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SECTION 24G ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Rectification of the unlawful commencement of developing Shopping Centre on Portion 149 of the Farm Lichtenburg Town and Town Land 271P.

DEA Ref: REC08/2012.

Draft Environmental Impact Assessment Report

11 April 2013

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Table of Contents:

1. Introduction
 - 1.1. Project History
 - 1.2. Report Structure
2. Legal Framework
 - 2.1. The National Environmental Management Act (Act 107 of 1998)
 - 2.2. The National Heritage Resource Act, 25 of 1999
 - 2.3. Other Potentially Relevant Legislation
3. Public Participation Process
 - 3.1. Identification of Stakeholders
 - 3.2. Public Participation Process to date
 - 3.3. Public Participation Process to be undertaken during final EIAR Phase
 - 3.4. Decision and Appeal Period
4. Site Description
 - 4.1. Location
 - 4.2. Status Quo of the site
 - 4.3. Vegetation
 - 4.4. Geotechnical Study
5. Impact Assessment and Proposed Mitigation Measures
 - 5.1. Identification and Assessment of Impacts already occurred
 - 5.2. Assessment of Identified Impacts
 - 5.2.1. Impact on Vegetation
 - 5.2.2. Geotechnical
 - 5.2.3. Social impacts
 - 5.2.4. Site stability of the site
6. Conclusion and EIA Statement
 - 6.1. Environmental Management Plan
 - 6.2. Way Forward
7. Bibliography

Table of Annexures

- Annexure A
- Annexure B
- Annexure C
- Annexure D
- Annexure E
- Annexure F
- Annexure G

List of Tables

Table 1: Report requirements in terms of NEMA

Table 2: Potential stakeholders in the EIA process.

Table 3: Summary of the public participation process

Abbreviations

CV	Curriculum Vitae
DEA&DP	Department of Environmental Affairs and
EIA	Development Planning Environmental Impact Assessment
EMP	Environmental Management Programs
I&APS	Interested and Affected Parties
ISO	International Organization for Standardization
Km	Kilometer
M	Meter
Ph	Potential Hydrogen
PPP	Public Participation Process
ToR	Terms of Reference

Glossary of Terms

Environment	The surroundings (biophysical, social and economic) within which humans exist and that are made up of: 1. The land, water and atmosphere of the earth; 2. Micro organisms, plant and animal life; 3. Any part of combination of (1) and (2) and the interrelationships among and between them; and 4. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
Environmental Impact Assessment (EIA)	A study assessing the potential significant environmental and social impacts of a proposed course of action.
Environmental Management Program (EMP)	A document that provides procedures for mitigating and monitoring environmental impacts, during the construction, operation and decommissioning phases.

1. Introduction

The purpose of this section is to provide a background to the unlawful construction of a Shopping Centre on Portion 149 of Farm Lichtenburg, Lichtenburg Town Land 271P. Furthermore, this section describes the process followed to date and will demonstrate how this report complies with Legal Requirements.

1.1. Project History

On 14/11/2011 excavation started on Portion 149 of Farm Lichtenburg, Lichtenburg Town Land 271P between Dr Nelson Mandela Drive and First Street, Lichtenburg. The project included the cleaning of 5,067 hectare vegetation and levelling the area. The aforementioned was done to enable the construction of buildings and a parking bay, the construction were divided into 2 phases. During February 2012 the Contractor started with Phase A erecting the Game Shopping Centre with line shops. Game's footprint comprise an area of 3895m². Game and the line shops were completed on 25 September 2012 where after they came in operation. The line shops are still vacant.

During January 2013 the Contractor commenced with Phase B, upon the date of writing this report, the Contractor were busy levelling the ground and preparing the land to continue with the construction. During September 2012 the DEDECT visited the Development Site, during this visit it was discovered that there is no authorization of the Competent Authority. This was confirmed with a letter dated 03/10/2012 that the construction of the Shopping Centre or Lichtenburg Mall constitute a listed activity in terms of GN544 of 2010 EIA Regulation Activity 24. The Applicant was under the impression that the authorization that was granted on 2007/07/18 was applicable.

Kobus Smit of Aquovadis HR Practitioners (Pty) Ltd was appointed to undertake the requested studies in support of the 24G Process. The relevant Application was submitted to the Department of Economic Development, Environment, Conservation and Tourism, North West Government. The DEDECT acknowledged receipt thereof with written correspondence dated 10/04/2013. Annexure A.

1.2. Report Structure

According to Section 24G (1)(a) of the National Environmental Act, 107 of 1998, the following information is required in order to fulfil the requirements of Section 24G Report.

Table 1

Requirements:	Section of Report:
Sec 24G 1(a): Compile a report containing: (i) are assessment of the nature, extent, duration and significance of the consequences for the impacts on the environment of the activity, including the cumulative effects done.	Please see Section ____.
(ii) a description of mitigation measures undertaken or to be undertaken in respect of the consequences for or impacts on the environment of the	Please see Section 5.

activity.	
(iii) a description of the public participation process followed during the cause of compiling the report, including all comments received from interested and affected parties and an indication of how issues raised have been addressed.	Please see Section 3, and Annexure B.
(iv) an Environmental Management Program.	Please see Annexure C.
Section 24 G (1) provided such other information or undertake such further studies as the Minister or MEC, as the case may be, may deem necessary.	None
The Curriculum Vitae of the Author is included.	Please see Annexure D.

2. Legal Framework

This section describes the policy and legal framework within which the Section 24G Process was undertaken. The following legislation, although not exhaustive, is applicable to the commencement of the illegal construction and operation of a Shopping Centre:

2.1. The National Environmental Management Act 107 of 1998

The National Environmental Management Act 107 of 1998 (NEMA) as amended, established the principle for decision-making of matters affecting the environment. Section 2 sets out the National Environmental Principles which apply to the action of organs of state may significantly affect the environment. Furthermore the Act states in 28(1) that “every person who causes or may cause significant pollution or degradation to the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring.”

The commencement of illegal construction of a Shopping Centre resulted in the transformation of undeveloped lands which is an activity listed in the Environmental Impact Assessment Regulations, listing Notice 1, published in General Notice 544, 02 August 2010.

Since the construction activities commenced without undertaking the required Environmental Impact Assessment to obtain an Environmental Authorization from the DEDECT, this Section 24G Process, in terms of the National Environmental Management Act 107 of 1998 is been undertaken to rectify the commencement of the illegal activity.

2.2. The National Heritage Resource Act, 25 of 1999

In terms of the National Heritage Resource Act, 25 of 1999 any person who intends to undertake “any development.... which will change the character of a site

exceeding 5,000m² in extent, must at the very earliest stages of initiating the development, notify the responsible heritage resources authority, namely the South African Heritage Resource Agency (SAARA) or the relevant provincial heritage agency. These agencies would in turn indicate whether or not a full Heritage Impact Assessment would need to be undertaken.

2.3. Other Potentially Relevant Legislation

In addition to the National Environmental Management Act, environmental issues is administered by, inter alia, the following pieces of legislation:

- The South African Constitution Act 108 of 1996.
- Occupational Health and Safety Act 85 of 1993.
- National Water Act 36 of 1995.
- National Environmental Management Biodiversity Act 10 of 2004.

3. Public Participation Process

Public Participation is a key component of this EIA process. This section describes the Public Participation Process followed to date as well as the proposed PPP for the remainder of the process. The objectives of the Public Participation Process are to provide information to the public, identify key issues and respond to issues raised. Furthermore to provide a review opportunity and document the process properly.

The Public Participation Process will be conducted according to the Public Participation in the Environmental Assessment Process Guideline 7, as published in the Government Gazette No 35769, 10 October 2012 and Regulation 54 of GNR 543 of 18 June 2010.

3.1. Identification of Stakeholder

The following authorities were identified as potential stakeholders:

Table 2
Potential Stakeholders in the EIA Process

Grouping:	Organisation:
State Departments	DEDECT Ditsobotla Municipality North West Provincial Government Department of Water Affairs South African Heritage Agency
I&AP	None

3.2. Public Participation Process to date

Table 3

Task:	Details:	Date:
Submit Section 24G Application form	The relevant Section 24G Application form was submitted to the DEDECT, North West Province.	18/03/2013
Stakeholder Identification	A stakeholder database was developed for the project. During the EIA Process the database will be updated. Annexure ____.	04/2013 05/2013
Site Notice	Site Notice, informing the general public of the proposed project and the public participation process, were placed at the entrance and along the fence at First Street & Dr Nelson Mandela Drive. Photos of the Notice will be included.	05/2013
Newspaper Advertisements	Block advertisements were placed in the Local Newspaper. Noordwester, Edition ____ dated.	05/2013
Lodging of the Draft EIAR for review	The draft EIAR was made available, including the draft EMP at the offices of Aquovadis HR Practitioners, Room 101, Sanlam Centre, Church Street Lichtenburg.	05/2013

3.3. Public Participation Process to be undertaken during the final EIAR phase

All comments received on the draft will be collated into an Issue and Response report. The Issue and Response report will be accompanied by the response of the project consultant and applicant. The Issue and Response report will be distributed to all parties that submitted comments and will be annexure to the final EIAR. After taking into account all the comments the draft EIAR will be updated to a final report. A 21 day period will be granted for comments, after the 21 days lapsed the final EIAR, including the comments received will be submitted to the DEDECT for decision making.

3.4. Decision and Appeal Period

The Department of Economic Development, Environment, Conservation and Tourism North West Province will base the decision on the information that was provided to them. Their decision can either be to authorize the proposed activity or to reject the application.

The authority have the prerogative to request additional information should they believe that insufficient information has been provided.

Once the DEDECT issued their decision on the proposed rectification of an illegal activity, the interested and affected parties according to the registration data base will be notified within 12 calendar days regarding the outcome. Should anyone wish to appeal the DEDECT decision, a notice of intent to appeal must be lodged within 20 calendar days to the Minister of Environmental Affairs and Tourism.

4. Site Description

This section provides information on the location and characteristics of the disturbed area in terms of vegetation and the Geotechnical characteristics.

4.1. Location

The construction of a Shopping Centre with offices and a parking bay is undertaken on Portion 149 of the Farm Lichtenburg, between Dr Nelson Mandela Drive and First Street Lichtenburg. Erf 149 is approximately 5,067 hectares that was impacted through the unlawful activities. The land is zoned in terms of the Ditsobotla Town Planning Scheme 2007, "Business" 1 Annexure E. See Annexure F for photos of the site.

4.2. Status Quo of the Site

The irregular nature of the soil surface provides evidence of activities that have occurred, including the construction of the Shopping Centre, Game and continuing construction of phase B.

4.3. Vegetation

Erf 149 was originally primarily grass field and trees. During November 2011 the site was impacted through illegal activities resulting in the loss of indigenous vegetation. The vegetation was dominated by grass and trees and was identified as Pure Grass field – types from data on the Agri - Agis website.

4.4. Geotechnical Study

According to the geo-technical map the land is divided in three zones, Zone A, B and C. The development of the Shopping Centre in question will be erected on Zone B and C. According to the geo-technical map, annexure 'A', Zone B covers the major portion of the site. Van der Merwe attached a much generalized description of the typical soil profile namely "...**Soil Zone "B"** covers the major portion of the site and a very generalized description of the typical soil profile which may be encountered here, is as follows: -

0,0-0,2:Slightly moist, dark olive brown, stiff, shattered, sandy SILT containing fine roots; colluvium.

0,2-0,3:Scattered, coarse, medium and fine, well-rounded and sub-rounded, GRAVELS of assorted origin, clast-supported in a matrix as above; pebble marker. Overall consistency is loose. Horizon is inconsistent and not present throughout.

0,3-1,5:Slightly moist, dark olive blotched white, very stiff, shattered and slickensided, silty CLAY; residual tillite.

1,5-2,5:Slightly moist, light pinkish red blotched light olive, very stiff, fractured, siltyCLAY containing scattered, well-roundd PEBBLES and occasional small BOULDERS of assorted origin; residual tillite.

Zone C as per Johan van der Merwe's report together with the geo-technical map indicates **Zone "C"** occupies the lower-lying north-westernportion of the site and a very generalized description of the typical soil profile which may be encountered here, is as follows: -

0,0- 0,5:Moist, dark grey and black, stiff shattered, silty CLAY containing fine roots,. colluvium.

0,5 - 2,4:Slightly moist, dark olive becoming light grey, very stiff becoming stiff, shattered and slickensided, silty CLAY; residual tillite.

2,4 - 3,0:Slightly moist, light pinkish red blotched light olive, very stiff, fractured, silty CLAY containing scattered, well-rounded PEBBLES and occasional small BOULDERS of assorted origin; residual tillite.

Zone A on the map is not part of the development in question.

On the attached Google Map, Annexure 'C' it will be noticed that the development is close to a wetland, and is confirmed in the report of Johan van der Merwe a geotechnical report, Annexure 'B'. "The Site Class "P" (for flooding) has been assigned for Soil Zone "C" since portions of this zone may be affected by seasonal flooding and by subtle drainage...and...". " silty CLAY containing scattered, well-rounded PEBBLES ..."

The construction is scheduled to be completed within 24 Months from commencement.

This soil zone tentatively classifies as a Site Class "113" according to the guidelines of the NHBRC Standards and Guidelines of 1999 and since the area is underlain by a prominent horizon of potentially expansive soils, one of the following foundations systems may be considered for the construction of rigid, single-storey masonry structures: -

Piled construction

- Piled foundations with suspended floor slabs with or without ground beams.
- Site drainage and plumbing/service precautions to be taken.
- Stiffened or cellular raft
- Stiffened or cellular raft with articulation joints or solid lightly reinforced masonry.
- Site drainage and plumbing/service precautions to be taken.

Soil Raft

- Remove all or part of expansive horizon to 1,0m beyond the perimeter of the structure and replace with inert backfill material compacted to 93% Mod AASHTO density at -1% to +2% of optimum moisture content.

- Normal construction with lightly reinforced strip footings and light reinforcement in masonry if residual movements are <7,5mm or construction type appropriate to residual movements.
- Light reinforcement in masonry.
- Site drainage and plumbing/service precautions to be taken.

Soil Zone "C"

The Site Class "P" (for flooding) has been assigned for Soil Zone "C" since portions of this zone may be affected by seasonal flooding and by subtle drainage features. It is recommended that the flood lines in these areas be determined accurately and that those portions of the site that may be affected by these adverse conditions be excluded from the development after which time, similar foundation precautions as for Soil Zone "B" may be adopted.

The design and construction of raft foundations (whether soil or concrete) should be done in accordance and under supervision of a civil or structural engineer. It is recommended that the excavations for foundations be carefully examined during construction in order to determine the possible presence of disturbed ground conditions which may not have been encountered during the investigation. The design of heavier structures such as double- or multi-storey structures, should take cognisance of the potentially problematic soil conditions that prevail across the site.

Earthworks

The design of roads and parking areas should take the potentially expansive nature of the site soils into consideration, the areas occupied by Soil Zones "B" and "C" may probably become virtually impassable for vehicular traffic after periods of heavy precipitation.

The materials that blanket virtually the entire property are generally fine-grained with a high plasticity index, a low grading modulus and possess a very low compacted strength (predicted CBR of probably less than 3 @ 95% Mod AASHTO compaction) and a very high swell after compaction, based on the results of the compaction tests. Material for use as backfill underneath surface beds and for the construction of roads and parking areas will have to be imported to the site. The design and construction of roads should take cognisance of the potentially expansive nature of the materials.

Moderate groundwater seepages were encountered in the lower-lying portion of the site during the investigation and indications of seasonal standing surface water conditions are evident in this portion of the site. The necessary damp proofing precautions should be taken underneath structures and provision will have to be made to prevent ingress of water into subsurface structures or beneath foundations. The foundation soils are expected to be potentially neutral to mildly chemically aggressive with regards to buried ferrous pipes based on the results of the chemical tests carried on the soils (pH values ranging from 7, 27 to 7, 66 and electrical conductivity values ranging from 0,290 to 1,544 S/m). Non-ferrous metal pipes or plastic pipes should therefore be used for wet services and the foundation soils should be treated with an environment friendly insecticide to combat termites. The results of the chemical tests conducted on a ground water sample have shown the ground water is not potentially aggressive towards concrete or steel for underground use.

5. Impact Assessment and Proposed Mitigation Measures

The purpose of this section is to assess the impacts associated with the commencement of the unlawful activities by determining the significance of the impacts. The potential environmental impacts have been identified. Management and mitigation measures to address the identified impacts are discussed in the section and included in the Environmental Management Program (EMP) that is attached hereto, Annexure ____.

Impacts and Mitigation Measures during the Construction and Operation Phase

5.1 Soil

Impact

Soil erosion could occur as a result of poor construction practices, which may result in soil erosion from storm water runoff.

Soil erosion would result in the loss of topsoil and thus a reduction in the productive capacity of the land.

Mitigation

Mitigation measures have been proposed to address the possible negative impacts of soil erosion.

- Appropriate measures to control storm water should be put in place. A storm water management plan will be implemented according to engineering specifications.
- The construction should take place as quickly as possible to reduce the amount of time that the area will not be vegetated. Irrigation of gardens must be carried out in such a manner that there is little or no water runoff.
- The loss of agricultural potential due to soil erosion will not be a problem as the area of land is too small to be used for growing crops and is therefore not suitable for economically viable agriculture.
- Construction in potentially wet areas should be planned for the dry seasons.

5.2 Surface water

Impact

There could be several possible impacts upon the surface water. The first impact could be water pollution resulting from the flow of sewerage and other polluted water from the site to the stream. This would only occur if the sewerage and domestic waste removal systems were not properly maintained. Oil and fuel leaks from vehicles, and litter could also pollute the surface water.

Mitigation

The mitigation of any harmful effects on surface water due to the establishment of the shopping centre development will occur in two broad themes: the first is the use of appropriate technology with the second being ongoing maintenance of the site.

- Maintenance of the development will mitigate the impact of the oil, fuel or domestic waste reaching the surface water. Most oil and fuel leaks would be absorbed by the soil surface of the gravel roads.
- Litter will be minimal if the waste removal services are operating efficiently.
- Maintenance of the sewerage system should prevent untreated sewerage from entering the stream. If sewerage is detected, the authorities should be notified immediately so that the system can be repaired. The systems must be installed according to the appropriate engineering standards while taking into account the geotechnical report.

5.3 Groundwater

Impact

Ground water impacts of the proposed development will be limited to the impact of sewer water, grey water and small fuel and oils spills on the ground that could reach the ground water.

All used water will pass into the municipal water borne sewerage system and will thus decrease the chance of polluted effluent reaching the groundwater. Also the significant depth of the water table will greatly reduce the chance of ground water pollution.

Mitigation

Measures to ensure that groundwater pollution does not occur include the following:

- The sewerage systems and pipes must be properly installed and maintained so that they remain in good working order. These systems will also treat grey water from washing.
- If any fuel or oil spills occur during construction, they should be remedied as in the EMP (Appendix D).
- Fuel or oil spills from the operation phase of the proposed development will not be significant enough to impact the groundwater.

5.4 Flora

The flora on the site is characteristic of a disturbed environment as weeds and other resilient plant species were in abundance. No red data species were observed during the site visit, nor are any likely to occur on the site.

Impact

The impact on the flora would be the initial impact of vegetation clearing to enable the construction of the houses and other infrastructure, and clearing for the construction of roads.

During the construction of houses, much of the existing vegetation would have to be cleared. The proposed site has been heavily impacted upon by human interference; hence the bush and grass clearing will not affect any sensitive or protected species. In fact, the removal of alien plant species, and the planting of indigenous trees will benefit the environment.

Mitigation

To mitigate the impacts on the flora of the area as a result of the construction of houses, the following measures should be followed:

- The environment in open spaces should be disturbed as little as possible, and suitable, fast-growing, indigenous trees should be planted within these areas. Trees should also be planted on the pavements to reduce the visual impact.
- Most of the vegetation in the buffer zone between the houses and the stream should also be left intact. The weed species may be removed, and again, suitable trees should be planted in this area. Large indigenous trees should not be removed, as they currently provide an aesthetic quality to the development and could improve the "sense of place" of the community.

5.5 Fauna

The fauna in the proposed area for development includes a few bird species. No red data animal species were observed during the site visit, nor are any likely to occur on the site, due to its disturbed nature.

Impact

The negative impacts on the fauna could include the following:

The small mammals and birds present on the proposed site would have to move out of the area due to their natural habitat being disturbed.

Mitigation

Mitigation measures for the above negative impacts are the following:

- Minimal mitigation for these animals being disturbed is necessary due to the fact that these animals are very small in number and will adapt easily in the surrounding areas.

5.6 Aesthetics / visual impacts

Impact

The impact that the proposed shopping centre will have upon the aesthetics of the area includes the visual impact that the construction of the buildings and associated lighting would have upon surrounding residents. Litter could also be a source of visual pollution, though this is already the case. Removing trees of significant size could reduce the aesthetics of the development.

Mitigation

- The development will be made to be aesthetically pleasing by planting trees.
- The area surrounding the proposed development is fairly flat. This fact, coupled with the planting of numerous trees will reduce the possibility of visual pollution. The houses will also be built in an aesthetically pleasing manner.
- Where possible, trees and vegetation should not be cleared, particularly in the open area (with the exception of weed species).
- Municipal refuse removal will effectively prevent the accumulation of litter. Litterbins should be placed in public areas and these should be regularly emptied.

5.7 Air

Impacts

The negative air pollution impacts caused by the development will include vehicle exhaust emissions.

Large amounts vehicle exhaust fumes may cause respiratory problems, but in the case of this development, it will be more of a nuisance than a health risk.

Concrete batch plant –dust emissions and noise are key potential impacts.

Mitigation

Measures to ensure that air pollution is reduced include the following:

Vehicle exhaust fumes will be much localized and will not cause problems for neighbouring residents.

Dust can be minimised by siting the concrete batching plant out prevailing high winds

5.8 Noise

Impact

The major noise impact of the proposed development would come from the noise from the construction vehicles and building activities. It will however be a short-term impact.

Other noise impacts could be the shopping centre and related activities. Noise generation due to traffic increases could cause disturbance. This will however be limited to business hours and of little significance.

Mitigation

A mitigation measure that is suggested for noise impacts is that construction should take place within normal working hours. If after hours construction is necessary, nearby residents should be informed.

5.9 Odours

Impact

Possible sources of odours include vehicle exhaust fumes.

If services for the removal of domestic waste and sewerage do not operate effectively, then this may also be a potential source of unpleasant odours.

Mitigation

- Mitigation measures are the same as those for reducing air and water pollution, i. e. waste and sewerage removal services should be maintained. If problems are encountered then these should be reported to the municipality.

- Odours from vehicles cannot be mitigated, though these impacts are not likely to be significant.

5.10 Servitudes

No servitudes exist on the proposed development site, thus no mitigation measures were considered necessary.

5.11 Traffic

There is a great increase suspected in traffic volumes during business hours due to the nature of the proposed development. Traffic would not be limited to motor vehicles but trucks for the provision of goods to occupants of the shopping centre as well.

Impact

The impact would not have a detrimental effect since road infrastructure would be able to accommodate the additional traffic. The introduction of trucks to this area might cause an increased safety risk of the roads. Pedestrian safety should also be considered.

Mitigation

- Current road infrastructure would be sufficient for the immediate need but upgrading of these structures should be done when road infrastructure is degraded.
- Delivery bays should be incorporated to minimize trucks in the area.
- Motorists should be warned to be on the lookout for pedestrians.

5.12 Social

There will be both positive and negative socio-economic impacts arising from the proposed development.

Impacts

Negative:

The social impact on neighbouring residents will be a potential nuisance due to the noise and visual impacts mentioned above.

Positive:

Positive social impacts would include increased job opportunities in the area (both as a result of construction activities and permanent employment once the shopping centre is complete). The people who secure the jobs will have an improved sense of well-being.

5.13 Crime

Impacts

Crime and the feelings of insecurity that accompany it are potential problems. Construction activities could attract potential thieves.

The impact on crime in general is not expected to be high.

Mitigation

- The large number of workers during the construction phase may be a trigger for increased crime. In this regard a suggested mitigation measure is that all construction workers be issued with a distinctive item of clothing. This item of clothing will allow the separating of construction workers from non-workers. In this way loitering and trespassing can be controlled.

5.14 Economic

Impacts

Temporary jobs will be created during the construction phase. This will raise average income in the area. Opportunities for permanent jobs will also be created with this type of development.

The impact upon the economy of the region is likely to be positive. The proposed shopping centre will also create an economic favourable area where economy will be stimulated.

Mitigation

The positive impact of increased economic activity created by the development would not require mitigation.

5.15 'Sense of place'

Impacts

The 'sense of place' of the surrounding residents could be impacted upon in terms of visual and noise impacts that could arise as a result of the proposed development. The proposed development is suspected to have a positive impact on the general sense of place and no mitigation measures are necessary for that.

Mitigation

The changed 'sense of place' in the area could be reduced if the mitigation measures for visual impacts (aesthetics) (section 6.2.6) and noise impacts (section 6.2.8) are implemented.

6. Conclusion and Statement

This section concludes the report and provides recommendation to rectifying the illegal construction of a Shopping Centre.

The following actions are recommended for the management of the site:

- a) When utilising the infrastructure that the recommendation of the geotechnical report of Johan van der Merwe (Pty) Ltd is taken into account.
- b) Building rubble and debris are disposed at a licensed waste disposal facility.
- c) Effective measures must be put in place to combat soil erosion.
- d) Cement contaminated effluent not to be allowed to enter any natural or man made water system.

- e) Top soil must be stripped from the work site and separately stockpiled for later use in rehabilitating damaged areas.

The proposed Shopping Centre development was subjected to a detailed environmental analysis and it is apparent that the positive aspects of the development outweigh the negative aspects. The study therefore found no compelling environmental or social issues that would hinder the execution of the project.

The client will ensure that contractors comply with the general findings and mitigation measures. The benefits of this project are likely to outweigh the negative impacts; by implementing the mitigating measures the impacts will be restricted.

This development will enhance the local community.

The development was born from the need for a proper Shopping Centre for Lichtenburg, enhancing the economy of the town. The development enhances the local community where jobs will be created. The latter will reduce the current unemployment. For the construction to take place it was necessary to clean the site from vegetation, Annexure 'D' Google Map 2008 & 2011.

If the development does not continue it will have a negative impact not only on the environment but also on the community and economy of Lichtenburg. The Shopping Centre will be accessible for nearby town and dwellings. If the development ceases to continue it will favour the unemployment that would have been otherwise positively influenced. Currently the Game Shop provides employment to 31 permanent employees and also employs 60 temporary employees.

Given the projection that Checkers will be part of the Shopping Centre, plus approximately 20 line shops it is self-explanatory what impact it will have on future employment. The development serves to provide a commercial need of residents in the area.

6.1. Environmental Management Plan

The EMP is intended to serve as a guideline to ensure that the construction is managed in an environmental responsible manner.

The EMP is also aimed to address concerns of environmental interested groups, general public and authorities. The EMP is included in Annexure ____.

The EMP includes the following mitigation measures:

- Water for human consumption must be tested.
- Adequate toilet facilities must be provided.
- Waste minimisation ensuring that littering on site and surrounding areas is prohibited.
- Litter bins must be provided.
- Waste removed and disposed at a licensed landfill.
- Excess concrete, building rubble or other materials must be disposed in designated areas.
- Contaminated soil be treated and disposed at a permitted waste disposal site.

- No vehicle will be serviced on site and vehicles will be free of diesel and oil leaks.
- Hazardous waste to be disposed at a registered landfill.
- Top soil to be temporarily stockpiled separate from clay, subsoil and rocky material.
- Diesel areas should be banded.
- Streams, rivers and dams must be protected from direct or indirect spillage of pollutants.
- Dust must be suppressed on access roads and construction site.

6.2. Way Forward

After the 40 day comment period of the draft EIAR, the report will be updated to a final status. The final EIAR will be available for a 21 day comment period after which the report, along with the comments received will be submitted to the Department Economic Development, Environment, Conservation and Tourism North West Province.

References(Tong and Chen 377-393)

(Mehta 61-66; Golding and Bandeira)Works Cited

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