THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE.

FINAL ENVIRONNEMENTAL MANAGEMENT PROGRAMME

(INCLUDING THE WASTE, WATER USE AND ELECTRICITY CONSUMPTION MINIMIZATION AND MANAGMENT PLAN)

Prepared for:

Rhinos Asset Holdings (Pty) Ltd

290 Anthony Street

Newlands

Pretoria

0049

derek@rhinosacademy.com

Prepared by:

Guillaume Nel Environmental Consultants

P.O. Box 2632

Paarl

7620

Tel: 021 870 1874

Fax: 021 870 1873

E-Mail: hpd@gnec.co.za

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

DEA&DP ..... Department of Environmental Affairs and Development Planning
DEAT ..... Department of Environmental Affairs and Tourism
DWS ..... Department of Water and Sanitation
EA ..... Environmental Authorisation
EAP ..... Environmental Assessment Practitioner
ECO ..... Environmental Control Officer
EIA ..... Environmental Impact Assessment
EMPr ..... Environmental Management Programme
EO ..... Environmental Officer
ESO ..... Environmental Site Officer
GNEC ... . Guillaume Nel Environmental Consulting
I&AP ..... Interested and Affected Parties

DEFINITIONS

Alien species - Plants and animals which do not arrive naturally in an area - they are brought in by humans. Alien plants often force indigenous species out of the area. Rooikrans is a good example of alien species in the Cape.

Alternative - A possible course of action, in place of another, that would meet the same purpose and need defined by the development proposal. Alternatives considered in the EIA process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

Aspect – Element of an organisation's activities, products or services that can interact with the environment.

Auditing - A systematic, documented, periodic and objective evaluation of how well the environmental management programme is performing with the aim of helping to safeguard the environment by: facilitating management control which would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

Biodiversity - The rich variety of plants and animals that live in their own environment. Fynbos is a good example of rich biodiversity in the Cape.

Built environment - Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

Conservation - Protecting, using and saving resources wisely, especially the biodiversity found in an area.

Contamination - Polluting or making something impure.

Corrective (or remedial) action - Response required to address an environmental problem that is in conflict with the requirements of the EMPr. The need for corrective action may be determined through monitoring, audits or management review.

Degradation - The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Ecology - The scientific study of the relationship between living things (animals, plants and humans) and their environment.

Ecosystem - The relationship and interaction between plants, animals and the non-living environment.

Environment - Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings.

Environmental Impact Assessment (EIA) - An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives; recommendations for appropriate management actions for minimising or avoiding negative impacts and for enhancing positive impacts; as well as proposed monitoring measures.

Environmental Management System (EMS) - Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The ISO14001 EMS standard has been developed by the International Standards Organisation.

Environmental policy - Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.

Fynbos - Low-growing and evergreen vegetation found only in the south Western Cape. Fynbos is known for its rich biodiversity.

Habitat - The physical environment that is home to plants and animals in an area, and where they live, feed and reproduce.

Hazardous waste – Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

Impact - A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

Indigenous species - Plants and animals that are naturally found in an area.

Infrastructure - The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.

Integrated - Mixing or combining all useful information and factors into a joint or unified whole. See Integrated Environmental Management.

Integrated Environmental Management (IEM) - A way of managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments. Also called "IEM".

Land use - The use of land for human activities, e.g. residential, commercial, industrial use.

Mitigation - Measures designed to avoid, reduce or remedy adverse impacts

Natural environment - Our physical surroundings, including plants and animals, when they are unspoiled by human activities.

Over-utilisation - Over-using resources - this affects their future use and the environment.

Policy - A set of aims, guidelines and procedures to help you make decisions and manage an organisation or structure. Policies are based on people's values and goals. See Integrated Metropolitan Environmental Policy.

Process - Development usually happens through a process - a number of planned steps or stages.

Proponent – Developer. Entity which applies for environmental approval and is ultimately accountable for compliance to conditions stipulated in the Environmental authorisation (EA) and requirements of the EMPr.

Recycling - Collecting, cleaning and re-using materials.

Resources - Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.

Scoping Report - A report presenting the findings of the scoping phase of the EIA. This report is primarily aimed at reaching closure on the issues and alternatives to be addressed in the EIA (in the case of a full EIA process).

Stakeholders - A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.

Storm water management – Strategies implemented to control the surface flow of storm water such that erosion, sedimentation and pollution of surface and ground water resources in the immediate and surrounding environments are mitigated. This is specifically important during the construction and decommissioning phases of a project.

Sustainable development - Development that is planned to meet the needs of present and future generations, e.g. the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.

Sustainability - Being able to meet the needs of present and future resources.

Waste Management – Classifying, recycling, treatment and disposal of waste generated during construction and decommissioning activities.

Wetlands - An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types e.g. vleis, swamps.

Zoning - The control of land use by only allowing specific type development in fixed areas or zones

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SECTION 1 - INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION AND BACKGROUND

Rhinos Asset Holdings (Pty) Ltd as proponent of the proposed development will use this Planning, Construction and Operational Phase Environmental Management Programme (EMPr) as a tool in managing the impacts of the proposed High Performance Sport Centre (HPSC), after environmental approval from the Department of Environmental Affairs and Development Planning (DEA&DP) in terms of the **NEW** Environmental Impact Assessment Regulations (GN R. No. 983, GN R. No. 984 and GN R. No. 985 [4 December 2014], as amended 07 April 2017) under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), have been obtained.

This document is based on the EMPr Guideline provided by DEA&DP which was compiled in accordance with the Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development (DEAT, 1992). IEM is a key instrument of the National Environmental Management Act [NEMA] (Act No. 107 of 1998). NEMA promotes the integrated environmental management of activities that may have a significant effect on the environment, while IEM prescribes a methodology for ensuring that environmental management principles are fully integrated into all stages of the development process. It advocates the use of several environmental and management tools that are appropriate for the various levels of decision-making. One such tool is an Environmental Management Programme (EMPr).

The IEM guidelines intend encouraging a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The basic principles underpinning IEM are that there be:

- informed decision-making;
- accountability for information on which decisions are taken;
- accountability for decisions taken;
- a broad meaning given to the term environment (i.e. one that includes physical, biological, social, economic, cultural, historical and political components);
- an open, participatory approach in the planning of proposals;
- consultation with interested and affected parties;
- due consideration of alternative options;
- an attempt to mitigate negative impacts and enhance positive aspects of proposals;
- an attempt to ensure that the ‘social costs’ of development proposals (those borne by society, rather than the developers) be outweighed by the ‘social benefits’ (benefits to society as a result of the actions of the developers);
- democratic regards for individual rights and obligations;

- compliance with these principles during all stages of the planning, implementation and decommissioning of the proposals (i.e. from 'cradle to grave'), and
- The opportunity for public and specialist input in the decision-making process.
  These principles are in line with NEMA, which has repealed a number of the provisions of the Environment Conservation Act, 1989 [ECA] (Act No. 73 of 1989), and is focussed primarily on co-operative governance, public participation and sustainable development. The Environmental Impact Assessment Regulations that took effect in December 2014, as amended April 2017, regulate the procedures and criteria for the submission, processing, consideration and decision on applications for environmental authorisation of listed activities.

1.2 SCOPE AND TERMS OF REFERENCE

The general principles contained within this document apply to all **PRE-CONSTRUCTION, CONSTRUCTION AND OPERATIONAL** activities.
Principles of this EMPr.
This EMPr is compiled using the following concepts and implementation requirements so that the higher principles of sustainable development are realised:

- ***Continuous improvement***. The project proponent (or implementing organisation) must be committed to review and to continually improve environmental management, with the objective of improving overall environmental performance.
- ***Broad level of commitment***. A broad level of commitment will be required from all levels of management as well as the workforce in order for the development and implementation of this EMPr to be successful and effective.
- ***Flexible and responsive***. The implementation of the EMPr must be responsive to new and changing circumstances, i.e. rapid short-term responses to problems or incidents. The EMPr is a dynamic "living" document and thus regular planned review and revision of the EMP must be carried out.
- ***Integration across operations***. This EMPr is integrated across existing line functions and operational units such as health, safety and environmental departments in a company/project. This is done to change the redundant mindset of seeing environmental management as a single domain unit.
- ***Legislation***. It is understood that any development project during its construction phase is a dynamic activity within a dynamic environment. The Developer, Engineer, Contractor and sub-contractor must therefore be aware that certain activities conducted during construction may require further licensing or environmental approval, e.g. river or stream diversions, bulk fuel storage, waste disposal, etc. The Contractor must consult the RE, EO and ECO on a regular basis in this regard.

SECTION 2 – SITE SPECIFIC INFORMATION

2.1 PROPOSED ACTIVITY AND LOCAL CONTEXT

Background

The proposed development site is located adjacent to the N2 highway in the City of Cape Town, Stellenbosch Division. Mondeor Road is located to the immediate South of the property, while Dinsley Walk Road is located to the immediate West and North. Monkey Town is located on the eastern boundary of the subject property. The total development area is approximately 8 Hectares in total.

Guillaume Nel Environmental Consultants (GNEC) has been appointed by Rhinos Asset Holdings (Pty) Ltd (applicant) to facilitate the Environmental Impact Assessment (EIA) process for the proposed High-Performance Sport Centre and Sports Academy on Portion 28 (a Portion of Portion 15) of the Farm Gustrouw No 918, City of Cape Town and Portion 63 (a Portion of Portion 25) of the Farm Gustrouw No 918, City of Cape Town, Division Stellenbosch, Western Cape.

The applicant is applying to develop a High-Performance Sport Centre and Sports Academy on Portion 28 (a Portion of Portion 15) and Portion 63 of the Farm Gustrouw No 918, City of Cape Town, Division Stellenbosch, Western Cape. (herewith referred to as the proposed development site/subject property).

The surrounding properties have been altered from its natural state and is no longer used for rural activities. Instead, the properties are used for industrial, tourism, educational and recreational purposes. The proposed development will therefore be in line with the surrounding properties. The character of the area can be described as mixed-use with Mondeor School and a nursery that can be found to the west of Dinsley Road. Recent approvals for a film studio, training facilities and a restaurant were given on properties to the west of Dinsley Road. Monkey Town can be found to the west of the site. Adjacent and to the west of Monkey Town a training facility can be found.

A few rural smallholdings can be found mostly adjacent to the railway line. To the north of the railway line approval was given for a rezoning to Subdivisional area to allow for the following zonings Single Residential, General Residential and Local Business 2. To the south of the N2 industrial uses can be found. The City of Cape Town has recently advertised the Vlakteplaas development proposing 4500 housing opportunities, to the south of the N2 and east of Broadlands Road.

At present, Portion 28 of Farm Gustrouw No 918, is used as a homestead, with the majority of the property being utilised for equestrian purposes. There are also numerous structures associated with these activities located on the property. It should be noted that all on-site structures will be demolished.

The entirety of Portion 63 of Farm Gustrouw No 918 is vacant.

It has been confirmed by the City of Cape Town: Urban Planning & Design Department that the proposed development site falls within the mixed-use intensification area as well as an area identified for tourism development intensification (Helderberg DSDF, 2023).

Proposed Development

The proposed development will entail the construction of a High-Performance Sport Centre and Sports Centre on Portion 28 (a Portion of a Portion 15) and Portion 63 (a Portion of a Portion 25) of Farm 918 Gustrouw, in the City of Cape Town, Stellenbosch Division, Western Cape.

It should be noted that the applicant wishes to develop a High-Performance Sports Centre (HPSC) over the entire extent of the subject property.

The following components will be located on the subject property:

- High-performance centre- This is seen as one of the primary uses of the proposed development and will be specifically designed for international sporting teams to have a secure environment to do seasonal training. This centre will include an indoor running track, gym, place of refreshment, boardroom, reception; and three offices.
- Sport Medical Centre- This centre is situated to the southwest of the High- Performance Centre and consists of three consultation rooms, a room for physiotherapy, a room for biokinetics, a room for medical testing, rehabilitation room, office, staff room and ablutions.
- The Clubhouse- situated north of the A field and will consist of a cafeteria, shop, kitchen, coffee shop.
- Athlete Accommodation- accommodation will be provided on the northern boundary (four clusters) and on the western boundary (three clusters). The accommodation will be in the form of a “living Pod” pre-manufactured living unit. Each cluster will have eight pods designed around a central courtyard. Each pod represents a double storey unit which are able to accommodate 5 people max. The total amount of people than can be accommodated within the pods are 280.
- Training Fields- Three training field will cover the majority of portion 28. Field A will be located in the middle of the three fields, adjacent to the High-performance centre (west) and the clubhouse (north). Field A will be a grassed field. Field B will be located Northeast of Field A and be an artificial lawn. Filed C will be located Southwest of Field A and will also be artificial lawn.
- Parking area- the majority of portion 63 of the proposed development will be used for parking. Both smaller vehicles and busses will be accommodated. This will include shaded ports with PV solar pannels. The total amount of energy that will be generated by the renewable recourse is 0.371MWp (megawatts) in total. The PV Planes will cover an area of 1786m².
- Two small training fields- these fields on portion 63 will be grassed fields.
- Skills development workshop building.

- Access control building containing a laundry, offices, tuck-shop, storage and staff ablutions.

Internal roads, stormwater infrastructure and a package plant (discussed below) will also form part of the proposed development.

Field A, B and C will have floodlights of approximately 15m in height. The 15m post-mounted floodlights may be visible through breaks in the tall vegetation but will generally not protrude as local vegetation is approximately 15m tall on average (Smit, 2023).

A total of two access points to the development is proposed. The main entrance will span from Mondeor Road, which is located adjacent and east of the site (Portion 63). A second separate access is proposed from Mondeor Road which would serve the workshop/skill training facility only. This access is located ± 35 metres from the main access on Mondeor Road. The proposed development site is preferred due to it being easily accessible from the N2 highway. A total of 172 internal parking bays and 7 bus bays will be provided for the proposed development. An emergency exit for the proposed development span from Dinsley Walk Road.

To accommodate future background traffic, the T2/Broadlands Road intersection be upgraded as specified in the Traffic Impact Assessment. The surfacing of the existing gravel section of Mondeor Road (from the 90-degree-bend to the proposed development-access) should also be considered.

Additionally, note should be made that a noise barrier will be constructed between the proposed development and the adjacent Monkey Town. The noise barrier will be a pre-cast wall with columns, 5m high stepped to follow natural ground level. This will mitigate the visual and noise impact on the adjacent property. This barrier will be constructed prior to major earthworks being undertaken for Field C.

The proposed 5m high boundary wall will be along the length of Portion 28 and Monkey Town boundary and will be approximately 213 meters in length.

This mitigation is however relevant to the primates being located on the property adjacent to the proposed development site. Additional construction methodology mitigations will be implemented by the applicant to further reduce the impacts on the adjacent Monkey Town. Please refer to Appendix S (also included in the EMPr, in Subsection 7).

It is also proposed that a package type Wastewater Treatment Plant (WWTP) be constructed to service the proposed development within the study area. The WWTP will be located on the south-west boundary of the site. The package plant will have a capacity of 120 kl/ day. All treated effluent will be used for irrigation purposes.

The package plant will be fitted with an emergency overflow connection to the existing municipal system located in Mondeor Road (UDS Africa, 2023). An approval for the SWMP has been obtained form the CoCT.

The treated effluent from the package plant will be discharged into an irrigation pond located on the southwestern corner of the site, from where it will be distributed to the landscaping areas throughout the development. Effluent will be pumped from the package plant into the irrigation network. The irrigation pond has a storage capacity of 48 hours.

The estimated peak summer month daily irrigation demand is sitting at 112kl/ day as calculated by Viridian Consulting Landscape Architects. The excess effluent will discharge into the on-site attenuation pond located further south once the maximum capacity (178 m3) of the irrigation pond has been reached.

The package plant will be fitted with an emergency overflow connection to the existing municipal system located in Mondeor Road. The treated effluent will pass through a reed bed system to undergo further treatment before being released into the stormwater attenuation facility. The reed bed will be constructed on a clay base filled with 19mm stone. The bed will consist of stones that have been ground and compromises of a mixture of similar sized bricks, ceramics, marble and granite. The reed bed will be planted with indigenous wetland plants. The reed bed serves the purpose to polish the treated effluent.

It should however be noted that treated effluent will be used for irrigation purposes. In the event that excess treated effluent is produced by the proposed development, it will be released into the stormwater system. The Stormwater Management Plan (UDS, 2023) has been approved by the CoCT. Please refer to Appendix Q. The approved SWMP specifies that the treated effluent will be released into stormwater system, if required.

Please refer to the civil engineering services report (UDS Africa, 2023) for detailed information of the package plant design. The treated effluent water will meet the requirements of the Department of Water and Sanitation general limit, which is deemed safe to release into the environment.

Ongoing maintenance of the attenuation pond will be maintained by the developer. Ultimately, the CoCT will take over the responsibility of the stormwater regional pond.

Botanical

Vegetation on the site is mapped to have historically supported Swartland Shale Renosterveld (FRs9). Swartland Shale Renosterveld is classified as a Critically Endangered vegetation type according to Section 52 of the National Environmental Management: Biodiversity Act (NEMBA) List of Ecosystems that are Threatened and in Need of Protection, 2022.

Swartland Shale Renosterveld typically occurs on moderately undulating plains and valleys, supporting low to moderately tall shrublands and low open shrublands dominated by renosterbos (Mucina & Rutherford, 2006). The vegetation type is also listed as Critically Endangered in the Western Cape State of Biodiversity Report (CapeNature 2017) and the National Biodiversity Assessment 2018 (SANBI 2019).

Note should be made that due to Portion 28 currently being used for equestrian purpose, the entirety of the site has been altered from its natural state.

Portion 63 has historically been transformed from its natural state, with the subject property no longer supporting this vegetation type. Portion 63 is vegetated with graminoid species (Cynodon dactylon and Pennisetum clandestinum) and has historically been used as an informal sports field.

Mr. Greg Nicolson from Capensis was appointed to conduct a Botanical Impact Assessment (updated 2023) to assess if any natural vegetation is present on the proposed development site and if the proposed development will impact on any natural vegetation.

The impact assessment found that the subject property has historically been highly degraded and transformed by agricultural activities. A small area (approximately 100m2) adjacent to the dam (Portion 28) contains a few renosterveld species. The entirety of the proposed development site has been excluded from the City of Cape Town BioNet and is therefore not seen as a conservation priority. This statement is supported by the conducted botanical assessment. Rehabilitation potential for the proposed development site is regarded as low.

Conclusion is made by the report that the proposed development is supported from a botanical perspective.

Additionally, three (3) Outeniqua yellowwood trees (Afrocarpus falcatus) are present on the southern boundary of the subject property. At this point in time, the three Outeniqua Yellowwood trees will be retained and not impacted by the proposed development.

In the event that the trees are removed, an Application under Section 15(1) of the National Forest Act, 1998, as amended, will be made to obtain a licence for the removal of the trees.

Freshwater

FEN Consulting (Pty) Ltd was appointed to conduct a Freshwater Ecological Verification Assessment of the proposed development site.

According to the report, surface water runoff from the study area and adjacent to Dinsley Walk Road, conveys through excavated stormwater channels, enter and reside in the artificial impound. In addition, no facultative vegetation species were noted surrounding the impoundment. Note should be made that no watercourses are located on the proposed development site.

It is also proposed that a package type Wate Water Treatment Plant (WWTP) be constructed on the proposed development site. Application in terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) will therefore be made to the Department of Water and Sanitation (DWS).

The Freshwater report has included the hydrogeological assessment and geotechnical investigation of the proposed development site, with emphasis on the proposed package plant on groundwater and any other possible impacts.

The report also takes into consideration the design and locality of the proposed package plant as indicated in the UDS Africa services report.

The DEA Screening tool Report (2020) indicated the study area to be of high aquatic biodiversity importance, this is likely due to the Sir Lowry's River located approximately 700 m south-east of the study area and it being located in a strategic water source area. Since no watercourses were observed during the site visit, the sensitivity of the site, from aquatic biodiversity perspective can be considered Low.

The potential for the proposed package plant to contaminate groundwater is considered to be low - due to the clay underlying the proposed package plant.

The report therefore confirms that should the recommended mitigation measures as per the hydrogeological assessment (GEOSS, 2022 & 2023) be implemented, the risk of contamination of any water resources are deemed low.

Noise Impact Assessment

Mr. Brett Williams from Safetech was appointed to conduct a Noise Impact Assessment (NIA) for the proposed development (2023).

Construction Phase

The expected noise levels during construction phase have been modelled in the report (Table 11 of the NIA). The results indicate that no receptors will experience noise levels above the SANS 10103:2008 daytime rating limits as most of the noise will be contained on site.

The modelling indicates that the receptors at Monkey Town will be impacted by the construction noise. The receptors at the boundary of the proposed development and Monkey Town, where the chimpanzee enclosure is located, will be the most affected. This is due to the short distance from the receptors to the location of construction.

It is unlikely that the construction noise will impact significantly on the noise sensitive areas, other than Monkey Town, for a temporary period (Williams, 2023). Post-mitigation, the noise impact associated with construction activities are predicted to be of low significance for the human receptors.

It is recommended that ambient noise (during the construction phase) around the project and at the closest receptors be monitored during the construction phase.

Important mitigations to note that will be implemented by the proposed development (as proposed by the NIA), is the erection of a noise barrier on the western fence of the animal (Monkey Town) enclosures.

The noise barrier/wall on the western fence of Monkey Town will be 5 meter in height. This mitigation is however only applicable if the Monkeys are still located adjacent to the proposed development site during the construction period.

Additionally, a Primate Specialist will be appointed to monitor the animal's behaviour during construction near the Monkey Town boundary. The Primate Specialist to determine if extra mitigation measures are required. This mitigation is subject to the primates being located adjacent to the proposed development site.

An environmental noise survey should be conducted annually up until the development is complete. This will enable the Developer to determine when, and if, traffic calming measures are required.

Operational Phase

Traffic Noise

According to the findings of the monitoring results, the SANS 10103:2008 daytime rating limit is not exceeded during the daytime as a result of traffic along the Mondeor Road and Mondeor Road Extension. These results do not include traffic along the T2(N2) road adjacent to Mondeor Road.

The predicted 2028 noise levels, when considering the development's contribution to traffic increases, may be considered a "noise nuisance". This disturbance may however be offset due to the proximity of the site to the N2 road that has higher traffic volumes and thus higher noise levels.

When considering the Monkey Town Wildlife Centre, it is expected that these receptors will not be impacted by an increase in traffic as the access points for the proposed development are located to the north-west of Monkey Town (approximately 75m). Due to the N2 road being closer (approximately 30m) and having a higher volume of traffic, it is expected that the noise from the N2 road would impact these receptors as opposed to noise from the proposed development.

Sporting Activity Noise

The primary use of the proposed fields will be for practising. Two noise source types are associated with the use of the fields- Noise arising from the use of a playing field and referee blowing his whistle.

The noise generated by the referee/coach blowing a whistle is much higher than the general noise expected on the training fields. However, the noise will be short during the sporting activities. The sporting whistle now is of very short duration and sporadic, as no public matches will occur. The noise generated by the players is not expected to be significant.

The NIA has noted that the new layout for the development proposal will not result in the fields being excavated as previously proposed.

It is recommended by the specialist that a 5m noise barrier be placed between the proposed development and the Monkey Town western boundary. This will mitigate the noise impacts on the primates housed on the Western Boundary of the Monkey Town Property. This mitigation is subject to the primates being located adjacent to the proposed development site at the time of construction.

Once off (including at least 2 nights) monitoring at community receptors during the beginning of the operational phase is recommended to be conducted to determine if a noise disturbance is present. If so, consideration can be given to further mitigation measures such as noise sensitivity training for coaches who blow whistles etc.

The results of the noise impact assessment of the proposed HPSC indicate that the construction noise and operational noise will be of short duration and low impact.

The mitigations proposed by the NIA will be implemented by the proposed development.

Visual Impact Assessment

Filia Visual (Pty) Ltd was appointed to conduct a Visual Impact Assessment (VIA) and report on the impacts the proposed development on the visual and scenic environment, with specific reference to heritage resources in the form of the cultural landscape.

It has been determined by the VIA that the proposed development will have a Low to Moderate impact on its surroundings. Numerous mitigation measures and management actions are proposed by the report which, if successfully implemented, will reduce some important aspects of the

proposed development to a Low significance. Note should however be made that the overall impact will remain Moderate.

Subject to the successful implementation of the conditions and mitigation measures, the proposed development application can be supported for a visual perspective. All conditions and mitigation measures as proposed by the report has been included in the legally binding Environmental Management Programme (EMPr).

As per the findings included above (based on the previous HPSC layout), Filia Visual was appointed to investigate the potential visual & aesthetic consequences of the proposed new layout; assess the revised development proposal for visual impact and determine if and how the new proposal would influence the findings of the previous report.

The 2021 VIA has been referenced within the supplementary VIA (SVIA) in cases where the findings of that report remain unchanged or continue to describe the status quo (or the findings of this investigation) sufficiently.

With the addition of Portion 63 within the development proposal, the proposed development reaches further into the areas east and into the Broadlands Cultural Landscape than the previous property boundary did. Here to the east, land use becomes more agricultural and rural in character, moving towards Sir Lowry's Pass and the undeveloped mountain slopes.

The findings of the Site and Receiving Environment Study remain largely unchanged (Filia Visual, 2023). Updated viewsheds have also been included in the (SVIA, 2023) for the new development proposal.

The revised proposal has increased Relative Compatibility when compared to that of the 2021 proposal.

The severity of the visual impact of the proposed development will be Moderate to Low overall.

1. The proposed development will result in the partial loss of or alteration to key elements/features/characteristics of the baseline (such as the removal of significant vegetation, increase in amount and intensity of light sources at night from time to time, and the change in land use from rural smallholding/agricultural to institutional/sporting) (Moderate severity);
2. The proposed development involves the introduction of elements that may be prominent (such as the light generated by the 15m tall floodlights, and perimeter walls with a suburban character, indicating Moderate severity), but may not be considered to be uncharacteristic when set within the attributes of the receiving landscape (this indicates Low severity);
3. Overall, Moderate to Low scenic quality impacts would result.

Although the methodology indicates that the proposed development will also result in Moderate to Low scenic quality impacts overall, it should be noted that the overall severity of visual impact will be reduced, despite not falling into a lower classification.

Despite the fact that the proposed development is a much smaller facility, highly visible elements like the floodlights, and some aspects of the new proposal (such as the removal of existing

vegetation, visually impermeable walls, omission of verge landscaping and inclusion of Portion 63 - which is more visible from the cultural landscape to the east) have bearing on the overall visual impact despite the overall reduction in scale.

Primatological Assessment

Fabien Génin and Judith C. Masters were commissioned to assess the possible impacts with respect to construction and operational noise, air quality during construction and operational illumination and to indicate whether the change to the proposed development addresses the potential impacts on the primates located on the adjacent Monkey Town.

Since the undertaking of the above-mentioned primatology assessment by Fabien Génin and Judith C. Masters, the scope of the proposed development has been significantly reduced. Mr. Curswan Andrews was therefore appointed to assess the new SDP with respect to the noise generated and the potential visual impact of the proposed development on the primates located on the adjacent Monkey Town.

The report has noted that during the construction phase, the impact on the primates will be minimal at best, and considering Monkey Town and the type of activities and events they host, the primates are most likely used to crowds and noise, albeit at a tolerable level.

The frequent exposure has probably led to some habituation and adaptation over time; therefore, the impact of the noise would be considered as low impact. However, a monitoring process needs to be put in place to ensure the welfare of the animals is not compromised. A behavioural monitoring sheet should be developed to better understand any change during the construction phase.

Based on the findings of the behavioural monitoring, additional mitigations (if needed) will be provided by the primatologist.

Any potential noise impact can be remedied with noise barriers. However, following the site visit of Monkey Town on the 28th of September 2023 by Mr. Andrews, the fortification or modification of the cages, considering the current design/configuration, is not impractical. The planting of trees would aid in the distortion of sound as well, which has been proposed by the Landscaping Master Plan (Viridian 2023).

Careful consideration should be given to the chimpanzees that are closest to the noise. The developer has therefore taken additional measures for the construction phase to mitigate the impacts during the construction phase. This includes adjusting the construction methodology. Please refer to Appendix S for the Construction methodology that will be implemented inter alia to further mitigate the impacts on Monkey Town.

The erection of floodlights could potentially be disruptive (in terms of sleeping patterns, activity, feeding behaviour) considering the primate species are diurnal and therefore this could be mitigated.

The floodlights proposed by the development will only be used during specific times during the day and will not be used after 20:00pm. The floodlights will therefore not be used late at night and interfere with the sleeping patters of the primates. It has also been indicated by Monkey Town that the primates (including the Chimpanzees) do not sleep in the trees, the primates sleep in enclosures located within their cages.

The mitigations proposed by the relevant specialist will ensure that the anticipated impacts are managed. However, as mentioned, the proposed development will only be a training facility and operate until 20:00 pm. This means that floodlights will rarely be used in the summer season when the sun sets late in the evening. The floodlights will be used in the winter mostly during the hours of 18:00 and 20:00 (depending on weather conditions).

Again, behavioural monitoring would be beneficial to ascertain if any of the animals experience any distress. It should be noted that practise sessions, if undertaken in the evening, will not transpire past 20:00pm.

Timing of the construction is crucial as it may exacerbate any impact on the animals. In this case, it will be during the day and that counters some adversity. The centre will be operational, and distraction will be afforded to the animals, though any initial fearfulness could be expected but on a minimal scale.

The report notes that none of the primates are from a free-ranging environment, exposure to anthropogenic land-and-soundscapes have predisposed the primates to various, tolerable levels of noise, however, care should be taken to monitor any behavioural changes that could potentially lead to any physiological changes and ultimately impact animal welfare. Noise monitoring will be done in accordance with the recommendation as proposed by the NIA (2023).

In terms of the noise sensitive areas and mitigating strategies, this requires species-specific intervention and thus the behavioural response, if any.

Additionally, the noise barriers proposed by the NIA (2023) would be beneficial between the subject site and Monkey Town. This mitigation is however relevant to the primates being located on the property adjacent to the proposed development site.

Furthermore, where necessary, signposts can be put up to limit visitor noise around the species that are more prone to disruptive low frequency sounds for the duration of the construction. The operational phase and activities limited to training, should pose no threat to the animals that have been exposed to tolerable levels of noise.

It is recommended by the Primatologist that based on the findings of the monitoring of the primates and the changes in the animal's behaviour (during both construction and operational phase), intervention can be undertaken to mitigate the impacts, if any.

It was indicated by the adjacent Monkey Town that the proposed development of a stadium "will compromise the wellbeing of the primates of Monkey Town".

In reducing the scale of the development and addressing, to some extent, the concerns of the adjacent Monkey Town, the impacts of the proposed development will be reduced. The use of the proposed development was also adjusted to training purposes only.

Dr. Andrews conducted a site visit of the Monkey Town facility on the 28th of September 2023. The visit entailed a round table discussion and also a walkthrough of the facility.

An addendum to the primatology assessment has been provided by Dr. Andrews following the meeting/ site visit was held at Monkey Town on the 28th of September 2023. Please refer to Appendix G.

It was stated by the owner of Money Town during the meeting that the Chimpanzees are the most sensitive primates on-site. The observation was however made that the enclosure of the Chimpanzees is located on an area of Money Town which is exposed to extensive surrounding noise impacts. As indicated in the addendum provided by Dr. Andrews, the Chimpanzees enclosure is located on the most southern portion of Money Town which is within close proximity to the N2/T2 and also the industrial developments within the area.

As stated in the primatologist addendum (2023):

It became apparent that the most-sensitive primates to noise, in this case the trio of chimpanzees (Pan troglodytes), are in very close proximity to the busy N2. The neighbouring gibbons (Hylobates lar) and tamarins (Saguinus spp.) have reduced sensitivity and therefore are of limited, if, any concern. The current arrangement of cages and consideration for the placement of new primate arrivals [temporary or permanent], happens arbitrarily without any consideration for current noise levels, if any, from surrounding sources.

The Chimpanzees are therefore highly exposed to noise impacts of the surrounding land uses.

Nevertheless, due to the construction noise impacts on the Chimpanzees being a concern for Monkey Town, the applicant has adapted a construction methodology and phasing provide mitigating measures to limit and/or reduce any construction noise, specifically during the bulk earthworks for Field C. This includes off-site manufacturing of walls and buildings, prefab housing and minimal on-site construction along with reduced noise from machinery.

Heritage Impact Assessment

A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape in July of 2020. Heritage Western Cape's response was that "since there is reason to believe that the proposed development will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of section 38(3) of the NHRA be submitted".

Ms. Cindy Postlethwayt was subsequently appointed to conduct a Heritage Impact Assessment Proposed development site.

It was found that the impacts upon the identified heritage resources have been limited to visual impacts, and these are generally identified as being of low to moderate significance. The development is therefore supported. Mitigations are also therefore appropriately limited to minimising these visual impacts and are proposed in relation to general outdoor and sports lighting facilities; roof material and façade colouring; adherence to the Landscape Master Plan and Tree Management Plan, fencing and parking. Additionally, note should be made that no structures of heritage value was found on-site.

It is concluded by the HIA that the proposed development site and its surroundings have a low sensitivity to potential impacts on heritage resources. A Heritage Impact Assessment has been conducted and an application process in terms of the National Heritage Resource Act (Act No. 25 of 1999) was undertaken.

Final comment was provided by HWC on the HIA on the 22nd of September 2021. The comment stated that: “The Committee had no objection to the development proposal as no apparent heritage resources will be impacted”.

Subsequent to the ROD being provided by HWC, the SDP has been amended and an additional property, Portion 63 of Farm 918, has been included in the development site.

A supplementary report to the original HIA has therefore been compiled by Ms. Postlethwayt and considers an updated policy and contextual environment; assesses the heritage and visual significance of the additional property; considers the implications for revised indicators; describes the revisions and assesses them for potential heritage (and related visual) impacts relative to the original.

The report has also taken into account the supplementary VIA (SVIA) report and the new Landscaping Master Plan.

It is important to note that since the undertaking of the HIA (2021), the City of Cape Town District Spatial Development Frameworks (DSDF) has been updated. However, no substantive change with respect of the proposed development site has been made within the DSDF.

There is no additional heritage association of significance with the expansion of the development site by the addition of Portion 63.

The supplementary Heritage Impact Assessment (SHIA) found that with regard to palaeontological significance, the area is considered to be of low significance. The landscape of the study area has been subject to substantial surface transformation and there are no obvious indicators for further assessment.

The SHIA found that the proposed development site has no inherent heritage constraints and heritage related contextual informants are limited to the protection of the heritage significance of the building older than 60 years on the adjoining Monkey Town property; of the Broadlands homestead; the views across the more intact scenic and agricultural landscape north of the railway line and south of Old Sir Lowry’s Pass Road; and of the Scenic Routes N2 and Old Sir Lowry’s Pass Road.

The potential for all these impacts has been addressed in the SVIA, the SVIA Impact Assessment tables are therefore the only impact assessment tables that are relevant.

The SHIA report states that the expanded property is regarded as Not Conservation Worthy, nor is it situated in a declared or proposed Heritage Protection Overlay.

HWC’s IACom meeting has held on the 18th of October 2023. HWC has endorsed the recommendations of the integrated HIA in full. The updated HIA has therefore been approved by HWC. Please refer to Appendix L for the ROD from HWC.

Groundwater Impact Assessment

GEOSS was appointed to conduct a groundwater impact assessment of a proposed site. The report takes into consideration the wastewater treatment system (package plant) proposed as part of the development.

The subject property overlies clay which is weathered from the Malmesbury Group. The aquifer in the area is classified as a “fractured” aquifer underlying the weathered clay.

Stormwater and wastewater during the construction phase on exposed surfaces could impact soils and groundwater. Furthermore, the groundwater level on the site is between 4 mbgl to 13 mbgl which means there is a potential for intersecting groundwater when excavations are made for the proposed development. No underground parking is proposed for the proposed development.

Dewatering would potentially not be required during the construction phase, however if groundwater is intersected then activities within the excavation represent a possible source of contamination to soil and groundwater.

It must be noted that based on the geotechnical investigation (GEOSS, 2021) it was seen that the soil underlying the site is mainly made up of clay which will act as a layer of protection since contaminates are unlikely to move through the clay which reduces the risk of groundwater contamination.

Based on the information available the bedrock depth is between approximately 4 and 9 mbgl (GEOSS, 2022). The proposed development will not result in excavation that will intersect with the bedrock.

However, if cut is required on the site (i.e., excavation depth) extends to depths which intersect preferential flow paths within the unweathered Malmesbury bedrock, the aquifer may not have adequate protection from the clayey material. Therefore, where such a case is presented, it would be prudent to consider a barrier system/membrane at the base of the excavation where possible. The aim being to limit the ingress of contaminants into the groundwater hosted in the underlying fractured aquifer.

In the event that extensive excavation is required for the proposed development that exceeds to 5m below ground level, excavations should be inspected by an appropriately qualified individual to ensure no contamination of the groundwater takes place as a result of bedrock exposure, since there is a fractured aquifer beneath the site. Despite this, the susceptibility of the aquifer to contamination from anthropogenic activities remains low.

The potential for the proposed package plant to contaminate groundwater is considered to be low.

Although the risk related to the proposed facility is low, due to there being groundwater users in the surrounding area, it is important that mitigation measures be implemented to ensure that no activities impact on the aquifer. The mitigations as proposed by the report will be implemented by the proposed development.

The Groundwater Impact Assessment (2022) undertaken for the proposed development site is still applicable to the proposed development, however, an addendum has been added to the report due to the amended made to the SDP and the addition of Portion 63 to the proposed development.

Similar to Portion 28 of Farm No. 918, the relief of Portion 63 gently slopes from northeast to southwest in the range of 3 – 4 metres. Little to no change in relief is noted in the south easterly to north westerly direction. The same hydrogeological conditions are expected on Portion 63.

Groundwater quality ranges from good to marginal as electrical conductivity of the groundwater is mapped to be in the range of 70 – 300 mS/m. The property has a low/medium vulnerability to surface based contaminants.

The available groundwater resources across the properties are not sufficient for the demand. Consequently, it is proposed that the effluent produced on site be treated to standard and be used for irrigation of the sports fields and embankments. Rain harvesting is also proposed for the site. Based on this, new risks are associated during the operational phase of the development, i.e., Over-abstraction of groundwater, groundwater quality deterioration as a result of over-abstraction, and groundwater quality deterioration as a result of irrigation with treated effluent.

The mitigation as included in the groundwater impact assessment addendum will be included by the proposed development.

The addendum (GEOSS, 2023) concludes that with the additional identified risks associated with the SDP amendments made to the proposed development, the geology and hydrogeology datasets indicate that due to the nature of the aquifer, the overall impact of the development is the same as previously stated in the GEOSS reports (2022).

The overall impact of the development to groundwater resources with mitigation measures in place, will be low.

Geotechnical Investigation

GEOSS was appointed to conduct a geotechnical investigation of the proposed site. The purpose of the report was to inform and guide the proposed development structures from a geotechnical design perspective.

The recommendation proposed by the Geotechnical report has been taken into account and included in the bulk services report.

The report states that conventional strip footings should be sufficient to support single story masonry structures with appropriate precautionary measures.

DPSH Testing Report

Large structures were proposed as part of the previous development proposal. Therefore, in depth assessment were undertaken to determine whether the site is Geotechnically suitable for the construction of proposal. This included DPSH testing to be conducted. The current proposal, however, does not include large structures as per the previous proposal.

GEOSS was appointed to complete a series of DPSH tests, to bolster geotechnical findings of the geotechnical investigation conducted at the proposed High-Performance Sports Facility.

The aim of the geotechnical investigation was to establish the depth to rock and founding conditions across the site.

The testing found that the material beneath the site is variable in consistency with significant scatter, ranging from loose in the upper 0.5 mbgl (assuming mostly cohesionless materials) increasing to (mostly) very stiff at approximately 1.0 mbgl (assuming mostly cohesive materials). Between 1.0 and 2.0 mbgl the material consistency remains very stiff (assuming most cohesive materials). From 2.0 mbgl, the consistency increases from very stiff cohesive soil to very soft rock. Refusal was encountered at various depths across the site between 2.6 and 11.3 mbgl. It is expected that, below refusal depth, the rock consistency will increase with depth.

The findings of the DPSH testing have also been used to inform the Groundwater Assessment (2022 & 2023).

Traffic Impact Assessment

UDS Africa was appointed to prepare a Traffic Impact Assessment (TIA) for the proposed sports centre development (2023).

The total the total trips potentially added to the road network by the proposed development, is expected in the order of 36 AM peak hour trips (24 in, 12 out) and 70 PM peak hour trips (35 in, 35 out).

The access to the proposed development is situated ± 250 metres from the 90-degree-bend in Mondeor Road. The proposed access will consist of one lane per direction, a total width of ± 6 metres, with an access gate setback ± 10 metres from the edge of Mondeor Road extension, and bellmouth radii of ± 10 metres, all of which is considered sufficient for the proposed development. The gates are expected to be open during operating hours.

A second separate, access which would serve the 12 parking bays provided for the workshop/skill training facility, is indicated ± 35 metres from the main access. The said second access measures ± 5 metres in width, which is considered sufficient to accommodate the traffic that it is expected to serve.

On-site parking will be provided in three parking area pockets on the subject property. These contain 87 bays (parking area to the right of the access) plus 73 bays (parking area to the left of the access) plus 12 bays (separate parking area at the workshop/skills training facility), i.e., total 172 vehicular parking bays. An additional 7 bus bays are also provided.

Based on the potential parking requirement, the number of parking bays provided are considered sufficient.

All bays provided are proposed with dimensions in line with normal parking standards (i.e. 2,5 by 5,0 metre bays, 7,5 metre isle widths), which are considered acceptable. The bus bays indicated measure ± 12,5 by 4 metres, which should be sufficient to accommodate the buses expected on-site.

Through the implementation of the recommendations as set out by the TIA, the surrounding road infrastructure will be able to accommodate the proposed development.

Bulk Services

UDS Africa was appointed to conduct a Bulk Civil Engineering Services Report for the proposed High-Performance Sport Centre and Rugby Academy. The report sets out the design for the proposed internal civil engineering infrastructure for the proposed development.

Water Demand

The total AADD for the entirety of the proposed development is calculated at 98 488ℓ/day, with the peak Water Demand being calculated at 393 952ℓ/day.

At present, there are no water infrastructure within the immediate vicinity of the proposed development site. The masterplan of the area shows that there will be a need for at least a 200mm diameter water main to be installed adjacent to Sir Lowry's Pass Road to supply future developments to the south of Sir Lowry Pass Road (UDS Africa, 2023) (indicated in red in figure 1).

Two water pipeline delineations and connection points are included in this application. The proposed development will connect to the most feasible connection point at the time of construction of the proposed development. Application is therefore made for both connection point options.

One option is for the proposed development to connect to the 200mm dimeter water main to be installed adjacent to Sir Lowry's Pass Road via a 160mm pipe of approximately 600m in length (delineation indicated in pink in Figure 1). This pipeline will span from Sir Lowry's Pass Road, turning in a southerly direction between 11/ 918, 32/ 918 and 14/ 918. The pipe would be extended in the Mondeor Road reserve up to the property boundary.

Figure 1: Proposed preferred and alternative pipeline routes (UDS, 2023).

Sewer Demand

The nearest sewer connection is situated along the Mondeor Road via a 297 mm diameter collector sewer which feeds into a 416 mm diameter bulk sewer located West of the Nomzamo informal settlement. A pipeline of approximately 10m being 160mm in diameter will be constructed to connect to the existing sewer connection.

However, due to the capacity shortage currently being experienced at the Macassar Wastewater Treatment Works, it is proposed that the development is serviced with a package plant. The package plant will be fitted with an emergency overflow connection to the existing municipal system located in Mondeor Road (UDS Africa, 2023). A package plant with a capacity of 120 kl/ day is required for the development based on the water demand.

The treated effluent from the package plant will be discharged into an irrigation pond located on the southwestern corner of the site, from where it will be distributed to the landscaping areas throughout the development. Effluent will be pumped from the package plant into the irrigation network. The irrigation pond has a storage capacity of 48 hours.

The estimated peak summer month daily irrigation demand is sitting at 112kl/ day as calculated by Viridian Consulting Landscape Architects. The excess effluent will discharge into attenuation pond located further south once the maximum capacity (178 m^3) of the irrigation pond has been reached.

Electrical Supply

DM Consulting Engineers (DMCE) was appointed to report on the electrical infrastructure for the proposed development site (2023).

It is proposed that the proposed development be provided with electricity from Eskom. A confirmation letter has been issued from Eskom, confirming that there is electricity supply capacity available on Waterkloof 1 network.

There is currently an 11kV Line running past the property and feeding the property from a pole mounted transformer. A 11kV bulk connection consisting of a radial underground/overhead 11kV MV feed will be required from Eskom. The total final capacity required from Eskom is 700kVA.

An existing radial T-Off overhead line will be removed, and the developer will sub distribute from a new MV Bulk supply point which will be established at the T-OFF pole, 48A8910 (Figure 4 within Electrical Infrastructure Report).

PV Solar panels will be installed on covered parking bays and specific structures based on the facing tilt direction. Several structures were examined to ensure the efficiency and suitability for the PV Panels.

Based on the area suitable for the PV Panels, the total amount of energy that will be generated by the renewable recourse is 0.371MWp (megawatts) in total. The PV Planes will cover an area of 1786m^2.

Stormwater

It is proposed by the masterplan for the area that a 4 000m3 regional stormwater attenuation facility be located at the intersection between the N2, Broadlands and Mondeor Road. The attenuation pond will be a dry pond, with side slopes at 1:2, limited to a depth of 1,5m. The pond will have 0.5m freeboard.

This attenuation facility will be constructed as part of the proposed development. The outlet pipe from the proposed development's attenuation facility will link to the stormwater network by means of 2 x 600mm diameter pipelines, crossing the N2.

Note should be made that this area proposed from the regional stormwater attenuation and associated pipeline has been transformed from its natural state. It has also been confirmed by the freshwater ecologist that no watercourse or wetlands are located within 500 meters from the proposed development site. This includes that property on which the stormwater attenuation pond is proposed.

In order to support the proposed development, it is anticipated that the regional pond and connecting pipework (in Mondeor Road and Dinsley Walk) will need to be constructed (delineation indicated in pink & dark blue in Figure 1). Ultimately, the regional pond will be transferred to the City of Cape Town Municipality.

This stormwater pipeline will have a diameter of 900mm and span over a length of 1200m.

The stormwater management plan (UDS, 2023) has been approved by the CoCT. Please refer to Appendix Q.

Figure 2:Previous masterplan (USD, 2023).

Locality Map of Portion 28 & Portion 63 of Farm No. 918, Somerset West, Western Cape.	Guillaume Nel environmental consultants	N
Source: Cape Farm Mapper	Tel: (021) 870 1874 | Fax: 086 6933 802 | Cell: 072 1571 321	

Figure 3: Locality Map of the Proposed Development Site, in the City of Cape Town, Stellenbosch Division, Western Cape.

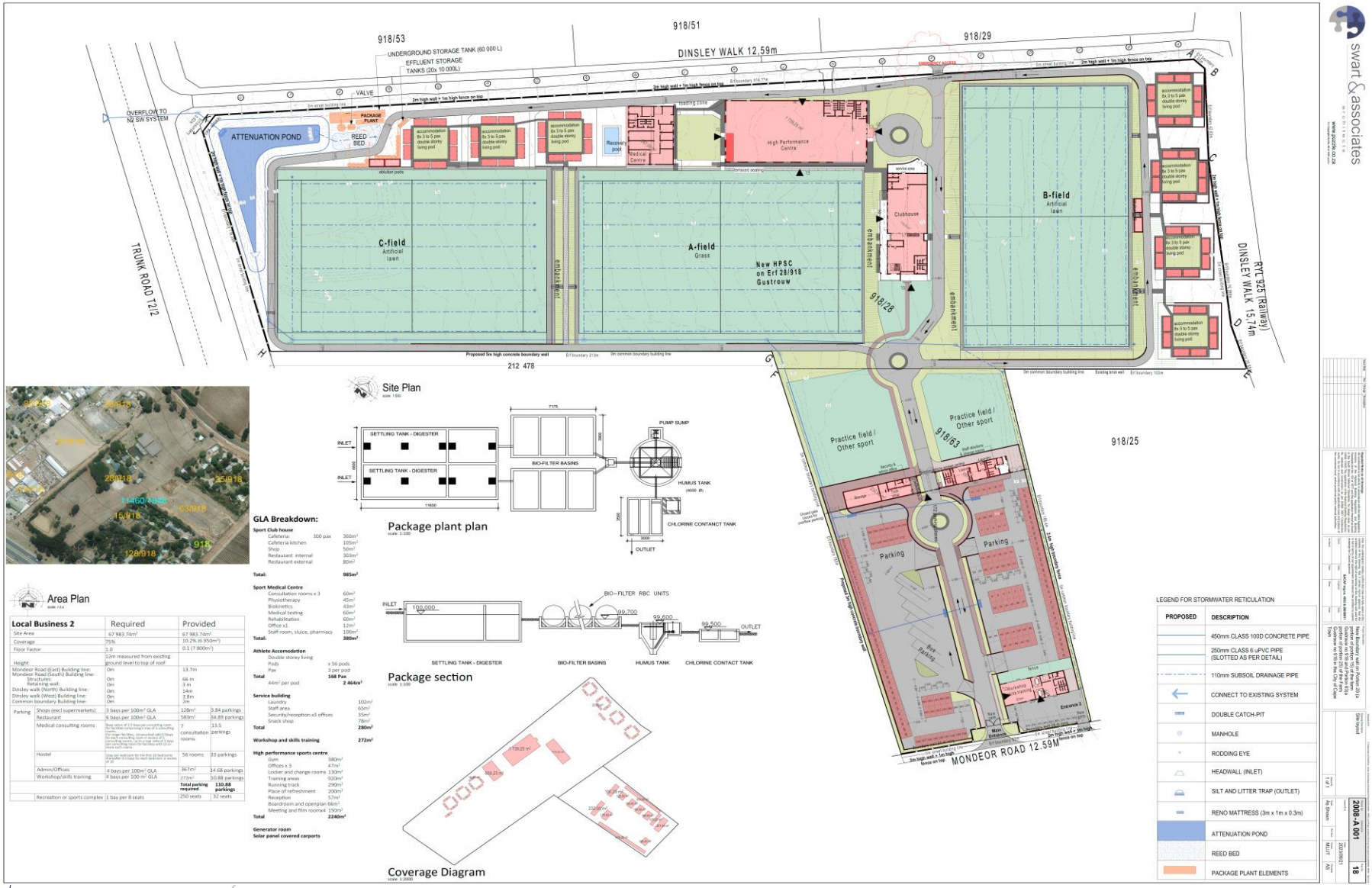


Figure 4: Proposed Site Development Plan (Swart & Associates, 2023).

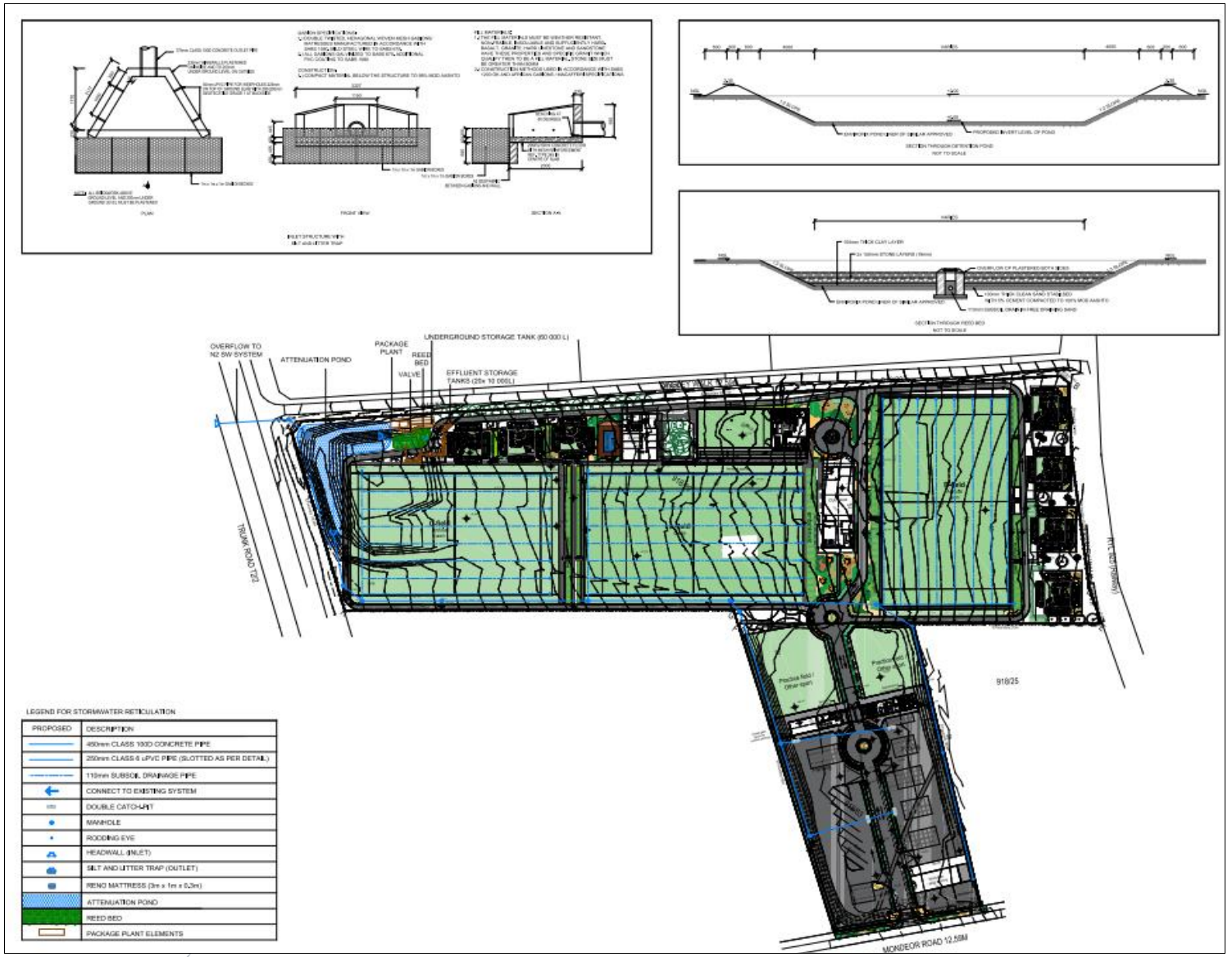


Figure 5 Stormwater layout (UDS, 2023).

Figure 6 Landscaping Plan for the proposed development (Viridian, 2023).

Figure 7: 3D Design Concept of the proposed HPSC development, in the City of Cape Town, Stellenbosch Division, Western Cape (Swart & Associates, 2023).

2.1.1 SUMMARY OF IMPACTS ASSOCIATED WITH THE PROPOSED ACTIVITY

- Economic impact:

The proposed development will create a number of new employment opportunities during both construction and operational phase. The job opportunities created will result in positive economic and social spillover effects for the local area.

Additionally, the primary aim of the development strives to encapsulate the principles of interconnecting with sports, concluding in an enriching outcome which contributes towards the development of the local community and the youth. The facility aims to retain a diversity with equal opportunity and international exposure to all genders and races.

The development will also aspire, by means of various initiatives, to make a difference in the community of Sir Lowry's Pass, by providing much needed social functions and economic opportunities.

- Heritage impact:

A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape in July of 2020. Heritage Western Cape's response was that "since there is reason to believe that the proposed development will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of section 38(3) of the NHRA be submitted".

Ms. Cindy Postlethwayt was subsequently appointed to conduct a Heritage Impact Assessment (HIA).

The HIA noted that the impacts upon the identified heritage resources have been limited to visual impacts, and these are generally identified as being of low to moderate significance. The development is therefore supported. Mitigations are also therefore appropriately limited to minimising these visual impacts and are proposed in relation to general outdoor and sports lighting facilities; roof material and façade colouring; adherence to the Landscape Master Plan and Tree Management Plan, fencing and parking.

Additionally, note should be made that no structures/buildings located on-site were found to be of any heritage value. A Heritage Impact Assessment has been conducted and an application process in terms of the National Heritage Resource Act (Act No. 25 of 1999) was undertaken.

Final comment was provided by HWC on the HIA on the 22nd of September 2021. The comment stated that: "The Committee had no objection to the development proposal as no apparent heritage resources will be impacted".

However, due to the change in scope and the addition of Portion 63 to the proposed development, a supplementary HIA has been compiled by Ms. Postlethwayt which will be submitted to HWC for approval.

HWC's IACom meeting has held on the 18th of October 2023. HWC has endorsed the recommendations of the integrated HIA in full. The updated HIA has therefore been approved by HWC. Please refer to Appendix L for the ROD.

- Impact of Freshwater Resources:

FEN Consulting (Pty) Ltd was appointed to conduct a Freshwater Ecological Verification Assessment of the proposed development site.

No watercourses were found on and within 500-meter radius of the proposed development site. The sensitivity of the site, from aquatic biodiversity perspective can be considered low.

It is however proposed that a package type Wate Water Treatment Plant (WWTP) be constructed on the proposed development site. Application in terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) will therefore be made.

Mitigations are however proposed by the report to ensure that the use of treated effluent will not detrimentally impact on the groundwater reserves associated with the subject property. These mitigations have been included in the EMPr.

- Impact on Flora:

Vegetation on the site is mapped to have historically supported Swartland Shale Renosterveld (FRs9). Swartland Shale Renosterveld is classified as a Critically Endangered vegetation type according to Section 52 of the National Environmental Management: Biodiversity Act (NEMBA) List of Ecosystems that are Threatened and in Need of Protection, 2022.

Note should be made that due to Portion 28 currently being used for equestrian purposes, the entirety of the site has been altered from its natural state.

Portion 63 has historically been transformed from its natural state, with the subject property no longer supporting this vegetation type. Portion 63 is vegetated with graminoid species (Cynodon dactylon and Pennisetum clandestinum).

The botanical survey found that the subject property has historically been highly degraded and transformed by historical on-site activities. The entirety of the proposed development site has been excluded from the City of Cape Town BioNet and is therefore not seen as a conservation priority. This statement is supported by the conducted botanical assessment. Rehabilitation potential for the proposed development site is regarded as low. Conclusion is made by the report that the proposed development is supported from a botanical perspective.

- Visual impact:

The proposed development will have a Low to Moderate impact on its surroundings (Smit, 2023). Numerous mitigation measures and management actions are proposed by the report which, if successfully implemented, will reduce some important aspects of the proposed development to a Low significance. Note should however be made that the overall impact will remain Moderate to Low .

Subject to the successful implementation of the conditions and mitigation measures, the proposed development application can be supported for a visual perspective. All conditions and mitigation measures as proposed by the report has been included in the legally binding Environmental Management Programme (EMPr).

- Traffic impact

The total trips potentially added to the road network by the proposed development, is expected in the order of 36 AM peak hour trips (24 in, 12 out) and 70 PM peak hour trips (35 in, 35 out).

It has been calculated that a total of 143 bays are required by the proposed development.

On-site parking will be provided in three parking area pockets on the subject property. These contain 87 bays (parking area to the right of the access) plus 73 bays (parking area to the left of the access) plus 12 bays (separate parking area at the workshop/skills training facility), i.e., total 172 vehicular parking bays. An additional 7 bus bays are also provided. Based on the potential parking requirement, the number of parking bays provided are considered sufficient.

All bays provided are proposed with dimensions in line with normal parking standards (i.e. 2,5 by 5,0 metre bays, 7,5 metre isle widths), which are considered acceptable. The bus bays indicated measure ± 12,5 by 4 metres, which should be sufficient to accommodate the buses expected on-site.

Through the implementation of the recommendations as set out by the TIA, the surrounding road infrastructure will be able to accommodate the proposed development.

- Noise Impact:

Some minor noise impacts might be expected as a result of the proposed construction activities. However, these impacts are not expected to be significant, given the temporary nature of the construction activities. Mr. Brett Williams from Safetech was appointed to conduct a Noise Impact Assessment (NIA) for the Proposed Development (2023).

The modelling indicates that the receptors at Monkey Town will be impacted by the construction noise. The receptors at the boundary of the proposed development and Monkey Town, where the chimpanzee enclosure is located, will be the most affected. This is due to the short distance from the receptors to the location of construction.

It is unlikely that the construction noise will impact significantly on the noise sensitive areas, other than Monkey Town, for a temporary period (Williams, 2023). Post-mitigation, the noise impact associated with construction activities are predicted to be of low significance for the human receptors.

During operational phase the predicted 2028 noise levels, when considering the development's contribution to traffic increases, may be considered a "noise nuisance". This disturbance may however be offset due to the proximity of the site to the N2 road that has higher traffic volumes and thus higher noise levels.

When considering the Monkey Town Wildlife Centre, it is expected that these receptors will not be impacted by an increase in traffic as the access points for the proposed development are located to the north-west of Monkey Town (approximately 75m). Due to the N2 road being closer (approximately 30m) and having a higher volume of traffic, it is expected that the noise from the N2 road would impact these receptors as opposed to noise from the proposed development.

Additionally, the noise generated by the referee/coach blowing a whistle is much higher than the general noise expected on the training fields. However, the noise will be short during the sporting activities. The sporting whistle now is of very short duration and sporadic, as no public matches will occur. The noise generated by the players is not expected to be significant.

It is recommended by the specialist that a 5m noise barrier be placed between the proposed development and the Monkey Town western boundary. This will mitigate the noise impacts on the primates housed on the Western Boundary of the Monkey Town Property. This mitigation is subject to the primates being located adjacent to the proposed development site at the time of construction.

Once off (including at least 2 nights) monitoring at community receptors during the beginning of the operational phase is recommended to be conducted to determine if a noise disturbance is present. If so, consideration can be given to further mitigation measures such as noise sensitivity training for coaches who blow whistles etc.

The results of the noise impact assessment of the proposed HPSC indicate that the construction noise and operational noise will be of short duration and low impact.

- Dust impact:

Possible dust impacts will be experienced during the construction phase of the proposed development. GNEC has complied a Dust Management Plan that will be implemented by the proposed development.

- Groundwater Impact:

A Groundwater Impact Assessment was undertaken for the proposed development.

The subject property overlies clay which is weathered from the Malmesbury Group. The aquifer in the area is classified as a “fractured” aquifer underlying the weathered clay.

It must be noted that based on the geotechnical investigation (GEOSS, 2021) it was seen that the soil underlying the site is mainly made up of clay which will act as a layer of protection since contaminates are unlikely to move through the clay which reduces the risk of groundwater contamination.

The potential for the proposed package plant to contaminate groundwater is considered to be low.

Despite this, the susceptibility of the aquifer to contamination from anthropogenic activities remains low.

The mitigation as included in the groundwater impact assessment addendum will be included by the proposed development.

The addendum (GEOSS, 2023) concludes that with the additional identified risks associated with the SDP amendments made to the proposed development, the geology and hydrogeology datasets indicate that due to the nature of the aquifer, the overall impact of the development is the same as previously stated in the GEOSS reports (2022).

The overall impact of the development to groundwater resources with mitigation measures in place, will be low.

- Primatologist Assessment

Due to the close proximity of the proposed development and Monkey Town, a Primatologist Assessment was commissioned.

Dr. Curswan Andrews was therefore appointed to assess the new SDP with respect to the noise generated and the potential visual impact of the proposed development on the primates located on the adjacent Monkey Town.

The report has noted that during the construction phase, the impact on the primates will be minimal at best, and considering Monkey Town and the type of activities and events they host, the primates are most likely used to crowds and noise, albeit at a tolerable level.

The frequent exposure has probably led to some habituation and adaptation over time; therefore, the impact of the noise would be considered as low impact. However, a monitoring process needs to be put in place to ensure the welfare of the animals is not compromised. A behavioural monitoring sheet should be developed to better understand any change during the construction phase.

However, following the site visit of Monkey Town on the 28th of September 2023 by Mr. Andrews, the fortification or modification of the cages, considering the current design/configuration, is not impractical. The planting of trees would aid in the distortion of sound as well, which has been proposed by the Landscaping Master Plan (Viridian 2023).

Careful consideration should be given to the chimpanzees that are closest to the noise. The developer has therefore taken additional measures for the construction phase to mitigate the impacts during the construction phase. This includes adjusting the construction methodology. Please refer to Appendix S for the Construction methodology that will be implemented inter alia to further mitigate the impacts on Monkey Town.

The erection of floodlights could potentially be disruptive (in terms of sleeping patterns, activity, feeding behaviour) considering the primate species are diurnal and therefore this could be mitigated.

The floodlights proposed by the development will only be used during specific times during the day and will not be used after 20:00pm. The floodlights will therefore not be used late at night and interfere with the sleeping patters of the primates. It has also been indicated by

Monkey Town that the primates (including the Chimpanzees) do not sleep in the trees, the primates sleep in enclosures located within their cages.

The mitigations proposed by the relevant specialist will ensure that the anticipated impacts are managed. However, as mentioned, the proposed development will only be a training facility and operate until 20:00 pm. This means that floodlights will rarely be used in the summer season when the sun sets late in the evening. The floodlights will be used in the winter mostly during the hours of 18:00 and 20:00 (depending on weather conditions).

Again, behavioural monitoring would be beneficial to ascertain if any of the animals experience any distress. It should be noted that practise sessions, if undertaken in the evening, will not transpire past 20:00pm.

Timing of the construction is crucial as it may exacerbate any impact on the animals. In this case, it will be during the day and that counters some adversity. The centre will be operational, and distraction will be afforded to the animals, though any initial fearfulness could be expected but on a minimal scale.

The report notes that none of the primates are from a free-ranging environment, exposure to anthropogenic land-and-soundscapes have predisposed the primates to various, tolerable levels of noise, however, care should be taken to monitor any behavioural changes that could potentially lead to any physiological changes and ultimately impact animal welfare. Noise monitoring will be done in accordance with the recommendation as proposed by the NIA (2023).

In terms of the noise sensitive areas and mitigating strategies, this requires species-specific intervention and thus the behavioural response, if any.

Additionally, the noise barriers proposed by the NIA (2023) would be beneficial between the subject site and Monkey Town. This mitigation is however relevant to the primates being located on the property adjacent to the proposed development site.

Furthermore, where necessary, signposts can be put up to limit visitor noise around the species that are more prone to disruptive low frequency sounds for the duration of the construction. The operational phase and activities limited to training, should pose no threat to the animals that have been exposed to tolerable levels of noise.

It was indicated by the adjacent Monkey Town that the proposed development of a stadium “will compromise the wellbeing of the primates of Monkey Town”.

In reducing the scale of the development and addressing, to some extent, the concerns of the adjacent Monkey Town, the impacts of the proposed development will be reduced. The use of the proposed development was also adjusted to training purposes only.

Dr. Andrews conducted a site visit of the Monkey Town facility on the 28th of September 2023. The visit entailed a round table discussion and also a walkthrough of the facility.

An addendum to the primatology assessment has been provided by Dr. Andrews following the meeting/ site visit was held at Monkey Town on the 28th of September 2023. Please refer to Appendix G.

It was stated by the owner of Money Town during the meeting that the Chimpanzees are the most sensitive primates on-site. The observation was however made that the enclosure of the Chimpanzees is located on an area of Money Town which is exposed to extensive surrounding noise impacts. As indicated in the addendum provided by Dr. Andrews, the Chimpanzees enclosure is located on the most southern portion of Money Town which is within close proximity to the N2/T2 and also the industrial developments within the area.

As stated in the primatologist addendum (2023):

It became apparent that the most-sensitive primates to noise, in this case the trio of chimpanzees (Pan troglodytes), are in very close proximity to the busy N2. The neighbouring gibbons (Hylobates lar) and tamarins (Saguinus spp.) have reduced sensitivity and therefore are of limited, if, any concern. The current arrangement of cages and consideration for the placement of new primate arrivals [temporary or permanent], happens arbitrarily without any consideration for current noise levels, if any, from surrounding sources.

The Chimpanzees are therefore highly exposed to noise impacts of the surrounding land uses.

Nevertheless, due to the construction noise impacts on the Chimpanzees being a concern for Monkey Town, the applicant has adapted a construction methodology and phasing provide mitigating measures to limit and/or reduce any construction noise, specifically during the bulk earthworks for Field C. This includes off-site manufacturing of walls and buildings, prefab housing and minimal on-site construction along with reduced noise from machinery.

2.1.2 The proposed developments' environmental management policy and commitments

The proponent understands the importance of conserving the environment and will endeavour to apply all necessary mitigation measures to conserve and maintain sensitive areas and prevent environmental degradation.

2.1.3 Interpretations

The implementation of the EMPr is not an additional or "add on" requirement. The EMPr is legally binding through NEMA and the relevant EA. This EMPr is to be used during the planning, construction and operational phases of the proposed project. The Environmental Control Officer appointed by the developer after environmental approval, must use this EMPr rduring the ECO audits to determine the developer's compliance to it.

Further on, the proponent is to ensure that through the project tender process the EMPr forms part of the Project Construction Contract Document to be incorporated in line with:

- General project specifications; and
- SANS 1200 A or SANS 1200 AA, as applicable.

The proponent is also to ensure that through any tender or appointment process, the operational EMPr forms part of the management contract with all service providers and contractors, for a period of time as stipulated by the DEA&DP during which the development will be audited for compliance to the operational EMPr. This EMPr is compiled in line with relevant legislation and general construction project specifications. However, to ensure sound environmental practice, the measures as described in the operational EMPr should be implemented for the full operational life of the development.

2.1.4 Project phase

The first part of this EMPr is specifically compiled for the ***period of time prior to commencement of and activities associated with construction of the above-mentioned activity***, and for the ***operational phase*** of the proposed development.

If and when applicable, where specific activities of the proposed development fall outside of the general principles contained herein, the Department will attach further 'activity – specific' EMPr's as appendices to this document.

2.1.5 Role players and responsibility matrix

In order for the EMPr to be successfully implemented, all the role players involved in the project need to co-operate. For this to happen, role players must have a clear understanding of their roles and responsibilities in the project, must be professional, form respectful and transparent relationships, and maintain open lines of communication. The EMPr therefore clearly defines the role players involved and indicates their role in the implementation of the generic EMPr.

Typically, these role players or the project team may include the Authorities (A), Other Authority (OA), Developer/Proponent (D), Consulting Engineers (CE), Resident Engineer (RE), Environmental Officers (EO), Environmental Site Officer (ESO), Environmental Control Officer (ECO), Project Manager (PM), Contractors (C), Environmental Assessment Practitioner (EAP). Furthermore, landowners, interested and affected parties and the relevant environmental and project specialists are also important role players.

Figure 8 below indicates the proposed reporting channels and highlights the relationships that need to be established between these role players to ensure that the EMPr is effectively implemented.

SECTION 3 – ENFORCEMENT, MONITORING AND AUDITING

3.1 PRE-CONSTRUCTION AND CONSTRUCTION PHASE

The applicant must appoint, at his own cost, an **ECO** and full time EO (as part of the construction team) who will oversee the implementation of the EMPr.

City of Cape Town Municipality as well as DEA&DP must be informed of the appointment of the **ECO** prior to construction activities. Please note that the responsibility of the particular ECO may end at the end of the construction period. In the event that an ECO is appointed during the operational phase, it must be noted that this ECO may be different from the original ECO and both DEA&DP as well as the City of Cape Town Municipality must be notified of this appointment again.

The independent ECO is responsible for Weekly or fortnightly audits on compliance to relevant environmental legislation, conditions of the Environmental Authorisation (EA), and the EMPr for the project.

Weekly audits are required during the demarcation of the trees that will be retained. This can thereafter be changes to fortnightly audits.

The ECO shall conduct weekly independent environmental audits at the beginning of the project (as specified above) which can later be reduced to fortnightly. **Formal Monthly Audit reports** are to verify the projects' compliance with the EMPr and conditions of the Environmental Authorisation (EA).

Weekly site visits are to be undertaken and later fortnightly, with an Informal Audit Report in the middle of each month and a Formal Audit Report at the end of each month.

Before any construction activities commence, the ECO must compile, for the approval by the Department, an audit checklist based on the contents of this EMPr and conditions of the Environmental Authorisation (EA). The ECO shall at the request of the Department forward audit reports to the Department and the City of Cape Town Municipality at a frequency determined by the Department which shall be stipulated in the Environmental Authorisation (EA).

Evidence of the following as **key performance indicators,** must be included in the audit reports:

- Complaints received from landowners and actions taken.
- Environmental incidents, such as oil spills, concrete spills, etc. and actions taken (litigation excluded).
- Incidents leading to litigation and legal contraventions.
- Environmental damage that needs rehabilitation measures to be taken.

A copy of all ESO and EO monitoring reports, contractor method statements and pro forma documentation must be held by the ESO and/or the EO on site and be made available to the Department and or the ECO upon request.

3.2 OPERATIONAL PHASE

The suitably qualified independent person shall conduct, at a frequency as determined by the DEA&DP and stipulated in the relevant Environmental Authorisation (EA) for the project, conduct independent environmental audits. The audits are to verify the developments' compliance with the operational EMPr and conditions of the Environmental Authorisation (EA).

The suitably qualified independent person must compile, for the approval by the DEA&DP, an audit checklist based on the contents of this EMPr and conditions of the Environmental Authorisation (EA). The suitably qualified independent person shall at the request of the DEA&DP forward audit reports to the Department.

The frequency of the External Audits will be determined by DEA&DP.

The following **Key Performance Indicators** must be included in the audit reports:

- Complaints received from landowners and actions taken.
- Environmental incidents, such as oil spills, fires etc. and actions taken.
- Incidents possibly leading to litigation and legal contraventions.
- Environmental damage that needs rehabilitation measures to be taken.

The minutes of site meetings, to which the suitably qualified independent person will have unrestricted access to, shall be the official record of environmental activities, complaints and communications. These minutes will be circulated to the entire project team. A copy of the standard site meeting agenda is available on request.

3.3 FORMAL ENVIRONMENTAL COMMUNICATION CHANNELS

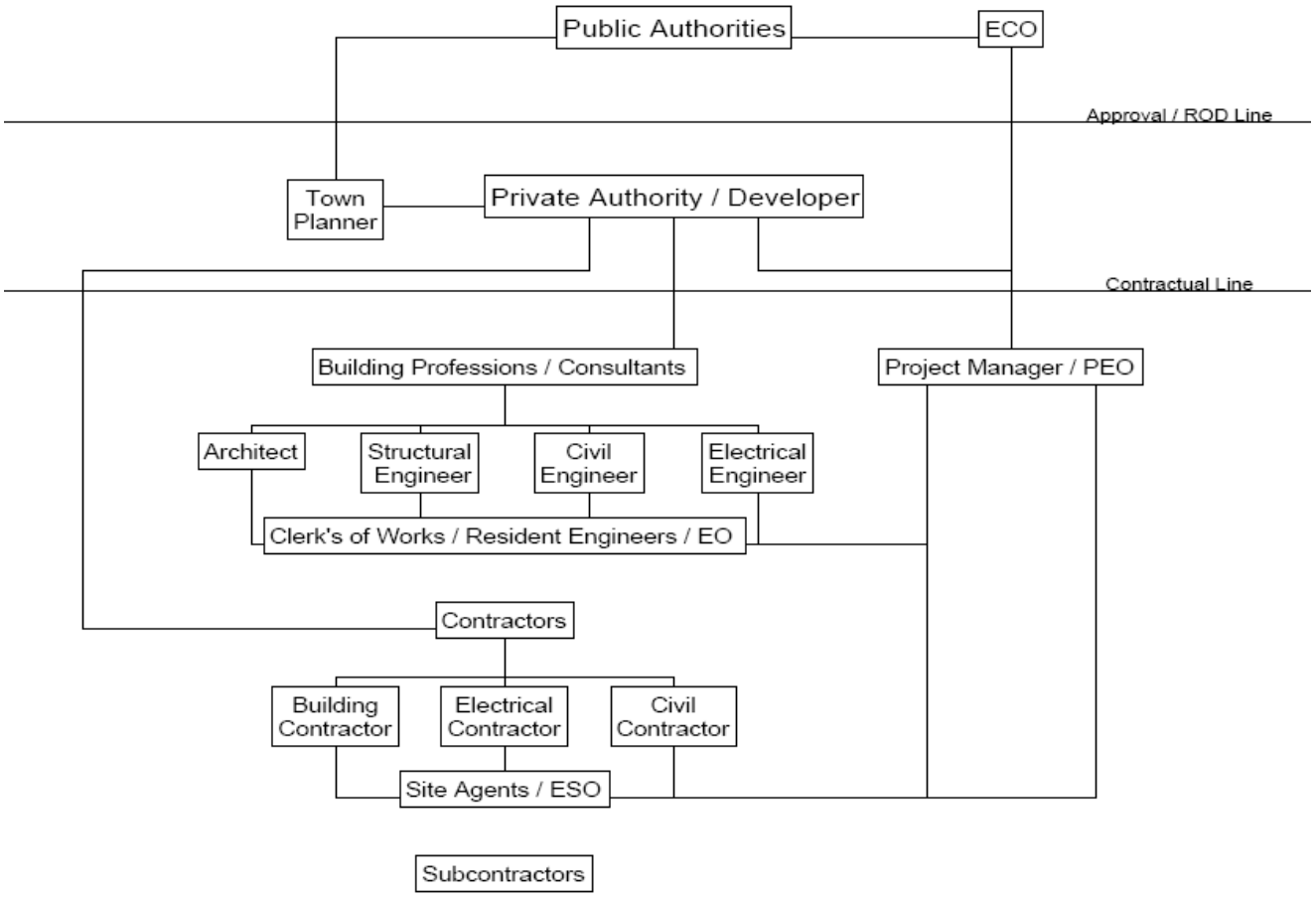


Figure 8: Reporting structure and role players involved in the construction of the HPSC on Portion 28 and Portion 63 of Farm No. 918 within the Stellenbosch Division, Western Cape.

Please note that due to the timeline of the development as well as the coming and leaving of consultants and contractors, as well as the many crossed channels of communication in the DEA&DP EMPr Guideline, it was decided by the project team to use the GACP-channels of communication whereby the Project Manager remains the central pivot between all the disciplines. All instructions and reports shall flow through the Project Manager (PM). In the environmental matters the PM becomes the Project Environmental Officer (PEO).

3.4 MEASUREMENT AND PAYMENT

It is understood that environmental requirements included in this EMPr will entail costs over and above those of the civil requirements. These include provision for: mitigation and enhancement actions; training and environmental awareness requirements; monitoring; auditing; and corrective actions. The proponent shall recognise this and make provision for it in the tender. Costing for management action should be done with inputs and advice from appropriate technical members of the project team and relevant EAP who have knowledge

of the management actions being recommended as well as practical experience in implementing similar measures and techniques.

A lump sum must be allocated for the management of Environmental Specifications where it is not possible to cost requirements of the EMPr.

3.6 GENERAL GUIDELINES

Guidelines as per standardised construction documentation must be used.

3.7 AWARENESS (INDUCTION) TRAINING

3.7.1 Construction Phase

The Department of Environmental Affairs and Development Planning (DEA&DP) and the City of Cape Town Municipality must be notified of the appointment of the ECO and his/her contact details prior to any work commencing on site.

The EO or ESO, or ECO are responsible in ensuring everyone on site is given an environmental awareness induction session which not only clearly defines what the environment is and specifics detailing the local environment but outlines the requirements of the EMPr as a management tool to protect the environment.

Refresher courses must be conducted as and when required. The EO or ESO must ensure daily toolbox talks include alerting the workforce to particular environmental concerns associated with the tasks for that day or the area/habitat in which they are working. Awareness posters and a handout must be produced to create awareness throughout the site.

3.7.2 Operational Phase

The ECO is responsible in ensuring everyone involved in the operation of the development at ground level receives an environmental awareness induction which not only clearly defines what the environment is and specifics detailing the local environment but outlines the requirements of the EMPr as a management tool to protect the environment.

Awareness posters and a handout must be produced to create awareness throughout the site.

3.8 SITE DOCUMENTATION

3.8.1 Construction Phase

The following is a list of documentation that must be held on site and must be made available to the ECO and/or DEA&DP on request.

- Access negotiations and physical access plan
- Site daily diary /instruction book
- Records of all remediation / rehabilitation activities
- Copies of EO reports (management and monitoring)
- Environmental Management Programme (EMPr)
- Complaints register

- Environmental Authorisation (EA)

3.8.2 Operational Phase

The following is a list of documentation which must be held on site and must be made available to the ECO and/or DEA&DP on request.

- Environmental monitoring reports (if required)
- Records of all remediation / rehabilitation activities (if required)
- Environmental Management Programme (EMPr)
- Complaints register
- Environmental Authorisation (EA)

3.8.3 Pro forma documentation

3.8.3.1 Prior to the commencement of construction activities

The following attached pro forma documentation is to be filled out and is binding to the EMP rand project contract and includes, but not limited to, the following:

- Declaration of understanding by the Developer
- Declaration of understanding by the Contractor

3.8.3.2 During construction activities

The following attached pro forma documentation is to be filled out and maintained. These are binding to the EMPr and project contract. They include, but are not limited to, the following:

- Environmental incidents
- Records of all remediation / rehabilitation activities

3.8.3.2 During the Operational Phase

The following attached pro forma documentation is to be filled out and is binding to the EMPr and project contract and includes, but not limited to, the following:

- Declaration of understanding by the Proponent
- Environmental incidents

3.9 TOLERANCES AND NON-COMPLIANCE

The independent ECO is responsible for Weekly audits on compliance to relevant environmental legislation, conditions of the Environmental Authorisation (EA), and the EMPr for the project.

Weekly audits are required during the demarcation of the trees that will be retained. This can thereafter be changes to fortnightly audits.

The ECO shall conduct weekly independent environmental audits. **Monthly Audit reports** are to verify the projects' compliance with the EMPr and conditions of the Environmental Authorisation (EA).

Should the contractor show repeated non-compliance in terms of the audits, a range of fines may be issued to the contractor. These fines are included as part of the Construction

EMPr (Table 5).

The Engineer, in conjunction with the ECO, shall be the judge as to what constitutes a transgression in terms of this clause, subject to the General Conditions of Contract.

All ECO and audit reports must be circulated to the DEA&DP, as well as the City of Cape Town Municipality Environmental Management Branch.

SECTION 4 - GENERIC CONSTRUCTION PHASE EMPR - IMPLEMENTATION

4.1 PREAMBLE

The point of departure for the proposed High Performance Sport Centre development EMPr is to empower a pro-active rather than re-active approach to environmental performance by addressing potential problems before they occur. This will limit corrective measures needed during the construction phase of the project. Therefore, the purpose of this EMPr is to provide management measures that must be implemented by Rhinos Asset Holdings (Pty) Ltd and all contractors and sub-contractors alike to ensure that the potential impacts of the proposed development are minimised. It must also be ensured that the *EMPr is maintained and upheld as a dynamic document* in order for the *project team to add or improve on issues* that might be considered left out or not relevant to the project. In such instances the DEA&DP may authorise the ECO to make such changes.

The following tables form the core mitigation measures appropriate to the pre-construction and construction phase. The tables present, the objectives to be achieved and the management actions that needs to be implemented in order to mitigate the negative impacts and enhance the benefits of the project. Associated responsibilities, criteria/targets and timeframes are clearly specified.

The **'pre-construction'** section of this generic EMPr, refers to the period of time leading up to and prior to commencement of construction activities, and is included to ensure pro-active environmental management measures with the goal of identifying avoidable environmental damage at the outset and sustain optimal environmental performance throughout the construction phase. Most impacts will occur during the construction phase and must be mitigated through the contingency plans identified in the pre-construction phase.

The bulk of environmental impacts will have immediate effect during the 'construction' phase (e.g. noise, dust, and water pollution). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the measures outlined in this section, together with a commitment to sound environmental management from the project team.

The "construction" section refers to all construction and its operation-related activities that will occur within the approved area and access roads, until the project is completed. This "construction" section is divided into three functional areas, namely "materials"; "plant"; and "construction". Each of these functional areas within the EMPr contains specific generic mitigation requirements and requested contractor method statements stipulated where required.

Many potential environmental impacts will have immediate or long-term effects during the 'operational' phase (e.g. noise, waste management, and water pollution). If the development is monitored on a continual basis during operations, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the measures outlined in this section, together with a commitment to sound environmental management from the proponent and management team.

It must be noted that the responsible party for the majority of the mitigation measures is that of the Management body, unless otherwise stipulated. The names of the responsible parties must be made available to DEA&DP for record purposes.

The management body must ensure that a maintenance team is employed with the correct equipment and skill to maintain boardwalks, pathways, fences etc. The following tables will refer to the responsible party as "Management body: 'to be announced' and "maintenance crew".

4.2 STRUCTURE AND CONTENTS OF THE TABLES

The table consists of seven parts as follows:

"Phase of development" - This row will identify either pre-construction (planning) or actual construction phase.

"Impact / issue" - This row will identify the issue being addressed, e.g. Materials, site demarcation, heritage, etc.

Mitigation Measure - This column will include all the necessary mitigation measures for each impact/issue'.

Management objectives - This column will indicate what the management objectives to be achieved for each mitigation measure are.

Measurable targets - This column will indicate what evidence is to be used as an indication to whether or not the 'Management objectives' have been implemented and hence achieved.

Responsible party - This column will provide information as to which role player, e.g. ECO, RE, etc. is responsible for the implementation and or management of each mitigation measure.

Frequency of action - These columns provide time guidelines for the 'Responsible party' by which he/she is to action or manage the required mitigation.

4.2.1 SPECIALIST RECOMMENDATIONS

4.2.1.1 Pre-Construction and Construction Phases

The last part of the table provides space for the EAP to add specialist recommendations that need to be addressed during the pre-construction and construction phases.

4.2.1.2 Operational Phase

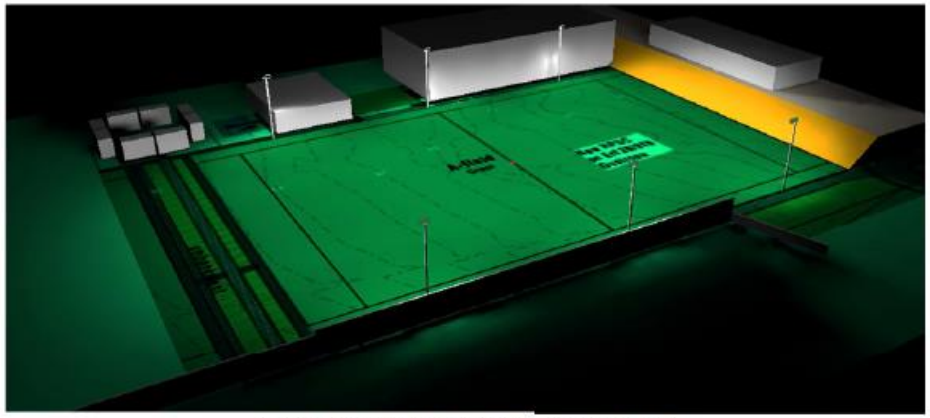
Additional requirements may need to be added to the table pending conditions required in the Environmental Authorisation (EA). The last part of the table provides space for such conditions, which must be added before the "declaration of understanding" is signed by the proponent and ECO.

Table 1: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE, PRE-CONSTRUCTION (PLANNING) PHASE EMPR.

Phase of development	**PRE-CONSTRUCTION (PLANNING)**			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Visual Impact The general mitigation measures contained in Section 6.6.2 a.) of the 2021 VIA continue to be relevant and must continue to serve as reference material for any future proposals or adjustments to the proposed development. The revised lighting report motivates for the specification of OmniBlast E Maxi 2 luminaires of 1408 W each for the A-field (and OmniBlast 1 Midi luminaires of 412 W each for the B-field) to meet the requirements of the mitigation measures put forward in the 2021 VIA. The report demonstrates the proposal's adherence to international and local standards with regards to the floodlights & field lighting and should enable the CA to take an informed decision on if the lighting impacts will be acceptable in the context of the Broadlands Cultural Landscape, sensitive receptors and associated scenic routes surrounding the site. See covering SVIA letter dated 25/09/2023 for further details. The following mitigation measures were recommended by Ms Fi Smit (Filia Visual, 2021) Visual Impact Assessment: a) **Planning and design phase:** General and outdoor sport facility lighting Light pollution should be kept to an absolute minimum throughout the development, and exterior lighting should be limited to areas where this is necessary for safety and security to keep the ambient light levels in the receiving environment as low as possible. Exterior lighting must be carefully directed away from sensitive receptors identified in this VIA (Scenic routes, the Cultural Landscape and heritage resources, neighbouring properties etc.).	• Unnecessary visually visible impacts are avoided. • Ensure exact implementation of EMPr guidelines with regards to light and lighting.	• Contract records.	Project team.	Design and implementation.

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
In principle, lighting in the development should: ✓ Only be on when needed; ✓ Only light the area that needs it; ✓ Be no brighter than necessary; ✓ Minimize blue light emissions; ✓ Be fully shielded (pointing downward). The negative impacts of night lighting should be mitigated in the following ways: • Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the light source, including interior lighting sources; • Façade lighting to be limited to accents and features, avoiding large parts of the exterior of buildings to be lit from any side, but especially not southern, eastern and north-facing facades. • Pedestrian pathways, parking areas and vehicular roads should be lit with low level 'bollard' type lights or (maximum 3m tall) post lights that are fully shielded (pointing downward). Fully shielded fixtures minimize skyglow, glare and light trespass. • Absolutely no "always-on" security flood lights, peripheral/boundary lighting or uncovered luminaires of any kind should be allowed. Security lighting should be activated on movement. • Light emitting diodes ("LEDs") are appropriate for outdoor lighting. If it is necessary to use white light, low-color-temperature LED lighting should be preferenced, on the condition that the brightness can be dimmed when they aren't needed to light empty parking lots etc.				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
• Because blue light brightens the night sky more than any other colour of light (International Dark Sky Association, 2021), it's important to minimize the amount emitted. The Rhinos development should use warm light sources (lower colour temperatures) for outdoor lighting: a maximum of 3000 Kelvins is recommended. **Floodlights / outdoor sporting facility lighting** Potential negative impacts of the proposed flood lights on the receiving environment (Cultural landscape, local sensitive receptors and scenic routes) have been mitigated to a significant extent by the June 2021 redesign of the outdoor lighting design by Watson Mattheus Consulting Electrical Engineers (Pty) Ltd. The high-level field lighting report was issued in response to the recommendation issued in Revision 0 of this VIA (April 2021) for a light impact study/statement to describe the potential effect of the proposed floodlights on sensitive viewers, the scenic routes and the cultural landscape. Revision 0 of this VIA specified that the illumination of the outdoor sporting facilities must be carefully controlled and designed to meet international and/or local standards to control backlight, uplight, glare and colour (refer to the International Dark Sky Association Community Friendly Outdoor Sports Lighting Program Guidelines (available: https://www.darksky.org/wp-content/uploads/2018/03/IDACriteria-for-Community-Friendly-Outdoor-Sports-Lighting.pdf) for further information). Subsequently, the outdoor lighting design was revised to ensure that the proposed development's lighting design minimizes spill and glare, manages high angle light pollution (to decrease off-site light trespass and sky glow) and avoids negative lighting impacts associated with poorly designed outdoor sports facilities in general.				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	GENERAL			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
 *Figure 3 - Field A render shows sharp cut-off of spill light* The report has demonstrated the proposed development's adherence to international and/or local standards with regards to the floodlights and should enable the CA to take an informed decision on if the lighting impacts will be acceptable in the context of the Broadlands Cultural Landscape and associated scenic routes. The 2023 lighting report notes the following mitigation measures, increasing the acceptability of the proposal for the aspects that do not strictly comply with IDA Criteria that are considered by the authors to be particularly onerous. • Events utilising match level lighting will not be the norm; • Lighting will typically be used in a dimmed mode suitable for practice; • Practices will typically not extend past 8 p.m.; • The sports centre buildings will provide a substantial amount of shielding of light to the west. The western boundary additionally has a street which also provides a				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
distance buffer to the western neighbours, which are mostly industrial. • The neighbouring property to the east has a substantial amount of tree growth along its boundary that will provide shielding. • The boundary with that eastern property will have a 5m wall [noise barrier]. *The lighting proposal was considered acceptable, and the August 2023 Supplementary report was in support of approving it. However, following concerns raised by the City of Cape Town that the mitigation proposed to address visual impact of flood lights is not sufficient, the following mitigation measures have been added to the VIA (see also items 3.1 – 3.4 of the covering letter, which are identical to the text provided below):* *i) At the time of future detailed planning (future municipal SDP or building plan approvals etc.), and before the Operational phase may commence, the percentage of illumination falling outside the 10m perimeter of all three the A, B and C fields must be calculated and demonstrated to be acceptable to the satisfaction of the relevant decision makers. This requirement must be included in the Environmental Management Plan.* *ii) Procedural and best-practice guidelines must be developed at the time of future detailed planning (future municipal SDP or building plan approvals etc.), to ensure that the mitigation measures related to the Control of the floodlights, timing of use etc. are carried over into the Operational phase.* *a. This documentation must be submitted to the relevant decision makers for review and approval, and form part of the Environmental Management Plan.* As stated in the Tusk CSS report: "… the majority of the criteria to be met can be assessed against IDA Criteria for Community-Friendly Outdoor Lighting v1.1." (Starke, 2023, p. 3). Please refer to Table 3 in the 2023 lighting report; the following relevant data points				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
are noted: i) Field A = Class III (Facilities with some provision for spectators) requires 30 foot-candle or 323 lx. The average illuminance achieved on Field A is 342 lux which is 5.9% more than the minimum and within limits. ii) Control of Backlight: Figure 2 in the lighting report demonstrates the minimal backlight in a stadium installation example and Figures 3 and 4 for Field A simulations showing a sharp cut-off of illumination beyond the field. The author notes that Simulations show the system is not fully compliant with criteria for the relevant IES10 Environmental Zones. Mitigation measures are however noted in section 6 of the report. iii) Control of Uplight: A horizontal evaluation surface was placed at 16.5m and calculated. The result shows 0 lux on that plane and demonstrates compliance with the requirement that "… all luminaires must be designed such as to not to emit direct light above the horizon." (Electrical Services - External Lighting Visual Impact Report, 2023, p. 4) iv) Control of Glare: At 45m beyond the field an observer will at most see 28 lx on north and south ends and 43 lx on the east and west ends. Both are below the 80 lm maximum, indicating compliance. Additionally, the OmniBlast fittings have a negligible amount of lumens in the 'very high glare zone', within which Luminaires shall not emit more than 250 lumens, according to the IES TM-15-11 Luminaire Classification System for Outdoor Lighting. v) The proposed development is deemed to fall within Zone E2 and Zone E3 according to the Environmental zones for lighting, as defined by CIE (Commission Internationale de L'Eclairage). The simulations show the system is not fully compliant, but the authors argue that the maximum allowable illuminance values specified for these zones are very onerous and will need to be exempted based on Field A being well offset from the roads and shieled by buildings and walls. Mitigation measures are however noted in section 6 of the report.				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
vi) Limitation of spill illuminance (to be less than 2.0 lx): The authors note partial compliance, given that light spill beyond the 45m perimeter of the field is limited to below 2 lx on the north, east and west. This is on account of the buildings. To the south the max spill illuminance is below 5 lx, but the space to the south is not deemed sensitive because it abuts the C-field. vii) Requirement for lighting installations to be controlled: The authors found that the proposed would be compliant, noting that lighting installation would have access to the Schreder ITERRA Dali control system with adaptive dimming control via wireless link to a smart device, and will enforce curfew times. viii) The requirement for a Maximum allowable correlated colour temperature of 5700 kelvin (K) is met through the specification of the OmniBlast fittings which emit 5700K. ix) The pole height will remain 15m. <u>Planning and design phase: Appropriate materials and finishes</u> All roof materials must be of dark recessive colours such as charcoal, black, grey or deep green to match surrounding vegetation. Façade colouring may be on a lighter spectrum - natural materials and walls plastered and painted white/ earth tones are preferred. <u>The retention and replacement of trees</u> The existing tree-belts, windbreaks and mature tree specimens must be retained as indicated on the Tree Management Plan, and their retention made a condition of approval. The integrity of natural features which form part of a neighbourhood's identity should be safeguarded (e.g., significant vegetation and trees). All trees that form part of the belt of trees that provide screening and contribute to the sense of place, and do not fall under proposed building footprints should be retained.				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Tree protection guidelines must be prepared for this project at building plan level, to be implemented during the construction phase to ensure that construction activities do not result in the loss of trees to be retained. Specifications for the replacement of trees marked for retention must form part of the project documentation to be approved at building plan level. In the event that a tree marked for retention is removed, is damaged or dies it must be replaced with an appropriate specimen during the Construction or Operational phase of the project. The Landscape Plan (and all future Landscape Plans) must show all trees to be retained both in and around the property (i.e. on road verges), as was the case in the previous revision of the Landscape Plan. <u>Proposed Noise Barrier:</u> i) The proposed buildings (as well as the existing vegetation) are anticipated to be taller than the proposed wall, and it is not expected to be visible from the sensitive receptors and protected landscapes that the VIA is concerned with. ii) From a light impact point of view, the proposed 5m wall will mitigate lighting impacts at night upon the Monkey Town residents. iii) The proposed approach to the 'tying-in' of the wall is acceptable (at the south eastern corner where it will be visible from the N2 along the southern boundary; and at the Portion 63 corner, where it will step down to meet the Portion 63 boundary). iv) The finishes of the wall must comply with the general recommendations associated with appropriate materials and finishes noted in this and the previous VIA.				

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Traffic Impact Access to the site will be obtained from Mondeor Road and Dinsley Walk (emergency exit). Comply with City of Cape Town Municipality Road rules and signs. The Standards and Guidelines to ensure access to Municipal Waste trucks will also have to be met with regards to turning circles and internal roads. All recommendations as proposed by the Traffic Impact Assessment conducted by UDS Africa (2023) should be implemented in order to accommodate the proposed development.	To reduce possible traffic impact to expectable standards.	• The existing level of traffic.	Project team.	Design and implementation.
Project contract and programme The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. A copy of this EMPr must be available on site. The Contractor shall ensure that all the personnel on site, sub-contractors, suppliers, etc. are familiar with and understand the specifications contained in the EMPr. A dewatering plan to be developed prior to construction (should dewatering be required). Impact on groundwater level as a result of dewatering is expected to be low but should be evaluated as part of the dewatering plan design. Where and if excavations intersect bedrock and expose fractures/conduits, an	• Contingencies for minimising negative impacts anticipated to occur during the construction phase. • Ensure environmental awareness and formalise environmental responsibilities and implementation.	• Contract records. • Signed declaration pro forma's.	Project team.	-

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
appropriate membrane should be placed to ensure no soil and/or groundwater is contaminated. In the event that excavations intersect bedrock and expose fractures/conduits a professional should inspect the prepared surfaces for such conduits, before further construction activities take place. At this stage it is anticipated that a liner will not be required; however, this is subject to inspection by an appropriately qualified individual. Inspection of excavation deeper than 5 meters from ground level by appropriately qualified individual to ensure ingression of water into rock structure (i.e. into aquifer) is negligible/null. In the event that extensive excavation is required for the proposed development that exceeds to 5m below ground level, excavations should be inspected by an appropriately qualified individual to ensure no contamination of the groundwater takes place as a result of bedrock exposure, since there is a fractured aquifer beneath the site.				
Site demarcation and development The surveys for the overall project area and construction footprint as approved in the Environmental Authorisation (EA) must be complete and clearly demarcated before the contractors set up their crew camps or begin construction. All relevant 'general' and 'specific' conditions contained in the Environmental Authorisation (EA) must be included in the space provided below and included as part of this EMPr when the "*declaration of understanding*" is signed by the proponent, the Engineer and the Contractor.	• Contingencies for minimising negative impacts anticipated to occur during the construction phase.	• Demarcated areas. • Filled in section of this document.	EAP specialist, Engineer, contractor.	As and when required.

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
The EO and ECO must be on site in order to make sure the correct areas are fully demarcated. Where practically possible, site screening methods should be employed to minimize the potential dust nuisance created by earth moving equipment, particularly during site preparation processes. Such dust screening measures should be installed on the perimeter of the site and at areas of high dust generation. The materials used should be capable of reducing the quantity of dust being blown off site to below nuisance levels. Implement monthly groundwater quality monitoring during construction phase. The recommendations included in the Geotechnical Report (2021) should be taken into consideration prior to the commencement of construction (where applicable).				
Emergencies, non-compliance and communication The contractor **must provide method statements** on the protocols to be followed, and contingencies to be put in place for the following, before construction may begin: • Emergency spills procedures for the contamination of soils from spills and fire. • Handling & storage of oils and chemicals. • Cement and concrete batching, which includes the storage, washing & disposal of cement, packaging, tools and plant.	• Contingencies for minimising negative impacts anticipated to occur during the construction phase.	• Method statements.	Contractor, Engineer.	As and when required.

Phase of development	PRE-CONSTRUCTION (PLANNING)			
Impact / issue	**GENERAL**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
• Diesel tanks and refuelling procedures. • Crew camps and construction lay down areas. • Workshop maintenance and cleaning of plant. Communication in emergencies must follow the suggested lines of communication as stipulated figure 8.				

Table 2: ADDITIONAL CONDITIONS FOR THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE., DEVELOPMENT EMPr.

Phase of development	**PLANNING**	**EA reference number**	
Impact / issue	**EA Conditions**		

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
All recommendation as proposed by the Bulk Services Report, compiled by UDS Africa (2023), should be implemented. The bulk service report should be read together with the EMPr as an addendum. All recommendations as proposed by the Stormwater Management Plan, compiled by UDS Africa (2023), should be implemented. The bulk Stormwater Management Plan should be read together with the EMPr as an addendum. All recommendation as proposed by the Electrical Services Report, compiled by DM Consulting Engineers (2023), should be implemented. The Electrical Services report should be read together with the EMPr as an addendum.				

Phase of development	PLANNING	EA reference number			
Impact / issue	EA Conditions				
MITIGATION MEASURE		MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION

Table 3: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE., CONSTRUCTION PHASE EMPr (Materials).

Phase of development	**CONSTRUCTION**
Impact / issue	**Materials**

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Handling				
Stockpiles All stockpiled material must be easily accessible on site without any environmental damage of the surrounding properties. All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised. In the case of strong wind and/or rain all stockpile material must be covered with a tarpaulin in order to prevent erosion. The stockpiles may only be placed within the demarcated areas; the location of which must be approved by the RE, EO or ECO. Storm water runoff from the stockpile sites and other related areas must be directed into the storm water system. Stockpiles are to be stabilised if signs of erosion are visible. Soils from different horizons must be stockpiled such that topsoil stockpiles do not get contaminated by sub-soil material. Topsoil stockpiles must be monitored for invasive exotic vegetation growth. Contractors must	• Minimise scarring of the soil surface and land features. • Minimise disturbance and loss of soil. • Minimise construction footprint. • Maintain the integrity of topsoil for landscaping and rehabilitation. • Containment of invasive plant growth by means of topsoil monitoring. • Minimise contamination of storm water run-off.	• No visible erosion scars once construction is completed. • The footprint has not exceeded the agreed site in terms of EA etc. • Minimal invasive weed and grass growth. • No signs of sedimentation and erosion.	Contractor	Daily

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
remediate as and when required in consultation with the EO, RE and ECO. All exposed soils must be protected for the duration of the construction phase with a suitable geotextile (e.g. Geojute or hessian sheeting) in order to prevent erosion and sedimentation of the watercourses in close proximity to these stockpiles. No plant, workforce or any construction related activities may be allowed onto the topsoil stockpiles. **Topsoil stockpiles must be clearly demarcated as no-go areas**. Stockpiles must not be higher than 2m to avoid compaction thereby maintaining the soil integrity and chemical composition.				
Oil and chemicals The contractor **must provide method statements** for the "handling & storage of oils and chemicals", "fire", and "emergency spills procedures". These substances must be confined to specific and secured areas within the contractor's camp, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 1.1 times the volume of the	• Prevention of pollution of the environment. • Minimise chances of transgression of the acts controlling pollution.	• No pollution of the environment. • No litigation due to transgression of pollution control acts. • No complaints from I & AP's. • Method statements.	Contractor.	Daily.

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
fuel) for potential spills or leaks. Drip trays (minimum of 10cm deep) must be placed under all machinery and vehicles. The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle while standing. The depth of the drip tray must be determined considering the total amount / volume of oil in the vehicle. The drip tray must be able to contain the volume of oil in the vehicle. Any spills larger than 100ℓ should be reported to all local authorities. Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. Spill kits must be made up of material/product that is in line with environmental best practice (sunsorb is a recommended product that is environmentally friendly). All spilled hazardous substances must be				

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
contained in impermeable containers for removal to a General & Hazardous Waste Landfill site, (this includes contaminated soils, and drenched spill kit material). All staff must be informed about the detrimental impacts of pollution on aquatic species, as well as about the suitable disposal of construction waste. All fuel and oil are to be stored with adequate spill protection, and no leaking vehicles are to be permitted on site. All hazardous substances must be accompanied by a permit, a hazard report sheet, and may only be handled by suitably trained operators. Vehicles must be maintained regularly and kept in a good working order.				
Cement **It is suggested that ready-mix cement be used as far as possible to minimize the possible impact on the surrounding environment.** Cement batching areas must be located in consultation with the RE, EO or ECO to ensure residues are contained and that the proposed location does not fall within sensitive areas such	• Minimise the possibility of cement residue entering into the surrounding environment. • Minimise pollution of soil, surface and ground water resources.	• No evidence of contaminated soil on the construction site. • No evidence of contaminated water resources. • Method statement.	Contractor.	Monitored daily.

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
as drainage lines, storm water channels, etc. The contractors **must provide and maintain a method statement** for "cement and concrete batching" which includes the storage, washing & disposal of cement, packaging, tools and plant. The mixing of concrete shall only be done at selected sites on mortar boards or similar structures to contain run-off into natural vegetation, soils and streams. Cleaning of cement mixing and handling equipment shall be done using proper cleaning trays. All empty containers must be stored in a dedicated area and later removed from the site for appropriate disposal at a Licensed Landfill site. All empty cement bags are to be picked up immediately to ensure that cement dust is not blown away. Empty cement bags are to be stored in a weather and scavenger proof bin, in order to prevent leaching and groundwater contamination. Cement dust is poisonous and will be detrimental to the environment. Any spillage that may occur must be investigated				

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
and immediate remedial action shall be taken. The visible remains of concrete, either solid, or from washings, shall be physically removed immediately and disposed of as waste to a Licensed Landfill site. Washing of the remains into the ground is unacceptable. Should any cement silos be employed on site; they are to be fitted with appropriate air pollution control equipment to control dust during fill-up operations.				
DANGEROUS AND TOXIC MATERIALS **Provision of storage facilities** Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas. Storage facilities should be bunded, roofed, secure, rain, wind and tamper proof. Storage areas shall display the required safety signs depicting “no smoking”, “No Naked lights” and “Danger” containers shall be clearly marked to indicate contents as well as safety requirements.	• Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments. • Minimise chances of transgression of the acts controlling pollution.	• No visible signs of pollution. • No litigation due to transgression of pollution control acts.	Contractor.	Monitor daily.

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction. In the case of pollution of any surface or groundwater, the Regional Representative of the **Department of Water and Sanitation** (DWS) must be informed immediately. Empty containers shall be removed to a General & Hazardous Waste Landfill site. During construction phase, the contractor must ensure that they comply with the Integrated Waste Management By-law 2009 as amended. All waste produced during the construction phase must be transported by an accredited service provider. **Material Safety Data Sheets (MSDS)** must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS's must be updated as required.				
Bulk storage of fuels and oils The contractors must **provide and maintain a method statement** for "Diesel tanks and	• Prevention of pollution of soil, surface and ground water resources in the immediate and	• No visible signs of pollution. • No litigation due to transgression of	Contractor.	Once off, as required.

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
refuelling procedures". Bulk fuel storage tanks on the site shall be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. A Flammable Liquid Licence must be obtained for diesel volumes greater than 200 litres. As no application was lodged for this activity, it should be noted that Environmental Authorisation is required for the storage of Diesel and/or Petrol with volumes greater than 30 000 litres. Bulk fuel storage tanks shall be located in a portion of the construction camp where they do not pose a high risk in terms of water pollution. Bulk fuel storage tanks shall be placed so that they are out of the way of traffic, so that the risk of the tanks being ruptured or damaged by vehicles is minimised. Bulk fuel storage should be covered during the rainy season. Temporary fuel dispensing areas should be covered. These areas must be isolated from surface runoff generated elsewhere onsite by utilising surface	surrounding environments. • Minimise chances of transgression of the acts controlling pollution.	pollution control acts. • Method statement.		

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
grades and/or diversion drains. Cleaning or wash waters generated from fuel dispensing areas must not be discharged directly or indirectly to stormwater. All runoff generated from fuel dispensing areas should discharge into a well-maintained separate system, with the necessary pre-treatment facilities for discharge to sewer or a temporary storage facility.				
Use of dangerous and toxic materials The contractor shall keep the necessary materials and equipment on site to deal with spills/ fire of the materials present should they occur. The contractor shall set up a procedure for dealing with spills/ fire, which will include notifying the ECO and the relevant authorities prior to commencing with construction. These procedures must be developed in consultation and approval by the appointed EO. All staff should receive some form of fire training. Fire buckets and hoses shall be in good working order and easily accessible on site. A record must be kept of all spills and the	• Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments. • Minimise chances of transgression of the acts controlling pollution.	• No pollution of the environment. • No litigation due to transgression of pollution control acts.	Contractor.	As required.

Phase of development	CONSTRUCTION
Impact / issue	Materials

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
corrective action taken.				

Table 4: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE, CONSTRUCTION PHASE EMPr (Plant)

Phase of development	**CONSTRUCTION**			
Impact / issue	**PLANT**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Eating areas and camp followers The contractors must **provide and maintain a method statement** for "Crew camps and construction lay down areas". The Contractor shall, in conjunction with the EO, designate the restricted eating area for eating during normal working hours. Two refuse bins with lids must be provided and cleaned on a daily basis. The bins are to be secure, wind, weather and scavenger proof. Designated areas for smoking must be provided. No fires are to be lit outside of a facility designed to contain fires. The adequacy and positioning of these structures must be determined in consultation with the EO and ECO. No animals, domestic or otherwise are allowed on the premises. The feeding, or leaving of food, for stray or other animals in the area is strictly prohibited. Camp followers/informal traders must not be allowed to congregate on pavements or outside the construction site. However, at the contractors discretion facilities can be made available within the designated eating area. Litter (even if originating outside the camp) and concrete bags etc. must be picked up and put into suitably closed bins.	• Control potential influx of vermin and flies. • Neat workplace and hygienic environment. • Minimise negative social impacts to local businesses and residences.	• No visual sign of vermin and flies. • No complaints from I & AP's.	Contractor, EO.	Once off, monitor daily.

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Toilets and ablution facilities The contractor will be responsible for providing all sanitary arrangements for his and the sub-contractors team. A minimum of **one chemical toilet** shall be provided **per 15 persons**. Sanitary arrangements shall be to the satisfaction of the ECO and the local authority. The contractor shall keep the toilets in a clean, neat and hygienic condition. The **contractor shall supply toilet paper at all toilets at all times**. Toilet paper dispensers shall be provided in all toilets. Toilets provided by the contractor must be easily accessible and a maximum of 150m from the works area to ensure they are utilised. All toilets will be located within the contractor's camp. Should toilets be needed elsewhere, their location must first be approved by the RE, EO or ECO. The contractor (who must use reputable toilet-servicing company) shall be responsible for the cleaning, maintenance and servicing of the toilets. The contractor (using reputable toilet-servicing company) shall ensure that all toilets are cleaned and emptied before the builders' or other public holidays. Toilets out on site must be secured to the ground and have a sufficient locking mechanism operational at all times.	• Ensure proper sanitation is achieved which will encourage the workforce to utilise toilets provided and not the surrounding habitat. • Minimise potential of diseases on site. • Minimise potential to pollute soils, water resources and natural habitats.	• Workforce use toilets provided. • No complaints received from I & AP's as well as members of the workforce. • No visible or measurable signs of pollution of the environment (soils, ground and surface water).	Contractor, RE or EO.	As and when required.

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Waste management Please refer to the waste minimization plan herewith attached.	• Sustainable management of waste by recycling. • To keep the site neat and tidy. • Minimise litigation and complaints by I&AP's. • Reduce visual impact. • Control potential influx of vermin and flies thereby minimising the potential of diseases on site and the surrounding environment. • Minimise potential to pollute soils, water resources and natural habitats.	• Disposal of rubble and refuse in an appropriate manner with no rubble and refuse lying on site. • Site is neat and tidy. • No complaints from surrounding industries and businesses. • Sufficient containers available on site. • No visible or measurable signs of pollution of the environment (soils, ground and surface water).	Contractor, EO	Daily

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Dust It is imperative that method statements regarding dust control be supplied to the ECO by the contractor prior to the commencement of any construction activities. Dust management and dust suppression during the construction phase is deemed very important. The method statement must provide information on the proposed source of water to be utilised and the details of the licenses acquired for such usage. **Potable water may not be used as a means of dust suppression**, alternative measures must be sourced. The use of 'grey' water must be investigated as an alternative. The contractor will be responsible to source this water and obtain the required approvals. Dust mitigation measures to include the use of chemical dust suppressants, such as Lignosulphonates; and the use of soil stabilisers such as straw for large open ground areas. The construction camp shall be treated with dust suppression during dry and windy conditions to control dust fallout. Dust production must be controlled by regular dust suppression of roads and works area, should the need arise. (**NB:** Concrete dust is toxic and damages soil properties. Therefore, dust suppression to prevent dust spread must not be done where concrete dust has fallen or it will infiltrate into the soil. Concrete bags must not be allowed to blow around the site and spread cement dust.)	• Reduce dust fall out. • Reduce visual impact. • Minimise loss of valuable soil material.	• No visible signs of dust. • No complaints from Interested and Affected parties. • No incidences reported to ECO. • No visible evidence of dust contamination on the surrounding environment. • Method statement. • Baseline targets not exceeded during regular monitoring of dust counts.	RE, Contractor, EO	Monitored daily

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
At the end of construction, the site camp must be fully rehabilitated by removing the temporary surface, ripping the area to loosen the soil and the area must be re-vegetated with locally indigenous vegetation only, according to the landscape development plan for the project. All vehicles transporting material that can be blown off (e.g. soil, rubble etc.) must be covered with a tarpaulin, and speed limits of 20 km/h must be adhered to. The transportation of all goods and materials by the building and construction industry and/or its nominated contractors must be carried out in such a manner to prevent accidental spills and leakage. Loads that may be subject to loss through wind erosion or accidental spillage must be totally and securely covered or sealed. Loose material should be cleaned from trucks before they leave the site. When loading, and unloading, prevent spillage of materials on to the road. Any accidental spills must be cleaned up immediately so as to prevent the material from entering the stormwater system. Adequate measures must be taken during the construction phase to control the emissions of dust into the atmosphere in terms of the City of Cape Town, Air Quality Management By-Law (2016): Section 4: Duty of care (Reasonable measures to prevent air pollution), Section 19 (Authorisation of open burning and burning of				

Phase of development	CONSTRUCTION			
Impact / issue	**PLANT**			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
material). Section 25 Emission caused by open burning (Prohibition of emissions that cause nuisances), and Section 26 (Dust Emissions) Implementation of the Dust Management Plan complied by GNEC (2023).				
Workshop equipment, maintenance and storage The contractors **must provide and maintain a method statement** for "workshop maintenance and cleaning of plant". All maintenance and washing of vehicles and equipment shall be done off-site as far as possible. During servicing of vehicles or equipment, a suitable drip tray shall be used to prevent spills onto the soil. Leaking equipment shall be repaired immediately or be removed from site to facilitate repair. Workshop areas shall be monitored for oil and fuel spills and such spills shall be cleaned and remediate to the satisfaction of the EO or RE. Cleaning and remediation must be done with products that are in line with best environmental practice i.e. Sunsorb. The Contractor shall be in possession of an emergency spill kit that must be complete and available at all times on site. The Contractor must ensure that senior and the other relevant members of the workforce are trained in dealing with spills by using emergency spill kits. All spills of hazardous substances must be reported to the ESO, EO, RE or ECO.	• Prevent pollution of the environment. • Minimise chance of transgression of the acts controlling pollution. • Disposal of hazardous substances to a General & Hazardous Waste Landfill site.	• No pollution of the environment. • No litigation due to transgression of pollution control acts. • Method statement.	RE, Contractor, EO.	Monitor daily.

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
The contractor must comply with the regulations of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) as well as specific specifications set forth by the health and safety agent. The floor drainage of covered work areas must be isolated from the stormwater system by utilising surface grades, and/or diversion drains. When floor areas are cleaned, dry absorbents and dry sweeping should be used to minimise the generation of wastewater. Intentional disposal of any substance into the environment is strictly prohibited, while accidental spillage must be prevented, contained and reported immediately. Drip trays to be used under stationary vehicles and machinery where possible. Earth moving equipment must be maintained regularly and kept in a good working order to ensure no leakages. Implement monthly groundwater quality monitoring during construction phase. No heavy equipment or vehicles to be left in the excavation pit when not in use.				

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
Noise All construction vehicles must be in a good working order to reduce possible noise pollution. Work hours during the construction phase shall be strictly enforced unless permission is given (07H00 – 18H00). Permission shall not be granted without consultation with the local industries and residents by the EO. A noise exemption is to be applied for with the Noise Control Unit of the City of Cape Town Municipality should the contractor wish to work after hours. No work to be done on Sundays. Noise reduction is essential and Contractors shall endeavour to limit unnecessary noise, especially loud talking, shouting or whistling, radios, sirens or hooters, motor revving, etc. The use of silent compressors is a specific requirement. All machinery to be muffled where possible. Noisy activities shall take place only during working hours. The EO must inform the residents of houses and businesses adjacent to the development in writing 24 hours prior to any planned activities that will be unusually noisy or any other activities that could reasonably have an impact on the adjacent sites. These activities could include, but are not limited to use of pneumatic jack-hammers and compressors etc. No noise louder than 70dB from the ambient noise level. Machinery and equipment on site must be maintained so as to	• Maintain noise levels below "disturbing" as defined in the National Noise Regulations. • Minimise the nuisance factor of the development.	• No complaints from surrounding landowners or I&APs.	Contractor, EO.	As and when required.

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
avoid any unnecessary noises. Mobile equipment, vehicles and power generation equipment must be subjected to noise tests at commencement and periodically throughout the construction phase. The duration construction related noise must be minimised as far as practically possible. Noise generated on site from all the proposed activities must comply with the Western Cape Noise Control Regulations Provincial Notice 200/2013. **Mitigation as proposed by the Noise Impact Assessment conducted by Safetech (2023):** • As a precautionary measure, construction should not occur at night. Construction to only be done during daytime hours. • All staff on the construction project should receive training to mitigate the noise impacts. • It is recommended that the ambient noise (with construction occurring) around the project and at the closest receptors be monitored during the construction phase. • Equipment to be regularly serviced and maintained to avoid unnecessary noise. • Noise monitoring during the construction period. The following noise mitigations are applicable should the				

Phase of development	CONSTRUCTION			
Impact / issue	PLANT			
MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
primates be located adjacent to the proposed development site during construction phase: • A noise barrier to be erected on the western fence of the animal enclosures. This to be erected prior to any heavy construction equipment or pile driving on site, if applicable. • Weekly communication with Monkey Town on the location and extent of construction equipment and activities to assess the impact on the animals. • Primate Specialist to be appointed to monitor the animals behaviour during construction near the Monkey Town boundary, if applicable. The Primate Specialist to determine if extra mitigation measures are required. Additional construction methodology mitigation as included in subsection 7 within the EMPr below should be implemented.				

Table 5: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE, CONSTRUCTION PHASE EMPr (Construction).

Phase of development	**CONSTRUCTION**
Impact / issue	**CONSTRUCTION**

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Crew camps Accommodation for members of the workforce will not be permitted on site unless authorisation has been given in terms of the Environmental Authorisation issued for the site. If accommodation is to be provided for workers, details need to be provided as to the location and facilities to be provided for the workers. Dedicated wash areas must be situated away from surface water sources. The contractor's camp shall be monitored for dust fallout and dust suppression applied as required. This may include the laying of gravel, the use of grey water can be considered as an option if the required permits have been acquired. The contractor's camp, offices and storage facilities shall be located within the site boundaries. If this is not feasible an alternative should be designated in consultation with the ECO. The contractor shall provide labourers to clean up the contractor's camp and construction site on a daily basis. These areas shall then be inspected by the contractor or his/her ESO to ensure compliance with this requirement. The contractor shall be responsible for cleaning the contractor's camp and construction site of all structures, equipment, residual litter and building materials at the end of the construction period and, the topsoil restored in areas where landscaping is to take place.	• Minimise water pollution. • Minimise dust fallout. • Minimise unwarranted environmental damage outside the footprint. • Maintain a clean and healthy working environment. • Minimise visual impact to surrounding environment.	• No signs of water or soil pollution. • No complaints from surrounding landowners or I&APs. • No visible signs of litter. • Method statements.	Contractor, EO, ESO.	Monitor daily.
Fires The contractors **must provide and maintain a method statement** for "fires", clearly indicating where and for what fires will be utilised plus details on the fuel to	• Minimise risk of veldt fires. • Minimise	• No veldt fires started by the contractor's workforce.	Contractor, EO,	Monitor daily.

be utilised in creating the fire. Fire training and equipment to be nearby to put fires out. No wood is to be collected from private or public property. Fires must be within designated areas and must be in small scale. Absolutely no burning of waste is permitted. Fires will only be allowed in facilities especially constructed for this purpose within fenced Contractor's camps. Wood and/or charcoal are the only fuels permitted to be used for fires. The contractor must provide sufficient wood (fuel) for this purpose. Fires in the designated areas must be small in scale so as to prevent excessive smoke being released into the atmosphere. Heavy smoke may not be released into the air. No felling of trees or wood collection is allowed from private or public property. **The Contractor shall ensure that there is appropriate fire-fighting equipment available on site at all times.** The construction should comply with SANS 10400 of 2011 and the Community Fire Safety By-Law, Provincial Gazette 5832 (as amended 29 June 2007 and 21 August 2015), with reference to: • Detailed fire protection plans should be submitted by a competent person – fire engineer for perusal of future building plan submissions; • Fire hydrants to be provided as per SANS 100400 T4.35; • No window, door or unprotected openings shall be closer than 3 m of an open space stair as per SANS 10400 T4.27.2; • Access for emergency vehicles as per Chapter 3 Section 12 of the Community Fire Safety By-law.	destruction of natural fauna and flora. • Maintain safety on site.	• No claims from landowners for damages due to veldt fires. • Method statement.	ESO.	

Erosion and sedimentation To reduce the loss of material by erosion, the contractor shall ensure that disturbance on site is kept to a minimum. The disturbance especially includes the movement of heavy vehicles. The contractor shall be responsible for rehabilitating all eroded areas in such a way that the erosion potential is minimised after construction has been completed. These areas are to be filled with mulch or funnels constructed to route the water. All disturbed areas that will not be landscaped within the construction phase, must be mulched to encourage vegetation re-growth. Mulch used must be free from alien seed. These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas. In the case of strong wind and/or rain all stockpile material must be covered with a tarpaulin in order to prevent erosion.	• Minimise erosion damage. • Minimise scarring of the soil surface and land features. • Minimise disturbance and loss of topsoil. • Re-growth of disturbed areas.	• No erosion scars. • No loss of topsoil. • No interference with the natural flow of water. • No visible erosion scars once construction is completed. • The footprint has not exceeded the agreed boundaries. • All damaged areas successfully rehabilitated.	Contractor, EO, ESO.	As and when required.
Fauna <u>All activities on site must comply with:</u> The regulations of the Animal Protection Act, 1962 (Act No. 71 of 1962); and Marine Living Resources Act, 1998 (Act No. 18 of 1998). All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to society. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. Employees must be trained on how to deal with fauna species as	• Minimise disturbance to animals. • Minimise destruction of habitat.	• No complaints from Nature Conservation. • No litigation concerning applicable animal protection	RE, Contractor, EO, ESO.	Monitor daily.

intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake a specialist must be called in to safely relocate the animal if the EO or ECO is not able to.		acts. • No measurable or visible signs of habitat destruction.		
Flora No open fires shall be allowed on site under any circumstances, fires will only be permitted in adequate facility within the crew camp, Forest Act, 1984 (Act No. 122 of 1984). The contractor must rehabilitate the construction camp and any other disturbed areas once construction activities have terminated. Three (3) Outeniqua yellowwood trees (Afrocarpus falcatus) are present on the southern boundary of Portion 63 of Farm No. 918. At this point in time, the two of the three Outeniqua Yellowwood trees will be retained and not impacted by the proposed development. Application under Section 15(1) of the National Forest Act, 1998, as amended, will be made to obtain a licence for the removal of one of the trees.	• Encourage natural habitat fauna. • Minimise scarring of the soil surface and land features. • Minimise disturbance and loss of topsoil. • Minimise risk of veldt fires. • Minimise risk of fauna and flora destruction.	• No exotic plants used for landscaping. • No visible erosion scars once construction is completed. • The footprint has not exceeded the agreed boundaries. •	Contractor, EO, ESO, Landscape Architect.	As and when required.

Heritage In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), should any archaeological artefacts be exposed during construction activities, work on the area where the artefacts were found shall cease immediately and the ECO as well as the Local Council shall be notified within 24 hours. Upon receipt of such notification, the ECO will arrange for the excavation to be examined by an Archaeologist. Under no circumstances shall archaeological artefacts be removed, destroyed or interfered with. Any archaeological sites exposed during demolition or construction activities must not be disturbed prior to authorisation by the Heritage Western Cape and/or the South African Heritage Resources Agency or the appropriate provincial heritage resource agency. **A Heritage Impact Assessment was conducted by Ms. Cindy Postlethwayt (2021). The proposed development is supported from a Heritage perspective if the following mitigations measure are implemented:** Impacts upon the identified heritage resources have been limited to visual impacts, and these are generally identified as being of low to moderate significance. Mitigations are also therefore appropriately limited to minimising these visual impacts and are proposed in relation to general outdoor and sports lighting facilities; roof material and façade colouring; adherence to the Landscape Master Plan and Tree Management Plan, fencing and parking. With the exception of the impacts of the floodlights on the landscape and scenic resources (which effects cannot be mitigated significantly), mitigations are expected to reduce each visual impact type, particularly during construction. **The supplementary Heritage Impact Assessment (SHIA) completed by Ms. Cindy Postlethwayt (2023). The proposed development is supported from a Heritage perspective if the following mitigations measure are implemented:** - in respect of heritage related considerations, it is generally in accordance with the SDP, Landscape Plan and Tree Management Plan included in Annexure D	• Limit the destruction of the country's heritage resources. • The preservation and appropriate management of new archaeological finds should these be discovered during construction.	• No destruction of or damage to known archaeological sites.	Contractor, EO, RE, ESO.	Monitor Daily.

of this report; and - the mitigation measures included in the SVIA, reiterated in Section 11 of this report, are undertaken. All proposed mitigation measures must be included in the Final Environmental Management Programme and any further planning and design documentation that follows this phase of approvals (e.g.: SDP and Building Plan).				
No-go / sensitive areas No sensitive areas were identified on the site. Topsoil stockpiles are to be demarcated with danger tape and seen as no-go areas. All construction activities must remain within the boundaries of the development area, as demarcated at the start of the construction phase. The construction footprint must be kept to a minimum by constructing boundaries and demarcated around areas not to be disturbed. These No-go areas must be **demarcated with fencing / warning tape** and signs before any construction activities commence. These areas and the type of fencing/demarcation must be approved by the relevant specialist involved in the EIA process. The EO and ECO must be on site in order to make sure the correct areas are fully demarcated.	• Minimise the potential for the spread of the construction footprint. • Reduce loss of fauna and flora habitat. • Minimise the potential for loss of protected and or endangered fauna and flora species.	• No sign of movement through "no go" areas. • Containment of footprint.	RE, Contractor, ESO, EO.	Monitor daily.
Access route/haul roads Existing roads and services must be utilised thus reducing the infringement of the development on natural habitat. If new access roads have to be constructed the road should follow existing roads for as far as possible in order to minimize the area of disturbance. Any authorised clearing for access roads must be done under the supervision of the ECO. Access roads for earthmoving-equipment must be clearly designated and be positioned as close as possible to the proposed development site. No driving off from the marked roads is permitted and designated parking areas must be	• Minimise loss of topsoil and enhancement of erosion. • Minimise fauna and flora displacement by destruction of natural habitats.	• No erosion on access roads after completion of construction. • No loss of topsoil due to runoff water on access roads.	Contractor, RE or EO.	As required, monitor daily.

identified and demarcated with applicable signage. Neither the site nor its access roads must be allowed to be utilised for recreational activities, this includes but is not limited to quad bikes, 4x4's and dirt bikes. Security personnel to ensure that this is enforced. No unauthorised access is permitted.				
Crime, safety and security No site staff, other than security personnel and skeleton staff shall be housed on site unless otherwise stipulated in the Environmental authorisation. Security personnel and skeleton staff shall be supplied with adequate protective clothing, ablution facilities, water and refuse collection facilities. A boundary fence will serve to prevent public access to the site, for public safety and security reasons. The access to the site must be controlled so as to restrict unauthorised personnel from entering the site. The workers on site must retain some means of identification. The ESO and the contractor are responsible for ensuring that only authorised personnel are on site at all times. The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the National Building Regulations. Site specific conditions and regulations as set forth by the health and safety agent should also be adhered to. The contractor shall ensure that all emergency procedures are in place prior to commencing work. Emergency procedures shall include (but not be limited to) fire, spills, contamination of the ground, accidents to employees, use of hazardous substances and materials, etc. The contractor shall ensure that lists of all emergency telephone numbers / contact persons are kept up to date and that all numbers and names are posted at relevant locations throughout the construction site. The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. The contact details of this emergency centre, as well as the police and ambulance services must be available at prominent locations around the construction site and the construction crew camps.	• Reduce the risk of potential incidences. • Minimise the potential impact on the environment. • Reduce the risk of possibly fatal incidents occurring on site.	• No incidences reported.	RE, Contractor, ESO, EO.	Monitor daily.

Visual impact Shade cloth must be utilised to conceal and minimise the visual impact of contractor camps, lay down and storage areas. Landscaping must enhance the aesthetic appeal of the development. The buildings that are to be erected must be aesthetically pleasing and blend into the area as far as possible. Rubble and litter must be removed every two weeks or more often as the need arises and be disposed of at a registered landfill site as designated by the City of Cape Town Municipality, Solid Waste removal department. **Implementation of the following mitigation measures recommended by Fi Smit (Fila Visual) (2021 & 2023):** **<u>Construction: Landscape works and installation</u>** The proposed landscaping is acceptable and considered as part of the mitigation measures for the following reasons (Draft Scenic Drive Network Management Plan Review: Phase 1, 2013, pp. 54, 34). The Landscape Master Plan proposes landscaping that: ✓ Is appropriate in its context, with the emphasis on place making, visual screening and protecting views; specifying indigenous trees and shrubs for new planting; ✓ Preserves existing tree avenues, tree belts, windbreaks and mature tree specimens(especially those that contribute to the sense of place) wherever possible; ✓ Avoids the use of artificial berms along a scenic route; ✓ Screens the parking areas which will be visible from the Scenic drive; ✓ Softens and screens views from scenic routes with landscaping and greenery; ✓ Protects an Iconic gateway view to Cape Town by enhancing the landscape quality and framing effect of existing green edges and tree planting.	• Minimise visual impact.	• No complaints from I & AP's.	Contractor, landscape contractor, ESO.	Monitor daily.

Proposed trees *i) The irrigation supply to trees performing a screening function for visual mitigation must be sufficient to ensure that they grow optimally during the establishment period (and for at least a 5 year period).* *ii) The project team must therefore demonstrate that the irrigation of the proposed trees (their irrigation source, storage and irrigation system design will be sufficient during and after the establishment period to ensure their survival and successful establishment. This includes, but is not limited to the following:* *a. Soil moisture content in the root ball must be consistent, i.e.; trees may not be allowed to dry out during the Western Cape summer months or become waterlogged during the wet winter months.* *b. Irrigation design must provide dedicated lines for the irrigation of trees.* *c. Dedicated lines must be programmed to supply water to trees on their own regime.* *d. Slower, soaking watering regimes should be preference over large quantities over short periods of time.* *e. The recommended guideline for watering trees is a minimum of 40 – 50L per week.* *f. The most important aspect of the watering regime is consistency. Once planted, the irrigation of the trees cannot be allowed to skip a +- 7-day cycle.* *g. The design team (Landscape architect and/or engineer) must provide the CA with sufficient detail to demonstrate that the irrigation requirements for trees will be met through rainwater harvesting, borehole supply or similar; and storage capacity must be indicated on the plans.* *h. Soil samples must be taken prior to the specification and design of the final irrigation system and the tree holes to ensure that soil conditioning is responsive to site-specific conditions.* *i. If the soil is at all sandy, it is strongly recommended that Zeoplant moisture retention granules or a similar product is specified to reduce fluctuations in the soil moisture content of the root balls of trees.*				

j. The root balls of trees must also receive adequate aeration, and compaction of root zones to be avoided wherever possible. *iii) The proposed trees for screening must be planted according to the specification of the Landscape Architect on the LMP (i.e.; no later revision of the LMP may reduce the number of trees to be planted for screening purposes).* *iv) The proposed Workshop building's visibility must be reduced for views from the east. It is recommended that an avenue of appropriate trees is planted east of the building to screen it and to reinforce landscape patterns that will increase the "fit" of the proposed development into the receiving environment. The Landscape Architect should consider extending this avenue south of the entrance to fill in the "gap" in screening vegetation that the proposed boundary wall creates along Mondeor Road. Scope for positive enhancement exists (see Figure 40).* *v) The Landscape Architect should consider the possibility of extending the screening utility of the 5m wall further north along the shared Portion 63 & 28 by planting an avenue of tall growing tree species along the extension line of the proposed noise barrier. This would increase shielding from the floodlights for viewers located to the east of the subject site in general, which are generally more sensitive.* *vi) The height of the proposed Electrical Sub-station is not shown on the Elevations.* *a. Should it be visible above (or through) the boundary wall, this structure should receive some screening with vertical greening or trees.* ***Landscape installation and phasing:*** *i) The installation of trees must be undertaken at the earliest possible opportunity, allowing as much time as possible to grow to maturity and begin fulfilling their screening and visual absorption capacity functions within the proposed development.* *ii) All trees that fulfil a screening function must be planted and irrigated as part of Phase 1, and as early in the construction process as possible.* *iii) All trees associated with property edges and roads within the property (that contribute the strengthening the landscape patterns of the context) must be planted and irrigated along with (or shortly after) the construction of the boundary walls*				

and/or roads within their associated phases, and as early in the construction process as possible. *iv) All disturbed areas (with specific reference to areas that will be developed towards the end of the construction period or is later phases) must be shaped and planted (or otherwise re-vegetated) so that these open areas blend in with the contours of the surrounding landscape.* *v) These areas must be maintained so as not to become a source of visual impact themselves (this applies to the Operational Phase too).* *<u>Additional landscaping required:</u>* *i) Key public road verges (i.e. the southern property boundary, the eastern property boundary of Portion 63, and the Disney Walk/Mondeor road corner visible from the N2) must receive appropriate verge landscaping to improve the development's public road interfaces.* *a. In terms of the interface with the N2 scenic route, the purpose of landscaping should be to make a positive contribution to the character of this somewhat degraded semi-industrial, semi-rural transitional landscape.* *b. In terms of the interface with the cultural landscape to the east, the purpose of landscaping should be to soften the proposed structures, increase visual absorption and contribute positively to the landscape character of the transitional zone between development and the rural agricultural landscape.* *ii) Any and all soft landscaping along all public road verges must be implemented along with the first phase of the development and/or along with (or shortly after) the construction of the boundary walls.* **Fencing, boundary walls and gateways/entrances** *The previous VIA stated that high, solid or palisade-type walling, and any form of precast panel type fencing should be avoided. The 2021 VIA supported the then-proposed boundary treatment, which combined sections of solid wall and Clear-Vu type mesh fencing. This proposal favoured visual permeability and was anticipated to result in boundary interfaces that reinforced the positive aspects of the receiving environments landscape character, and resulted in an acceptable level of transformation between rural/smallholding character's status quo and the evolving*				

urbanity of this transitional area. *The August 2023 revision of this report requested additional information and a motivation explaining why the previously supported fencing proposal was changed. It has since come to the specialists attention that the boundary wall in its entirety has been granted approval at building plan level by the City of Cape Town Municipality, prior to the completion of the NEMA approvals process. As noted in the August 2023 findings, this VIA defers to the final decision of the City of Cape Town officials in terms of the requirements of the Boundary Walls and Fences Policy. In light of the fact that building plan approval has already been granted, further comment on the design of the boundary walls has limited utility from a visual impact management point of view within the NEMA process.* *It should however be noted that the omission of verge landscaping, public realm improvements and the reduction of positive public interfaces on street verges plays a role in increasing the negative visual impact of the proposed development and remains an issue that should be addressed at detail design level in future processes. Please refer to 6.1 item f) i) a-b, and f) ii) for the relevant recommendations.* *As before:* *i) Boundary walling, fencing and gateways should be in keeping generally with a visually neutral architectural character, and should be visually permeable.* *ii) Where security fencing is required, it should be screened with trees or hedging.* *iii) Gateways and gateway structures should be set back from the boundary by no less than 6m and should be visually simple in design, if possible.* **Signage** Control of signage as per Outdoor Advertising and Signage By-law should be strictly enforced in order to reduce impact of possible inappropriate signage or boundary demarcations on the Scenic Drive and facing sensitive receptors. i) Score boards may not be visible from public roads and sensitive viewers, and must avoid line of sight from neighbouring properties. ii) Signage visible from the public realm must be simple and discrete. iii) Commercial signage and advertising within and surrounding the proposed				

development is to be avoided. **Parking lot** The proposed design of the parking area is acceptable, and considered as part of the mitigation measures to the extent that the parking area: ✓ Collects vehicles related to particular facilities in specific locations, closely related to that facility ✓ Does not allow vehicles to line the Scenic drive edge. ✓ Screens the parking lot from the surrounding roads using landscaping and softens the edges. Additionally, the proposed development should ensure that overflow parking outside the demarcated areas is physically impossible on the southern interface with the N2. **<u>Construction phase</u>** At this stage, limited information detailing the specifics of the construction phase is available. The applicant/developer/landowner must put formal and enforceable measures in place to ensure that the visual impact of construction activities is limited and reduced wherever possible. Ideally, this would form part of the Environmental Management Plan/Programme (EMP). The following recommendations are made to guide the drafting of the EMPr in terms of managing visual impact during the construction phase. • Dust management, waste management, the placement of screens and hoarding, as well as the location and management of access points to the site must be proactively managed to reduce visual clutter and limit visual impacts associated with construction activity before, during and after each phase of the construction process (demolition, excavation, project execution, close-out etc., establishment, etc.) • Areas on site such as material storage, stockpiles, lay-down areas, site offices and parking areas for plant must be limited and consistent. These areas must be screened by the existing vegetation to be retained in the south eastern corner of site and/or sufficiently tall screens/hoarding placed on the southern and lower western property boundaries to screen views from the N2 scenic				

route. • Road junctions should have good sightlines, traffic control measures, necessary safety signage, and dust control measures in place. • All site operatives to receive training in awareness of the issues of fires, litter, and contaminants as these pertain to visual impacts. No fires are to be allowed on site; and no litter and no contaminants to be allowed to enter the receiving environment surrounding the site. • Signage on site during construction to be limited to the absolutely necessary safety and information signage, excluding advertising in all forms. • Fencing/hoarding and signage must adhere to local policy relating to signage and ensure that no views to scenic routes are impacted by large or numerous signage. • Appropriate fencing should screen the construction site entirely. • Dust and debris control must be implemented to minimize the impacts on the local roads, residents and neighbouring properties. Where necessary, access routes and the site itself should have an effective dust suppression management programme applied, such as the use of non-polluting chemicals that will retain moisture in the exposed site surfaces. • All Construction phase impacts must be managed in accordance with an approved Environmental Management Plan. • Site offices, storage and lay down areas, loading areas and similar temporary infrastructure should be situated centrally, must be screened by the existing vegetation to be retained in the south eastern corner of site and/or sufficiently tall screens/hoarding placed on the southern and lower western property boundaries to screen views from the N2 scenic route.				
Hydrology Increased run-off during construction must be managed using berm, storm water retention facility and other suitable structures as required to ensure flow velocities are reduced; this must be done in consultation with the Resident engineer as well as the ECO. The Contractor shall take reasonable measures to control the erosive	• Minimise pollution of soil, surface and ground water resources in the immediate	• No visible signs of pollution. • No signs of siltation of	RE, Contractor, EO.	As and when required, monitor daily.

effects of storm water runoff. Dirty water should be captured, to be re-used where possible. No dirty water is allowed to be discharged into the surrounding environment. Storm water, wherever possible, should be allowed to soak into the land in the area on which the water fell. In the event of pollution caused as a result of construction activities, the contractor, according to section 20 of the National Water Act, 1998 (Act No. 36 of 1998) shall be responsible for all costs incurred by organisations called to assist in pollution control and/or to clean up polluted areas and water courses. The contractor shall ensure that excessive quantities of sand, silt and silt-laden water do not enter the storm water system. No wastewater may run freely into any of the surrounding streets. Install sediment collection devices to prevent the export of sediment from the site. Locate sediment traps and basins in locations that will not create adverse flood risks to adjoining properties. <u>Geohydrological Assessment (GEOSS, 2022):</u> Implement monthly groundwater quality monitoring during construction phase. No heavy equipment or vehicles to be left in the excavation pit when not in use. Monitoring boreholes must be installed on site for regular groundwater monitoring purposes. Spillages or leakages from the proposed WWTF could contaminate soil or groundwater in the area. The monitoring of the WWTF must be done in according to the Minimum Requirements for Water Monitoring at Waste Management Facilities (1998). It is planned that the WWTF will treat black water and if these plans are approved it is recommended that monitoring boreholes be installed. Containment of effluent should be appropriately lined to avoid discharge into the subsurface, and potentially groundwater. The conducted Freshwater Ecological Verification Assessment Following	and surrounding environments. • Minimise impeding the natural flow of water. • Minimise the impact on natural water flow dynamics. • Minimise scarring of the soil surface and land features.	water courses. • No visible erosion scaring once construction is completed. • Minimum loss of topsoil.		

(FEN,2023) indicate that the following mitigation measures should be implemented in terms of Sections 21 (a), (e), (g), (f) and (j) of the National Water Act, 1998 (Act No. 36 of 1998): • All mitigation measures as per the hydrogeological assessment (GEOSS, 2022) must be implemented to ensure that the risk of contamination of any water resources can be deemed 'low'. • All treated effluent from the package plant must be metered and a monthly water quality analysis undertaken by taking a grab sample and analysing it for the specific substances and parameters as listed in Table 2 within the Freshwater Report. • Suitable storage facilities must be provided for the treated effluent prior to use for landscape/sports field irrigation. During the raining winter season, when irrigation is not required (or minimally used), water from the package plant must either be stored for use during the dry summer season or released into a constructed wetland/ the stormwater management system (if applicable). • It is recommended that Sustainable Drainage Systems (SuDS) be utilised as they will assist with further polishing of treated effluent water, minimise impacts on surrounding terrestrial habitat (e.g., erosion) and provide additional habitat for a variety of faunal and avifaunal species. Figure below provides examples of SuDS installed within residential environments.  **Figure 16: Examples of stormwater swales developed to meander between built up areas for stormwater attenuation and conveyance.**				

Stormwater The overall stormwater strategy must comply with the City of Cape Town's Stormwater Policies and By-laws, as listed below: • Management of Urban Stormwater Impacts Policy, approved by Council: 27 May 2009; • By-Law Relating to Stormwater Management, approved by Council: 30 August 2005. Oil / water separators must be installed on the stormwater system, at the outfall of the parking areas, prior to discharge into the stormwater pond, in order to remove oils / hydrocarbons from stormwater runoff from the parking areas. Prominently displayed safety signage must be placed in the vicinity of each stormwater attenuation and treatment facility, warning owners, tenants, staff and the public that water levels within the stormwater facility will temporarily rise during storm events and that water may be contaminated. Mortar must not be mixed in gutters or any other location, which will drain to the stormwater system. All wastewater from brick cutting activities must be prevented from entering the stormwater system. Brick cutting activities that generate surplus wastewater should not be carried out on public roads, footpaths or reserves. Paint waste and wash waters must not be discharged to the stormwater system. Water-based paint cleaning water should be disposed of to sewer or diverted into a contained area lined with newspaper on-site. When it is dry, place the newspaper with paint residue in a solid waste bin. Oil-based clean up material should be filtered for reuse of the solvent or taken to a	• Contingencies for minimising negative impacts anticipated to occur during the construction phase.	•	Contractor, Engineer	Design and Implementation

waste depot that is licensed to accept these wastes. Place the paint residue after filtering in a solid waste bin. Unused paint should be kept in the tin or other sealed container and disposed of to a waste depot licensed to receive this waste. Plastering waste and wash waters must not be discharged to the stormwater system. All residues and wastes from plastering activities should be allowed to dry within a designated contained area of the site. Solid waste should be disposed of either on-site or taken to a licensed waste depot. Alternatively, solid wastes from plastering activities such as calcium sulphate may be used as a clay modifier in gardens. All stormwater to be managed in accordance with the Stormwater Management Plan complied by UDS Africa. 2023. Hardstanding must be used on site to underlie parking areas. Runoff from the hardstanding to discharge into the stormwater system. A proper stormwater system needs to be developed so as to catch any surface run-off. No rainwater is allowed to be discharged to the sewer system. The containment slab must be graded to drain to a catch-pit that is connected to discharge to the stormwater system while the surrounding paved surface areas must be graded to ensure rainwater runoff to the stormwater system. The stormwater management plan should evaluate the potential quality of the stormwater and need for potential oil separator systems or containment structures and treatment or attenuation ponds. Monitoring boreholes must be installed on site for regular groundwater monitoring purposes.				

Soil Topsoil must be stripped from all areas that are to be utilized during the construction period and where permanent structures and access is required. These areas will include comprising the permanent works, pipeline trenches, stockpiles, access roads, construction camps and lay down areas. All topsoil must be removed and stockpiled on the site. Single handling is recommended. Stockpiles must not be higher than 2m to avoid compaction. Dust suppression is necessary for stockpiles older than a month – with either water or a biodegradable chemical binding agent. Backfill will require contouring to ensure that it blends in with the surrounding environment.	• Minimise scaring of the soil surface and land features. • Minimise disturbance and loss of soil. • Minimise construction footprint. • Maintain the integrity of topsoil's for future landscaping and rehabilitation. • Containment of invasive plant growth.	• No visible erosion scars once construction is completed. • The footprint has not exceeded the agreed site in terms of EA etc. • Minimal invasive weed growth. • No signs of sedimentation and erosion. • Method statement.	Contractor.	Daily.

Noise <u>Mitigation as proposed by the Noise Impact Assessment conducted by Safetech (2023):</u> Construction to only be done during daytime hours. Staff to be trained on how to mitigate noise impacts. Equipment to be regularly serviced and maintained to avoid unnecessary noise. Noise monitoring during the construction period. A noise barrier to be erected on the western fence of the animal enclosures. This to be erected prior to any heavy construction equipment on site. Weekly communication with Monkey Town on the location and extent of construction equipment and activities to assess the impact on the animals. A Primate Specialist to be appointed to monitor the animals behaviour if piling is to be conducted (during the first piling event) (If applicable). The Primate Specialist to determine if extra mitigation measures are required.	• Minimise noise during construction period	• No complaints from local community	Contractor.	Daily

Groundwater Clay in soil profile of the study area will result in ponding of water on top of the fields if over irrigation takes place. Appropriate subsurface drainage will be required for the sports fields. Ensure an appropriate irrigation plan is put in place to prevent ponding and/or irrigation of fields with treated effluent contaminating the groundwater. Treated effluent must conform to DWS general limit. Ensure package plant and associated infrastructure (e.g., plumbing system) is to relevant standards and is bunded appropriately. Ensure the water quality of the water cycled through the package plant is treated to DWS general limit. Prior to the use of groundwater for any construction related purpose, the water quality is to be analysed by an accredited laboratory.	•	•		

Phase of development	CONSTRUCTION
Impact / issue	TOLERANCES

MITIGATION MEASURE	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Fines Environmental management is concerned not only with the final results of the Contractor's operations, but also to the standard of the day-to-day operations required to complete the works. Penalties may be instituted for non-compliance. The penalty is over and above the cost of rectifying the problem and / or damage. Penalties will vary on a sliding scale from **R 1 000 to R 5 000** for non-serious issues as determined by the Engineer / RE / ECO. For each subsequent similar offence the fine shall be doubled in value to a maximum value of **R 20 000.** The Engineer together with the ECO will decide how the penalties, if any, are to be spent on measures improving the environment. Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the environmental specifications. The Engineer will inform the Contractor of the contravention and the amount of the fine, the amount will be deducted from the monies due in payment certificates issued under the Contract. Maximum fines for the following contraventions by either the Contractor and / or his subcontractors may be imposed by the Engineer / ECO, as follows: **a)** Any persons, vehicles, plant, or material related to the Contractors operation within the designated boundaries of a "no-go" area. **R 5 000** **b)** Persistent failure to demarcate "no-go" areas. **R 2 000** c) Damage to trees not specified to be removed. **R 3 000** **d)** Persistent and unrepaired oil leaks from machinery / not using a drip tray to collect waste oil and other lubricants / not using specified absorbent material to encapsulate hydrocarbon spillage / using inappropriate methods of refuelling. **R 3 000** **e)** Litter on site associated with construction activities. **R 2 000** **f)** Deliberate lighting of illegal fires on site. **R 1 000** **g)** Burning of waste without a permit. **R 2 000** **h)** Any employee eating meals on site, outside of defined eating area. **R 500** i) Employees not making use of the site ablution facilities. **R 2 000** j) Failure to implement specified noise controls. **R 1 000**	Engineer	Monitor Daily

k) Failure to empty waste bins/skips/litter structures on a regular basis. **R 2 000** **l)** Inadequate dust control or failure to apply dust suppression. **R 2 000** **m)** Any water abstraction activities from a watercourse without approval. **R 5 000** **n)** Inadequate handling of bitumen. **R 3 000** **o)** Inadequate handling of concrete. **R 2 000** Any activity, that in the reasonable opinion of the Engineer, RE and ECO, constitutes a deliberate contravention of the requirements of the specifications relating to environmental matters. **R 4 000**	Engineer	Monitor daily

Table 6: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE, *OPERATIONAL* PHASE EMPr (General)

Phase of development	**OPERATIONAL**
Impact / issue	**General**

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Waste management Please refer to the waste Minimization Plan Herewith attached.	• Sustainable management of waste by recycling. • To keep the development neat and tidy. • Minimise litigation and complaints by I&AP's. • Reduce visual impact.	• Disposal of refuse in an appropriate manner with no refuse polluting the development. • Development is neat and tidy. • No complaints from surrounding industries and businesses. • Sufficient containers available on site. • No visible or measurable signs of pollution of the	Property Owners association and ECO.	6 Monthly.

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
		environment (soils, ground and surface water).		
Stormwater Management Storm water, wherever possible, must be allowed to soak into the land in the area on which the water has been discharged. The storm water system and the discharge points must be inspected, and damaged areas must be repaired if required. Discharge points should further be inspected for blockages of any kind; these must be removed timeously to ensure the efficient operation of the storm water management system. No waste or refuse must be allowed to access the storm water infrastructure. In the event that silt runoff occurs off the development site, the cause of this must be investigated and suitable mitigation measures employed. This may include the vegetation of bare areas, installing flow diversion channels in consultation with an engineer, installing velocity reducing structures etc. For all maintenance undertaken reference must be made to recommendations in the engineer's reports and or the approved storm water management plan. All maintenance activities must be monitored to ensure that no environmental damage occurs. All damage must be mitigated immediately. The following maintenance procedure (stipulated by UDS Africa) should be implemented: The developer undertakes to maintain the attenuation pond and infiltration trench. It	• Minimise pollution of soil, surface and ground water resources. • Minimise the potential loss of topsoil. • Minimise the potential of flooding of the development, or its neighbouring properties.	• No evidence of pollution at the discharge points. • No evidence of silt build-up at the discharge points. • No complaints from I & AP's.	Property Owners association and ECO.	As and when required. Monitor seasonally.

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
will be kept neat and in a functional condition at all times. All maintenance activities to take place as well as their proposed implementation timeline as indicated in Table 3 (Maintenance Schedule) in the Stormwater Management Plan.				
Dust Surface dust should be minimized during the operational phase of the development in order to prevent the dust from being blown to adjacent properties.	• No dust blown from the development to adjacent properties.	• No complaints from I&AP's.		

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Atmospheric pollution **Air pollution** All forms of dust/air pollution must be managed in terms of the Air Quality Act No. 39 of 2004 and Dust Regulations of 2013, this includes the control of noxious and offensive gases, smoke, dust and vehicular emissions. Excavation activities must be managed with due care for the requirements of the National Dust Control Regulations, R 827, National Environmental Management: Air Quality Act 39 of 2004. All phases of the operations must comply with all the stipulations of the City of Cape Town Air Quality Management By-Law, PG 7662 of 17 August 2016: Section 4: Duty of care (Reasonable measures to prevent air pollution), Section 19 (Authorisation of open burning and burning of material). Section 25 Emission caused by open burning (Prohibition of emissions that cause nuisances), and Section 26 (Dust Emissions) Under no circumstances may heavy smoke be released into the air.	• Reduce visual impact. • Minimise chances of transgression of the acts controlling pollution.	• No visible signs of pollution. • No litigation due to transgression of pollution control acts. • No complaints from surrounding residents and businesses.	Property Owners association and ECO.	Monitor daily.

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Noise pollution Noise levels shall be kept within acceptable limits, these are determined in terms of the relevant local by-laws. Operation activities will remain within normal working hours (07:00am – 18:00pm). Safetech noted that the results show that when the development is completed in 2028, a small amount of community complaints can be expected as per SANS 10103:2008, although this response may be offset due to the proximity of the site to the T2 road that has higher traffic volumes and thus higher noise levels. If complaints are received due to traffic noise, the local authority can then implement traffic calming measures that may decrease the road noise. It is recommended that the Noise Management Plan (as complied by Safetch, 2023), be adhered to in order to mitigate any potential noise impacts on the surrounding receptors. The Noise Management Plan (NMP) should be considered in the context of the following legislation: • Province of the Western Cape: Provincial Gazette Extraordinary 7141 – Western Cape Noise Control Regulations - PN 200/2013 (20th June 2013). • GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 1989 (Act No. 73 of 1989); • SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication. The internally generated traffic noise impacts is not expected to be significant. However, if complaints arise, the primary aim would be to reduce the traffic speed. Therefore, it is recommended that the following measures be considered as best practice: • Implement stop junction where possible within the facility				

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
• Erect signage to enforce low speed limits in the area • Install speed bumps wherever reasonably practicable • Restrict the use of heavy delivery vehicles to business hours The noise from sporting activities may impact on the surrounding receptors as a result of referees and coaches blowing whistles. The following measures will mitigate the noise impacts on the surrounding receptors and thus minimize the probability of negative community responses: • Appoint a competent staff member to handle community interaction, this staff member should be responsible for handling any complaints or concerns received by the community. • Prohibit music concerts from being hosted at the facility (this is not anticipated due to the proposed new design and purpose of the facility) • No public address systems, such as loudspeakers, bells or sirens, should be used. • Restrict the continuation of sporting activities after 22:00. • Consider the construction of a noise barrier on the western fence line of Monkey Town (if applicable). • Appoint a primate specialist to monitor the animal behaviour during the beginning of the operational phase to determine if there is an impact on the animals and if further mitigation measures are needed (if applicable).				

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Construct a noise barrier 5 meters in height on the western fence line of Monkey Town (if applicable). Conduct once off (including at least 2 nights) monitoring at community receptors during the beginning of the operational phase to determine if a noise disturbance is present. If so, consider further mitigation measures such as noise sensitivity training for coaches who blow whistles etc. Noise generated on site from all the proposed activities must comply with the Western Cape Noise Control Regulations Provincial Notice 200/2013.				
Primate Monitoring and mitigations (if applicable): The mitigations as included below were not allowed to be conducted by Monkey Town: The initial cycles of monitoring can be done over a 24-hour period (for the noise impact), but not exceeding 14 days (for the effect of light), depending on the variables to measure as well as the availability of the equipment to be used. Since all the primates are diurnal, behavioural observations would be split into noise impact during the day and light impact at night. This can be done from the time the animals wake to going to sleep and from dusk until midnight and again between 02:00 and 04:00. The exact protocol would have to be developed in line with the objectives. Monitoring should be done to measure the rate of adaptation to light exposure and any changes in the behavioural repertoire of the primates. Similarly, this could be applied to nocturnal species at the centre as well in the interest of animal welfare. Based on the findings of the monitoring of the primates, the primatologist must advise in term of additional mitigations required (if any).				

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Safety and Security Boundary wall must be regularly inspected and maintained to prevent any damage. All fencing on site must be managed in terms of the **Fence Act No. 31 of 1963.** All maintenance and repair work must be done in accordance with **National Building Regulations and Standards Act 103 of 1977.** Maintenance work must not be the cause of environmental damage. Any environmental damage caused must be investigated and mitigated immediately. An emergency plan (including fire management) must be developed and implemented; the relevant authority must approve this plan. Ensure that all fire extinguishers are replaced on or before their expiry dates. Ensure that pump devices are in good working order.	• Reduce the risk of potential incidences. • Minimise litigation and complaints by I&AP's.	• No complaints from surrounding residents and businesses.	Property Owners association and ECO.	As and when required.
Traffic management It must be ensured that a backlog of traffic does not develop at access points during peak hours, through the implementation of an efficient and effective access control system. All traffic management must be done in accordance with the **National Road Traffic Act No. 93 of 1996.**	• Minimise chances of transgression of the acts controlling traffic. • Minimise traffic backlog.	• No litigation due to transgression of traffic control acts. • No complaints from surrounding industries and businesses.	Property Owners association and ECO.	Monitored continually.

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
Landscape maintenance Where applicable landscaped areas must be maintained in terms of the general conditions set out in the approved landscape plan.	• Minimise chances of transgression of the acts. • Reduce visual impact.	• No litigation due to transgression of relevant acts. • No complaints from surrounding residents and businesses.	Property Owners association and ECO.	As and when required. Monitor seasonally.
Infrastructure maintenance All buildings must be maintained in accordance with engineer's specifications. In case of emergency sewage leaks, effluent must not be discharged into any water course or water body. All taps must be regularly inspected for leaks and washers or valves replaced as required. Inspect the development for burst, blocked or leaking water pipes and repair as required. A risk assessment has been compiled by Becon Watertech (Package Plant Manufacturers). The risk assessment and mitigations measures have been included in Subsection 6 within this EMPr below. **Groundwater** Spillages or leakages from the proposed WWTP could contaminate soil or	• Reduce visual impact. • Minimise pollution of soil, surface and ground water resources.	• No complaints from surrounding residents and businesses. • No pollution of the environment.	Property Owners association and ECO.	As and when required. Monitor as part of a monthly maintenance inspection/schedule.

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
groundwater in the area. The monitoring of the WWTP must be done in according to the Minimum Requirements for Water Monitoring at Waste Management Facilities (1998). It is planned that the WWTP will treat black water and if these plans are approved it is recommended that monitoring boreholes be installed. The proposed package type Wastewater Treatment Plant will be temporary and will be decommissioned once the Macassar Waste Water Treatment Works is upgraded. Ensure an appropriate irrigation plan and fertilisation plan is put in place to prevent ponding or fertilisers contaminating the groundwater. This should avoid over fertilising of the fields. Appropriate subsurface drainage will be required for the sports fields. Containment of effluent should be appropriately lined to avoid discharge into the subsurface, and potentially groundwater. Ensure package plant and associated infrastructure (e.g., plumbing system) is to relevant standards and is bunded appropriately. Ensure the water quality of the water cycled through the package plant is treated to DWS general limit. GN665 as promulgated in the Government Gazette 36820 of September 2013 in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) indicates that the use of up to 500 m^3 per day of treated wastewater can be utilised on any given day, must meet the following general water quality standards (parameters vary with increasing daily irrigation volumes):				

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION

Variables	Limits
pH	Not less than 6 or more than 9
Electrical Conductivity (mS/m)	Not exceed 200
Chemical Oxygen Demand (mg/l)	Not exceed 400 mg/l after removal of algae
Faecal coliforms	Not exceed 100 000 per 100 ml
Sodium Adsorption Ratio (SAR)	Not exceed 5 for biodegradable industrial wastewater

GEOSS Addendum to the Groundwater Impact Assessment (2023):

Groundwater abstraction volumes must be monitored.

Water levels must be monitored and should not drop below the critical water level as indicated in the yield testing report.

Monitoring information must be assessed regularly (suggested monthly in summer). If the water level in the borehole drops below 15 metres of drawdown, abstraction will immediately be reduced by 10%. Monitoring will persist and after 30 days, if the water level in the borehole did not recover to above the 15-metre drawdown level, abstraction will be reduced by a further 10%. This process will continue until the water level in the borehole is stable.

A groundwater management plan needs to be implemented.

Monitoring information must be assessed regularly (suggested monthly in summer). If an increase of ≥25% is observed in electrical conductivity, abstraction will immediately be reduced by 10%. Monitoring will persist and after 30 days, if the water quality of the borehole did not recover, abstraction will be reduced by a further 10%. This process will continue until the water quality has stabilized.

Prior to irrigation, the water quality of the water cycled through the package plant must be treated to DWA general limit. Treated effluent (after the package plant, before

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	RESPONSIBLE PARTY	FREQUENCY OF ACTION
irrigation) must be regularly tested for quality. Monitoring boreholes should be installed and regularly (i.e. quarterly) monitored to screen for potential deterioration in groundwater quality. Monitoring will no longer be required once the package plant is decommissioned and treated effluent is no longer used for irrigation purposes. Where possible, greater volumes of groundwater and rainwater can be used for irrigation, particularly in the winter months. **Visual:** At the beginning of the operational phase, a once-off monitoring exercise must be undertaken (over the course of at least two nights, at the time of the new moon) from the locations of surrounding sensitive receptors and neighbours, to determine if the predicted conditions have been achieved within the 10m - 45m area around the fields. a. This report must be submitted to the relevant decision makers for review. b. This requirement must be included in the Environmental Management Plan. c. If the results exceed the predicted conditions, the relevant decision makers may then impose additional mitigation measures and/or call for the redesign of the lighting proposal as deemed fit. iIn order to minimise the probability of negative community responses, a competent staff member should be appointed at the beginning of the operational phase, to be responsible for handling any complaints or concerns received by the I&Aps (and any other affected neighbours). This can be the same person as recommended in Section 8.2 of the NIA, and this requirement must be included in the Environmental Management Plan.				

Table 7: THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE, OPERATIONAL PHASE EMPr (EA conditions)

Phase of development	**OPERATIONAL**	**GNEC-Guillaume Nel**	
Impact / issue	**EA Conditions**		**……**

MITIGATION MEASURE	**MANAGEMENT OBJECTIVES**	**MEASURABLE TARGETS**	**RESPONSIBLE PARTY**	**FREQUENCY OF ACTION**
	•	•		

THE PROPOSED HIGH-PERFORMANCE SPORT CENTRE DEVELOPMENT ON PORTION 28 & PORTION 63 OF THE FARM GUSTROUW NO 918, CITY OF CAPE TOWN, DIVISION STELLENBOSCH, WESTERN CAPE.

(INCLUDING THE WASTE, WATER USE AND ELECTRICITY CONSUMPTION MINIMIZATION AND MANAGMENT PLAN)

Prepared for:

Rhinos Asset Holdings (Pty) Ltd

Willem Strauss

290 Anthony Street

Newlands

Pretoria

0049

willemstrauss@icloud.com

Prepared by:

Guillaume Nel Environmental Consultants

P.O. Box 2632

Paarl

7620

Tel: 021 870 1874

Fax: 021 870 1873

E-Mail: hdp@gnec.co.za

REFERENCES

DEA&DP, 2003. A Waste Minimization Guideline Document for Environmental Impact Assessments (2003) by Common Ground in association with deVilliers Brownlie Associates.

National Environmental Management Act 107 of 1998 (NEMA)

Stellendale Village DRAFT Green Building Guidelines by Steadfast Greening, 2008

SUB SECTION 1 - INTRODUCTION

1.1 INTRODUCTION

Rhinos Asset Holdings (Pty) Ltd as proponent of the proposed development, will use this WASTE, WATER USE AND ELECTRICITY CONSUMPTION MINIMIZATION AND MANAGMENT PLAN to minimize and manage waste and wastage, electricity consumption and water use in the design, construction and operational phase of the proposed development as a tool in managing the impacts of the proposed development after environmental approval from the Department of Environmental Affairs and Development Planning (DEA&DP) in terms of the **NEW** Environmental Impact Assessment Regulations (GN R. No. 983, GN R. No. 984 and GN R. No. 985 [4 December 2014] as amended 07 April 2017) under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), has been obtained.

This document is based on the Waste Minimization Guideline Document on the DEA&DP website (by Common Ground in association with deVilliers Brownlie Associates) and the Stellendale Village DRAFT Green Building Guidelines by Steadfast Greening.

The regulation of activities that have a significant impact on the environment as well as the protection of the environment itself, have improved significantly in the last decade and a half with the promulgation of the Constitution, and general environmental legislation, such as the National Environmental Management Act (NEMA) and the National Water Act. One of the main impacts of human activities on the environment is that of waste disposal (Common Ground & deVilliers Brownlie Associates, 2003).

Waste may be in solid, liquid or gaseous form. It may be benign, toxic, or hazardous. The management of hazardous waste, with associated negative impacts on the environment, is generally covered by legislation. The longer term, cumulative impacts of relatively benign waste disposal is poorly addressed by our laws (DEA&DP Waste Minimization Guideline, 2003).

“Waste” in this document is primarily interpreted as solid waste. Waste minimization per se is not specifically legislated in South Africa at present. Similarly, there are no legal instruments that can be used to enforce reduction in wastage of electricity and water although the National Water Act No 36 of 1998 prohibits wastage of water without specifying what wastage means and how this section will be enforced. However, there are a number of laws and overarching policies that are aimed at

sustainable development and sound environmental management, and which are relevant to waste and wastage minimisation.

Wastage is defined in the Oxford Dictionary as…“expend or employ to no purpose or for inadequate result, use extravagantly or ineffectually, squander”. Part of the obligation to protect the environment would be to limit wastage of resources. Thus limiting wastage of water would fall within this obligation. So too would be limiting the wastage of electricity that results in pollution at the site of electricity generation (Common Ground & deVilliers Brownlie Associates, 2003).

SUB SECTION 2 - WASTE REDUCTION

2.1 BACKGROUND TO WASTE REDUCTION

A key element of environmentally friendly buildings is to promote awareness and change behaviour around all aspects of waste management.

Waste minimisation can therefore be assessed as a component of waste management that aims to reduce the amount of waste, which has to be disposed of. In this regard waste minimisation is aimed at tackling the causes and sources of waste rather than just trying to address and mitigate the symptoms (e.g. through treatment). Waste management can be depicted as a hierarchy, as shown in Figure 9 below. In the hierarchy, source reduction options are considered as a priority, followed by re-use and recycling options. Treatment options are considered only when acceptable waste minimisation techniques have been investigated. As a "last resort" disposal should be considered.

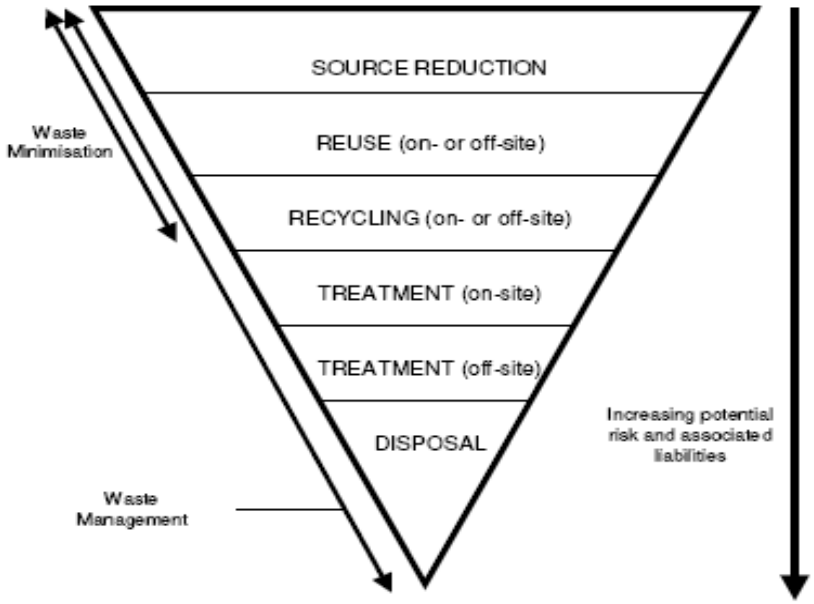


Figure 9: Waste Management Hierarchy (Common Ground & deVilliers Brownlie Associates, 2003).

Waste Management, therefore, involves interventions to minimize waste generation in the planning, operation, management and maintenance of the built environment, and includes waste prevention, waste reduction, waste re-use, and recycling.

A further aspect is minimizing the environmental and health impacts by reducing toxicity and ensuring environmentally sound treatment and disposal of remaining waste. The ultimate is however to promote a zero-waste concept where all the related materials can be used again over the longer term with life-cycle assessments, cradle to cradle.

Zero Waste is a goal, a process, a way of thinking that is different to the way we think about products and processes. Not only is Zero Waste about recycling and avoiding waste going to landfill, it also changes production and distribution systems to prevent waste from being manufactured in the first place. It is a way of changing how materials flow through society in such a way that, as in nature, they flow in a closed loop – resulting in efficient use of material and other resources, such as energy and water (Steadfast Greening, 2008).

Zero Waste therefore aims to:

- Prevent rather than manage waste.
- Turn resource that would normally be thrown away into economic value instead of loss.
- Support sustainable development.
- Follows natural processes where everything is recycled.
- Promote the efficient flow of energy and materials.

It is thus essential to ensure that waste avoidance is built into the process at a design phase, referring to the construction and maintenance of the building. This will be done through selection of the appropriate building materials and managing the construction process in a responsible manner.
Opportunities for the separation of waste at source must also be built into the design of the building to encourage people to recycle their waste.

2.2 BENEFITS OF WASTE REDUCTION

The benefits of waste reduction as described in the DEA&DP Waste Minimization Guideline (Common Ground & deVilliers Brownlie Associates, 2003) include the following benefits.

2.2.1 Financial benefits

- Reduced transportation costs for waste materials (less transportation because of less material wasted). This includes transportation to and from the site and disposal.

- Reduced disposal costs of waste materials (disposal costs are likely to rise significantly in the near future)
- Reduced purchase quantity and price of raw materials by waste minimisation.
- Reduced purchase price of new materials when considering reuse and recycling (depending on materials).
- Increased returns can be achieved by selling waste materials to be reused.

2.2.2 Environmental benefits

Some of the environmental benefits are:

- Reduced quantity of waste generated.
- Efficient use of waste generated.
- Minimised amounts of waste disposed of at landfills, which therefore extend the lifespan of landfills.
- Reduced environmental effects as a result of disposal, e.g. noise, pollution.
- Reduced transportation of waste to be disposed of (hence less noise, vehicle emission pollution, and energy used).

2.2.3 Social benefits

- Increased site safety.
- Increased work efficiency.
- Enhanced company image.
- Job creation through recycling initiatives.

2.3 GENERATED WASTE

2.3.1 Examples of waste generated during construction:

- Waste wood from cutting structural elements, broken structural elements and damaged elements from incorrect storage
- Damaged or off-cut steel components
- Off-cut electrical wiring and cabling
- Broken or off-cut tiles
- Packaging
- Off-cut and broken bricks
- Surplus material from cut and fill activities
- Spoil from cut and fill activities
- Off-cut, or broken conduit and plumbing
- Off-cut or damaged insulation elements
- Surplus paint and paint containers
- Broken or redundant plant and equipment

- Surplus concrete, cement and grouting
- General waste

SUB SECTION 3 - WASTE MINIMIZATION PLAN

3.1 WASTE MINIMIZATION DURING CONSTRUCTION

Issue	Minimization Plan
General Considerations	
Standardization of dimensions	The developer will for as far as it is economically feasible design the buildings to maximise the use of standard dimensions in order to minimize the amount of cutting waste during construction. They include but are not limited to: • The size of rooms and roofs to ensure minimal cutting of tiles; • The size of roofs to make use of standard roof trusses.
Material Selection	The developer will, for as far as it is economically feasible select: • materials for least waste generation during preparation and use during construction, • materials used in the construction which are durable in order to minimise maintenance or replacement, • standard materials to increase re-use/ recycling potential, • materials which are sourced locally.
Pre-Fabrication	The developer will, for as far as it is economically feasible make use of pre-fabricated components in order to minimise waste on site and permit re-use by the manufacturers of any waste generated during construction of the units.
Hazardous Substances	The developer will, for as far as it is economically feasible make use of non-hazardous substances to replace hazardous substances such as replacing asbestos with fibre glass etc.
Maintenance	The developer will, for as far as it is economically feasible design the structure of buildings in such as way that it minimizes but facilitates maintenance, in order to prolong the life-span of the structure and reduce the amount of waste resulting from demolition. The developer will, for as far as it is economically feasible design the structure of buildings in such a way that maintenance does not require the use of hazardous or toxic substances. This will ensure that minimal waste will be un-recyclable due to contamination.

Ordering	The developer will strive to order materials "just-in-time" to avoid deterioration/ breakage during storage The developer will strive to (as far as reasonably possible) order materials only from suppliers which will take back any unused/ off-spec or broken materials favoured. The developer will strive to (as far as reasonably and economically possible) order materials in bulk to reduce packaging but without over-ordering resulting in waste generation. Suppliers which take back the packaging will be favoured by the developer.
Load and unloading of materials	The construction site staff will be trained to load and unload materials correctly to avoid breakage and wastage.
Storing of materials	Care will be taken to ensure that materials are stored appropriately according to supplier specifications to reduce the risk of damage or deterioration.
The use of temporary structures	The developer will attempt to keep temporary structures on site to a minimum. Where unavoidable the temporary structures used on this site, will be re-used on other sites.
General	The **contractors must provide and maintain a method statement** for "solid waste management". The method statement must provide information on the proposed licensed facility to be utilised and details of proposed record keeping for auditing purposes. For the disposal of clean building rubble, a General & Hazardous Waste Landfill sites can be utilized. • Waste shall be separated into recyclable and non-recyclable waste, and shall be separated as follows: Hazardous waste: including (but not limited to) old oil, paint,etc, • General waste: including (but not limited to) construction rubble, • Reusable construction material. Recyclable waste shall preferably be deposited in separate bins. The contractor is advised that "Collect-a-Can" collect tins, including paint tins, chemical tins, etc. and "Consol" collect glass for recycling. Any illegal dumping of waste will not be tolerated. Proof of legal dumping must be able to be produced on request. Bins must be clearly marked for ease of management. All refuse bins must have a lid secured so that animals cannot

	gain access. Under no circumstances may any waste be burnt. All waste must be managed in accordance with the Minimum Requirements for waste disposal by landfill 2nd ed 1998. The minimum requirements for easy access by waste disposal service trucks will be met in order for vehicles to effectively access the waste. All waste must be disposed of at a registered site. It is the management bodies' responsibility to ensure that the contracted party responsible for waste disposal disposes of the waste at the correct facility. This facility refers to a General & Hazardous Waste Landfill site as referred to by the City of Cape Town Municipality Solid Waste Management Department. These landfill sites are permitted by Department Water and Forestry with operating numbers in place.
	The use of building materials which result in least amount of waste generated (e.g. pre-fabrication as opposed to on-site construction/ fabrication) will be favoured by the developer as far as economically feasible. Materials will be re-used on site wherever possible. Off-cuts and equipment will be re-used on other jobs wherever possible.

3.2 WASTE MINIMIZATION DURING OPERATION

Issue	Minimization Plan
General Considerations	
General	Owners of properties will be encouraged to separate waste into recyclable and non-recyclable waste, and shall be separated as follows: • Hazardous waste: including (but not limited to) old oil, paint, etc, • General waste: including (but not limited to) domestic refuse, non- recyclable waste; • Recyclable waste shall preferably be deposited in separate bins. The owners will be advised that "Collect-a-Can" collect tins, including paint tins, chemical tins, etc. and "Consol" collect glass for recycling. Bins must be clearly marked for ease of management. All refuse bins must have a lid secured so that animals cannot gain access. Sufficient closed containers must be strategically

	located around the development to handle the amount of litter, wastes, rubbish, debris generated by the development. Under no circumstances must any waste be burnt. All waste must be managed in accordance with the Minimum Requirements for waste disposal by landfill 2nd ed 1998. The minimum requirements for easy access by waste disposal services must also be met in order for vehicles to effectively access the waste. All waste must be disposed of at a registered site. It is the management bodies' responsibility to ensure that the contracted party responsible for waste disposal disposes of the waste at the correct facility. This facility refers to a General & Hazardous Waste Landfill site as referred to by City of Cape Town Municipality Solid Waste Management Department. These landfill sites are permitted by Department Water and Sanitation with operating numbers in place.

SUB SECTION 4 – WATER USE AND MANAGEMENT PLAN

4.1- WATER USE MINIMIZATION AND MANAGEMENT DURING CONSTRUCTION AND OPERATION

CONSTRUCTION PHASE	
Issue	Management Plan
General Considerations	
DUST SUPPRESSION	Potable water cannot (as far as possible) be used as a means of dust suppression, alternative measures must be sourced. The use of 'grey' water must be investigated as an alternative. The contractor will be responsible to source this water and obtain the required approvals.
ABLUTIONS	The developer will reuse as much of the water from wash basins on site as possible.
CONCRETE AND CEMENT PREPARATION	The developer/contractor will order concrete and cement from supplier for as far as possible. The mixing area should contain any liquids to prevent contamination of soil and storm water
GENERAL CLEANSING OPERATIONS	All hoses will be fitted with trigger gun spray nozzles to limit wastage. Dry sweeping will be used (for as far as possible) in preference to washing of areas and equipment. **Wherever possible** biodegradable and non-toxic detergents, soaps and degreasers will be used. Regular Maintenance of equipment will be conducted in order to prevent wastage.

OPERATIONAL PHASE	
WATER WISE LANDSCAPING	The developer will focus on the use of indigenous water wise planting and irrigation methods (if necessary), such as drip irrigation, which can drastically reduce garden water consumption. If biodegradable, non-toxic soaps, shampoos and detergents are used exclusively in the structure, these waste water streams can

	be directed to catch ponds for re-use as irrigation.
WATER SOURCES	The capture and use of rainwater from gutters and roofs will be promoted amongst owners of the new erven
ABLUTIONS	Washbasin taps should be fitted with flow reduction devices or aerators. Toilets will be fitted with dual flush systems.

SUB SECTION 5 – ELECTRICITY MANAGEMENT PLAN

5.1 ELECTRICITY CONSUMPTION REDUCTION OPERATION

Using energy efficient electrical installations is one of the cheapest and easiest ways to reduce energy costs and thus improve the economic and environmental performance of existing developments. Newer equipment is often more energy efficient than old equipment.

Choosing appliances such as energy efficient Geysers, stoves, Zero CFC based refrigerators; may initially be more expensive, although in the longer term it would reduce electrical costs and thus has a positive effect on the environment.

OPERATIONAL PHASE	
General Considerations	
AIRCONDITIONING	The buildings will as far as possible be positioned or orientated to optimise use of ambient weather and climate conditions for heating and cooling. Solar glazing or energy efficient windows to reduce need for air-conditioning will be promoted. Insulation to reduce the need for air-conditioning will be promoted. Natural air flow must be used in preference to air-conditioning wherever possible.
LIGHTING	Natural light will be used wherever possible during the day in preference to artificial light (trade off between using large windows for use of sunlight but this may require additional air-conditioning) Low voltage or compact fluorescent and/or High Pressure Sodium lights will be used in place of incandescent globes.
REFRIGERATION	**Should it be used** on the premises, consideration must be given to fit cold rooms and freezers with counter-weight doors to ensure that they cannot be left open unnecessarily.
HEATING	The use of solar heating will be investigated and utilized as far as economically feasible.

SUB SECTION 6 – PACKAGE PLANT RISK ASSESSMENT AND MITIGATIONS

	Likelihood to occur within 5 years	Damage
1	Not likely	Minor/Nuisance
2	Somewhat likely	Risk of disease/pollution
3	Very likely	High risk of disease/pollution
4	Regular occurrence	Severe risk of disease/pollution

Risk factor = Likelihood x Damage

12-16	High risk
4-11	Medium risk
1-3	Low risk

Item	Cause of fault	Effect	Likelihood	Damage	Risk factor	Mitigation
1	Blockage of pipe in works	Spillage within fenced area	2	1	2	Screening plant upstream
						Pipe diameter suitable for flows
						Annual cleaning of plant
2	Blockage in septic tank	Spillage within fenced area	2	1	2	Screening plant upstream
						Annual honey sucking of septic tank
3	Lift pump failure	Spillage within fenced area	2	1	2	Duty/Standby pump arrangement
						Quarterly servicing of pumps
4	Eskom power outage	Spillage within fenced area	4	1	4	Generator power backup
		Total plant failure	4	4	16	Generator power backup
5	Single rotor failure	Ineffective sewage treatment	2	1	2	Rotors designed with 10% tolerance - other rotors can bear the load temporarily
						Rotor lifespan 10-15 years
						Spares locally available
6	Multiple rotor failure	Ineffective sewage treatment	1	3	3	Rotor lifespan 10-15 years
						Spares locally available
						Temporarily use septic tank as conservancy tank if required and honey suck daily until rotors are repaired
						Use lift station as transfer station - pump to municipal main sewer with temporary pipeline until repairs effected
7	Total plant failure	Ineffective sewage treatment	1	4	4	Temporarily use septic tank as conservancy tank if required and honey suck daily until rotors are repaired
						Use lift station as transfer station - pump to municipal main sewer with temporary pipeline until repairs effected
8	Operator error	Ineffective sewage treatment	4	2	8	O&M manuals provided
						Site signage includes daily operational tasks
						Logbook checklist is available
						Training provided at site handover
9	Poor maintenance	Rotor failure (Items 5,6,7)	2	3	6	Monthly preventative maintenance contract available
						O&M manuals provided
						Spares locally available
		Lift pump failure (Item 3)	2	1	2	Monthly preventative maintenance contract available
						O&M manuals provided
						Spares locally available

SUBSECTION 7- CONSTRUCTION METHODOLOGY

swart & associates
architects

18 October 2023

To Whom it may concern:

Construction Methodology of the new High-Performance Sport Centre on Portion 29 (a portion of portion 15) and Portion 63 (a portion of portion 25) of the Farm Gustrouw no 918 in the City of Cape Town.

The project scope comprises 3 large training fields with subsidiary services buildings, such as athlete accommodation and indoor training facilities.

CONSTRUCTION PHASING

Stage 01 – Construction of perimeter walls.

The precinct perimeter will be enclosed before any construction commences on site. Boundary wall building plans were approved by the local authority.
The walls will be pre-manufactured off site, and installed by a specialist contractor. This construction method allows for quality control, accuracy and no material waste. The installation process is 4 times quicker than conventional construction, using limited resources on site. Construction noise associated with the casting of concrete, placement of steel with grinder noise, and so on are greatly eliminated.
The height of the wall varies in accordance with an acoustic engineer's recommendation. Once installed, all future construction work noise will partially be shielded, reducing the impact of noise.

Stage 02 – Bulk earthworks

Once the land-use rights are approved the development team will construct the sporting fields. The works will be prioritized starting with field **C** closest to Monkey Town. The

works in this area will be approximately 6 – 8 weeks with the balance of the other fields another 4 weeks.
Before any works commence on site and specifically Field C, the works programme and working hours will be discussed with Monkey Town to coordinate acceptable times and introduce possible mitigation methods to reduce the impact on the animals.

It is proposed that the disturbing revers hooter noise associated with the earthworks machinery be disconnected to mitigate the disturbance. A safety officer will be employed to control the movement of vehicles in such a way as to not allow unnecessary traffic close the common boundary wall with Monkey Town

.

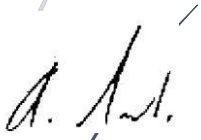
Stage 03 – Services and buildings

The residential buildings form the bulk of the building works and will be manufactured off site and erected by a specialist's contractor. 3 Buildings will be built on site in the traditional way. It is important however to note that the position of building works is on the opposite side of Monkey Town. There will thus at no stage of the project be any traditional construction works against the perimeter of Monkey Town.

Stage 04 – Project activation

Once complete, the facility will generate most of its own energy needs. The landscaping and visual context of the development will reflect a Cape Dutch feel. The main buildings will portray a traditional farm build, and the accommodation buildings will be constructed with new building technologies. The design success will be the interaction between the old and new with traditional and modern building mythologies complimenting one another. The combined approaches will offer the public a traditional setting with a modern experience.

Yours faithfully



_____

Swart & Associates Architects
André Swart

ANNEXURE 1 DECLARATION OF UNDERSTANDING BY THE DEVELOPER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Programme for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness 2: _____

ANNEXURE 2 DECLARATION OF UNDERSTANDING BY THE ENGINEER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Programme for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness 2: _____

ANNEXURE 3 DECLARATION OF UNDERSTANDING BY THE CONTRACTOR

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Programme for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness 2: _____

ANNEXURE 4 INCIDENT AND ENVIRONMENTAL LOG

ENVIRONMENTAL INCIDENT LOG				
Date	**Env. Condition**	**Comments** *(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	*Signature*