economic impacts associated with project-related expenditure based is rated to be of **very low (+ve)** both without and with mitigation. The following (optional) mitigation measures are recommended:

- 100 % (subject to availability) local² labour should be used.
- 100% (subject to availability and skills levels) local contractors should be used.
- Ensure that contractors from outside the local area that tender for work meet targets for the number of locals employed.

² In the context of this development local is defined as residing within the City of Cape Town.

- Ensure that empowerment targets relevant to the construction sector are met.

7.2 Visual Impacts

Construction phase:

Visual impacts may arise as a consequence of construction activities taking place at a site that has a high frequency of visitors who are highly sensitive to visual impacts. Visual impacts associated with construction sites are generally attributed to poor house-keeping (e.g. presence of excavation scars, poorly managed construction waste, untidy storage of construction materials, visible portable latrines). Off-setting the significance of the potential construction phase visual impacts is the fact that these are temporary insofar as they will last only as long as the construction phase (\pm 6 months).

The overall significance of the potential visual impact associated with the construction phase, without mitigation, is rated to be low (-ve). Effective mitigation of construction phase-related impacts can be achieved through the implementation of an Environmental Management Plan. With mitigation the visual impact is rated to have a significance of **very low (-ve)**.

Operational phase:

Operational phase visual impacts may arise from the presence of additional built form within an area of natural beauty. Exacerbating the significance of the potential impact is the high sensitivity of the viewers (tourists) but offsetting the significance of the potential impact is the presence of several other buildings in close proximity to the proposed sewage package plant site, including a restaurant, offices, shops and ablutions.

The overall significance of the potential visual impact associated with the operational phase, without mitigation, is rated to be medium (negative). Effective mitigation of the operational phase-related impact can be achieved through the sympathetic architectural design. Such design has underpinned the design and appearance of the existing structures. It is therefore essential that the same architectural design and finishes are adopted in the construction of the sewage package plant. With mitigation the visual impact is rated to have a significance of **low (-ve)**.

7.3 Ecological Impacts

Construction phase:

Poorly managed construction activities have the potential to cause ecological impacts, particularly if contaminants are discharged into the receiving environment and if construction activities cause physical disturbance outside the existing disturbance footprint. Offsetting the significance of the potential construction phase impacts is the relatively low sensitivity of the vegetation in the area immediately surrounding the Cape Point precinct.

The impact is rated to be of **low (-ve)** significance provided a comprehensive construction phase Environmental Management Plan which includes the following specifications is implemented:

- Designation of "No-Go" areas;
- Designation of construction materials and fuel storage areas;
- Specifications for refuelling of construction machinery and the use of drip trays; and
- Effective rehabilitation of naturally vegetated areas disturbed as a result of construction activities.

Operational phase:

Upgrading the sewage treatment system at Cape Point will result in a significant improvement in terms of potential ecological impacts. Currently the system of conservancy tanks and soak-aways results in the subsurface discharge of treated effluent into the park at a point some 100m to the north west of the ablation block. This system is effective when dealing with relatively low volumes of effluent. However, as a result of the growing numbers of visitors and increased capacity of the restaurant, effluent volumes have increased to such a level that the efficacy of the system is questionable. Should the capacity of the system be exceeded then contamination of the receiving environment may result in significant ecological impacts.

Constructing a sewage package plant that operates an activated sludge treatment process will result in an improvement in the quality of the treated effluent and it will have the capacity to treat greater volumes of effluent thereby significantly reducing the risk of failure in the foreseeable future. As a result the new proposed package plant is anticipated to have an impact of **medium (+ve)** significance.

7.4 Nuisance Impacts

The proposed construction of the sewage treatment plant has the potential to generate the following potential nuisance impacts:

- Dust emissions; and
- Noise.

Dust emissions are likely to be generated during excavations which are required to level out the site for the proposed sewage package plant. These emissions are likely to be exacerbated during the dry and windy summer months but all indications are that construction is likely to commence during the wetter winter season. The intensity of use of the site by tourists, however, suggests that dust emissions must be controlled at all times.

Noise impacts are also likely as construction machinery will be involved in undertaking the required excavations and in constructing the sewage plant and its housing. The presence of large numbers of tourists in close proximity of the construction site highlights the need for strict control of noise emissions. By ensuring that noise levels are kept below 70 dB(A) and activities with noise levels exceeding this level restricted to outside peak visitor hours, noise impacts will be satisfactorily minimized.

The significance of the potential construction phase-related nuisance impacts are rated as **very low (-ve)** provided the following mitigation measures are implemented:

- Formulate and implement a construction phase EMP which includes the following specifications:
 - Erect fencing around construction site to act as a screen minimising the effect of wind in generating dust emissions.
 - Implement dust suppression measures (water, hay bails, etc) when appropriate.
 - Adhere to OHSA with regards to noise levels and protective equipment.
 - Ensure that noise levels are below 70 dB(A); and
 - When noise levels are likely to exceed 70 dB(A) then ensure that the noisy construction activity is undertaken outside of peak visitor hours (i.e. early morning or late evening).

8 EVALUATION AND RECOMMENDATIONS**8.1 Environmental Impact Statement**

The construction of the proposed sewage treatment plant at Cape Point will generate an economic benefit of low significance for the City of Cape Town as construction expenditure is estimated at R2 Million with this expenditure taking place over ±6 months. Coupled with the economic benefit comes the social benefits associated with the employment opportunities that will be created. Given the importance of job creation in addressing poverty in South Africa, employment creation opportunities associated with the proposed development presents a significant benefit, albeit of very low significance given that only approximately 19 temporary jobs will be created.

Inevitably there will be environmental costs associated with infrastructure upgrading projects and sometimes environmental benefits (as is the case here). Costs include the potential visual and biophysical impacts (damage to natural vegetation) associated with the construction phase and the expansion of the disturbance footprint within the Cape Point precinct, albeit only to a limited extent. Important benefits include the improved quality of treated effluent which is being discharged into the surrounding area.

In summary the proposed upgrading of the sewage treatment and disposal system through the installation of a new sewage package plant can be described as being associated with the following:

- Minor socio-economic benefits associated with construction phase expenditure and job creation;
- Minor (insofar as they are mitigable) visual impacts;
- Minor (mitigable) biophysical costs associated with the construction phase; and
- Significant biophysical benefit associated with improving the quality of treated effluent discharged to the environment.

The key decision making factors which the EAP believes need to be kept in mind by the authorities in deciding on the sustainability of their decision, are as follows:

- Given the anticipated growth in visitor numbers to Cape Point there is an urgent need to upgrade the system for the treatment and disposal of sewage at Cape Point as the capacity of the current system will be exceeded and this has the potential to cause significant environmental harm in a protected area.
- IAPs have shown no interest in the proposed development which suggests that the rights and interests of the public are unlikely to be affected by the proposed upgrading.
- Both upgrading alternatives are environmentally suitable insofar as both are associated with impacts of low and very low significance (assuming the recommended mitigation measures are implemented).
- While the alternative scenario of connecting to the municipal network is marginally more preferable in terms of the environmental impacts it is considerably (and prohibitively) more costly for the applicant and is associated with an unquantifiable risk that failure of the pipeline and/or pump station(s) could cause significant environmental harm in more sensitive parts of the Park.

- While the site alternatives are marginally more preferable in terms of environmental impacts there are practicalities which render them critically flawed. These include the following:
 - Neither site alternative allows for vehicular access which is required for maintenance purposes (achieved by a ramp in the preferred alternative – see Figure 1). This can only be achieved by constructing the plant adjacent to existing infrastructure and not beneath existing infrastructure.
 - Due to the levels, both site alternatives would require pumping of the treated effluent to the site of disposal. In using the preferred site this can be achieved through gravity flow thereby reducing the overall cost and risk of possible failure.

8.2 Authorisation Opinion

The EAP believes that sufficient information is available for DEAT to take a decision and that the EIA has shown clearly that upgrading of the system for treating and disposing sewage is urgently required and that both upgrading alternatives contemplated are environmentally acceptable. While the applicant's preferred alternative is marginally less preferable when compared to the alternative scenario of connecting to the municipal network, the significantly lower cost, lower risk and greater practicality render the preferred alternative the most sustainable alternative. The EIA has also shown that the "No-Go" alternative may be associated with significant negative impacts which potentially render it as an environmentally unacceptable alternative. The EIA has also assisted in the identification of essential mitigation measures that will mitigate the impacts associated with the upgrading the sewage treatment and disposal system to ensure that the impacts remain minor and acceptable.

In conclusion the EAP is of the opinion that based on a combination of 'environmental' grounds (i.e. the project's potential socio-economic and biophysical implications) and the cost implications for the applicant, the applicant's preferred alternative should be approved, provided the essential mitigation measures are implemented.

8.3 Recommendations

The following mitigation measures should be considered as conditions of approval as they are regarded as being essential insofar as rendering potentially unacceptable impacts acceptable:

- Implement the standard SANParks EMP for construction activities in National Parks with special attention being give on:
 - Maintaining good house-keeping through the duration of the construction phase;
 - Screening unsightly aspects from public view including excavations (where practical), construction material storage areas, waste storage areas and ablutions).
 - The rehabilitation of all areas of natural vegetation that have been disturbed as a result of construction activities.
 - Designation of "No-Go" areas.
 - Designation of construction materials and fuel storage areas.
 - Effective control of waste and containment of stormwater.
 - Erect fencing around construction site to act as a screen minimising the effect of wind in generating dust emissions.
 - Implement dust suppression measures (water, hay bails, etc) when appropriate.
 - Adhere to OHSA with regards to noise levels and protective equipment.

- Ensure that noise levels are below 70 dB(A); and
- When noise levels are likely to exceed 70 dB(A) then ensure that the noisy construction activity is undertaken outside of peak visitor hours (i.e. early morning or late evening).

- Adopt the same architectural design and finishes for the new building that will house the proposed sewage package plant. The following mitigation measures are considered optional insofar as they do not result in a significant enhancement of the positive socio-economic impact associated with the proposed development. As such the EAP is of the opinion that these should not be made conditions of authorisation:

- 100 % (subject to availability) local³ labour should be used.
- 100% (subject to availability and skills levels) local contractors should be used.
- Ensure that contractors from outside the local area that tender for work meet targets for the number of locals employed.
- Ensure that empowerment targets relevant to the construction sector are met.

9 WAY FORWARD

9.1 Way Forward

The Executive Summary of the EIR has been sent to all the registered IAPs. The Executive Summary notifies registered IAPs of the availability of the EIR on the SANParks website. It also informs IAPs of the opportunity to submit comments within the comment period. Should IAPs wish to submit comment then this should be submitted on or before 24 May 2009 for the comment to be included in the final submission to DEAT.

Written comment must be submitted on or before 24 May 2009 to:

Mr Nick Steytler
 Nick Steytler EAP
 PO Box 22761
 Scarborough, 7974
 Fax 086 694 6901
 email: nicksteytler@telkomsa.net

Should additional issues and concerns be raised that have not been adequately addressed in the EIR then the report may have to be revised and re-issued for IAP review. Should this occur then a further opportunity for IAPs to engage in the EIA process may be provided. If not, the report, along with the comments received by IAPs during the current comment period, will be submitted to DEAT for a decision regarding whether or not to authorise the project. Should DEAT authorise the project then all registered IAPs will receive notice of the decision and be informed of the opportunity to appeal against the decision, should they so wish.

Upon request, electronic copies of the EIR can be emailed to IAPs (free of charge) and hard copies of the EIR can also be mailed at a cost of R300 (incl VAT). Note costs are merely to cover the time and expenses associated with producing additional copies.

NICK STEYTLER EAP

³ In the context of this development local is defined as residing within the City of Cape Town.

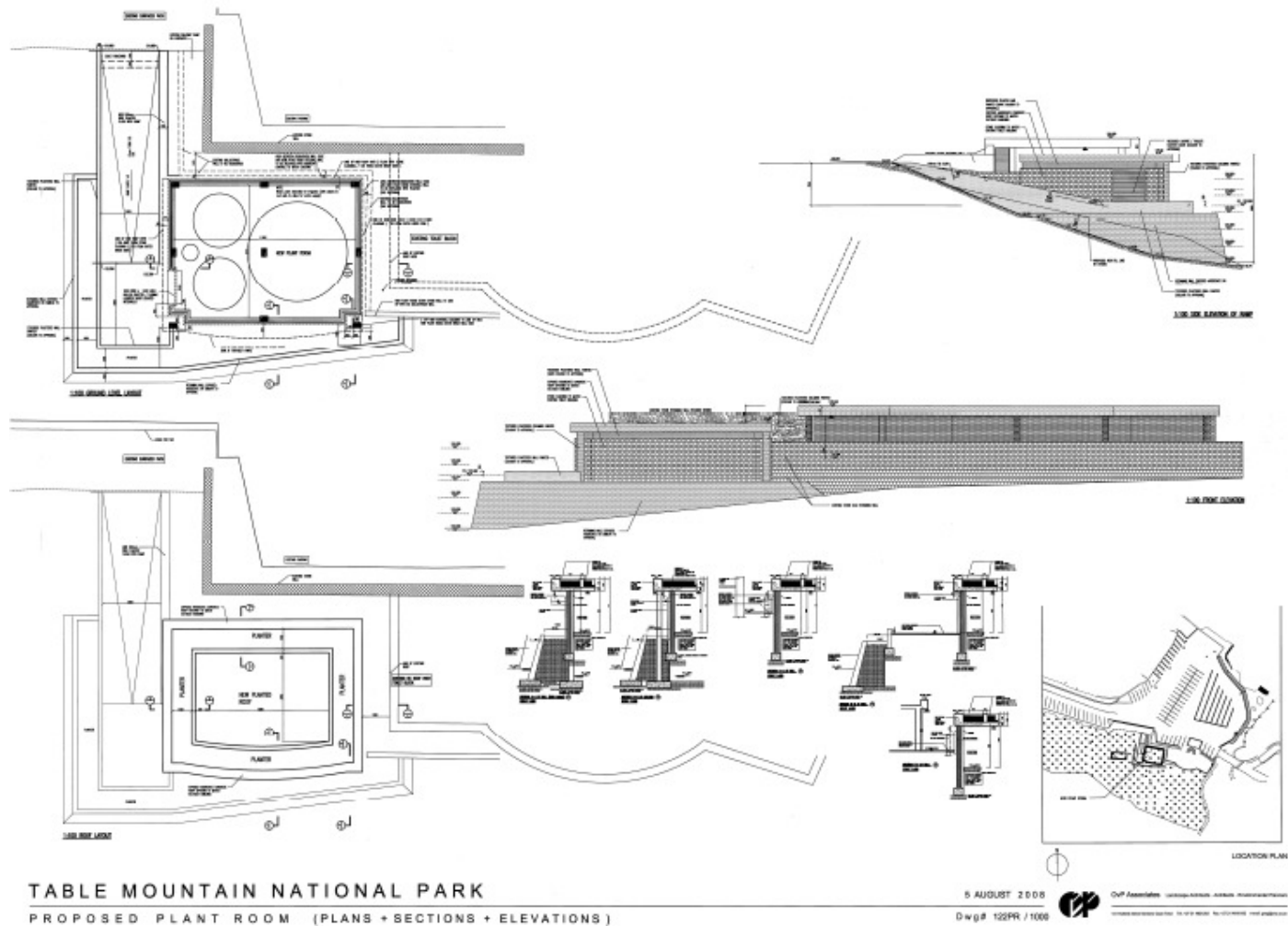


Figure 1: Engineering drawings showing the proposed sewage treatment plant