

**Report
Version - FINAL**

Namibia Investment Contacts cc

PROJECT DETAILS

Title	Environmental Management Plan for the Proposed Construction of Hospitality Facilities on Erven 1 and 2 of Consolidated Erf "X" Rundu Extension 3, Kavango East		
MEFT Reference	APP-002721		
Proponent	Namibia Investment Contacts cc		
Report date	June 2021		
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ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
DEA	Department of Environmental Affairs
DR	Developer's Representative
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GG	Government Gazette
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
HIV	Human Immuno-deficiency Virus
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
NHC	National Heritage Council
Reg.	Regulation
S	Section
TB	Tuberculosis

1 INTRODUCTION

Rundu is the capital of the Kavango-East Region. The Kavango Regions are regarded as the poorest in Namibia. The town of Rundu has experienced a rapid population growth which has seen it rise from 36,964 to 63,430 inhabitants between the two census periods of 2001 to 2011, having recorded the second highest growth in Namibia. Rundu is not only the administrative centre of the Region but is also the economic hub of the Kavango-East Region. With the rebuilding efforts of the Angolan economy and the Trans-Caprivi highway that links the country and its main port in Walvis Bay to the rest of Africa, Rundu is setting itself up to become the hub of trade and development in the north. The town is also becoming a popular tourism destination. This has led to an increase in applications to the Rundu Town Council from investors interested in purchasing land for the development of hospitality facilities such as hotels and lodges.

Instead of allowing the ad-hoc subdivision of the Rundu Townlands in response to individual applications, the Rundu Town Council decided to adopt a holistic and integrated planning approach. This approach is based on the creation of Consolidated Erf X which comprises of Portion 129 and Erven Re/1220 and 1229, Rundu Extension 3. Consolidated Erf X was subdivided into 13 portions that can be made available to investors to put up the hospitality amenities.

Mr Joseph Hungamo, the proponent, has interest in Erf 1 and Erf 2 of Consolidated Erf X and intends to put up a restaurant, bar, swimming pool, and conference facilities on Erf 1, while he plans a townhouse development on Erf 2.

The Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above activity was conducted by Africa Planning Forum CC (APF) in 2016. Following the submission of the final Environmental Assessment Report, the ECC was granted as per letter dated 25 January 2017 (Appendix C). In accordance with the Environmental Management Act No 7 of 2007 and the Environmental Impact Assessment Regulations of 2012 the ECC is only valid for three years and as such the ECC has expired in 2020. Stubenrauch Planning Consultants (SPC) has been appointed to apply on their behalf to the Ministry of Environment, Forestry and Tourism (MEFT) for the renewal of the ECC. The EMP is herewith updated as part of the application to apply for the ECC renewal for the proposed activity.

An Environmental Management Plan (EMP) is one of the most important outputs of the EA process as it synthesises all of the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. This EMP details the mitigation and monitoring actions to be implemented during the following phases of these developments:

- Planning and Design - the period, prior to construction, during which preliminary legislative and administrative arrangements, necessary for the preparation of properties are made and engineering designs are carried out. The preparation of construction tender documents forms part of this phase;
- Construction - the period during which the proponent, having dealt with the necessary legislative and administrative arrangements, appoints a contractor for the construction of services infrastructure to service the development as well as any other construction process(s) within the development area;
- Operation and Maintenance - the period during which the services infrastructure and the facilities will be fully functional and maintained.

The decommissioning of these developments is not envisaged; however in the event that this should be considered some recommendations have been outlined in **Table 5**.

2 ROLES AND RESPONSIBILITIES

The proponent (the Developer) is ultimately responsible for the implementation of the EMP, from the planning and design phase to the decommissioning phase (if these developments are in future decommissioned) of these developments. The proponent will delegate this responsibility as the project progresses through its life cycle. The delegated responsibility for the effective implementation of this EMP will rest on the following key individuals:

- Developer's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

2.1 DEVELOPER'S REPRESENTATIVE

The Developer should assign the responsibility of managing all aspects of this development for all development phases (including all contracts for work outsourced) to a designated member of staff, referred to in this EMP as the Developer's Representative (DR). The Developer may decide to assign this role to one person for the full duration of these developments, or may assign a different DR to each of the development phases - i.e. one for the planning and design phase, one for the construction phase and one for the operation and maintenance phase. The DR's responsibilities are as follows:

Responsibility	Project Phase
Making sure that the necessary approvals and permissions laid out in Table 1 are obtained/adhered to	Throughout the lifecycle of these developments
Making sure that the relevant provisions detailed in Table 2 are addressed during planning and design phase.	Planning and design phase
Suspending/evicting individuals and/or equipment not complying with the EMP	<ul style="list-style-type: none"> • Construction • Operation and maintenance
Issuing fines for contravening EMP provisions	<ul style="list-style-type: none"> • Construction • Operation and maintenance

2.2 ENVIRONMENTAL CONTROL OFFICER

The DR should assign the responsibility of overseeing the implementation of the whole EMP on the ground during the construction and operation and maintenance phases to a designated member of staff, referred to in this EMP as the Environmental Control Officer (ECO). The DR/Developer may decide to assign this role to one person for both phases, or may assign a different ECO for each phase. The ECO will have the following responsibilities during the construction and operation and maintenance phases of these developments:

- Management and facilitation of communication between the Developer, DR, the contractors, and Interested and Affected Parties (I&APs) with regard to this EMP;
- Conducting site inspections (recommended minimum frequency is monthly) of all construction and/or infrastructure maintenance areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP);
- Assisting the Contractor in finding solutions with respect to matters pertaining to the implementation of this EMP;
- Advising the DR on the removal of person(s) and/or equipment not complying with the provisions of this EMP;
- Making recommendations to the DR with respect to the issuing of fines for contraventions of the EMP; and
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document.

2.3 CONTRACTOR

Contractors appointed by the Developer are automatically responsible for implementing all provisions contained within the relevant chapters of this EMP. Contractors will be responsible for the implementation of this EMP applicable to any work outsourced to subcontractors. **Table 3** applies to contractors appointed during the construction phase and **Table 4** to those appointed during the operation and maintenance phase. In order to ensure effective environmental management the aforementioned chapters should be included in the applicable contracts for outsourced construction, operation and maintenance work.

The tables in the following chapter (**Chapter 3**) detail the management measures associated with the roles and responsibilities that have been laid out in this chapter.

3 MANAGEMENT ACTIONS

The aim of the management actions in this chapter of the EMP is to avoid potential impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

The following tables provide the management actions recommended to manage the potential impacts rated in the scoping-level EA conducted for these developments. These management actions have been organised temporally according to project phase:

- Applicable legislation (**Table 1**);
- Planning and design phase management actions (**Table 2**);
- Construction phase management actions (**Table 3**);
- Operation and maintenance phase management actions (**Table 4**); and
- Decommissioning phase management actions (**Table 5**).

The responsible persons from the proponents' team have assessed these commitments in detail and have committed to the specific management actions where indicated in the tables below.

3.1 ASSUMPTIONS AND LIMITATIONS

This EMP has been drafted based on the scoping-level Environmental Assessment (EA) conducted for the construction of hospitality facilities on Erven 1 and 2 of Consolidated Erf X Rundu Extension 3 as represented in **Figure 2**. SPC will not be held responsible for the potential consequences that may result from any alterations to that layout.

It is assumed that construction labourers will be sourced mostly from the Rundu townlands area and that migrant labourers (if applicable) will be housed within established accommodation facilities in the townlands.

3.2 APPLICABLE LEGISLATION

There are multiple legal instruments that regulate and have a bearing on good environmental management in Namibia. Table 1 below provides a summary of the legal instruments considered to be relevant to this development and the environmental assessment process.

Table 1: Legal provisions relevant to these township developments

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Constitution of the Republic of Namibia as Amended	Article 91 (c) provides for duty to guard against “the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia.” Article 95(l) deals with the “maintenance of ecosystems, essential ecological processes and biological diversity” and sustainable use of the country’s natural resources.	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to achieve that. Section 3 details the principles of Environmental Management	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process.	Activity 6 The construction of resorts, lodges, hotels or other tourism and hospitality facilities. Activity 8.8 Construction and other activities in water courses within flood lines.
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	The pollution of water resources should be avoided during construction and operation of the development.

The Ministry of Environment and Tourism (MET) Policy on HIV & AIDS	MET has recently developed a policy on HIV and AIDS. In addition it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	The proponent and its contractor have to adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when construction workers interact with local communities.
Township and Division of Land Ordinance 11 of 1963	The Townships and Division of Land Ordinance regulates subdivisions of portions of land falling within a proclaimed Local Authority area	In terms of Section 19 such applications are to be submitted to the Townships Board
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council. Sections 34-47 makes provision for the aspects of water and sewerage	The development has to be comply to provisions of the Local Authorities Act
Labour Act no 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	Given the employment opportunities presented by the development, compliance with the law is essential.
Public Health Act no 36 of 1919	Section 119 prohibits persons from causing nuisance.	Contractors, residents and business owners of the proposed extensions are to comply with these legal requirements.
Nature Conservation Ordinance no 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants have to be managed within the legal confines.

3.3 PROJECT LOCATION

Rundu is located in northern Namibia on the banks of the Kavango River and borders Angola to the north. The proposed Consolidated Erf X is located east of the well-known Rundu Beach area and to the north of the Kavango Regional Council and Omashare Lodge. The area is located on vacant townlands and is zoned “Undetermined” according to the Rundu Town Planning Scheme. Erf 1 and 2 where the development will take place are located on the western side of Consolidated Erf X and are proposed to be zoned to “Hospitality”. Refer to the locality map of Rundu in **Figure 1** and **Figure 2** for the locality map of Erven 1 and 2 of Consolidated Erf X below:

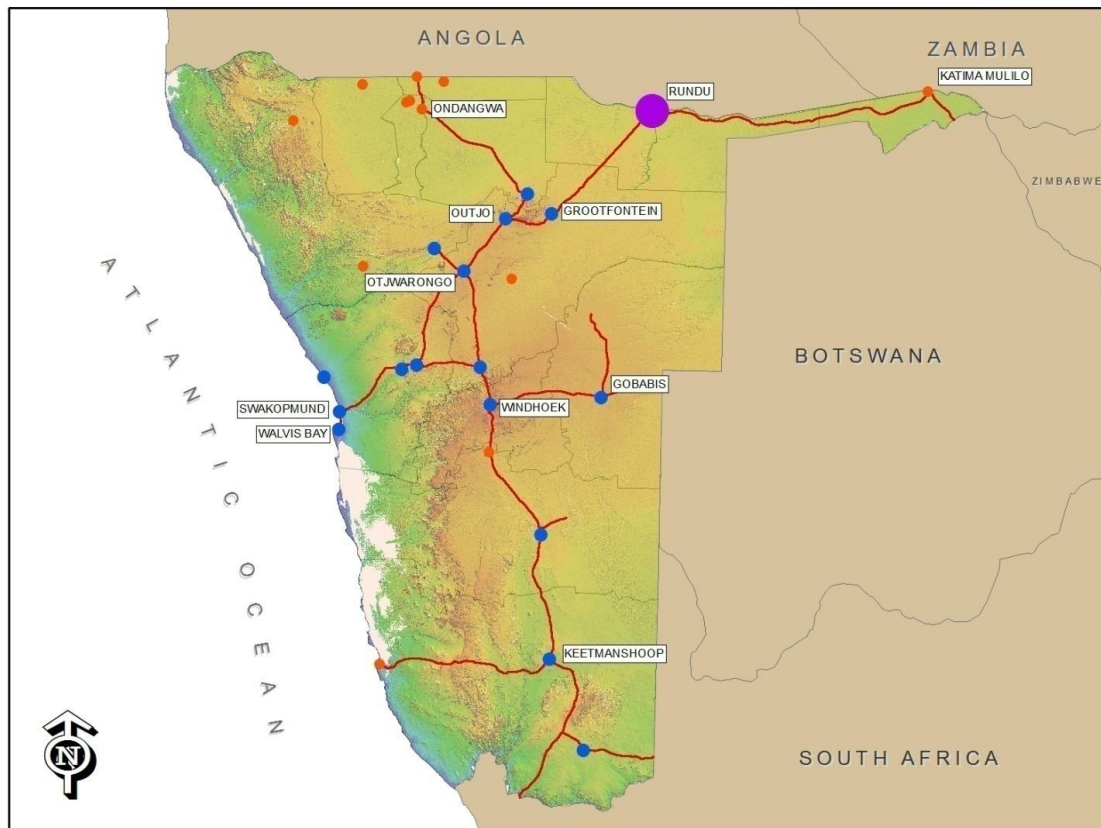


Figure 1: Locality map of Rundu



Figure 2: Locality map of Erven 1 and 2 of Consolidated Erf X

3.4 PLANNING AND DESIGN PHASE

The DR should ensure that the management actions detailed in **Table 2** below should be adhered to during the period before the construction of the services infrastructure starts.

Table 2: Planning and design management actions

Aspect	Management Actions
Flooding	<ul style="list-style-type: none"> • Conduct a flood analysis of the area to identify flood prone areas with a view to adapt the designs of the structures on Erven 1 and 2 to avoid inundated sections. • Appoint professional engineers to design a detailed stormwater management system and supervise the construction thereof as part of the infrastructure service provision of the developments.
Traffic	<ul style="list-style-type: none"> • Ensure that road junctions have good sightlines. • Limit the type of vehicle (heavy trucks) allowed on site. • Adhere to the speed limit. • Designate a formal parking area. • Designate no-drive zones. • Implement traffic control measures where necessary.
Wastewater	<ul style="list-style-type: none"> • Sewerage lines should not be laid within river channels. • Sewer pipes should avoid crossing rivers. Where this is not possible the design should comply with the South African Bureau of Standards 1200 for sewer pipe designs. • Ensure that the sewage system is linked to the municipal waste water infrastructure. • Re-use of treated waste water should be considered wherever possible to reduce the consumption of potable water.
Borrow pits	Building sand should be sourced from a borrow pit with a valid ECC.
Existing Service Infrastructure	<ul style="list-style-type: none"> • It is recommended that alternative and renewable source of energy be explored and introduced into the proposed development to reduce dependency on the grid. • Solar geysers and panels should be considered to provide for general lighting and heating of water and buildings. • Designs and building materials should be as such to reduce dependency on artificial heating and cooling in order to limit the overall energy necessities. • Water saving mechanisms should be incorporated within the proposed residential development's design and plans in order to further reduce water demands.

3.5 CONSTRUCTION PHASE

The management actions listed in Table 3 applies during the construction phase. This table may be used as a guide when developing EMPs for other construction activities within these development areas.

Table 3: Construction phase management actions

Aspect	Management Actions
EMP training	<p>All construction workers are to undergo EMP training that should include as a minimum the following:</p> <ul style="list-style-type: none"> • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities.
Fauna and Flora	<ul style="list-style-type: none"> • Prevent the destruction of protected tree species. • The layout and building design should incorporate existing trees¹. • The Contractor should compile a Tree Management Plan which should include the following as a minimum: <ul style="list-style-type: none"> ○ Trees if not already accounted for in an existing Geographic Information System (GIS), should be surveyed, co-ordinates/location incorporated into the Contractor's GIS, marked with paint (or other means so as to be readily visible) and protected; ○ Trees, which are impossible to conserve, need to be identified and their location recorded on a map; ○ The Contractor should apply to the local authority for a permit to remove these trees. ○ A list should be compiled of all trees to be removed detailing the erf on which they are located, the species as well as which trees will be planted to replace these. The nursery where these trees will be sourced from should also be included;

¹a "tree" is defined as an indigenous woody perennial plant with a trunk diameter ≥ 150 mm

Aspect	Management Actions
	<ul style="list-style-type: none"> ○ Each tree that is removed needs to be replaced with an indigenous tree species after construction; ○ Some of these trees can be obtained at the nearest forestry office or at a commercial nursery (most of these are located in Windhoek). Assistance can be sought from the nearest forestry office regarding nearby nurseries where additional trees may be bought. ● Only a limited width +/- 5 m on the side of roads may be partially cleared of vegetation. ● Workers are prohibited from collecting wood or other plant products on or near work sites. ● No alien species may be planted on or near work areas. ● Prevent contractors from collecting wood and veld food such as amphibians, migrating birds, etc. during the construction phase. ● Prevent contractors from fishing in the river or catching aquatic species.
Lay-down areas and materials camp	<p>Suitable locations for the contractors lay-down areas and materials camp should be identified with the assistance of the DR and the following should be considered in selecting these sites:</p> <ul style="list-style-type: none"> ● The areas designated for the services infrastructure should be used as far possible. ● Second option should be degraded land. ● Avoid sensitive areas (e.g. rivers/drainage lines)
Hazardous waste	<ul style="list-style-type: none"> ● All heavy construction vehicles and equipment on site should be provided with a drip tray. ● All heavy construction vehicles should be maintained regularly to prevent oil leakages. ● Maintenance and washing of construction vehicles should be take place only at a designated workshop area. ● Spilled cement and/or concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers.

Aspect	Management Actions
	<ul style="list-style-type: none"> • All hazardous substances (e.g. fuel etc.) or chemicals should be stored in a specific location on an impermeable surface that is bunded - with a volume of 120 % of the largest single storage container or 25 % of the total storage containers, whichever is greater
Sewage and grey water	<ul style="list-style-type: none"> • Sewage should not be discharged directly onto open soil. • All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. • The water collected from wash basins and showers (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should be recycled: <ul style="list-style-type: none"> ○ Used for dust suppression; ○ Used to water a vegetable garden, or to support a small nursery; ○ Used to clean equipment. • Grey water that is not recycled should be removed along with sewage on a regular basis.
Surface and Ground Water Impacts	<ul style="list-style-type: none"> • It is recommended that construction takes place outside of the rainy season in order to limit flooding on site and surface water pollution. • No dumping of waste products of any kind in or in close proximity to surface water bodies. • Heavy construction vehicles should be kept out of any surface water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks. • Contaminated runoff from the construction sites should be prevented from entering the surface water bodies. • Construction workers should be given ablution facilities at the construction sites that are located at least 30 m away from any surface water and regularly serviced.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Washing of personnel or any equipment should not be allowed on site.
General waste	<ul style="list-style-type: none"> • The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. • All recyclable waste needs to be taken to the nearest recycling depot where practical. • A sufficient number of separate bins for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project
Topsoil	<ul style="list-style-type: none"> • When excavations are carried out, topsoil² should be stockpiled in a demarcated area. • Stockpiled topsoil should be used to rehabilitate post-construction degraded areas and/or other nearby degraded areas if such an area is located a reasonable distance from the stockpile.
Soil Erosion	<ul style="list-style-type: none"> • Clear the vegetation of the project area in phases during the construction period in order to keep the soil more compacted as well as to limit overall disturbance to the area over time. • It is recommended that construction takes place outside of the rainy season in order to limit potential flooding and the run off of loose soil causing further erosion. • Appropriate erosion control structures must be put in place where soil may be prone to erosion.

² Topsoil is defined here as the top 150mm of surface material, which accounts for the seedbank.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial actions are to be undertaken wherever erosion is evident.
Rehabilitation	<ul style="list-style-type: none"> • Upon completion of the construction phase consultations should be held with the local community/property owner(s) regarding the post-construction use of remaining excavated areas (if applicable). • In the event that no post-construction uses are requested, all excavated/degraded areas need to be rehabilitated as follows: <ul style="list-style-type: none"> ○ Excavated areas may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. ○ Rehabilitated excavated areas need to match the contours of the existing landscape. ○ The rehabilitated area should not be higher (or lower) than nearby drainage channels. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across excavated areas evenly. ○ Deep ripping of areas to be rehabilitated is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along slopes, not up and down a slope, which could lead to enhanced erosion.
HIV/AIDS and TB awareness	<ul style="list-style-type: none"> • The Contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase. • A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases. • Provide free condoms in the workplace and to local community throughout construction and project operation.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Facilitate access to Antiretroviral medication • Construction personnel should not overnight at the site, but only the security personnel.
Road safety	<ul style="list-style-type: none"> • Demarcate roads clearly. • Off-road driving should not be allowed. • All vehicles that transport materials to and from the site must be roadworthy. • Drivers that transport materials should have a valid driver’s license and should adhere to all traffic rules. □ Loads upon vehicles should be properly secured to avoid items falling off the vehicle. • Construction in and around schools in the area, including the routes frequently used by school going children should be timed so as to coincide with school holiday periods. • Limit and control the number of access points to the site.
Safety around work sites	<ul style="list-style-type: none"> • Excavations should be left open for the shortest time possible. • Excavate short lengths of trenches and box areas for services or foundations in a manner that will not leave the trench unattended for more than 24 hours. • Demarcate excavated areas, building material and topsoil stockpiles with danger tape. • Provide additional warning signage in areas of movement and in “no personnel” areas where workers are not active. • Borrow pits are to be fenced-off with steel wire fencing. • Work areas must be set out and isolated with danger tape on a daily basis. • All building materials and equipment are to be stored only within set out and demarcated work areas. • Only construction personnel will be allowed within these work areas. • 2 fire extinguishers should be available at fuel storage areas.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Comply with all waste related management actions stated above in this table.
Ablutions	<ul style="list-style-type: none"> • Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: <ul style="list-style-type: none"> ○ 1 toilet for every 15 females. ○ 1 toilet for every 30 males. ○ Sewage needs to be removed on a regular basis to an approved (municipal) sewage disposal site. Alternatively, sewage may be pumped into sealable containers and stored until it can be removed. ○ Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Open fires	No open fires may be made anywhere on site.
General health and safety	<ul style="list-style-type: none"> • A fully stocked first aid kit should permanently be available on-site as well as an adequately trained member of staff capable of administering first aid. • All workers should have access to the relevant personal protective equipment. • Sufficient potable water reserves should be available to workers at all times. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets - the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol. • Building rubble and domestic waste should be stored in skips.
Dust	<ul style="list-style-type: none"> • A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during times of drought.

Aspect	Management Actions
	<ul style="list-style-type: none"> • The use of waterless dust suppression means (e.g. lignosulphonate products such as Dustex) should be considered. • Cover any stockpiles with plastic to minimise windblown dust. • Dust protection masks should be provided to workers if they complain about dust. • Construction vehicles to only use designated roads. • During high wind conditions the contractor must make the decision to cease works until the wind has calmed down.
Noise	<p>Work hours should be restricted to between 08h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. If an exception to this provision is required, all residents and business owners within the 500 m radius should be given 1 week’s written notice.</p>
Recruitment of labourers	<p>The Contractor should compile a formal recruitment process including the following provisions as a minimum:</p> <ul style="list-style-type: none"> • Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME’s, etc.). • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside these agreed upon procedures. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those who are qualified and from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contracts (e.g. period of employment etc.) - make use of interpreters where necessary.

Aspect	Management Actions
Communication plan	<p>The Contractor or DR should draft a Communication Plan, which should outline as a minimum the following:</p> <ul style="list-style-type: none"> • How Interested and Affected Parties (I&APs), who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; • How these I&APs will be consulted on an ongoing basis; • Make provision for grievance mechanisms - i.e. how concerns can be lodged/ recorded and how feedback will be delivered as well as further steps of arbitration in the event that feedback is deemed unsatisfactory.
General communication	<ul style="list-style-type: none"> • The DR must appoint an ECO to liaise between the Contractor, I&APs, Developer. • The Contractor shall at every monthly site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement the EMP awareness training as stipulated above in this table. • The Contractor must list the I&APs of the project and their contact details with whom ongoing communication would be required for the duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the DR before construction commences. • The Communication Plan, once agreed upon by the Developer, shall be legally binding. • A copy of the EMP must be available at the site office and should be accessible to all I&APs. • Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. • The Contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences.

Aspect	Management Actions
	<ul style="list-style-type: none"> • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the I&APs list should be informed about the availability of the complaints register and associated grievance mechanisms in writing by the DR prior to the commencement of construction activities.
Archaeology	<ul style="list-style-type: none"> • Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, a “chance find” procedure should be applied in the order they appear below: <ul style="list-style-type: none"> ○ If operating machinery or equipment stop work; ○ Demarcate the site with danger tape; ○ Determine GPS position if possible; ○ Report findings to the construction foreman; ○ Report findings, site location and actions taken to superintendent; ○ Cease any works in immediate vicinity; ○ Visit site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project’s Geographic Information System (GIS) for field confirmation by archaeologist; ○ Inspect site and confirm addition to project GIS; ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: <ul style="list-style-type: none"> ○ Apply the chance find procedure as described above; ○ Schedule a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and

Aspect	Management Actions
	<ul style="list-style-type: none"><li data-bbox="628 293 1254 398">○ Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory.

3.6 OPERATION AND MAINTENANCE PHASE

The management actions included in Table 4 below apply during the operation and maintenance phase of these developments.

Table 4: Operation and maintenance management actions

Environmental Feature	Management Actions
EMP training	All contractors appointed for maintenance work on the respective services infrastructure must ensure that all personnel are aware of necessary health, safety and environmental considerations applicable to their respective work.
Property development	The Property Development EMP (see Appendix A) should be included as part of the title deed for every unit sold.
Monitoring	<p>The ECO should monitor the implementation of the Property Development EMP:</p> <ul style="list-style-type: none"> • The ECO should inspect the site before construction starts; and • The ECO should inspect the site at the end of the construction period.
Water	<ul style="list-style-type: none"> • Ensure that all properties are connected to the municipal water and wastewater reticulation • Regular preventative maintenance should be carried out on the infrastructure to ensure that risks of leakages are minimised. • A no-go buffer area of at least 30 m should be allocated to any water bodies in the area. • No dumping of waste products of any kind in or in close proximity to any surface water bodies. • Contaminated runoff from the various operational activities should be prevented from entering any surface water bodies. • Ensure that surface water accumulating on-site are channelled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment. • Disposal of waste from the properties should be properly managed.

Environmental Feature	Management Actions
Aesthetics	<ul style="list-style-type: none"> • 'Green' technologies should be implemented within the architectural designs and building materials of the development where practical. • Natural colours and building materials such as wood and stone should be incorporated as well as the use of indigenous vegetation, where practical.
Energy efficiency	<ul style="list-style-type: none"> • The use of solar geysers and solar panels should be encouraged to provide for general lighting and heating of water and buildings. • Use of designs and building materials, which reduce dependency on artificial heating and cooling, should be encouraged. • The use of water saving initiatives should be incorporated within the proposed housing development's design and plans in order to reduce water demand.
Dust and emissions	<ul style="list-style-type: none"> • Tarring of the internal road network should be considered.

3.7 DECOMMISSIONING PHASE

The decommissioning of these developments is not foreseen. In the event that these developments are decommissioned the following management actions in **Table 5** should apply.

Table 5: Decommissioning phase management actions

Environmental Feature	Management Actions
Deconstruction activity	Many of the mitigation measures prescribed for construction activity for these developments (Table 4 above) would be applicable to some of the decommissioning activities. These should be adhered to where applicable.
Rehabilitation	In the event that decommissioning is deemed necessary, excavations need to be rehabilitated according to the management actions laid out in Table 4 above.

Appendix A - Property Development Environmental Management Plan

Environmental feature	Mitigation measure
Conservation of vegetation	<ul style="list-style-type: none"> • All trees listed (with co-ordinates provided) in the title deed for this unit should be conserved as far as practicably possible. These trees should be incorporated into the planning layout of any structures to be erected on this erf. • Where listed trees cannot be accommodated by the planned structures to be built, written motivation should be submitted to the Rundu Town Council requesting permission to remove such trees. Only once a permit has been received from the Town Council may the owner of the erf remove affected trees.
Health and safety	<ul style="list-style-type: none"> • No human waste may be expelled on open soil. Every construction site should have at least one portable toilet. • Only one or two security guards may reside/sleep on-site during construction. No other construction personnel may sleep/reside on-site. • No open fires may be made anywhere on-site during the construction period. Heating and cooking facilities (where necessary/applicable) should be provided by the Contractor.
Waste management	<ul style="list-style-type: none"> • The waste container of portable toilets should be emptied on a regular basis to avoid overflows. Waste from portable toilets should be removed to the Rundu Town Council wastewater treatment facility. • All waste should be placed in the appropriate waste containers on a daily basis. • All waste on-site should be removed on a weekly basis. • Concrete should not be mixed on open soil. Concrete should be mixed on an impermeable (i.e. lined) surface.

Appendix B - Water Quality Guidelines

Appendix C - Environmental Clearance Certificate previously issued