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1. BACKGROUND

This Environmental Management Program (EMP) provides an operational framework and serves as a guideline document with regards to the construction phase activities associated with the development of a multi-purpose community centre and sports field on proposed portion H of Portion 97 (proposed 101) of Farm 369, Doorn River, Aan De Doorns, Worcester, hereafter referred to as the Subject Land.

This EMP contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding after approval of the EMP. It is essential that the EMP be carefully studied, understood, implemented and adhered to at all times. Expansion or adaptation of this management plan may be required in specific circumstances.

The Subject Land is being donated by the landowner for the development of a multi-purpose enrichment centre and sports field. The main objective of the proposed development is to provide much-needed facilities to the Aan De Doorns Primary School as well as the broader local community.

The school currently does not have their own sports facilities and is in need of additional learning space. The proposed centre will provide a place of gathering and will contribute to educational, extramural, recreational and social activity for the local community. The centre will provide additional classrooms and a library to the school. Day care (crèche), as well as health issues will simultaneously be addressed. Furthermore, the centre will provide running water and ablution facilities, both which have not been readily available.

This EMP is required to conform to conditions as set out in the Acknowledgement of Receipt of the latest Application Form for Basic Assessment, issued by the Department of Environmental Affairs and Development Planning’s (DEA&DP) on the 7th October 2010.

The EMP has been drafted taking into account the Western Cape Provincial Guideline for Environmental Management Plans (2005). The scope and the level of detail have been adjusted to an appropriately restricted level, reflecting the following considerations:

- The assessment of impacts
- Mitigation & monitoring requirements
- Legal requirements
- The complexity of the project activities

In addition, this EMP has been drafted taking into consideration such comments as have been received from Interested and Affected Parties (I&APs), including relevant commenting authorities, with regard to the proposed development.

Start-up, development (daily/weekly/monthly) and post development checklists are included in Annexure F to facilitate site inspections by the Environmental Control Officer.
2. APPLICABLE LEGISLATION

The legislation that is relevant to this development is briefly outlined below.

2.1. NATIONAL ENVIRONMENTAL MANAGEMENT ACT

The National Environmental Management Act (Act 107 of 1998) (NEMA) makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorization from the relevant authorities based on the findings of an environmental impact assessment (EIA). NEMA is a national act, which is enforced by the Department of Water and Environmental Affairs. These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEA&DP).

According to the regulations of Section 24(5) of NEMA (EIA Regulations 2010), authorisation is required for the following activities related to the proposed development:

Government Notice R544 of 2010, listed activities:

22: The construction of a road, outside urban areas,
   (i) with a reserve wider than 13,5 meters, or
   (ii) where no reserve exists where the road is wider than 8 meters, or for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.

23: The transformation of undeveloped, vacant or derelict land to –
   (b) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares.

Government Notice R546 of 2010, listed activities:

4: The construction of a road wider than 4 metres with a reserve less than 13,5 metres.
   (a) In Western Cape:
      (ii) All areas outside urban areas

*NOTE: A Basic Assessment is required for activities listed in Government Notices R544 and R546.

2.2. CONSERVATION OF AGRICULTURAL RESOURCES ACT

The purpose of the Conservation of Agricultural Resources Act (Act 43 of 1983) provides for control over the utilization of the natural agricultural resources in order to promote the conservation of the soil, the water sources, vegetation and to combat weeds and invader plants.

2.3. LAND USE PLANNING ORDINANCE

The property is currently zoned Agricultural Zone I. The proposed subdivisional Area (Portion H) will be rezoned to Institutional Zone I (place of instruction) with a consent use on proposed Institutional Zone I for a place of assembly (multi-purpose community centre) to accommodate the proposed
facilities. The application for rezoning, subdivision and consent use of proposed portion H (3.7ha in extent) from Portion 97 (proposed 101) of the Farm No. 369, Doorn River, Worcester, is facilitated by BolandPlan Town and Regional Planners, and is running parallel to, but distinct from the environmental authorisation process.

2.4. NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa’s heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority and in the Western Cape, SAHRA have, in most cases, delegated this authority to Heritage Western Cape (HWC).

In terms of Section 38 of the National Heritage Resources Act, SAHRA and/or HWC will require a Heritage Impact Assessment (HIA) where certain categories of development are proposed. Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are applicable:

- “Any development or other activity which will change the character of a site exceeding 5 000 m² in extent”.

An Archaeological Specialist Study was conducted and the report was submitted to HWC along with the Basic Assessment Report. A Record of Decision was obtained from HWC on the 14th May 2010.

3. DESCRIPTIVE OVERVIEW

3.1. LOCATION AND SITE DESCRIPTION

The Subject Land is 3.7 ha in extent and located in the none-urban sub-region of the Breede Valley Local Municipality, approximately 7 kilometres south of Worcester. The site is located adjacent to the Aan De Doorns Primary School, opposite the Aan De Doorns Wine Cellar. The Aan De Doorns – Overhex Road runs along the north-western boundary of the site. The north-eastern side borders the Aan De Doorns Primary School. The R43 (Worcester – Villiersdorp road) runs along the western boundary of the site.

The site consists of natural Moordkuil Succulent Karoo vegetation which is considered least threatened (previously recognized as Breede Alluvium Renosterveld at this site - NSBA 2004 data). The site is currently vacant and undeveloped and most of the land earmarked for the sports field is already disturbed (± 60%) (informal soccer/playground and foot paths). The site is small and isolated and no biological linkages (corridors) exist to the same vegetation type.

3.2. RELEVANT ACTIVITIES

3.2.1 Construction

The construction phase described for the purposes of this EMP consist of the following activities:

- Upgrading of the existing gravel access road up to the entrance of the facilities;
• Construction of an internal paved road with parking bays;
• Clearing of indigenous vegetation (3.7ha) to construct the community centre and sports field;
• Earthworks to prepare the land, i.e. grading, levelling, compacting, etc.
• Landscaping and re-vegetation of sports field;
• Installation of electricity, water, storm water and sewer systems.

3.2.2 Operational

The operational phase described for the purposes of this EMP consist of the following activities:

• Typical educational, extramural, recreational and social related activities (facilitated usage of the community hall, sports field and community enrichment centre by the Aan De Doorns Primary School and the local community);
• Activities (school, sport events and functions) generating waste (solid and sewerage);
• Possible educational usage of the remaining natural vegetation on the south-western corner of the property;
• Irrigation and maintenance of sports field

3.2.3 Decommissioning

The proposed project will be a permanent development and it is highly unlikely that a decommissioning phase will occur. Should the development, however, be demolished, associated activities will include the decommissioning of buildings and removal of grass layer on the sports field.

3.3. THE RECEIVING ENVIRONMENT

The receiving environment consists of a rural community in need of additional facilities that will uplift their quality of life. The subsequent rezoning of the property from Agricultural Zone I to Institutional Zone I for this proposed purpose is therefore expected to be received with much appreciation.

The proposed site consists of vacant, undeveloped land which is mostly transformed to bare soil. The surrounding land use is predominantly agriculture related and includes small farm dams, farm homesteads and a number of workers cottages.

4. SUMMARY OF IMPACTS PRIOR TO MITIGATION

The Environmental Impact Assessment (Basic Assessment Report) identified various potential impacts associated with the proposed development:

4.1. CONSTRUCTION PHASE IMPACTS:
Potential negative impacts of Low to Medium significance identified for the Construction Phase are as follows:

4.1.1. Negative Impacts of Low Significance
Potential negative impacts of low significance were identified for the construction phase:

<table>
<thead>
<tr>
<th>NEGATIVE IMPACTS (LOW)</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrological – Storm Water</td>
<td>Potential runoff will gradually increase during the construction phase as the hardened footprint of the development increases. The impact of this increased runoff is likely to be relatively minor,</td>
</tr>
</tbody>
</table>
### Hydrology – Water Supply
The development will use relatively little water during the construction phase.

### Faunal Impacts
Impact on tortoises, porcupines and mongoose that might be present on site, although unlikely due to the small size and isolation of the site.

### Waste – Sewerage / Effluent
Very little sewerage will be generated during the construction phase.

### Waste – Solid Waste (building rubble and littering)
Construction phase expected to generate small amount of building rubble; Littering by construction personnel may occur.

### Noise
Increased noise levels due to earthmoving and construction equipment.

### Heritage Resources – Archaeological
The site appears to be of low heritage significance.

### Heritage Resources – Cultural
The site is of low heritage significance.

#### 4.1.2. Negative Impacts of Medium-Low Significance
Potential negative impacts of medium-low significance were identified for the construction phase:

<table>
<thead>
<tr>
<th>NEGATIVE IMPACTS (MEDIUM-LOW)</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>Increased dust levels due to earthmoving activities / vehicle movement may impact on air quality and possibly surrounding cultivated lands.</td>
</tr>
<tr>
<td>Visual – Land Transformation</td>
<td>Clearing of land and construction of the community centre will create a visual impact.</td>
</tr>
<tr>
<td>Increased Levels of Traffic</td>
<td>The transport of construction materials will increase traffic along the Aan De Doorns-Overhex Road as well as the gravel road used to access the Aan De Doorns Primary School during the construction phase. This should not impede on traffic flow but may result in a safety risk to pedestrians.</td>
</tr>
</tbody>
</table>

#### 4.1.3. Impacts of Medium Significance
Potential negative impacts of medium significance were identified for the construction phase:

<table>
<thead>
<tr>
<th>NEGATIVE IMPACTS (MEDIUM)</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floral Impacts</td>
<td>Loss of indigenous vegetation. The site is however a small, isolated stand of indigenous vegetation (endangered Breede Alluvium Renosterveld according to NSBA 2004, but more recently classified as least threatened Moordkuil Succulent Karoo by CAPE fine-scale maps). No red data species on present on site; No biological linkages to the same or other vegetation types in the region.</td>
</tr>
</tbody>
</table>

#### 4.1.4. Positive Impacts
Potential positive impacts were identified for the construction phase:

<table>
<thead>
<tr>
<th>POSITIVE IMPACTS</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-Economic – upliftment of quality of life</td>
<td>The construction phase may provide short-term employment for local construction contractors, but is unlikely to have any significant socio-economic impacts.</td>
</tr>
</tbody>
</table>
4.2. OPERATIONAL PHASE IMPACTS:
Potential negative impacts of Low to Medium-Low significance identified for the Operational Phase are as follows:

4.2.1. Negative Impacts of Low Significance
Potential negative impacts of low significance were identified for the operational phase:

<table>
<thead>
<tr>
<th>NEGATIVE IMPACTS (LOW)</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological Impacts on Plants and Animals</td>
<td>No impacts are expected during the operational phase.</td>
</tr>
<tr>
<td>Noise and Nuisance</td>
<td>The development is not expected to cause increased noise pollution in the area.</td>
</tr>
</tbody>
</table>

4.2.2. Negative Impacts of Medium-Low Significance
Potential negative impacts of medium-low significance were identified for the operational phase:

<table>
<thead>
<tr>
<th>NEGATIVE IMPACTS (MEDIUM-LOW)</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrological – Storm Water</td>
<td>Land transformation due to the clearing of natural vegetation, the construction of the community centre and the associated hardened surfaces will increase runoff.</td>
</tr>
<tr>
<td>Hydrolology – Water Supply</td>
<td>Water will be required for the kitchen and ablution facilities of the community centre and for irrigation of the sports field. The Central Breede River Water Users Association has agreed on a 2.5 ha allocation of water to the proposed development. Approximately 990 ha is currently available from the Greater Brandvlei Scheme for allocation to development projects for historically disadvantaged communities.</td>
</tr>
<tr>
<td>Waste – Sewerage / Effluent</td>
<td>Sewerage and wastewater will be generated by the community centre. This will drain into a closed septic tank system on site. The volumes of wastewater are expected to be low (5m³ per month).</td>
</tr>
<tr>
<td>Waste – Solid Waste (building rubble and littering)</td>
<td>The development is unlikely to generate large quantities of solid waste. The only sources of waste will be the kitchen facilities of the community centre, recyclable waste generated in the classrooms and littering during community/sports events. Waste will be disposed of at the Municipal waste site in Worcester on a weekly basis.</td>
</tr>
<tr>
<td>Visual</td>
<td>The community centre will have a maximum height of 7 m and a number of single level classrooms. The surrounding area has already been transformed to various degrees. The Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (CSIR, 2005) indicates that this is a Category Four development (sports facility) taking place within an area or route of low scenic, cultural, historical significance/ disturbed. As such only a moderate visual impact is expected.</td>
</tr>
</tbody>
</table>
### Traffic Impact

The development is not expected to significantly increase traffic along the R43.

The close proximity of the entrance to the intersection with the Aan De Doorns-Overhex road, in this layout alternative, may elevate risks associated with increased traffic levels. This layout is thus not preferred.

### Electricity

The development will require electricity for the community centre lighting and kitchen facilities, as well as lighting on the sports field.

50 KWV electricity will be provided by Eskom, which should be sufficient for the operational need of the development.

#### POSITIVE IMPACTS

<table>
<thead>
<tr>
<th>POSITIVE IMPACTS</th>
<th>DESCRIPTION OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-Economic – upliftment of quality of life</td>
<td>The multi-purpose enrichment centre will benefit the Aan De Doorns Primary School and broader local community and contribute to a better quality of life.</td>
</tr>
</tbody>
</table>

#### 4.3. DECOMMISSIONING PHASE IMPACTS:

Decommissioning of the development is highly unlikely. Should decommissioning, however, be required, associated impacts of low significance will include the ‘scarring’ of the landscape due to the concrete foundations of the buildings (visual), waste generated by the demolition of the building and foundations, as well as a possible safety risk caused by an increase in traffic (demolition machinery and vehicles).

#### 5. CONSTRUCTION PHASE MANAGEMENT PLAN (C-EMP)

The overall goal for the construction phase is to undertake the activities associated with the development of the community centre and sports field in a way that:

- Ensures that activities are properly managed in respect of environmental aspects and impacts.

#### 5.1. GENERAL MANAGEMENT STRATEGY

- The “Pro Forma: Protection of the Environment” form, must be completed by the Contractor and submitted to the Developer, for safe keeping, before he is allowed onto the Site (Annexure D).
- The Developer and Contractor have identified the Environmental Control Officer (see Annexure E).
- A start-up, development (daily/weekly/monthly) and post development checklist has been included in Annexure F to facilitate site inspection by the Environmental Control Officer. Inspection frequency will be determined by the length of the construction phase.
## 5.2. MITIGATION MEASURES DURING THE CONSTRUCTION PHASE

All appropriate mitigation measures should be implemented by the Developer / Contractor for the duration of the construction phase.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Mitigation: Action/control</th>
</tr>
</thead>
</table>
| Storm water management             | ➢ The Developer should only clear the land necessary to accommodate the development.  
➢ Storm water network should be constructed in order for storm water to drain into the existing channel that runs along existing roads bordering the property.  
➢ Proper erosion measures should be implemented where storm water is discharged into the stormwater channel.                                                                                                                                                                                   |
| Water resource management          | ➢ Personnel must be instructed not to waste water during the construction phase, particularly with respect to applying water to suppress dust levels or cleaning equipment.                                                                                                                                                                                          |
| Reduce risk of erosion             | ➢ Areas which show signs of erosion should be rehabilitated as soon as possible.                                                                                                                                                                                                                                                                          |
| Protection of fauna                | ➢ No wild or domesticated animals should be interfered with.  
➢ Animals (e.g. reptiles or small mammals) encountered during the construction phase should be relocated to another site and not harmed in any way.  
➢ No trapping or snaring of animals should be permitted.                                                                                                                                                                                                                          |
| Protection of flora                | ➢ Limit construction activities to the eastern portion of the site which is already disturbed. Conserve the western portion of the site which is still in a relatively good condition.  
➢ No unnecessary roads or tracks are to be made during land clearing and building.  
➢ Further degradation by means of trampling and grazing should be prevented by erecting a fence and only allowing controlled access.  
➢ The fence should allow for movement of small animals.  
➢ Remaining natural vegetation on site can be preserved and used for educational purposes (especially south-western corner of the property).  
➢ All vegetation outside immediate development footprint should be left intact and undisturbed.                                                                                                                                               |
| Solid waste management             | ➢ Personnel should be instructed not to litter and should only dump waste, including building rubble, at designated areas (e.g. litter drums).  
➢ Litter drums should be placed at strategic points for use by personnel and should be emptied regularly and removed to the Worcester Municipal landfill site.  
➢ Any building waste will be transported to the Worcester Municipal landfill site at the Developer’s cost.                                                                                                                                                  |
| Sewerage and effluent management   | ➢ Toilet facilities (portable toilets) should be available to personnel during the construction phase of the development.  
➢ Portable toilets should be secured to the ground and at a location approved by the Supervising Engineer and Environmental Control Officer prior to establishment.  
➢ Ablution facilities shall be maintained in a hygienic state and serviced regularly. Toilet paper shall be provided.  
➢ The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from Site.  
➢ Washing and acts of excretion and urination are strictly prohibited other
Minimisation of Dust

- Any soil, and only areas intended for development, must be exposed for the minimum time possible once cleared of vegetation to avoid prolonged exposure to wind and water erosion and to minimize dust generation.
- Water used for dust suppression purposes must be used in moderation and should not be wasted.

Minimisation of Noise

- All construction equipment, including vehicles, must be properly and appropriately maintained in order to minimise noise generation.
- Noise levels will be kept to a minimum by limiting operation of heavy earthmoving equipment and construction activities to normal working hours, and to normal work days (i.e. Monday to Friday, between 08:00 and 17:00).
- Silencers (sound bafflers) should be used to ensure effective sound dampening if necessary.

Minimisation of visual impact

- Construction activities will be limited to specific demarcated areas.
- A designated work area should be established.
- The type and colour of roofing and cladding materials to the Contractor’s temporary structures shall be selected to reduce reflection.
- The Contractor shall ensure that any lighting installed on site for his activities does not interfere with road traffic or cause a reasonably avoidable disturbance to the surrounding community or other users of the area.

Minimisation of traffic impact

- Construction vehicles may only park on specific demarcated areas.
- Measures should be put into place to ensure the safety of learners from the Aan De Doorns Primary School who walk to and from school every day - road and other safety measures should be strictly adhered to and maintained.
- The Developer will ensure that traffic flow is not impeded by avoiding the transportation of materials during peak traffic hours of 07:00-08:00 and 17:00-18:00.
- Appropriate traffic warning signs shall be maintained. Trained and equipped flagmen shall be used where the access road intersects with public roads.
- All public roads shall be kept clear of mud and sand. If this material is deposited onto public roads by construction activities it must be cleared regularly.

Protection of heritage resources (Archaeology)

- If any archaeological material (e.g. human remains) is found during earthmoving and construction, work must cease, the site should be demarcated and Heritage Western Cape must be notified immediately.
- The remains should not be removed until inspected by an archaeologist.

Maintenance of cultural heritage (Built landscape)

- The architecture of the proposed multi-purpose centre should be subdued in form and colour as to not create a visual distraction. The farm houses of the area typically resemble white buildings with red pitted roofs.

Socio-economic upliftment

- Local contractors should be used to undertake any construction work, if possible, in order to boost the local economy.
- It is recommended that the proposed community centre and sports field is located adjacent to the Aan De Doorns Primary School which will be the prime user of the facilities.
5.3. FIRE RISK MANAGEMENT DURING THE CONSTRUCTION PHASE

- The Developer/Contractor shall appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed.
- The Fire Officer shall ensure that there is basic fire-fighting equipment available on Site at all times.
- The Fire Officer shall ensure that the basic fire-fighting equipment is to the satisfaction of the Local Fire Services.
- Any fires which occur shall be reported to the Fire Officer immediately.
- Smoking shall not be permitted in those areas where it is a fire or health hazard.

5.4. HEALTH AND SAFETY MANAGEMENT DURING THE CONSTRUCTION PHASE

- The Contractor shall appoint a Safety Officer who has been sufficiently trained to deal with medical emergencies.
- Dangerous zones (e.g. scaffolding) must be demarcated as such.
- The rules and procedures should include emergency telephone numbers and shall be displayed on a visible notice board that is accessible to all employees and workers on site.
- Any new recruits or casual workers employed by the Developer/Contractor for this project should be provided with basic health and safety awareness training as part of their induction.
- No unauthorised firearms are permitted on Site.
- All incidents must be recorded in a Log Book. The date, time, the names of persons involved, a short description of incident and the final outcome must be recorded.

5.5. EMERGENCIES PROTOCOL

- **Fire**: The Contractor shall advise the Fire Officer and relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall ensure that his employees are aware of the procedure to be followed in the event of a fire.

- **Hydrocarbon (fuel & oil) leaks and spillages**: The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the Supervising Engineer, Environmental Control Officer and the relevant authorities. Oil spill kits must be available on site.

- **Raw Sewerage spills (from portable toilets)**: The Contractor shall ensure that his staff and the staff of Subcontractors are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the Supervising Engineer, Environmental Control Officer and the relevant local authorities.

  The Contractor shall ensure that the necessary materials and equipment for dealing with spills and leaks are present on site at all times.

  The clean-up of sewerage spills and any damage caused by the spill or leak shall be for the Contractor’s account.

- **Emergency telephone numbers** shall be displayed on a visible notice board that is accessible to all employees and workers on site.
All incidents must be recorded in a Log Book. The date, time, the names of persons involved, a short description of incident and the final outcome must be recorded.

5.6. COMMUNICATION OF MANAGEMENT ACTIONS

- The Environmental Control Officer is responsible for communicating the management actions of the EMP to the labour force during the initial site orientation and to coordinate and facilitate weekly tool-box meetings.

- Telephone numbers of emergency services, including the local fire fighting service, shall be posted conspicuously on site, either in the Contractor’s office or the nearest telephone. In the event of an emergency, the Contractor shall contact the relevant authority or emergency service.

- The Contractor shall erect and maintain accessible public information boards. Such boards shall include details of the Environmental Control Officer for complaints by members of the public.

- The Contractor shall keep a “Complaints Register” on site. The Register shall contain all contact details of the person who made the complaint, and information regarding the complaint itself.

- All incidents must be recorded in a “Log Book”. The date, time, the names of persons involved, a short description of incident and the final outcome must be recorded.

5.7. ENFORCEMENT OF SITE USE RULES

- The Environmental Control Officer can impose spot fines on the Contractor for any contraventions of the C-EMP by individuals. By imposing spot fines on individuals guilty of contravening the EMP, the Environmental Control Officer will be able to ensure that the requirements of the C-EMP are taken seriously not only by the management personnel on site, but also by labour.

- The Environmental Control Officer will not collect the fines from individuals, but will rather inform the Contractor of the contravention, the individual's identity and the amount of the fine. The fine will be deducted from the Contractor’s monthly certificate, or the Environmental Control Officer will issue a variation order, to the value of the fine, for the Contractor to undertake activities that would in some way enhance the state of the environment or the site. It will be the Contractor’s responsibility to reclaim such fines from the guilty individuals.

- In addition to penalties, the Environmental Control Officer has the power to remove from Site any person who is in contravention of the C-EMP, and if necessary, the Environmental Control Officer can suspend the part or all of the works, as required.
5.8. NON-COMPLIANCE

- DEA&DP in their environmental authorisation stipulate that: “The Department of Environmental Affairs and Development Planning reserves the right as a result of non-compliance with a condition of this authorisation to withdraw the authorisation and render the holder liable for criminal prosecution.”

- Non-compliance with the conditions of the EMP constitutes a breach of Contract for which the Contractor may be liable to pay penalties. These penalties imposed will be per incident. The amount of the penalty will depend on the seriousness of the contravention, and thus the Environmental Control Officer must use his judgement in determining the amount of the penalty.

5.9. RECORD KEEPING

- The Environmental Control Officer will keep a record of all activities on site, meetings attended, accidents or incidents, verbal or written complaints received, cases of non-compliance with the C-EMP together with corrective action taken and penalties issued. This information will be recorded in an appropriate manner by the Environmental Control Officer in a log book (site diary).

- In addition, the Environmental Control Officer’s daily, weekly and monthly checklist on Site will be kept in order to ensure compliance with the C-EMP (Annexure F).

- At the end of each month, a compliance certificate needs to be completed and submitted to the Developer for his records and safe-keeping. The weekly and month end checklists need to be attached to the compliance certificate.

- The Environmental Control Officer will keep a photographic record of progress and all incidents or events that take place on site. Such photographs shall be properly dated. The photographs should be kept safe and may be called for in disputes regarding environmental management.

5.10. AUDITING

The purpose of auditing is to monitor compliance with this C-EMP and measure its effectiveness in mitigating environmental impact. To this end, the following will be required:

- An internal review procedure will be established by the Environmental Control Officer to monitor the progress and implementation of the C-EMP. Any modifications to the C-EMP will be issued as variation orders by the Environmental Control Officer and registered in the records of the Environmental Control Officer.

- At the end of the construction period, a report outlining the implementation of the C-EMP and highlighting any problems or issues that arose during the construction period will be compiled by the Environmental Control Officer.

- The following documents and information should be taken into consideration when completing this audit:
  - log book (site diary)
  - completed start-up, daily/weekly, monthly and closure checklists
  - compliance certificates
  - photographic records
- public complaints register

➢ The post-completion audit shall be submitted to the Developer and the relevant DEA&DP case officer. This report will contain recommendations for how future EMPs can be improved or revised to limit, mitigate or rectify any potential environmental impacts.
6. OPERATIONAL PHASE MANAGEMENT PLAN

The overall goal is to:
- ensure that the use of the community centre and sports field, including associated activities, do not impose a negative impact on the environment.

6.1. MITIGATION MEASURES DURING THE OPERATIONAL PHASE

The proposed mitigation measures should be implemented as a minimum by the Developer for the duration of the operational phase.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Mitigation: Action/control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm water management</td>
<td>➢ The Developer should ensure that proper drainage systems are in place to remove storm water from the site without eroding soil.</td>
</tr>
<tr>
<td></td>
<td>➢ Irrigation of the sports field should be designed as to prevent excess irrigation and unnecessary run-off.</td>
</tr>
<tr>
<td>Water resource management</td>
<td>➢ Water efficient systems, such as dual-flush toilets and water-efficient taps are recommended for use in the community centre.</td>
</tr>
<tr>
<td></td>
<td>➢ Appropriate irrigation systems should be installed on the sports field to save water.</td>
</tr>
<tr>
<td></td>
<td>➢ Landscaping of the development must be done with indigenous vegetation and sports field should preferably make use of Buffalo grass (<em>Stenotaphrum secundatum</em>) or kweek grass (<em>Cynodon dactylon</em>) which is suitable alternatives to Kikuyu that require less maintenance and less water.</td>
</tr>
<tr>
<td>Protection of fauna and flora</td>
<td>➢ All remaining natural vegetation should be kept intact. The natural veld in the south-western corner of the property should be preserved (educational field studies).</td>
</tr>
<tr>
<td></td>
<td>➢ Further degradation by means of trampling and grazing should be prevented by erecting a fence and only allowing controlled access (the fence should allow for movement of small animals).</td>
</tr>
<tr>
<td></td>
<td>➢ Landscaping of the development must be done with indigenous vegetation.</td>
</tr>
<tr>
<td></td>
<td>➢ All vegetation outside immediate development footprint should be left intact and undisturbed.</td>
</tr>
<tr>
<td>Control alien vegetation within undeveloped sites</td>
<td>➢ Measures should be introduced to clear all alien invasive plants and to control further spread into natural areas.</td>
</tr>
<tr>
<td>Solid waste management</td>
<td>➢ All reasonable steps will be taken to minimize wastage, for example recycling of waste paper and the use of organic waste in a food garden.</td>
</tr>
<tr>
<td></td>
<td>➢ Waste and litter drums should be placed at strategic points for use during any functions/sports events. The drums should be regularly emptied and waste removed for disposal at the municipal landfill site.</td>
</tr>
<tr>
<td>Sewerage and effluent management</td>
<td>➢ The septic tank should be regularly pumped and emptied by the Breede Valley Municipality. The sewerage will be disposed of at the Worcester Waste Water treatment Works.</td>
</tr>
<tr>
<td></td>
<td>➢ Grey water from the kitchen will be used to irrigate the food garden.</td>
</tr>
<tr>
<td>Minimisation of visual impact</td>
<td>➢ The building should have a neutral colour (white or earth toned) to avoid unnecessary visual impact on the surrounding area.</td>
</tr>
<tr>
<td></td>
<td>➢ Trees must be planted along the boundaries of the property.</td>
</tr>
<tr>
<td></td>
<td>➢ Lighting at night will be limited to evening sports events. Visors and light shields must be used to reduce light pollution and to direct lighting directly downward.</td>
</tr>
<tr>
<td>Minimisation of parking</td>
<td>➢ Parking should be restricted to available parking bays.</td>
</tr>
</tbody>
</table>
Measures should be put into place to ensure the safety of learners from the Aan De Doorns Primary School who walk to and from school every day during main sport and public events - road and other safety measures should be strictly adhered to and maintained.

Energy-efficient fluorescent lighting should be used within the community centre.

Flood lights on sports field should only be used when necessary and for the duration of sports events.

The architecture of the proposed multi-purpose centre should be subdued in form and colour as to not create a visual distraction. Neutral colours should be used. The farm houses of the area typically resemble white buildings with red pitted roofs.

It is recommended that Aan De Doorns be developed as a social facility cluster (also see Breede Valley Local Municipality Spatial Development Framework 2007 – 2011).

Development of the multi-functionality facet of the proposed development should be emphasized to reduce public and transport costs and promote a sense of ownership by the entire community.

Proposed aspects such as day care facilities (crèche), library, additional learning space, etc. should be implemented.

Local community should be involved in the establishment and implementation of training, skills development and other enrichment programmes to uplift and ensure a sense of ownership amongst them.

7. DECOMMISSIONING PHASE

It is highly unlikely that the development will be decommissioned. Broad mitigation measures have however been included in this should occur.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Mitigation: Action/control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remediation of the biophysical environment</td>
<td>The area occupied by the community centre and sports field is to be rehabilitated following demolition of the building, concrete foundation and sports field (grass).</td>
</tr>
<tr>
<td>Waste management</td>
<td>Rubble should be properly disposed of in a municipal waste management facility, appropriate materials should be recycled.</td>
</tr>
<tr>
<td>Minimisation of traffic safety risks</td>
<td>Measures should be put into place to ensure the safety of learners from the Aan De Doorns Primary School.</td>
</tr>
</tbody>
</table>

8. ANNEXURES

Annexure A – Locality map
Annexure B – Site layout
Annexure C – Environmental Authorization (when issued)
Annexure D – Pro Forma: Protection of the Environment
Annexure E – Letter of Appointment: Environmental Control Officer
Annexure F – Project start-up, Development and Post Development Checklists
Annexure A – Locality map

Figure A1. Locality map of the area surrounding Portion 97 (proposed 101) of Farm 369, Aan De Doorns, Worcester (originally sourced from 1:250 000 Government topo-cadastral survey map 3319)

Figure A2. Locality map of Portion 97 (proposed 101) of Farm 369 (sourced from 1:50 000 Government topo-cadastral maps 3319 CB and 3319 DA)
Annexure B Site layout

Figure B1: Site plan of the proposed multi-purpose community centre and sports field on Portion 97 (proposed 101) of Farm 369, Aan De Doorns, Worcester.
Annexure C

Environmental Authorization

(when issued)
Annexure D

PRO FORMA: “PROTECTION OF THE ENVIRONMENT”
Protection of the Environment

Aan De Doorns Community Trust
(hereafter referred to as the Developer / Employer)

Contract No _____________________________________________

Contract title _____________________________________________

PROTECTION OF THE ENVIRONMENT

The Contractor will not be given right of access to the Site until this form has been signed

I/we, ...................................................{hereafter referred to as the Contractor} record as follows:

1. I/we, the undersigned, do hereby declare that I/we am/are aware of the conditions stipulated in the environmental authorization issued by the Department of Environmental Affairs & Development Planning (DEA&DP), dated ..................., as well as the increasing requirement by society that construction activities shall be carried out with due regard to their impact on the environment.

2. In view of the above mentioned conditions and requirements and in addition to complying with the letter of the terms of the Contract dealing with protection of the environment, I/we will also take into consideration the spirit of such requirements and will, in selecting appropriate employees, plant, materials and methods of construction, in-so-far as I/we have the choice, include in the analysis not only the technical and economic (both financial and with regard to time) aspects but also the impact on the environment of the options. In this regard, I/we recognised and accept the need to abide by the “precautionary principle” which aims to ensure the protection of the environment by the adoption of the most environmentally sensitive construction approach in the face of uncertainty with regard to the environmental implications of construction.

3. I/we acknowledge and accept the right of the Developer / Employer to deduct, should he so wish, from any amounts due to me/us, such amounts (hereinafter referred to as fines) as the Environmental Control Officer shall certify as being warranted in view of my/our failure to comply with the terms of the Contract dealing with protection of the environment, subject to the following:

3.1 The Environmental Control Officer, in determining the amount of such fine, shall take into account inter alia, the nature of the offence, the seriousness of its impact on the environment, the degree of prior compliance/non-compliance, the extent of the Contractor's overall compliance with environmental protection requirements and, in particular, the extent to which he considers it necessary to impose a sanction in order to eliminate/reduce future occurrences

3.2 The Environmental Control Officer shall, with respect to any fine imposed, provide me/us with a written statement giving details of the offence, the facts on which the Environmental Control Officer has based his assessment and the terms of the Contract (by reference to the specific clause) which has been contravened.

Signed .....................................CONTRACTOR          Date......................
Annexure E

LETTER OF APPOINTMENT
ENVIRONMENTAL CONTROL OFFICER
(an Environmental Control Officer has not been appointed at this stage –
this letter of appointment will be completed subject to
environmental authorisation being granted by DEA&DP).
Annexure F

Project Start-up, Development and Post Development Checklists
## PROJECT START-UP CHECKLIST

### Contract:

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<table>
<thead>
<tr>
<th>ENVIRONMENTAL ASPECT</th>
<th>YES/ NO (✓ or X)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A copy of the Contract Document and the Construction Environmental Management Programme (C-EMP) is on Site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All new personnel on site are aware of the contents of the C-EMP and have been through the orientation/induction and signed the attendance register.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Location of designated work areas has been established.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Solid waste management system has been established.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Appropriate toilet facilities are available to construction personnel.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Toilet facilities are located in areas approved by the Supervising Engineer and ECO.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Telephone numbers of emergency services are available and on display on site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All necessary fire-fighting equipment is on site and in good working order.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Complaints Register and Incident Logbook (Site Diary) on site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trained Safety and Fire Officers have been (or are in the process) of being appointed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Completed by:……………………… Sign:…………………….. Date:……………………..
<table>
<thead>
<tr>
<th>ENVIRONMENTAL ASPECT</th>
<th>YES/ NO (✓ or X)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper measures are implemented to manage additional storm water run-off from site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion control measures are in place and are effective in controlling erosion, especially for rainy seasons (winter).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No trapping or snaring of animals are taking place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The western section of the site is kept in good condition and activities are restricted to the eastern portion of the site which is already disturbed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural vegetation outside the immediate development footprint is left intact and undisturbed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water used for dust suppression purposes are used in moderation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste (solid and effluent) control and removal system are being maintained.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contaminated waste substances are kept separate from household and general waste.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable toilets are being emptied and maintained in a proper manner.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel are not washing or conducting acts of excretion and urination in areas not designated for this use.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All construction vehicles are in good working order and no leakages are visible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drip trays are being utilised where there is a risk of incidental spillage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil spill kits are available and kept in good working order for emergency incidences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic fire-fighting equipment is available on site and to the satisfaction of Local Fire Services.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Emergency telephone numbers are displayed on site.
- Road safety and other measures are in place to ensure the safety of learners from the Primary School.
- All public roads are cleared of mud and sand deposited by construction vehicles and equipment.
- Noise Control measures are in place and are working effectively.
- Construction activities are limited to the designated work area.
- Chemical and flammable substances area kept apart and stored separately in the necessary containers.
- The existing architecture of the area (typically white buildings with red pitted roofs) is brought into the new building(s).
- All incidents have been recorded in the Incident Logbook.

Completed by:……………………… Sign:……………………….. Date:……………………
**POST DEVELOPMENT CHECKLIST**

<table>
<thead>
<tr>
<th>ENVIRONMENTAL ASPECT</th>
<th>YES/ NO (✓ or X)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Measures are in place to accommodate additional storm water run-off.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Water efficient systems are used for the community centre and sports field.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Energy-efficient systems are used to minimize electricity usage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Solid waste (including building rubble) is disposed of in a responsible manner and the site is left in a good and clean condition.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Measures are implemented to re-used or recycled material to minimize waste (waste paper, organic waste in a food garden).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All public roads are cleared of mud and sand deposited by construction vehicles and equipment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Erosion sites are being repaired.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Measures are implemented to remove alien invasive plants from undeveloped sites and to prevent encroachment into natural areas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Landscaping of the site is done with indigenous vegetation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Landscaping of the sports field made use of an appropriate grass type.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Road safety and other measures are in place to ensure the safety of learners from the Primary School.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The existing architecture of the area (typically white buildings with red pitted roofs) is brought into the new building(s).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Completed by:.......................... Sign:.......................... Date:..........................