



HillLand Environmental

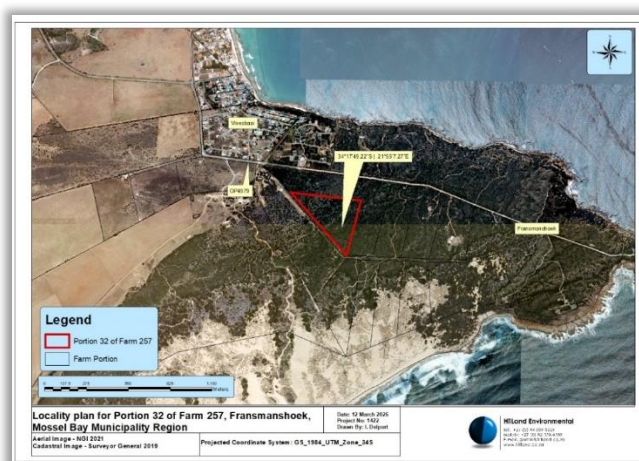
Environmental Assessment Practitioners

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

In terms of the National Environmental Management Act, 1998 (Act 107 of 1998, as amended) and the Environmental Impact Assessment Regulations 2014 (as amended)

THE PROPOSED PRIMARY HOUSE AND ASSOCIATED INFRASTRUCTURE ON PORTION 32 OF FARM MISGUNT NO 257, FRANSMANSHOEK

HOUSE KALOSÝNI



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ON PORTION 32 OF FARM MISGUNT NO 257, FRANSMANSHOEK**

Submitted for:

Public review and comment – submission with Draft BAR

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National Environmental Management Act

An EMPr must comply with Section 24N of NEMA and the Environmental Impact Assessment Regulations 2014 (GN 982 Appendix 4) which requires that it must include the following:

REQUIREMENTS	REPORT SECTION
(a) details of- (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Annexure J

(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 2
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Annexure B
(d) a description of the impact management [objectives] outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Section 2, 4 - 8
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 2
(f) a description of proposed impact management actions, identifying the manner in which the impact management [objectives and] outcomes contemplated in paragraph (d) [and (e)] will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 2, 4 - 8
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 3 and 6
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f)	Section 3 and 6
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 3 and 6
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 3, 4 and 6
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 2, 4 - 8
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 2, 4 - 8
(m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 3 and Annexure B
(n) any specific information that may be required by the competent authority.	N/A
1. Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.	N/A

1 INTRODUCTION

Hilland Environmental have been appointed as the Environmental Assessment Practitioners (EAP) by the applicant/holder/landowner, **Mr C.M. Lundall**, to ensure compliance with regulations contained in the National Environmental Management Act (NEMA Act No. 107 of 1998, as amended) and the Environmental Impact Assessment Regulations (2014, as amended).

The proposal entails the construction of a primary house and associated infrastructure on Portion 32 of Farm 257, Fransmanshoek, near Vleesbaai (hereafter referred to as 'the property').

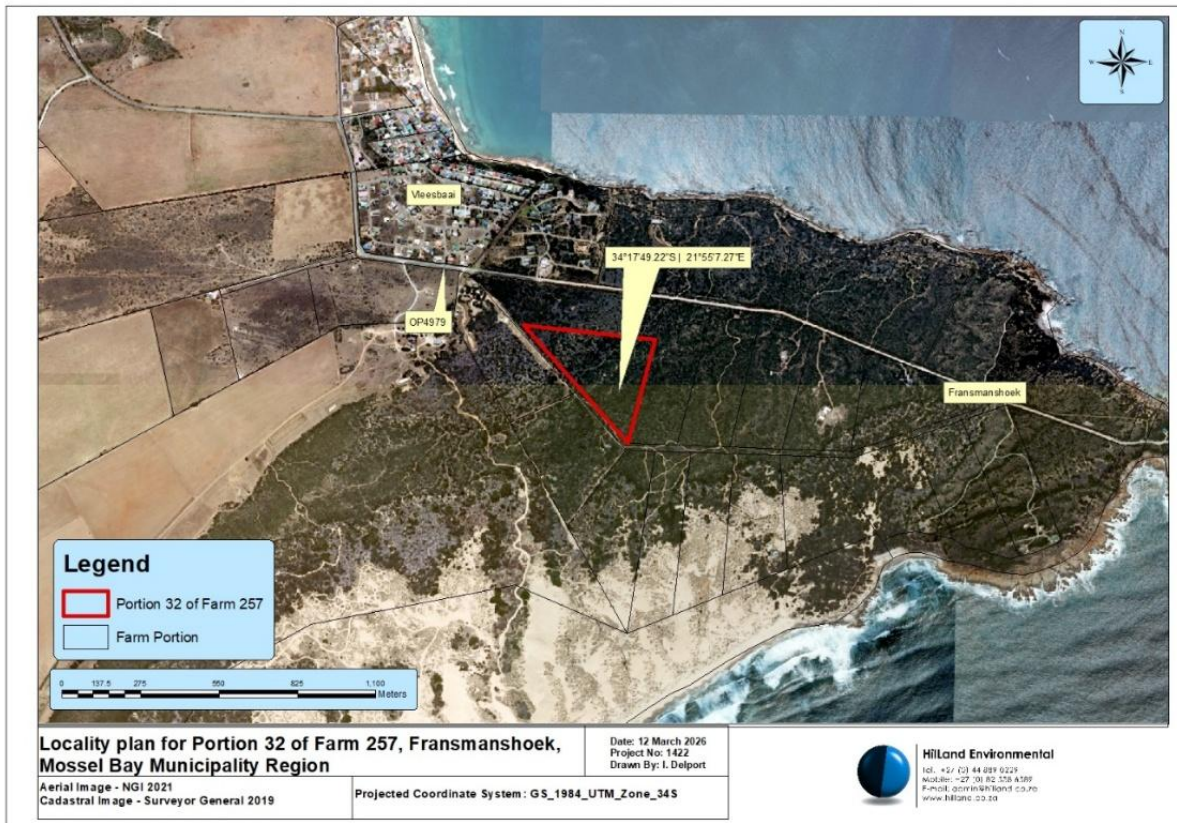


Figure 1: Locality map of the property

This EMPr is submitted as per the requirements of a Basic Assessment in terms of NEMA.

The monitoring of compliance of the EMPr is mandatory in terms of the construction phase and a completion audit at the end of the construction phase (installation of all services, home building and formalising of driveway) is likely to be a requirement of the EA.

This EMPr, in terms of the NEMA duty of care, also includes the rehabilitation phase and ongoing alien invasive clearing (operational phase) that were highlighted as part of the process, and it will be the landowner's responsibility to ensure continued alien invasive clearing as that falls outside the scope of the Listed Activities to be authorized in terms of NEMA. The report is divided to provide clear distinction between the Pre-construction and Construction Phase(s) and the ongoing Operational aspects (alien clearing) of the property.

This EMPr **must be included** in the tender documents of all prospective contractors and must also be included in the final contract awarded. **The EMPr must be regarded as binding on all contractors, sub-contractors, agents, consultants and construction staff on the property.**

The full and approved EMPr will be made available to all contractors working on the project.

This EMPr must be implemented in conjunction with the Environmental Authorisation and approved Site Development Plan. Site-specific implementation details may be refined through written method statements approved by the ECO, provided that such refinements do not alter the authorised activity, approved footprint, environmental sensitivities or impact management outcomes. Any substantive amendment to the approved EMPr, authorised scope or approved layout must be dealt with in accordance with the applicable EIA Regulations and must receive the necessary written approval before implementation.

2 ACTIVITY DESCRIPTION

The proposal entails the construction of a primary house, associated infrastructure and access track within the preferred disturbance zone proposed.

The disturbance zone requires the clearance of approximately **1 500 m²** - this includes the home, associated infrastructure, parking, driveway, small garden, working areas and fire protection.

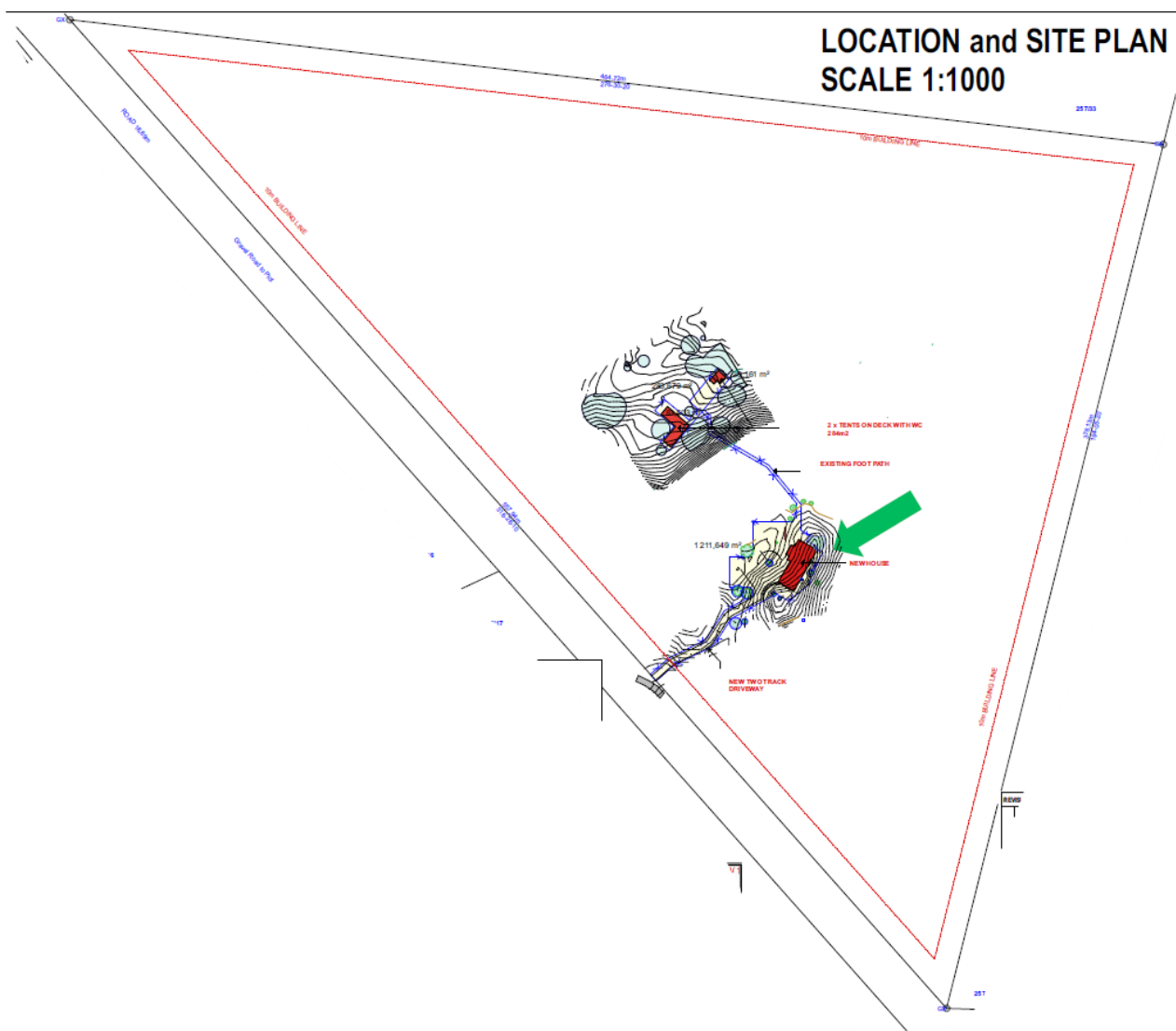


Figure 2: Proposed site plan showing the primary home, the existing tents in relation to the cadastral boundaries (ARCXL Architects, 2026)

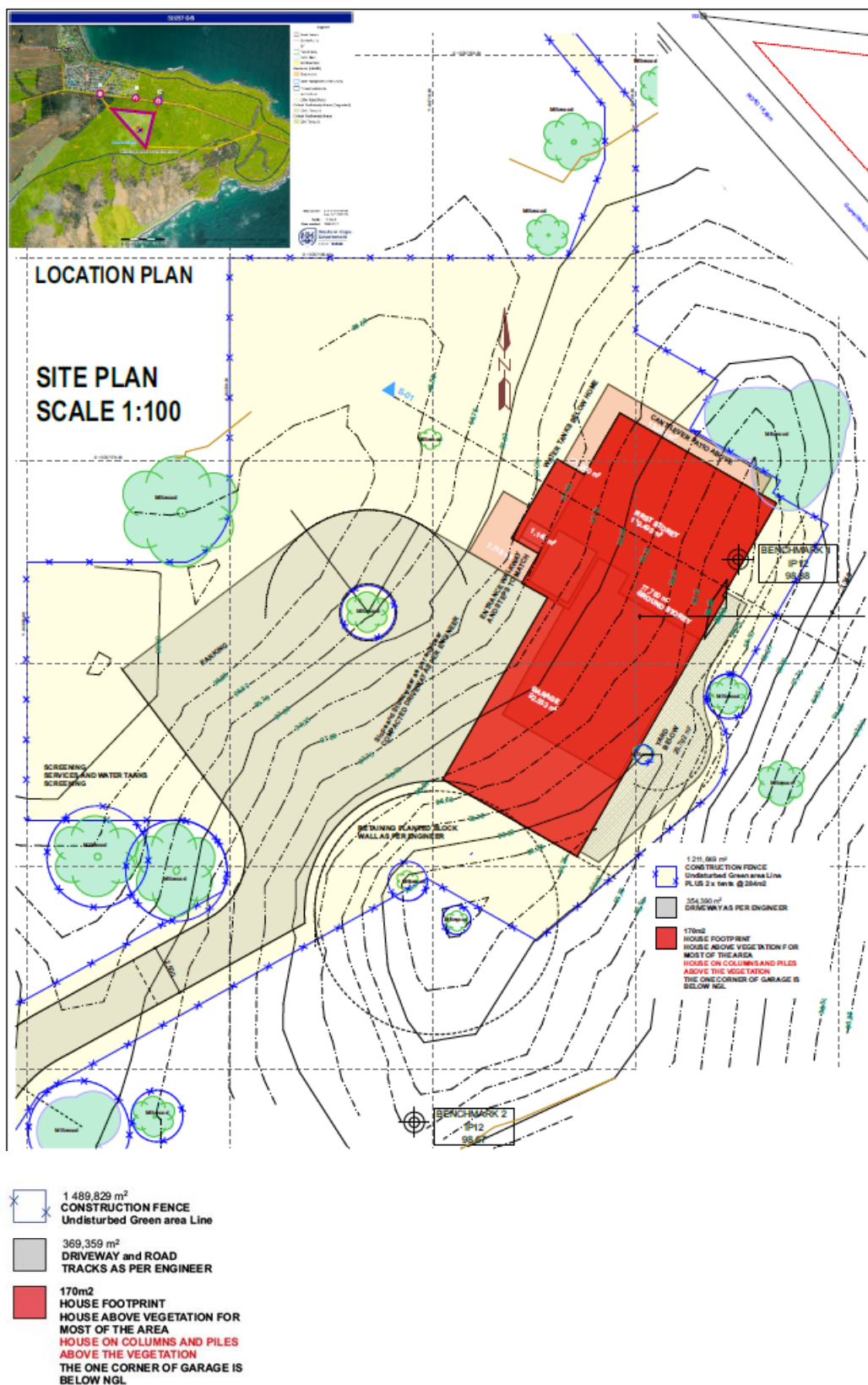


Figure 3: Proposed site plan showing the light green shaded area as the disturbance zone subject to clearance of vegetation, and blue 'fence' lines. Note that Milkwood trees will be demarcated to avoid disturbance (ARCXL Architects, 2026)

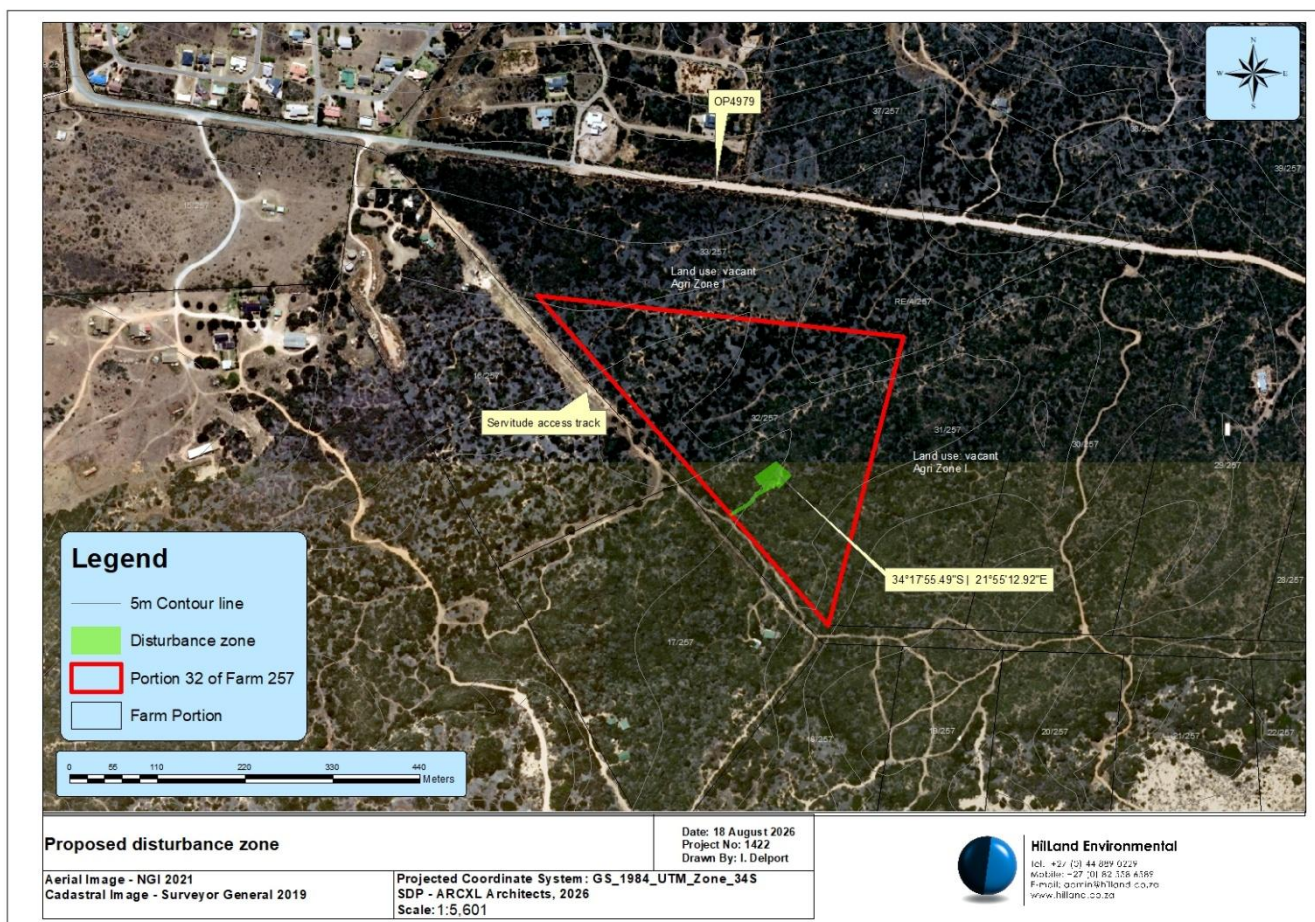


Figure 4: NEMA preferred site plan showing the proposed disturbance zone being applied for

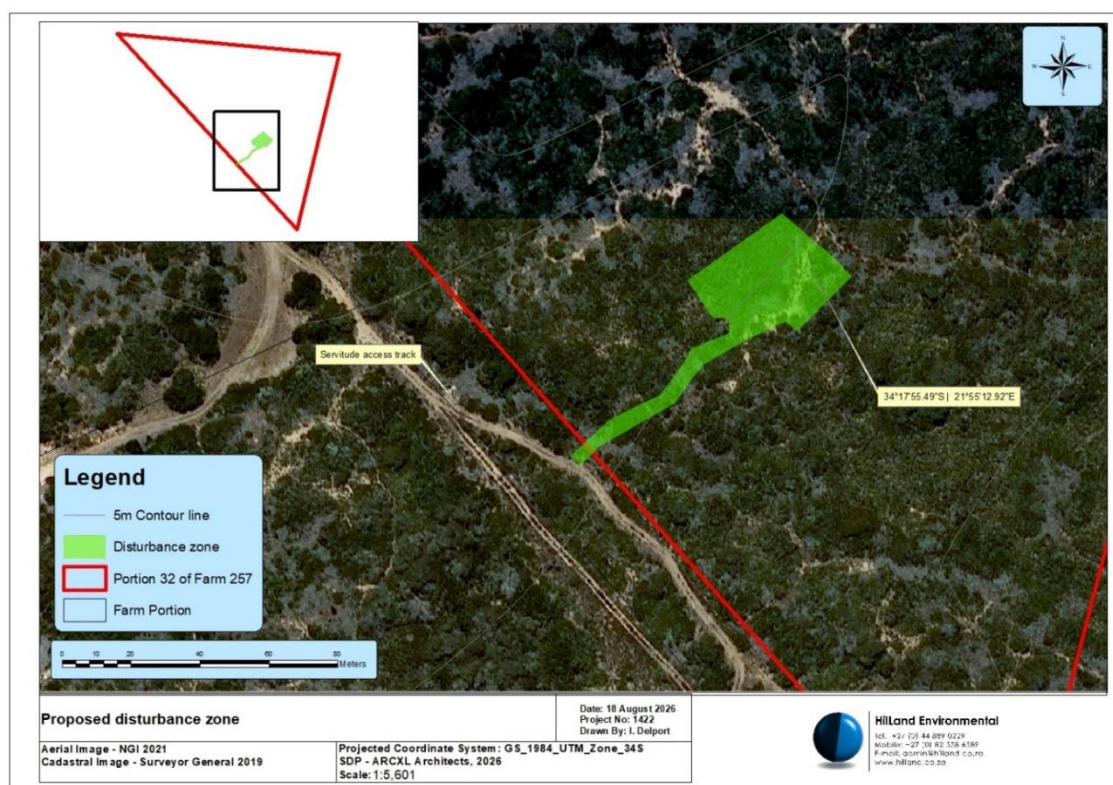


Figure 5: Close up view of the proposed disturbance zone; access to be gained from servitude road south

"The dwelling will be elevated on columns and piles above the vegetation. Cross-laminated timber (CLT) panels are proposed, which will be prefabricated off-site and assembled on site, thereby reducing construction waste and impact on the surrounding environment during construction. Natural colours will be used for the structures to assist with visual integration into the surrounding landscape" (ARCXL Architects, 2026).

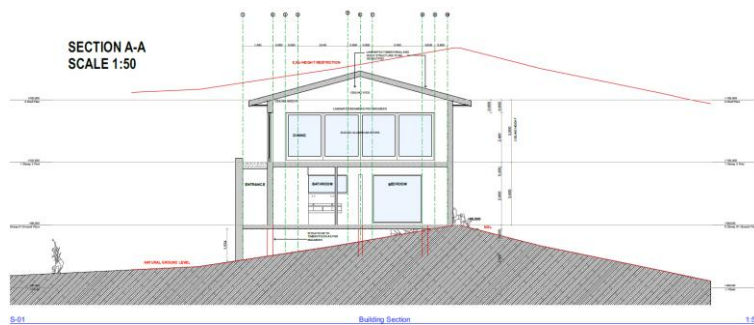


Figure 6: Section view of the proposed house



Figure 7: 3D representation of the proposed house

Associated services:

- Water

There are no municipal connections on the property, rainwater harvesting tanks will be installed to collect roof water and when required these will be filled with water purchased from the municipality. Approximately 20 000L water tanks will be provided for.

- Sewage

There is no municipal connection. The wastewater will discharge into a small sewage package plant with an associated artificial wetland area. A Calcamite wastewater treatment plant will be installed.

Product information as obtained from: <https://calcamite.co.za/solutions/wastewater-treatment-plants/>

1 Primary treatment

Sewage enters the septic tank (depending on the size of the plant, the septic tank can have multiple chambers which permit settlement as well as surplus sewage sludge storage). Within the septic tank, gross solids settle out under gravity and are gradually broken down by anaerobic digestion. This natural separation process allows a relatively solid-free effluent to be passed into the sewage treatment plant process stream.

Note: the septic tanks are designed for 24-hour retention and are modular which allows them to easily be scaled should additional capacity be required.

2 Biological treatment

The next step in the wastewater treatment process is the submerged Bio-reactor where the biological treatment of sewage takes place.

It consists of a tank that is filled with a fixed film plastic media that serves as a surface area for biomass to attach to. The tank is aerated to allow for aerobic bacterial sewage treatment (bacteria that feed on the organic compounds present in the wastewater).

If designed, constructed, and operated correctly, these biological sewage treatment systems can produce an effluent that meets the general authorisation limits standard of the National Water Act 36 of 1998.

3 Final settlement

The treated sewage flows into the final clarifier. Here, clear water rises to the surface of the tank and is discharged via the outlet into a disinfection chamber and the settled sludge is recycled to the septic tank.

4 Disinfection and storage

The disinfection process in wastewater treatment is the final stage and ensures any remaining pathogens are killed. This is either done by using chlorine, ozone or UV radiation.

5 Re-use of the processed water

Non-potable applications - the treated wastewater can either be re-used for non-potable applications such as irrigation; or safely returned to the environment via a stormwater system or soakaway in accordance with local regulations.

Potable applications - tertiary treatment can also be added to further recycle the treated wastewater for potable reuse if required.

6 Soakaway drainage system

The overflow is connected to a soakaway (a drain field that allows the treated wastewater to percolate into the ground) should the tank get too full or when system maintenance is required.

Maintenance

A maintenance and operation manual is provided during the commissioning phase and typically consists of annual desludging of the septic tank, servicing of mechanical equipment, and monthly replacement of chlorine tablets (if applicable). The plants need to be inspected on a regular basis to ensure all components are operational.

- Electricity

Solar and gas will be installed.

The municipality provided a letter confirming that no municipal services are available for this property and that they are therefore in support of the off-grid proposal.

- Refuse

As with all houses within Fransmanshoek, household waste will be disposed of at the nearest licenced waste disposal facility or local waste collection point.

Final detailed design recommendations made by the terrestrial faunal specialist (Confluent Environmental, 2026):

"There are some considerations within the layout and design phase of the project which can reduce the impact of the development on fauna and their habitat within the property.

1. *Keep artificial lighting along roads and around infrastructure to a minimum and consider lighting colour, brightness and design options with minimal impact on biodiversity. This is particularly relevant to development within this largely natural area, where the potential for impacts on the native faunal diversity can be large. Light pollution is of global concern given that our night skies are getting lighter due to urban development and that many animals are specifically adapted to dark night skies for navigation, foraging, and behavioural aspects (i.e. sleep, hunting). A common impact is that many insects are attracted to or disorientated by artificial lights, leading to aggregations at such point sources. This interferes with their natural behaviour (i.e. feeding), associated ecosystem services they provide (e.g. pollination) and often has fatal consequences for individuals unable to escape the 'light trap'. There is also the cumulative impact of attracting predators to light sources (e.g. birds, frogs, small mammals) and exposing them to risks in these areas as well. These impacts are mitigated in the construction and operation phase, but the following is advised:*
 - *Wherever possible in the design phase consider 'no lighting' options to encourage dark areas and reduce light pollution.*
 - *Where this is not possible, the impacts of lighting can be reduced through the selection of the colour/brightness (select yellow, dim lights which are less attractive to insects than bright white or blue lights) and design elements (lights facing down towards the ground rather than facing up towards the sky).*
2. *A strong emphasis should be placed on minimising the footprint of the development on this site and thereby limiting the loss of natural ecosystems, which benefits all SCC and biodiversity more widely. This is already achieved by placing the wooden platforms outlined in the SDP on stilts to promote the growth of natural vegetation below and allow fauna to use the landscape, but it is advised that all future layouts prioritize keeping built infrastructure to a minimum and concentrated in one place".*

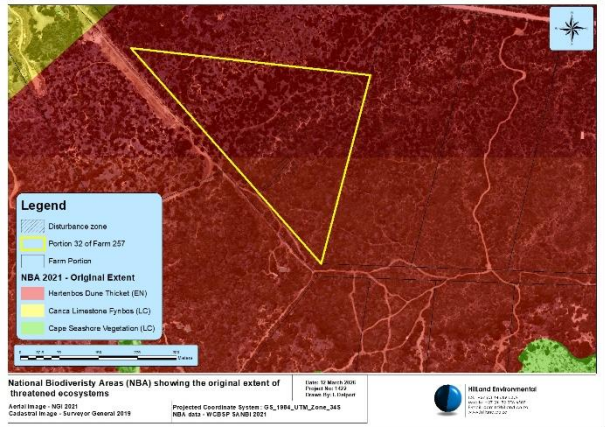
Please note that **any deviation** from the above/approved SDP will require DEADP approval prior to implementation.

The existing tented area, as surveyed and approved by Mossel Bay Municipality, must remain as indicated. Any deviation or additional vegetation clearance, excluding ongoing alien clearing, requires prior DEADP approval.

2.1 LISTED ACTIVITIES

The property forms part of engendered Hartenbos Dune Thicket. Based on this sensitivity the following listed activity are triggered in terms of the Environmental Impact Assessment Regulations (2014, as amended) (GN NO. R. 327):

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for	The property has been mapped as Hartenbos Dune Thicket – endangered. The clearance of vegetation associated with the proposed primary home and driveway will exceed 300m².

	maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on even in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	Clearing of alien invasive vegetation on the property will continue in accordance with the approved alien control plan.  NBA original extent map
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2.2 MANAGEMENT OUTCOMES AND OBJECTIVES OF THE PROJECT

Impact	Management Measures	Desired Outcome
Loss of indigenous vegetation	Limit clearing to the approved disturbance zone (1 500m ²); demarcate no-go areas; protect vegetation outside the footprint; rehabilitate disturbed areas.	Indigenous vegetation loss is minimised and the majority of the property remains in a natural state.
Impacts on protected Milkwood trees	Demarcate and protect all retained Milkwood trees prior to construction; prohibit storage of materials in close proximity to the demarcated trees.	Protected Milkwood trees remain undisturbed and healthy throughout construction and operation.
Habitat loss and fragmentation	Cluster infrastructure within a single disturbance area; maintain natural habitat outside the approved footprint.	Ecological connectivity and habitat function are maintained across the property and surrounding Fransmanshoek Conservancy landscape.
Disturbance to fauna	Restrict clearing to authorised areas; undertake phased vegetation clearing; implement fauna search-and-rescue procedures where required; minimise external lighting.	Disturbance and mortality of faunal species are minimised.
Species of Conservation Concern (SCCs)	Undertake pre-construction searches; implement search-and-rescue procedures; minimise lighting and disturbance.	No unnecessary disturbance or mortality of SCCs occurs.
Alien invasive vegetation infestation	Continue implementation of the approved Alien Clearing Plan; monitor and remove invasive species on an ongoing basis.	Alien invasive vegetation is reduced and ecosystem condition is progressively improved.

Soil disturbance and erosion	Minimise excavation; stabilise exposed soils; implement erosion-control measures; rehabilitate disturbed areas.	Soil resources are protected and erosion is prevented.
Stormwater impacts	Implement stormwater management measures; maintain natural drainage patterns where possible; prevent concentrated runoff.	Stormwater is effectively managed without causing erosion, sedimentation or pollution.
Pollution of land and water resources	Store hazardous materials appropriately; provide waste collection facilities; prevent spills; properly maintain wastewater systems.	Surface water, groundwater and soils remain free from pollution.
Waste generation	Separate, collect and dispose of waste at authorised facilities; recycle materials where feasible; prohibit dumping or burning on site.	Waste is responsibly managed and does not cause environmental degradation.
Visual impacts and change to landscape character	Maintain the approved footprint and building design; utilise natural colours and materials; retain existing vegetation screening.	The scenic quality, sense of place and rural character of the Fransmanshoek landscape are maintained.
Heritage impacts	Implement heritage chance-find procedures; stop work and notify Heritage Western Cape (HWC) if heritage material is uncovered.	Heritage resources are protected and managed in accordance with legal requirements.
Construction impacts (noise, dust and disturbance)	Restrict work to normal working hours; implement dust suppression where required; maintain equipment in good working order.	Construction-related nuisance impacts are minimised.
Water consumption	Utilise rainwater harvesting; install water-efficient fittings; regularly inspect for leaks.	Water use is minimised and water resources are used efficiently.
Wastewater generation	Operate and maintain the wastewater treatment system in accordance with specifications.	Wastewater is effectively treated without causing environmental pollution or nuisance impacts.
Resource consumption	Utilise solar energy, rainwater harvesting and other off-grid infrastructure.	The development operates efficiently with reduced demand on municipal resources.
Climate change and environmental resilience	Retain natural vegetation; maintain ecological connectivity; implement erosion and stormwater controls; continue rehabilitation and alien clearing.	The property remains resilient to climate-related pressures and ecological processes are maintained.
Fire risk	Implement fire prevention measures; maintain equipment and firebreaks.	No avoidable fire incidents occur as a result of the development.
Human-wildlife conflict	Store all food waste and refuse in secure wildlife-proof containers; implement double-container waste storage; prohibit the use of rodenticides and bug zappers; remove waste regularly; maintain responsible waste management practices throughout the operational phase.	Wildlife is not attracted to, harmed by, or becomes dependent on the development, and human-wildlife conflict is minimised.

2.3 CONDITIONS OF ENVIRONMENTAL AUTHORISATION (EA)

The Environmental Authorisation (EA) (once issued) will be attached to the Final EMPr.

It is binding on the contractors, sub-contractors, agents, consultants and construction staff on the property.

If the EA conditions are not included at this point, then the reader is NOT reading the final approved EMPr and should request such a document prior to continuation.

3 TERMS OF REFERENCE

The main terms of reference of this EMPr are to identify and mitigate any potential negative environmental impacts that may be associated with the construction in accordance with the site layout plan.

The full and approved EMPr must be made available to all contractors working on the project and must be included in all tender documentation. Certain fundamental aspects are therefore of importance:

The EMPr and these requirements are binding on all contractors and their sub-contractors.

It is the responsibility of the holder /owner to ensure that any contractor(s) or sub-contractor(s) is made aware of the environmental requirements.

The contractor will be required to make good any damage caused through their actions or the actions of their sub-contractors (in addition to any penalties for non-compliance issued).

3.1 ROLES AND RESPONSIBILITIES

Role	Responsibility
Landowner	Ensure compliance with the approvals, licences, this EMPr and all statutory requirements; appoint competent contractors; make this EMPr available to all parties; provide resources for environmental management, rehabilitation and alien clearing.
Contractor(s)	Implement construction phase mitigation measures; restrict activities to the approved footprint; prevent pollution, erosion, fire and vegetation damage; ensure staff and sub-contractors comply with this EMPr.
Environmental Control Officer (ECO) – description provided in Section 3.2 onwards	Undertake environmental inductions, inspect compliance, advise on corrective action, monitor rehabilitation and provide reporting where required by the approval or holder.
Site agent / foreman (where applicable), alternatively this duty is to be undertaken by the main contractor	Day-to-day implementation of this EMPr, record keeping, communication with the ECO / EAP and immediate correction of non-compliances.

3.2 ENVIRONMENTAL MANAGEMENT OFFICER (ECO)

An environmental control officer (ECO) must be appointed to oversee the **construction phase (house, associated infrastructure and driveway)** ensure compliance with the Environmental Authorisation (EA) and the approved Environmental Management Programme (EMPr) and to assist with issues as they may arise on site.

It will be the ECO's responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in the EA are implemented and complied with by the owner and to report on this compliance to the competent authority.

The **holder (owner)** will be responsible for the remuneration of the ECO and any other expenses encountered in the process of environmental monitoring of the construction.

3.2.1 SELECTION OF THE ECO

The appointed ECO must be able to demonstrate that (s)he is of sufficient competency to undertake the required task. This includes:

- Previous experience of environmental control of similar sites.
- Working experience with contractors.
- Knowledge of the particular project and expected areas of concern.

3.2.2 ROLES AND RESPONSIBILITIES OF THE ECO

The ECO will undertake the following tasks:

- Ensure **compliance** with the EMPr at all times during the pre-construction and construction phase;

- Ensure **compliance** with relevant management conditions of the EA during the pre-construction and construction phase;
- To work in close co-operation with the contractor(s) and landowner of the site;
- Meet with the contractors to set out the environmental parameters within which they must work (pre-construction and construction phase);
- Provide **Environmental Induction (Environmental Education)** with **all** contractors prior to the commencement of any work (pre-construction phase (prior to commencement of activities));
- Indicate where **all no-go areas** are to be demarcated and to ensure adherence to these delimitations at the induction session **BEFORE** any construction or site clearance commences on-site (pre-construction phase);
- Indicate where **plant rescue** may be necessary, and what species should be rescued on this site (pre-construction phase);
- Indicate where **erosion protection and siltation prevention measures** are required or need to be supplemented and to ensure correct implementation;
- Advice on **rehabilitation/landscaping measures** to be implemented;
- Check up on general environmentally friendly construction practices (e.g. no littering, safe and secure environment, contamination risks, etc.);
- Ensure that the correct earthworks practices are adhered to; e.g. **no** encroachment into the surrounding vegetation, separation of topsoil and subsoil, correct stockpiling and stripping of topsoil);
- ECO to assist with NFA licence applications for any protected trees / seedlings within the disturbance zone;
- Provide a report back at site meetings (if necessary) (during the pre-construction and construction phase) to report on and assess the success of the environmental control and to determine any further environmental control measures which may be necessary;
- The ECO is to do a site inspection **once a week** during the first 2 months of site preparation and construction and then may reduce this to **monthly** if the work is progressing in an environmentally satisfactory manner. The intent is that the ECO is active at times when vegetation clearing, topsoil recovery, site demarcation, access drive creation and platform creation are being done, to ensure that there is no encroachment into the no-go areas. Once building works on the home are internal, ECO frequency of visits can be reduced.
- It is recommended that the ECO provides the contractor and client with feedback following the visit to provide mitigation measures for implementation. The contractor must then ensure that these measures are implemented as soon as possible;
- The ECO should conduct a **monthly inspection** for the first 2 months of the **rehabilitation phase** following construction to ensure success until the area is suitably reinstated and secure;
- The ECO has the discretion to undertake more frequent visits if he/she feels this is justified due to the actions of the contractors and to make ad hoc visits in order to ensure compliance;
- The ECO is to keep a site diary; a photographic record of activities taking place on site as well as copies of all monthly reports submitted to the Department, a schedule of current site activities including the monitoring of such activities and complaints register of all public complaints and the remedies applied to such complaints;
- ECO is to ensure that no off-site damage is caused as a result of the home build – specifically along the servitude access road. As the route is limited, it is anticipated that all deliveries will be made in small vehicles that can use the access road.
- **Any issues noted on site must be immediately reported to the owner and resolved;**
- The ECO is to submit a **completion report** to the competent authority (DEADP) and holder upon completion of the construction phase and before the EA lapses;
- It must be noted that the **ECO HAS THE AUTHORITY TO SUSPEND WORK ON SITE FOR ANY ACTION BEING UNDERTAKEN THAT DOES NOT COMPLY WITH THE ENVIRONMENTAL REQUIREMENTS OF THE SITE.**

Such a stop order has immediate effect and will be communicated through the resident engineer to the contractor responsible.

4 SPECIFICALLY REQUIRED ENVIRONMENTAL MANAGEMENT PRACTICES

4.1 IMPLEMENTATION PROGRAMME

The following implementation programme sets out the sequence of actions required to ensure that the EMPr is implemented effectively throughout the pre-construction, construction, rehabilitation and operational phases. The programme must be read together with the Environmental Authorisation, once issued, the approved site development plan, specialist recommendations, method statements, monitoring requirements and all relevant annexures to this EMPr.

Phase / timing	Implementation action	Responsible party	Monitoring / verification
Before commencement	Ensure that the Environmental Authorisation, approved EMPr, approved site development plan, building plan approval and any required licences or permits, including any NFA licence for protected trees or seedlings where applicable, are in place before any listed activities commence.	Landowner ECO	Copies of approvals, licences and plans to be kept in the environmental file and made available to the ECO and contractor.
Contract appointment	Include the approved EMPr and EA conditions in tender and contract documentation. Ensure that all contractors, sub-contractors and site personnel understand that the EMPr is binding.	Landowner	Signed contracts and records confirming receipt of the EMPr by the contractor must be retained.
Pre-construction	Appoint a suitably qualified ECO. Notify DEADP of commencement where required by the EA. Undertake the environmental induction before any work starts on site.	Landowner, ECO and contractor	Appointment letter, commencement notification, induction material and signed induction registers to be filed.
Site establishment	Survey, peg and demarcate the approved disturbance zone, no-go areas, access route, storage areas, protected milkwood trees and any other sensitive areas before clearing or construction begins.	Surveyor, contractor and ECO	ECO to inspect and approve demarcation before vegetation clearing or earthworks commence.
Before vegetation clearance	Implement plant rescue and fauna search-and-rescue where required. Topsoil stripping may only take place after plant rescue has been completed and the ECO is satisfied that sensitive plants and fauna have been addressed.	Landowner, contractor and ECO	Plant rescue register, photographic record and ECO inspection notes to be retained in the environmental file.
Construction phase	Implement all construction-phase mitigation measures, including restriction of activities to the approved disturbance zone, waste control, erosion and stormwater management, cement and concrete controls, fire prevention, noise management and protection of fauna and vegetation.	Contractor, site agent and ECO	ECO inspections once a week during the first two months of site preparation and construction, thereafter monthly if compliance is satisfactory, or more frequently if required.
Incident / non-compliance response	Immediately report and correct any non-compliance, spill, erosion incident, unauthorised clearance, damage to no-go areas, heritage chance find or fauna incident. Work must stop where required until the ECO has advised on corrective action.	Contractor, site agent, ECO and landowner	Incident records, corrective action instructions, photographs and close-out confirmation to be included in ECO reporting.
Rehabilitation phase	Remove rubble and waste, decompact disturbed soil, replace topsoil, stabilise erosion-prone areas, replant rescued or suitable indigenous species and implement any additional rehabilitation measures required by the ECO.	Contractor, landowner and ECO	ECO to inspect rehabilitation during close-out and, where necessary, during the initial rehabilitation monitoring period.

Completion and close-out	Submit a completion / final compliance monitoring report confirming implementation of the EMPr and EA conditions applicable to the construction phase.	ECO / independent EAP where required	Final monitoring / audit report to be submitted to the competent authority and landowner, as required by the EA.
Operational phase	Continue implementation of the operational-phase measures, including alien invasive plant control, erosion monitoring, stormwater management, waste management, lighting controls, fire management and responsible open space management.	Landowner, with ECO input where required	Landowner to undertake regular inspections and keep photographic records. ECO to advise where required, including through photographic review where appropriate.

4.2 APPROVALS TO BE IN PLACE PRIOR TO COMMENCEMENT

The following must be in place before commencement of activities:

1. Environmental authorization (EA) from DEADP

Note – activities MUST commence within 10 years of date of issue of the EA.

Construction must be completed within 5 years of commencement.

Notification of the Department of construction and operation is required and as specified in this report and EA.

Compliance with the EA conditions is mandatory.

2. Building plan approval from Mossel Bay Municipality

- Should any pruning, disturbance, removal, and/or transplanting of identified protected Milkwood trees be required, a **National Forest Act (NFA) licence from Department of Forestry** will be required prior to such activity being undertaken. The disturbance zone specifically avoids mature protected. Seedling protected trees are to be rescued and transplanted into the adjacent thicket rehabilitation areas subject to the NFA licence conditions.

Note that licence applications can only be made once the building plans are approved – allow for sufficient processing time.

4.3 PRE-CONSTRUCTION PHASE

Please note, DEADP notification seven (7) days prior to commencement of activities on site is a normal condition of the EA.

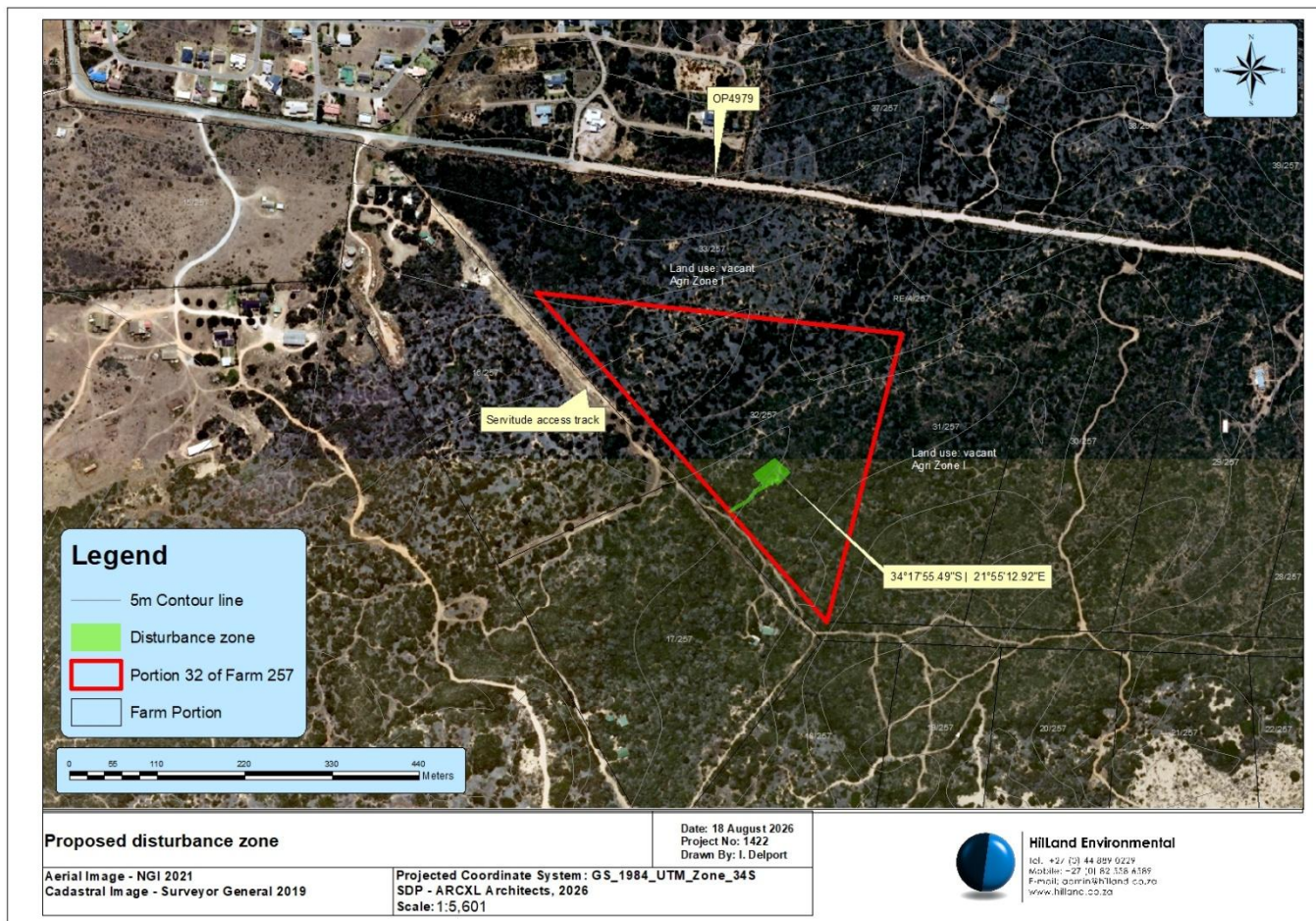
4.3.1 PEGGING OF THE DISTURBANCE ZONE, DEMARCATION OF NO-GO AREAS AND MILKWOOD TREES

A surveyor must survey and peg the site in accordance with the approved site plan. When surveyed and pegged, pre-construction activities may commence on-site.

NO disturbance permitted beyond the designated working area (disturbance ZONE indicated on the plan below) and no-go signs / demarcation are to be in place.

All people working on site **must** be made aware of the boundaries in which work is to be done (to be located within the disturbance zone). Areas **outside** the demarcated disturbance zone (working zone) are all considered to be no-go areas. This includes for the any construction activities, delivery and storage of construction materials, parking, turning of construction vehicles/machines etc.

The intention is to retain the mature protected milkwood trees occurring within the disturbance zone. A protective exclusion area must be demarcated around each retained Milkwood in accordance with the approved plan, applicable licence and ECO instruction.



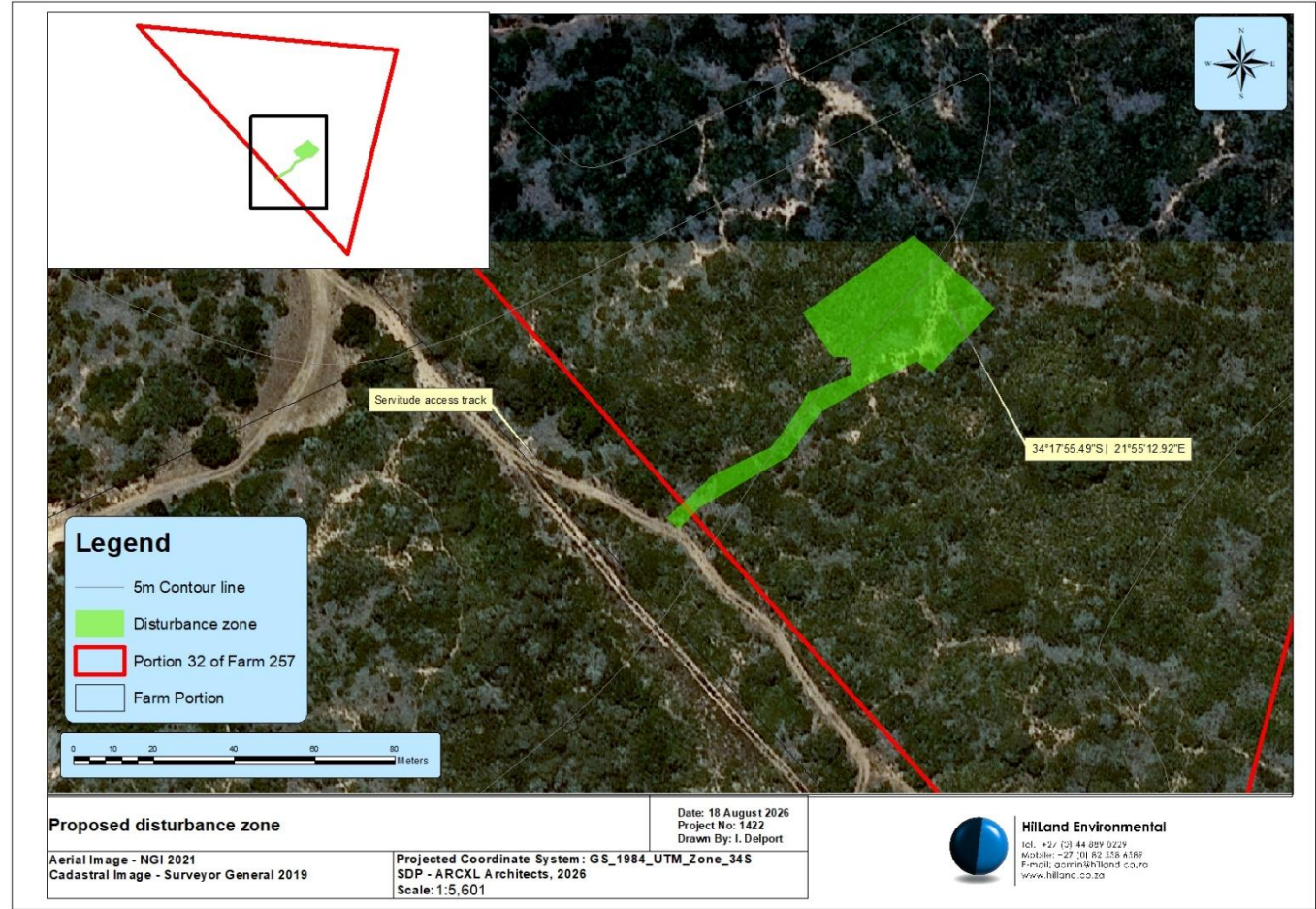


Figure 8: Disturbance zone to be adhered to

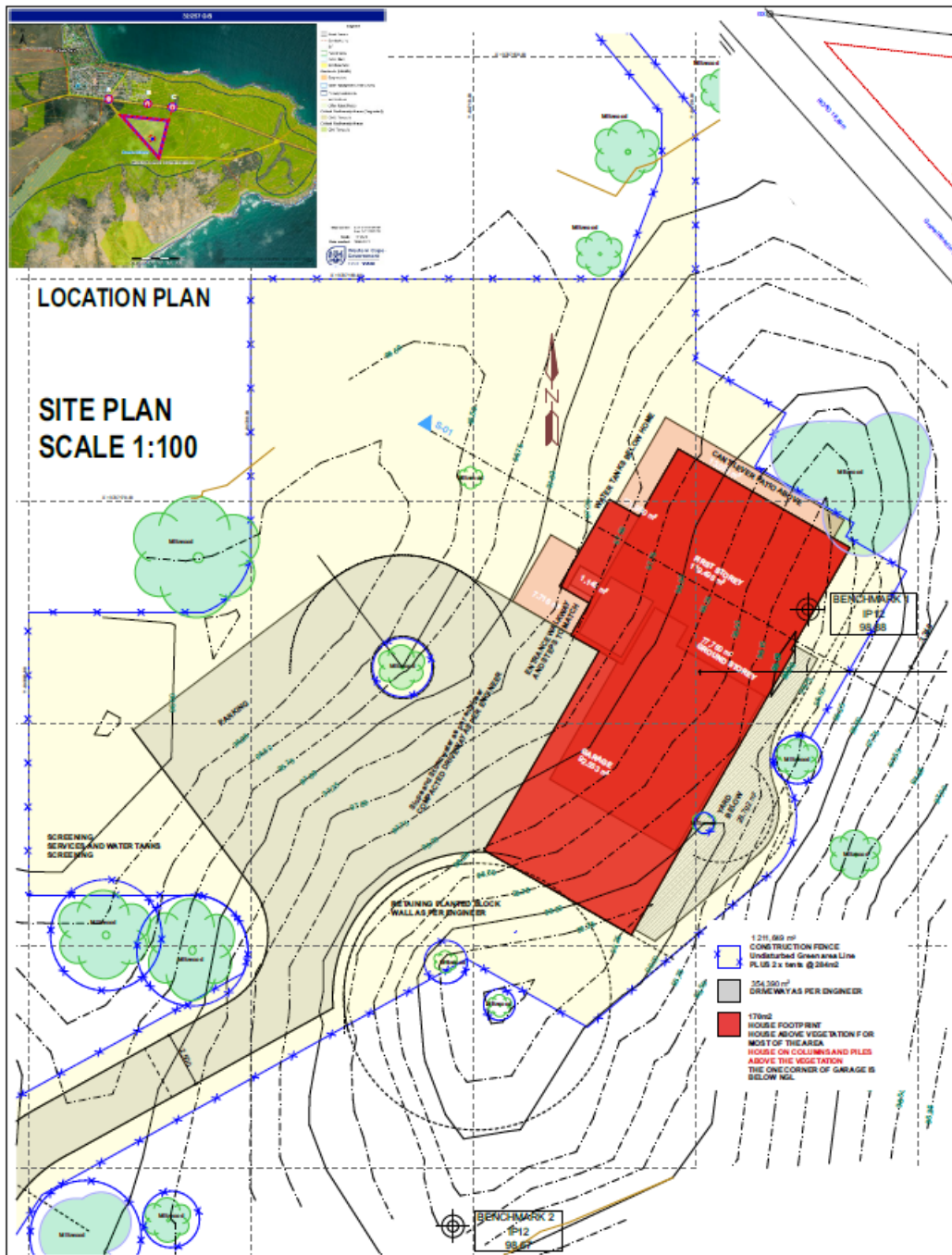


Figure 9: Architect plan showing the surveyed mature milwood trees that will be retained and that needs to be demarcated

The following applies:

- **All contractors** – all areas **outside** that of the defined works (disturbance zone) is deemed a no-go area.
- Disturbance within the work area is to be kept to the minimum, as all disturbed areas will require rehabilitation (placing topsoil and re-seeding to ensure vegetative cover) on completion of the work by the contractor.
- All construction activities must be restricted to the demarcated areas to ensure that no further disturbance into the surrounding vegetation.
- No encroachment or activities may take place outside the work areas.

- Storage sites for construction material and access must be approved by the ECO prior to commencing (to be located within disturbance areas only (existing / proposed) and areas will require rehabilitation after use).
- No-Go areas will be required to be demarcated by the contractor to ensure that they are visible at all times, to all personnel.
- Methods of demarcation will be agreed with the ECO and may include danger tape, rope, fencing, shade cloth, mulch bags, wire fencing etc.
- In light of the above, should access be required through a no-go area, permission must be obtained from the ECO in writing prior to the use of such an area.
- No disturbance may be caused to the areas surrounding the demarcated disturbance areas.
- The ECO should monitor adherence to the No-Go area policy.
- Access into the No-Go areas by personnel is strictly forbidden (i.e. Work breaks such as lunch are not permitted outside the defined work area / area indicated by the landowner as being acceptable for such activities – no entry into the neighbouring properties or open space areas). A spot fine will be imposed against the contractor in the event of contravention of the no-go policy up to a maximum of R5 000 per incident).

4.3.2 ENVIRONMENTAL INDUCTION (EDUCATION)

All construction staff must be briefed by the ECO in an environmental education programme regarding the environmental status and requirements of the site, **prior** to any activities commencing on site. This will include providing general guidelines for minimizing environmental damage during construction, as well as education with regards to basic environmental ethics, such as prevention of littering, the lighting of fires, etc.

Staff must be made aware what all SCC looks like and to report all fauna occurring on site to the ECO.

Records of environmental training (attendance register and training content) must be kept. Please refer to Annexure C of this EMPr.

4.3.3 METHOD STATEMENT

Before the contractor begins on site, if requested by the ECO, a method statement must be provided to the ECO setting out the following:

- Demarcation and fencing off of the disturbance zone
- Location of the material delivery area (to be restricted to the disturbance zone)
- Storage of construction materials and hazardous substances (if any) (to be restricted to the disturbance zone)
- Delivery of materials (large delivery trucks will not be able to access the site)
- Location of topsoil stockpiles
- Waste management plan
- Site toilets
- Erosion, sedimentation control and stormwater management
- Fire control
- Cement and concrete batching

The ECO is to approve the method statement(s) **before** the works may commence. A pro-forma method statement showing what is required is attached in Annexure D.

4.3.4 VEGETATION CLEARANCE AND PLANT RESCUE PROGRAMME

Plant rescue of all seedling trees and geophytes from within the disturbance zone must be undertaken **prior** to any clearing of topsoil. The contractor and appointed ECO must inspect the disturbance zone to identify any plants that must be rescued.

Note that complete clearing of vegetation is not necessary over the entire site as the building is proposed on supports, pruning first and only clearing essential areas is a requirement for this site in order to retain as much natural vegetation as possible.

The landowner (or his appointed agent) will undertake the initial plant rescue and vegetation clearing prior to the building contractor commencing on site.

Rescued plants are to be stored in an **on-site nursery** for later use in the landscaping phase or directly transplanted into the surrounding open space area - adjacent to the disturbance zone.

A full record of plant rescue needs to be kept in the environmental file on site. (please refer to the attached table that should be filled out in Annexure E).

For successful transplant a sod including the desired plant with its roots intact should be removed and replanted. Plants that are to be kept within the temporary nursery should be planted into black plastic bags and watered (as required).

Any **endangered species or protected tree species** listed in Schedule 3 and 4, in terms of the Western Cape Nature Conservation Laws Amendment Act, 2000 (Act No. 3 of 2000) and National Forest Act (NFA), be discovered during vegetation clearance, may **not** be removed without the relevant **permit and license**.

Please see Annexure F for this list of species as adapted from these Acts.

Protected Milkwood trees were identified on the property (disturbance zone specifically avoid removal mature protected trees). These trees must be clearly marked and demarcated. No disturbance, pruning or removal may occur without a licence issued in terms of the NFA. Transplant of seedling protected trees may only be undertaken after the issue of a NFA licence. ECO to confirm demarcation prior to clearance and to identify the plants that should be rescued.

All cut vegetation shall be chipped and used as mulch. Stockpiling of cut vegetation shall only be permitted in areas indicated by the ECO. No cut vegetation shall be burnt on site as it is a high fire risk area.

The removal, damage or disturbance of flora and fauna **outside** of the immediate disturbance areas is not permitted without the written approval of the ECO (see Annexure B -No-Go Map)

4.3.5 PROTECTION OF FAUNA (ANIMALS)

"After the footprint of the development has been clearly demarcated, the ECO should do a walk-through to look for signs of fauna with limited mobility and escape potential (i.e. tortoise, chameleon, etc.)."

Should signs of fauna with limited mobility or an SCC be found within the demarcated area, a search and rescue operation should be undertaken to relocate fauna to a suitable location far away from construction-related disturbance on the property.

No construction may commence until the ECO is satisfied that all fauna with limited mobility and/or SCC have been successfully removed from the demarcated footprint area.

A search is to be conducted for nests within the PAOI September to November. If any are found that match that of Knysna Warbler, construction related activities occurring on the site September to November are to be postponed until after November" (Confluent Environmental, 2026).

To further limit disturbances to animals – *"construction activities are to take place during daytime hours to reduce the amount of light pollution in the landscape as construction flood lights are typically high lumen values up to 10 000" (Confluent Environmental, 2026).*

Disturbance to fauna within the construction area is to be avoided and where a conflict arises the ECO should be asked for assistance (e.g. snakes found in trenches etc.). Any fauna encountered must be carefully captured and relocated to suitable adjacent habitat by or under the direction of the ECO.

The contractor(s) shall be responsible for informing all employees about the need to prevent any harmful effects on natural vegetation on or around the construction area (disturbance footprint/working zone) as a result of their activities. Clearing of natural vegetation shall be kept to a minimum (restricted to the disturbance zone). The removal, damage and disturbance of natural vegetation without the written approval of the ECO are prohibited.

The contractor(s) shall ensure that no hunting, trapping, shooting, poisoning or otherwise disturbance of any fauna takes place.

For any encounters, the following procedure needs to be followed:

Box 1: Best practice principles for ALL fauna encounters during construction or operational phases of projects

If any animals are seen on site, a photo or a video should be taken if possible (to assist in identification) and all fauna encountered on site should be reported to the ECO immediately. This is particularly important when:

- An animal is harmed or compromised in any way during construction.
- Ground-dwelling animals their nests or eggs are unearthed during earthworks (e.g. moles, tortoise eggs, terrapins/frogs estivating).
- An animal with limited mobility is found (e.g. tortoises, moles, chameleons).
- Any potentially dangerous animal is encountered. This includes any potentially venomous animal (e.g. snakes, scorpions) or any medium-large animal that has become cornered in an enclosed area such that it cannot escape (e.g. porcupines, monkeys, baboons, antelope). It is critical in the case of snakes/scorpions to get pictures/videos to aid in identification and appropriate treatment of anyone needing medical assistance.
- Any animal that shows a reluctance to escape or move away from the construction site thereby increasing its exposure to harm or increasing the risk of injuring people on site.

The ECO should provide guidance or assistance to get all animals to safety, treating any injured animals, and issuing instructions on when to continue with construction (once they are satisfied that all animals have been removed from site) or put additional mitigation measures in place to protect animals on the site from harm.

For any injured animals or animals to be removed from site (domestic or wild):

A local SPCA or animal welfare society can collect and treat most animals and should be the first point of call for assistance. If they cannot directly assist, they will revert and notify the relevant authorities/vets.

For any assistance with snake removals/relocations, identifications, or bite treatment contact the African Snakebite Institute. The contact details of a suitably qualified snake handler are provided at the following link: <https://snakeremoval.co.za/mossel-bay>. Also available are the following emergency contacts.

SNAKEBITE EMERGENCIES:

Poisons Information Helpline	+27 861 555 777
Dr Jenna Taylor	+27 83 631 4816
Dr Christoff Bell	+27 73 174 0199
Johan Marais	+27 82 494 2039
Jason Seale	+27 82 781 8498
Arno Naude	+27 83 739 9303
Dr PJC Buys	+26 481 127 5109 (Namibia)

GET THE FREE APP:



(Scan this code with your phone's camera.)

Confluent Environmental, 2026

4.3.6 SOIL MANAGEMENT

- As topsoil is a valuable resource, it must be stripped from essential construction areas **before work commences**. This topsoil should be stockpiled for use in rehabilitation and landscaping and must **not** be contaminated with other building materials and / or subsoil.
- Areas within the “disturbance zone” where no physical construction is required may not be disturbed or cleared of topsoil and should be protected from accidental disturbance as these areas will become garden on completion. ECO to agree to clearance areas.
- The vegetation roots are to be removed together with the top 30 cm of topsoil. This is to be stockpiled for use during the rehabilitation phase. This topsoil is to be stockpiled in the designated topsoil stockpile areas, to be agreed on by the ECO and landowner (to be located within the disturbed areas (such as old existing roads, nearby areas where large stands of Rooikrans have been cleared or within the proposed disturbance zone) as per the site plan).
- As recommended by the specialist, Confluent Environmental:
 - Avoid mixing sand from under Rooikrans infested areas.
 - Rooikrans slash chip material may be used selectively as mulch after the construction

phase when sand is replaced, particularly within disturbed construction areas or rehabilitation buffers. Mulching should be avoided on historically mobile dune systems in the north-western third (red triangle below) of the Portion

- No topsoil stripping is to take place prior to the completion of the plant rescue programme.

4.3.7 HERITAGE RESOURCES

Should it be suspected that an object or structure of heritage value has been uncovered during earthworks or the clearing of vegetation (including but not limited to bones, burial sites, structures older than 50 years, stone tools, shell middens, pottery etc.), then all work is to immediately **cease**, and the ECO is to be contacted to inform Heritage Western Cape (HWC). Work shall not recommence until HWC have visited the site, inspected the object in question and advised on how to proceed. If the object requires removal by a trained archaeologist, this process will be at the expense of the landowner. It is the contractor's responsibility to ensure all staff on site is aware of this procedure.

4.4 GENERAL CONSTRUCTION REQUIREMENTS

4.4.1 CONSTRUCTION PROGRAMME

As recommended by the specialists, Confluent Environmental:

- *Monitor weather conditions daily; stop all construction during heavy rainfall periods, and inspect for damage before resuming.*
- *Construction activities are to take place during daytime hours to reduce the amount of light pollution in the landscape as construction flood lights are typically high lumen values up to 10 000.*

4.4.2 ACCESS TO THE SITE

Access to the site will be from the southern servitude road and new driveway to the disturbance zone.

Movement of small construction vehicles must be restricted to the designated tracks only – no additional temporary access roads may be created.

The access driveway is not to exceed 3.5m in width.

NO large construction vehicles will have access to the site due to the restricted access tracks. Any turning areas required must be within the disturbance areas (existing / proposed).

Access to the area is to be monitored during construction. Constant regard must, therefore, be taken to safety.

Any damage to the access road caused by the contractor will need to be repaired at their cost.

During the construction phase, it is essential that traffic flow is correctly managed as the servitude track provides access to other properties in the area.

4.4.3 SITE AGENT

The contractor shall appoint a responsible agent to ensure that they comply with this EMPr and all its conditions. This party is to report directly to the ECO and will need to attend the induction and be briefed on the requirements by the ECO.

4.4.4 LOCAL LABOUR

It is recommended that local labour is used for the construction phase of this project. "Local" implies persons from the Mossel Bay area.

4.4.5 CONTRACTOR'S SITE CAMP

- As the project is only for a small domestic home construction, it is unlikely that a "campsite" will be required. A space for the contractor to store material during construction is necessary. The area at the existing workshop and at the future store would be ideal for this purpose. **– no new disturbance areas are permitted.**
- A demarcated area must be created for refuse and waste management. **Refuse** is to be collected in two separate containers, one for recyclable materials (glass, metal, paper and plastic) and the other for non-recyclable materials. These are to be disposed of through the municipal waste collection that currently services the area. Building waste is to be removed by the contractor to an appropriately licenced waste disposal facility.
- **Note that the bins need to have lids on at all times.**
- **No open fires are permitted.**
- Storage of all materials required for the contract must occur within the demarcated area approved by the ECO.
- **Any concrete batching plant areas** are to be approved by the ECO prior to utilisation and must be equipped with suitable bunding to prevent movement of contaminated water or material off site.
- No ready-mix trucks are permitted to rinse their tanks on site or along the access roads to and from the site. **Any spillage is to be immediately cleaned by the responsible contractor / supplier / owner.**
- Adequate signage must be erected at the construction site to ensure that safety regulations are adhered to.

4.4.6 STORAGE OF CONSTRUCTION MATERIAL

The following must be adhered to:

- As recommended by the specialist, Confluent Environmental: *the bulk of the woodwork must be handled off site.*
- *Any small items or building materials which can be carried away by medium-large animals (i.e. genets, mongoose) should be safely stored in containers or locked away in a designated area to prevent interference from animals, causing possible harm to them and preventing them from removing such items from site.*
- All stockpile sites are to be approved by the ECO and/or landowner, **prior** to the commencement of stockpiling. **These MUST be within the disturbance zones (existing / proposed).**
- All stockpile sites to be properly demarcated with silt-fences and/or danger tape, where necessary.
- All construction material to be stored in the area identified for that purpose within new or existing disturbance areas.
- **No** construction material is to be stored within the surrounding undisturbed areas as per the site plan.
- Proper storage facilities for the storage of oils, paints, grease, fuels, chemical and any hazardous materials to be used must be provided and must conform to the relevant safety materials to be used must be provided and must conform to the relevant safety requirements to prevent the migration of spillage into the ground and groundwater regime around the temporary storage area(s). Any spills to be cleaned immediately.

4.4.7 FIRE PROTECTION

The contractor should take all reasonable and active steps to avoid increasing this risk of fire (especially to prevent damage to surrounding properties and vegetation).

The contractor shall ensure that all personnel are aware of the fire risk and the need to extinguish cigarettes before disposal.

Cigarettes may **not** be disposed of onsite and must be disposed of properly in receptacles for this purpose (sand or water container).

The contractor shall identify the authorities responsible for fighting fires in the area and shall liaise with them regarding procedures should a fire start.

The contractor shall ensure that his staff are aware of the fire danger at all times and are aware of the procedure to be followed in the event of a fire.

The contractor shall also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency (e.g. in ablution facility or storage containers).

4.4.8 HEALTH AND SAFETY

The Occupational Health and Safety Act (Act number 85 of 1993) must be complied with.

The H&S Officer is to copy the ECO in on his/her reports for record purposes.

4.4.9 WASTE MANAGEMENT

- It is recommended that an integrated waste management approach must be used that is based on waste minimisation and must include reduction, recycling, re-use and disposal where appropriate.
- A demarcated area must be created for refuse and waste management during construction.
- **Refuse** is to be collected in two separate containers, one for recyclable materials (glass, metal, paper and plastic) and the other for non-recyclable materials. These are to be disposed of through the municipal waste collection that currently services the area.
- Building waste is to be removed by the contractor to an approved waste disposal sites.
- **Note that the bins need to have lids on at all times.**
- The contractor shall ensure that the site is maintained in a neat and tidy condition and kept free of litter.
- The contract staff must be clearly briefed on the 'no litter policy'. The site is to be kept clean of litter, even if it is not caused by the contractor staff.

4.4.10 ABLUTION FACILITIES

Ablution facilities must be in place as soon as activities commence on-site.

Contractors must provide chemical ablution facilities for all construction personnel working on the site / make use of existing toilet facilities as approved by the landowner.

Toilets shall be of a **neat** construction and shall be provided with doors and locks and shall be secured to prevent them from blowing over.

Sanitation provision and servicing shall be to the satisfaction of the landowner / ECO.

Failure to use the chemical toilet provided and making use of the vegetation either on or off-site **will result in maximum penalty fine being awarded in addition to requiring the contractor to clean up.**

4.4.11 SOIL EROSION AND STORMWATER MANAGEMENT

As recommended by specialist, Confluent Environmental:

The slopes leading down from the development footprint are highly likely to be vulnerable to erosion during the clearance of the site and the construction phase. It is therefore important that appropriate erosion control measures are implemented, which include inter alia, the following:

- *Ensure that construction activities do not cause any preferential flow paths and concentrated surface runoff during rainfall events.*
- *Clearly demarcate the construction area and ensure that heavy machinery does not compact soil or disturb vegetation outside of these demarcated areas.*
- *Reduce transport of sediment through use of structures such as silt fences and biodegradable coir logs placed along a contour below the development footprint (Figure 9).*



Figure 9: Examples of silt fences (left) and coir logs (right) used to trap sediment mobilised from steep slopes.

- *Ensure that vegetation clearing is conducted in parallel with the construction progress to minimise erosion and runoff.*
- Areas requiring erosion control mechanisms are to be identified by the contractor and ECO. Instructions by the ECO are to be given to the contractor as required.
- In the event of erosion damage or silt movement, the contractor will be liable for a fine and is responsible for the clean-up and required to reinstate the conditions to normal as determined by the ECO.
- To decrease the risk of pollution, all construction materials must be secured (e.g. only stockpiling at a pre-determined site, around which there must be a silt protection boundary) so that there is **no wash away**.
- In the case of contaminated water run-off, silt can be stopped by means of sandbags and following the rain the contaminated area(s) should be cleaned.
- It is the responsibility of the contractor working inside any trench at any specific time to ensure that their works are protected from damage which may be caused through runoff of rainwater inside the trench. The use of sandbags, mulch bags or any other appropriate methods of slowing down the flow of water within a trench is required.
- In addition to silt fencing and phased clearance, the Contractor must incorporate Sustainable Urban Drainage System (SuDS) measures where appropriate, including swales, detention ponds, permeable paving, and rainwater harvesting tanks.

4.4.12 CONCRETE AND CEMENT WORKS

- Mixing areas must be defined on-site and **clearly** demarcated.
- Cement powder has a high alkalinity pH rating, which can contaminate and affect both soil and water pH dramatically. A shift in pH can have serious consequences on the functioning of the soil, water organisms and plants.
- Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils.
- The designated mixing areas should be limited to areas that will become future hard surfaces on the site. No concrete and cement mixing is allowed in areas outside of proposed hardened surfaces.
- Cleaning of contaminated equipment must be done into a designated, bunded & lined slurry sump or container.
- If using Readymix concrete, care must be taken to prevent spills from the trucks while offloading.
- **Cement contaminated water may not leave the disturbance areas and enter any natural areas.**
- The contractors and sub-contractors need to ensure that the used cement bags do not create a litter problem.
- Where cement is placed directly on the ground, the contaminated soil must be removed and disposed of appropriately.
- Excess or spilt concrete should be disposed of at a suitable registered landfill site.
- Construction equipment may be cleaned in a designated cleaning area that is well bunded only.
- **No mixing to be done in environmentally sensitive areas or areas where there is a high risk of cement contaminated water entering the ecosystem (including groundwater).**

4.4.13 NOISE MANAGEMENT

During the construction phase work must comply with the normal Municipal building control requirements.

5 REHABILITATION PHASE

The work areas around the structures and damage to areas outside of the allowable disturbance zones must be rehabilitated to the satisfaction of the landowner and ECO.

Rehabilitation of damaged areas will include, but is not limited to the following:

- All building rubble, foreign material, waste, and temporary infrastructure must be completely removed and disposed of at an approved landfill site;
- Contaminated soil must be disposed of at an approved landfill site;
- Compacted temporary work areas have been loosened without destabilising surrounding dune soils;
- Suitable topsoil has been replaced;
- No active rills, gullies or sediment deposits are present;
- Stormwater controls are stable and functional;
- Indigenous grass seed can be sown within required areas (as indicated by the ECO);
- Indigenous planting as required for the landscaping (see Section 8.2);
- No-Go areas and retained Milkwoods have been inspected for damage and rehabilitated where required.

The ECO is to advise on the rehabilitation measure that should be implemented as it will be case specific.

6 MONITORING REQUIREMENTS AND REPORTS

The monitoring, reporting and record-keeping requirements for the project are summarised in the table below. The ECO shall be responsible for ensuring that monitoring and reporting obligations are implemented in accordance with this EMPr and the Environmental Authorisation. All records must be retained in the environmental file and made available to the competent authority upon request.

Report or record	Prepared by	Timing or frequency	Recipient or filing location	Minimum content
Pre-commencement compliance record	ECO	Before site establishment	Holder and environmental file	EA and permits available; ECO appointed; SDP and no-go areas confirmed; induction complete; method statements approved
ECO inspection report	ECO	Weekly for first two months; monthly thereafter if compliance is satisfactory; additionally during high-risk activities	Holder, contractor and environmental file; authority if required by EA	Activities inspected; photographs; compliance findings; incidents; corrective actions; responsible persons and close-out dates
Environmental incident record	Contractor or ECO	Immediately following an incident	ECO, Holder and authority where legally or EA-required	Nature and location of incident; containment; remediation; photographs; follow-up action
Complaints register	Contractor or Holder	Updated when a complaint is received	Environmental file and ECO	Complainant details where provided; issue; date; investigation; response and closure
Plant rescue register	ECO and responsible contractor	During rescue and replanting	Environmental file	Species where identifiable; number or extent rescued; source and receiving location; survival observations
Waste and hazardous-material records	Contractor	Throughout construction	Environmental file	Waste removals; disposal destination; spills; contaminated-soil disposal
Rehabilitation completion record	ECO	At construction close-out and follow-up inspections	Holder and environmental file	Removal of temporary works; soil stability; erosion; indigenous establishment; alien control; outstanding actions
Final ECO completion report	ECO	At completion of construction and initial rehabilitation, or as required by the EA	Holder and competent authority where required	Overall compliance; incidents; corrective actions; photographs; rehabilitation status; outstanding operational obligations
Environmental Audit Report	Independent environmental auditor	At the frequency and time required by the EA and Regulation 34	Holder and competent authority	Compliance with the EA and EMPr, effectiveness of outcomes and recommendations for corrective action or amendment
Operational inspection register	Holder	Monthly for the first 12 months after construction, then at the frequency stated in the approved EMPr or EA	Retained by Holder	Alien plants; erosion; stormwater; wastewater system; fire controls; waste storage; lighting and wildlife incidents

7 AUDITING REQUIREMENTS

- The holder of the Environmental Authorisation (EA) must appoint a suitable and qualified independent EAP to conduct a final Audit.
- This audit must be undertaken prior to the completion date of the EA.
- The audit is to report on the success of the implementation of the EA and the EMPr as the case may be.
- Auditing requirements are to cover ONLY the Construction phase and does not extend to the operational phase of the property.

8 OPERATIONAL PHASE

The landowner is bound by their general **Duty of Care**, as stated in Section 28 of the National Environmental Management Act, 1998 (as amended). As such it is recommended that the Operational phase monitoring should be conducted by the landowner who can appoint or consult the ECO where required.

As recommended by the terrestrial biodiversity and plant specialist (Confluent Environmental, 2025):

8.1 INVASIVE PLANT SPECIES MANAGEMENT

Ongoing alien clearing on the property must be done in accordance with the alien control plan (annexure H).

As recommended by the specialist, Confluent Environmental: the ECO should conduct monthly post-monitoring construction monitoring of invasive species to maintain habitat quality, and the landowner going forward conduct monthly post-construction monitoring of invasive species to maintain habitat quality.

As the landowner is already successfully implementing alien control, the monitoring of the ECO post-construction can be done through landowner sending photographs to the ECO and the ECO advise where necessary.

8.2 LANDSCAPING AND OPEN SPACE MANAGEMENT

As recommended by the specialist, Confluent Environmental:

- *Ensure no planting of listed invasive species (e.g., kikuyu grass) occurs on-site.*
- *Replant rescued species within areas cleared of Rooikrans slash and within the 2m rehabilitation buffer around permanent disturbance areas. Add woody mulch to the sandy soil in disturbed rehabilitation areas to aid water infiltration and plant establishment. (already being implemented in places near the footprint proposed where Rooikrans was cleared). NOTE: Mulch should be applied selectively and not broadly across previously mobile dune surfaces (red triangle to be avoided for mulching is indicated below)*



Design gardens to be water-wise, wildlife-friendly, and aligned with slope, aspect, and microclimates. Avoid NEMBA-listed invasive species. Fynbos Life in Cape Town is an inspirational indigenous landscaping project with very useful tips allowing a garden to add biodiversity value, instead of detract value.

- a. Gardens & the built environment should be planned with rainfall, slope/aspect, wind direction, & microclimates in mind. Gardens could be planned to capture rainfall & slow water loss. Create a grey-water wetland if there is a need for water filtration & absorption of extra nutrients.
- b. No garden waste may be dumped in any remaining natural area and must be disposed of in a responsible manner.
- c. Make sure not to plant NEMBA listed invasive plants (e.g., kikuyu grass) in your garden.
- d. Select locally indigenous plants for gardens, making use of as many of the rescued plant species as possible. Avoid plants that are hybrids and cultivars.
- e. Add a 10cm thick layer of wood chip to keep in moisture.
- f. Reduce or replace lawns with water-wise groundcovers or enlarging shrub beds.
- g. Add local edible and aromatic plants to avoid water & nutrient intensive vegetable gardens

Soft landscaping should prioritise indigenous species; hard landscaping should be minimised to reduce heat and water runoff. See the explanations below for the difference between soft and hard landscaping:

Soft landscaping

Soft landscaping refers to natural spaces around constructed buildings that contain plants. These are often trees, shrubs, and herbs that perform valuable ecosystem functions and services. Soft landscapes support biodiversity if local indigenous species are planted, or better yet, if the natural vegetation is left to recover and grow with minimal to no planting of man-made gardens. Grasses and

shrubs are as effective at converting Carbon dioxide as are trees. Keeping thicket & fynbos vegetation allows groundwater attenuation and minimisation of erosion risk.
Hard landscaping Hard landscaping are spaces around buildings that have been transformed into impermeable surfaces, such as pavements, and concrete driveways. Hard landscapes have negative impacts on the natural environment. Hard landscaping results in the absorption and reflection of heat, which makes them hotter than the surrounding natural areas. Furthermore, they speed up the flow of rainwater. No plants can really grow on these surfaces making groundwater attenuation problematic.
Fire-proof hedges (Esler et al., 2014) can be made with indigenous species to reduce fire risk around the built environment. Some of the species that could be planted for this purpose include <i>Osteospermum moniliferum</i> (Bietou), <i>Diospyros dichrophylla</i> , <i>Searsia glauca</i> , <i>Pterocelastrus tricuspidatus</i> (Candlewood), <i>Ekebergia capensis</i> (Cape Ash), <i>Grewia occidentalis</i> (Crossberry), <i>Carissa bispinosa</i> , and <i>Euclea racemosa</i> (Gwarrie).
Schedule major maintenance activities to avoid critical periods such as flowering, seed dispersal, and pollination periods (for most species this is during spring between September to November).
When chemical treatments are necessary, use targeted applications that minimize exposure to non-target species. Consider alternative non-chemical solutions first.

Open space areas:

- No additional infrastructure may be constructed in the open space area without approval. Only recreational low impact structures such as benches etc., may be placed in this area without disturbance to vegetation.
- Dispose of garden waste responsibly, no dumping in natural areas. Where possible, chip and use as mulch or composting.
- The open space areas may be used for limited recreational activities on demarcated paths (walking routes). No vehicle access within this area is permitted.
- Restrict movement to the paths and implement ongoing alien clearing and vegetation management as per the Alien Control Plan (ACP).
- The area may be used for low impact agricultural activities such as bee keeping.

8.3 LIGHTING

"Light pollution must be reduced and avoided wherever possible during the operational phase of the project. White LED lights have the worst negative effects for the environment, therefore dimmer lights with more natural warm light colours should be used.

Permanent lighting along the access road must be avoided. Where lighting is necessary, consideration should be given to light colour, brightness, and direction to minimise impact on fauna (Figure 16)

Loud sirens/alarms must not be permitted." (Confluent Environmental, 2026).



Figure 16. Lighting recommendations to prevent disturbance to fauna.

8.4 HUMAN WILDLIFE CONFLICT

As recommended by the specialist, Confluent Environmental:

- All food waste or general waste should be kept in a secure location which is not accessible to any wildlife. Examples of wildlife-proof bins are suggested in Figure 17.



Figure 17. Wildlife-proof garbage disposal container options. Locking mechanisms and handles on bins achieve this successfully.

- All waste should be stored in a double-container fashion, in such a way that it does not serve as an attractant to wildlife attempting to access the secure location (i.e. all waste products put into closed/sealed rubbish bags/containers and then placed within larger sealed containers/bins).
- All waste, particularly food waste, should be regularly removed from the property and disposed of appropriately to prevent the scent of old products increasing the attractiveness to the disposal area and surrounding development for wildlife.

- *As the property potentially represents a source population for rodent prey, the use of rodenticide is prohibited. Consumption of poisoned rodent prey by raptor SCC can lead to biomagnification and subsequently decreases in wellbeing.*
- *The use of bug zappers is prohibited on the site as this can affect insect prey populations consumed by Knysna Warbler.*
- *It is advised that netting rather than spikes or reflectors be used to deter birds from nesting in the roof of proposed structures.*

8.5 STORMWATER AND EROSION MANAGEMENT

The property must be regularly monitored by the landowner, during the operation, to identify areas susceptible to erosion. The required erosion control measures must be implemented within these areas. The erosion protection measures that are to be implemented must be approved and signed-off by the ECO prior to the commencement of the implementation.

Ensure that stormwater and runoff generated by hardened surfaces is discharged in retention areas (i.e. swales or retention ponds), to avoid concentrated runoff and associated erosion.

Where pathway erosion is evident, the spreading of woodchip from alien clearing is an effective method to prevent sand movement.

As per the specialist, Confluent Environmental:

A key impact related to the development is an increase in the volume of stormwater associated with an increased area of impermeable surfaces created by the development.

It is therefore important that stormwater generated on-site should be managed according to Sustainable Drainage System (SuDS) principles. This requires that as much stormwater as possible should be attenuated within the development footprint. For example, the City of Cape Town guideline is that developments must provide for 24-hour extended detention of the 1-year return interval 24-hour storm event. In this respect, the following measures, inter alia, should be considered: (City of Cape Town stormwater management plan).

- *Rainwater harvesting tanks must be installed where possible;*
- *Use of swales and detention ponds to attenuate stormwater runoff, encourage infiltration and reduce the speed, energy and volumes at which stormwater is discharged from the;*
- *Use of permeable paving to encourage infiltration into the soil, and*
- *Use of retention ponds and artificial wetlands to capture stormwater runoff, prevent its discharge from the site and attenuate pollutants.*

8.6 WASTE MANAGEMENT

The landowner is encouraged to re-use, reduce and recycle.

No waste may be dumped on the property. All waste must be disposed of in appropriate municipal or other authorised dumping sites.

Sewage infrastructure must be adequately maintained in compliance with the relevant health regulations. Effective effluent treatment and disposal require routine septic tank maintenance and monitoring along with backup plans in case of system failure.

8.7 FIRE MANAGEMENT

Firebreaks are a legal requirement in terms of the National Veld and Forest Act, 1998 (NVFA), therefore, the firebreaks must be maintained as agreed with the FPA. These will require brush-cutting every 6 months. No disturbance of the soil is to take place along the firebreaks. Ensure that firebreaks do not compromise indigenous forest areas. FPA will advise.

The landowner is already a member of the FPA and is to remain a paid up member

Firefighting equipment (extinguishers, water tanks, hoses) must be maintained and easily accessible.

9 DECOMMISSIONING PHASE

Should there ever be a need for decommissioning, decommissioning activities need to adhere to the applicable legislation at the time. All material foreign to the site must be removed from the site and must be disposed of at an approved waste disposal site.

Any material that can be recycled should be recycled.

10 LEGISLATIVE REQUIREMENTS

10.1 NOISE

The contractor must comply with the regulations pertaining to noise. SANS 10400 is applicable.

10.2 SOLID WASTE

National Environmental Management: Waste Amendment Act 2014 (Act 26 of 2014), consists of the regulations regarding waste management. The landowner must adhere to the regulations regarding solid waste management under this act.

10.3 NATIONAL WATER ACT

Based on the specialist investigations and information available at the time of compilation, no water use requiring authorisation has been identified. This does not remove the Holder's obligation to obtain any authorisation that may become necessary following detailed design.

10.4 PENALTIES FOR NON-COMPLIANCE

Penalties in terms of Chapter 9 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, are applicable for any action, which leads to damage to the natural environment.

In addition to the penalties in terms of the Act (NEMA), spot fines up to a maximum value of R10 000 per offence can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMPr and EA (FINES ISSUED WILL INCREASE EXPONENTIALLY FOR REPEAT OFFENCES).

In the event of damage being caused, the contractor will be responsible for the cost of cleanup, repair or rehabilitation as necessary, as well as being liable for the fine.

11 CONCLUSION

This EMPr is binding on all contractors on site and constitutes Best Practice for construction activities.

This EMPr may be updated with specific conditions required by the Environmental Authorisation.