

Draft Basic Assessment Report

Re-establishing of the floodline on Holding 56, Bredell AH

Gaut 002/17-18/E0229

May 2018

Executive Summary



TEXTURE
ENVIRONMENTAL CONSULTANTS



Executive Summary

1 INTRODUCTION

Muirwood Manor CC (the applicant) appointed Texture Environmental as the independent Environmental Assessment Practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for the proposed project.

The application is for the re-establishing of the floodline on Holding 56, Bredell Agricultural Holding by excavating soil which was back-filled into the watercourse. The total project area measures 1,6357 hectares in extent.

An application for environmental authorisation will be submitted in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), read with the Environmental Impact Assessment Regulations, 2014 (EIA Regulations), as amended. The Gauteng Department of Agriculture and Rural Development (GDARD) will require a Basic Assessment for this project.

In addition to the Environmental application, an application for a General Authorisation (GA) Report has to be completed in terms of the requirements of the National Water Act, 1998 (Act 36 of 1998) as amended (NWA), and the General Notice 509, Government Gazette 40229, dated 26 August 2016, "General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998)" for the water uses as defined in terms of Section 21(c) & (i) (GN 509 of 2016) of the Department of Water and Sanitation (DWS) for a water use authorisation, as required by Section 22 of the NWA. The study area is affected by a 1:100 year flood line and any development in the flood line area will require authorisation.

In addition to the above, Planit Planning Solutions CC. has submitted an application to the Ekurhuleni Metropolitan Municipality: Kempton Park Customer Care Centre for the rezoning of the mentioned property to "Industrial 1". The site is zoned "Agricultural" in terms of the Ekurhuleni Town Planning Scheme and is currently used for industrial purposes.

2 APPROACH TO THE BASIC ASSESSMENT PROCESS

The approach followed by the consultants is based on the specifications for the Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Gauteng Provincial Department of Agriculture and Rural Development, is the lead authority for this EIA process and the development needs to be authorised by this Department in accordance with the NEMA. To ensure that all requirements and processes in terms of the Acts are followed the following tasks need to be conducted:

The following has to be submitted to the GDARD:

- ✓ Application form for Authorisation
- ✓ Draft Basic Assessment Report
- ✓ Environmental Management Programme (EMPr)
- ✓ Final Basic Assessment Report

The environmental authority will review the Application and final Basic Assessment Report and the following decisions may be made:

- ✓ Grant authorisation of the activity

- ✓ Refuse the activity
- ✓ Request further information or investigations
- ✓ Refer the application to a scoping process where substantial additional investigations or assessments are required in order to make a decision.

3 PROJECT

As mentioned, Planit Planning Solutions CC. submitted an application to the Ekurhuleni Metropolitan Municipality: Kempton Park Customer Care Centre for the rezoning of the mentioned property from “Agricultural” to “Industrial 1”. The site is zoned “Agricultural” in terms of the Ekurhuleni Town Planning Scheme and is currently used for industrial purposes.

Table 1: Contribution calculation table:

Existing zoning	Development Potential	Existing Use	Proposed Zoning	Development Potential
Agricultural	Coverage: 30% FAR: 0,6 Height: 2 storeys	Industrial	Industrial 1	Coverage: 20% FAR: 0,2 Height: 1 storey

The character of the area has changed over time as a result of continuous development pertaining to the airport, supporting logistics and industrial uses, proposed and existing provincial and local road infrastructure upgrades as well as regional, metropolitan and local spatial frameworks. The residential nature of the area has transformed into a logistics/ commercial/ industrial hub in keeping with spatial frameworks as well as development proposals such as the Ekurhuleni Aerotropolis. This factor makes the proposed workplace a perfect land use to be located within an area where differing land uses exist.

Additionally, the successful operation of any business is dependent on accessibility and exposure. The site is well located in close proximity to local distributor and collector roads, the R21 Freeway as well as the airport. As mentioned, several commercial and industrial developments exist within the area thus setting the precedent and need for development.

The applicant’s intention is to establish the rights for industrial purposes including subservient uses that will consist of the following:

- a) Primary use: The property will be used for industrial purposes.
- b) Subservient uses: Storage and offices.

In addition to the above mentioned application, a floodline study was conducted, as according to the applicant, the site floods in the rainy season. The study, by CivicEc Civil Engineering Consultants, investigated the possibility of amending the floodline over Holding 56 without negatively affecting the floodline on the opposite shore or any other holding.

The proposed changes on holding 56 are shown on the diagram below.

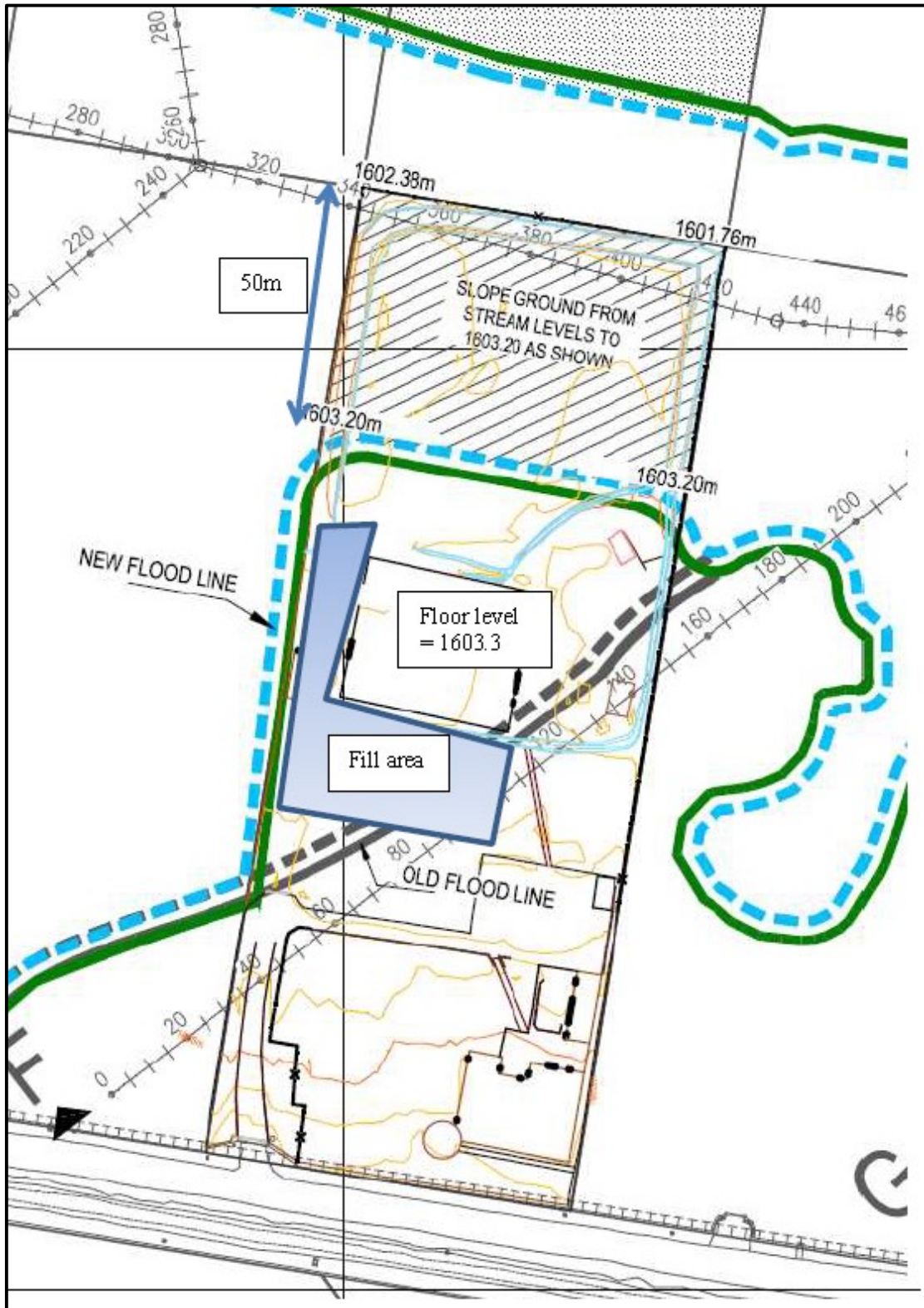


Figure 1: Proposed Changes to the Banks of the Watercourse

The intention is to level the hatched area by sloping the ground from the existing stream invert over a distance of 50m to a level of at least 1603.2. The excess material must be used to raise the existing ground level to an elevation of at least 1603.2. This level must be increased gradually in a southerly direction. This will increase the channel cross section sufficiently to

accommodate the 100-year flood event as shown in the figure above. This will re-establish the floodline, reduce the impeding of the flow of the water in the stream and reduce the extent of flooding of Holding 56.

Taking the hydrology, water surface elevations, velocities and risks into consideration, the civil engineering consultants are of the opinion that it is safe to shift the flood line as shown by minor earthwork without negatively affecting neighbouring properties.

From the above it is evident that the floodline on Holding 56 needs to be re-established, by excavating soil which was back-filled into the watercourse. The main proposed works includes:

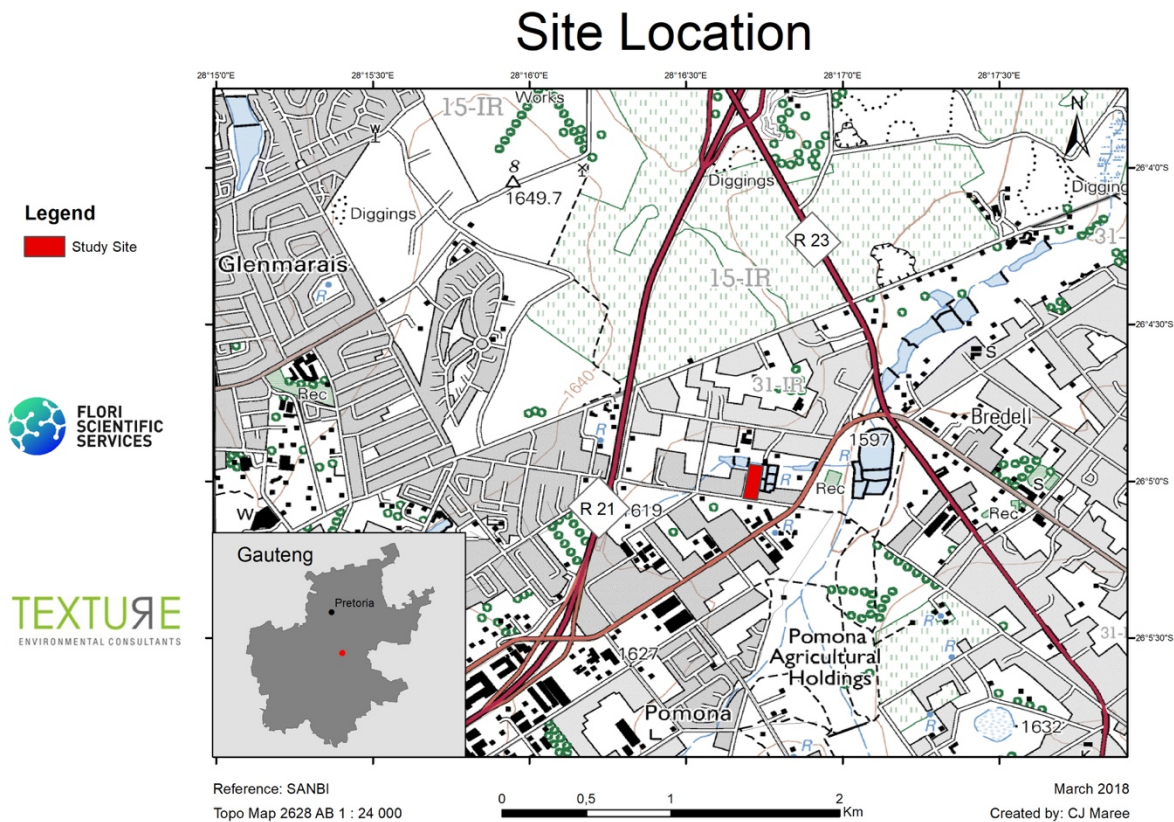
- Approximately 5 154 m² of the 16 357 m² will be affected by the excavation of soil.
- Approximately 87 m² of an existing building will be upgraded with a new roof and floor.

In the light of the above, an environmental application has to be submitted in parallel to the application for rezoning of the property to Industrial use, and the resulting re-establishment of the floodline (as summarised above).

4 PROJECT LOCALITY

Holding 56, Bredell Agricultural Holdings is situated along the northern boundary of Seventh Avenue, Bredell Agricultural Holdings between Second Road and Third Road, in Kempton Park, in the Ekurhuleni Metropolitan Municipality. The study area is within the A21A Quaternary catchment. The site is located on a small unnamed tributary of a tributary of the Rietvlei, both of which flow into the Hennops River.

The proposed project is set out in the Location Map below. (Project indicated in red).



Map 1: Site Location (2628 AB Topo Map)

The GPS coordinates of the main landmarks within the project area are as follows:

- Approximate centre of study area: 26° 04' 58.08" S, 28° 16' 43.24" E
- 1:50 000 map grid references: 2628 AB.



Map 2: Study area location (Google Earth)

There are no major perennial rivers in the study area. The closest large river is the Rietvlei River, which is over 4 km away to the east. The small, unnamed Bredell tributary, a semi-perennial stream, flows in a west-east direction, which is on the northern boundary of the study site, into the Pomona Spruit. The Pomona Spruit, which flows in a north-easterly direction for about 4 km, is a tributary of the Rietspruit. The Rietspruit flows northwards into the Hennops in Centurion.

The unnamed Bredell tributary has been significantly channelized, with more than one impeding and flow altering structure, like dam walls and changes to the bed and banks of the watercourse. There are also a number of culverts and significant upstream developments that has change the flow and characteristics of the watercourse.

5 PROPERTY DESCRIPTIONS

The property description is Holding 56, Bredell Agricultural Holdings, Ekurhuleni Metropolitan Municipality, Gauteng Province. The Surveyor-general 21-digit site reference number is T0IR0105000005600000.

6 TOPOGRAPHY

The Kempton Park and Ekurhuleni Metropolitan Municipality is an area that forms part of the major watershed between the rivers that drain west towards the Atlantic Ocean and those that drain east towards the Indian Ocean. The area can generally be regarded as flat with few outstanding topographical features. The Study site falls in an area that is characterised as “undulating plains with pans” within the greater Ekurhuleni areas.

The study area is flat with an average gradient (slope) of 3% - 1,3%. The downward slope is from south to north, with the lowest point being along the northern boundary of the study site, which is the area along which a watercourse (drainage line / wetland) runs. The approximate maximum and minimum elevations of the study site are 1 615m and 1 609m, respectively.

7 GEOLOGY AND SOILS

The soils of the immediate area and study area are red, yellow and / or greyish soils with a low to medium base status. The geology and soils of Soweto Highveld Grassland (in which the study site is situated) is that of shale, sandstone or mudstone of the Madzaringwe Formation (Karoo Supergroup) or the intrusive Karoo Suite dolerites which feature prominently in the area. In the south, the Volksrust Formation (Karoo Supergroup) is found and in the west, the rocks of the older Transvaal, Ventersdorp and Witwatersrand Supergroups are most significant. Soils are deep, mostly reddish on flat plains and are typically Ea, Ba and Bb land types.

8 SITE AND SURROUNDING LAND USES

The landcover or landuse of the study site consists of dwellings, sheds, open grass area and factory facilities for a furniture business. The landcover of the area is a mix of medium- to dense urbanisation and industrial and commercial sites.

The main features in the areas is the Kempton Park CBD, approximately 4 km, south-west west of the site; and the OR Tambo International Airport, approximately 6 km, south-west of the site.

The character of the area has changed over time as a result of continuous development pertaining to the airport, supporting logistics and industrial uses, proposed and existing provincial and local road infrastructure upgrades as well as regional, metropolitan and local spatial frameworks. The residential nature of the area has transformed into a logistics/ commercial/ industrial hub in keeping with spatial frameworks as well as development proposals such as the Ekurhuleni Aerotropolis.

9 NEED AND DESIRABILITY

As mentioned, several commercial and industrial developments exist within the area thus setting the precedent and need for development. Additionally, the successful operation of any business is dependent on accessibility and exposure. The site is well located in close proximity to local distributor and collector roads, the R21 Freeway as well as the airport. The applicant's intention is to establish the rights for industrial purposes including subservient uses that will consist of storage and offices.

Having taken all the relevant factors into account, it is the applicant's submission that the proposed land use of Industrial 1 is desirable in terms of the following:

1. Access to the site will be gained off Seventh Avenue and sufficient on-site parking will be provided to the satisfaction of the Local Authority.
2. The amount of traffic generated will not be notably higher than the current traffic generated by existing commercial and industrial businesses.
3. It will support the existing commercial and industrial development in the area.
4. The adjoining property values will increase due to this development, and more people could benefit financially from mixed land use developments in the long term.
5. The Regional Spatial Development Framework of the Ekurhuleni Metropolitan Municipality indicates that the site falls within an area that is earmarked for "mixed use zones" in terms of the Local Integrated Development Plan: Areas 6 & 7. Industrial and commercial uses are permitted on application to Council.
6. The site is not affected by the planning of any National or Provincial routes and is further notably located within a network of arterial-, collector- as well as distributor roads. Traffic is generally well dispersed within the area.

7. The proposed development is compatible with the surrounding land uses due to the following factors:
- The proposed land use will be industrial and should blend in well with the existing commercial and industrial developments within the area.
 - The development controls ascribed to property will be restricted to a height of 1 storey, a Coverage of 20% and a Floor Area Ratio of 0.2.

The proposed re-establishment of the floodline is required to accommodate the commercial and industrial land use. The site experiences flooding on a frequent basis and this is detrimental to the commercial activities taking place on the site.

The intention is to level the hatched area by sloping the ground from the existing stream invert over a distance of 50m to a level of at least 1603.2. The excess material must be used to raise the existing ground level to an elevation of at least 1603.2. This level must be increased gradually in a southerly direction. This will increase the channel cross section sufficiently to accommodate the 100 year flood event.

Taking the hydrology, water surface elevations, velocities and risks into consideration, the civil engineering consultants are of the opinion that it is safe to shift the flood line as shown by minor earthwork without negatively affecting neighbouring properties.

10 LEGAL REQUIREMENTS

10.1 National Environmental Management Act

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and the EIA Regulations 2014, an application for environmental authorisation for certain listed activities must be submitted to the relevant authority, the Gauteng Department of Agriculture and Rural Development (GDARD).

A Basic Assessment (BA) process for this proposed project is being undertaken by Texture Environmental. The listed activities for the proposed project are the following:

Table 2: Listed Activities

Listed Activity	Activity/ Project Description
<p><u>Listing Notice 1 Activity 12</u> The development of—</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —</p> <p>excluding—</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	<p>Not applicable</p> <p>Only 87 m² of existing building will be upgraded with a new roof and floor.</p>
<p><u>Listing Notice 1 Activity 19</u> The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</p>	<p>To make provision for the excavation or infilling of more than 10 cubic metres of soil from a watercourse if required.</p>

	Infilling and / or excavation within the 1:100 year flood line will have to be done to re-establish the 1:100 year flood line.
<p><u>Listing Notice 1 Activity 27</u> The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for –</p> <p>(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>Not applicable</p> <p>Approximately 5 154 m² (0.5ha) of the 16 357 m² will be affected by the excavation of soil. As a result, approximately 0,5154 hectares of indigenous vegetation will thus be cleared.</p>
<p><u>Listing Notice 1 Activity 28</u> Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</p> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>Not applicable</p> <p>Only approximately 0,5 ha to be affected.</p>
<p><u>Listing Notice 1 Activity 48</u> The expansion of—</p> <p>(i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;</p> <p>where such expansion occurs—</p> <p>(a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding—</p> <p>(aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such expansion occurs within an urban area; or (ee) where such expansion occurs within existing roads, road reserves or railway line reserves.</p>	<p>Not applicable</p> <p>Only 87 m² of an existing building will be upgraded with a new roof and floor</p>
<p><u>Listing Notice 3 Activity 12</u> The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan</p> <p>c. Gauteng</p> <p>(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 or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans; or (iii) 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.</p>	<p>Not applicable</p> <p>The site is not within a CBA or an ESA.</p>
<p><u>Listing Notice 3 Activity 14</u> The development of—</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or (ii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>where such development occurs—</p> <p>(a) within a watercourse; (b) in front of a development setback; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p>	<p>Infrastructure or structures with a physical footprint of 10 square metres or more will be constructed within 32 metres of the 1:100 year flood line area.</p> <p>Approximately 87 m² of an existing building will be upgraded with a new roof and floor.</p>
<p><u>Listing Notice 3 Activity 23</u> The expansion of—</p> <p>(i) dams or weirs where the dam or weir is expanded by 10 square metres or more; or</p>	<p>Not applicable</p> <p>The site is not within any of the areas mentioned.</p>

<p>(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs— (a) within a watercourse; (b) in front of a development setback adopted in the prescribed manner; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>Gauteng</p> <ul style="list-style-type: none"> i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority; vii. Sites or areas identified in terms of an international convention; viii. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA; or ix. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or x. Sites zoned for conservation use or public open space or equivalent zoning. 	
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10.2 National Water Act

An application for a General Authorisation (GA) Report has to be completed in terms of the requirements of the National Water Act, 1998 (Act 36 of 1998) as amended (NWA), and the General Notice 509, Government Gazette 40229, dated 26 August 2016, “General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998)” for the water uses as defined in terms of Section 21(c) & (i) (GN 509 of 2016) of the Department of Water and Sanitation (DWS) for a water use authorisation, as required by Section 22 of the NWA. The study area is affected by a 1:100 year flood line and any development (activity) in the flood line area will require authorisation.

The site is located on a small unnamed tributary (referred to as the unnamed Bredell tributary) of a tributary of the Rietvlei, that flows into the Hennops River. The Hennops in turn flows into the Crocodile River in the Lanseria area. The study area is situated in the Primary Drainage Area (PDA) of A and the Quaternary Drainage Area (QDA) A21A.

11 FEASIBLE AND REASONABLE ALTERNATIVES

During investigations various alternatives were investigated. The best options will be determined through the environmental and specialist studies, as well as public opinion. The following alternatives have been identified and are described as follows:

11.1 Location Alternative

Alternative Property

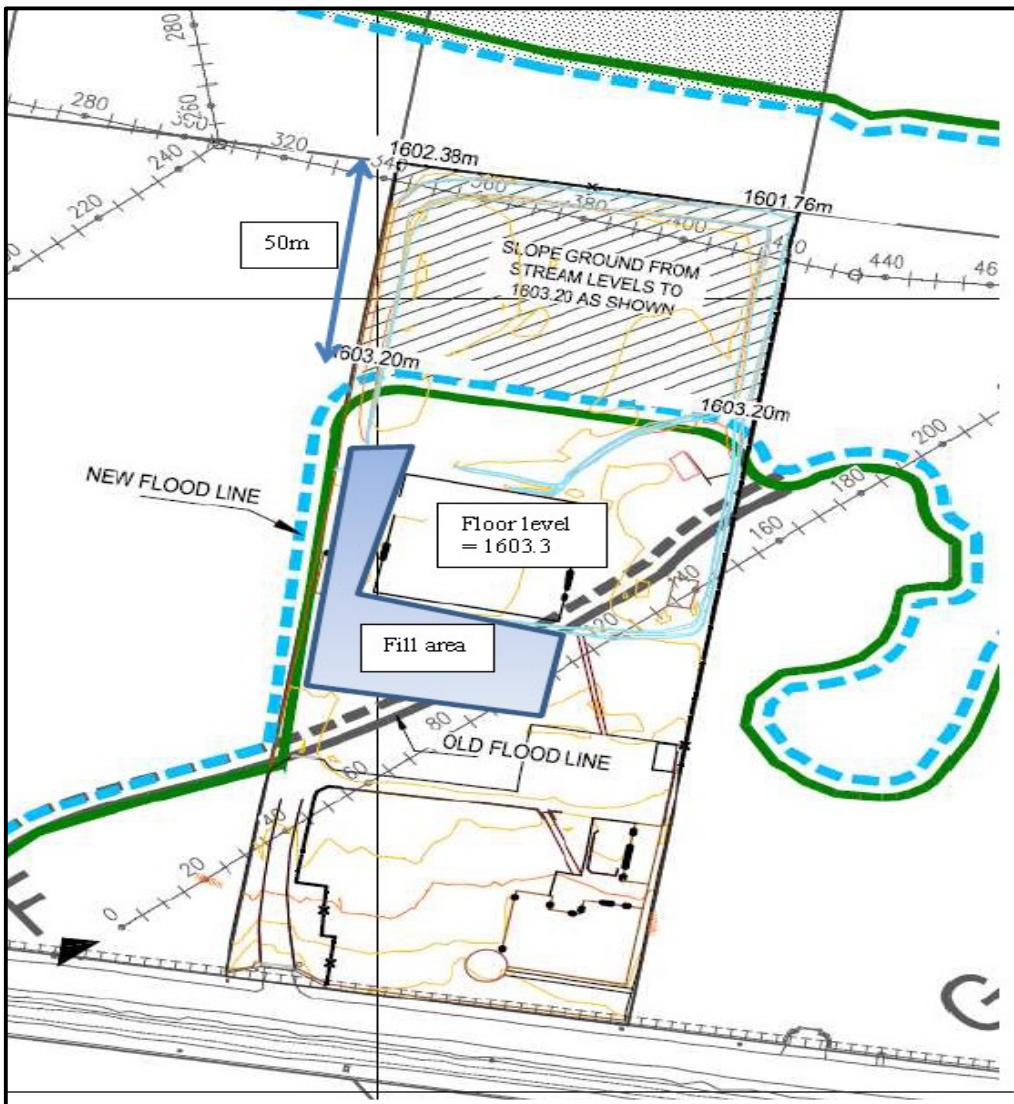
This property has been purchased by the applicant decades ago, and it is not feasible to consider other sites in terms of location alternatives. Alternative locations are therefore currently not available and would involve the lease or purchase of land / other sites. The proposed development is compatible with the surrounding land uses and should blend in well with the character of the surrounding developments.

11.2 Layout Alternatives

The property is impacted by flood lines as indicated and endorsed by the relevant engineer on the Layout Plan, below.

Preferred Layout

As indicated on the layout plan, a portion of the subject property falls below the 1:100-year flood line area and is therefore not deemed suitable for development. The remaining portion of the property is, however, suitable for development and will be utilised as such. The proposed activities include the re-establishment of the floodline and wetland area in the north of the study site. Presently the existing 100 year floodline is compressed from the original floodline to a small area in the north of the study site. Construction activities include removing soil backfill that was pushed into the wetland areas to level the area. Re-contouring and reshaping of the lower laying areas (in the north of the study area) to closer to the original, thereby having a positive impact on the floodlines as well as the wetland area. The area to be affected by the new floodline will not form part of the development.



Map 3: Proposed activity and layout

11.3 Activity alternative

Alternative Activity: Current and future development trends in the area: Agriculture vs Light Industrial

The site is zoned “Agricultural” in terms of the Ekurhuleni Town Planning Scheme and is currently used for industrial purposes. Existing negative impacts on the study area and

surrounding areas include extensive urbanisation, industrialisation and commercialisation. More and more of the area is being declared industrial zones with more and more of the small holdings being development and built up.

The site falls within an area that is earmarked for “mixed use zones” in terms of the City of Ekurhuleni, Local Integrated Development Plan: Areas 6 & 7. Industrial and commercial uses are permitted on application to Council.

Additionally, the successful operation of any business is dependent on accessibility and exposure. The site is well located in close proximity to local distributor and collector roads, the R21 Freeway as well as the airport. As mentioned, several commercial and industrial developments exist within the area thus setting the precedent and need for development. Agriculture could therefore not be considered as a viable alternative for this property at the present time.

11.4 Activity alternative

Alternative Activity: Current and future development trends in the area: Residential development vs proposal of light industrial

The proposed development can be deemed desirable and in line with future development trends for the area:

- The character of the area has changed over time as a result of continuous development pertaining to the airport, supporting logistics and industrial uses.
- The area appears to be vibrant and dynamic due to the establishment of a range of commercial and industrial land uses. The impact of the proposed rights (rezoning to light industrial) will consequently not affect the character of the area, and it is further felt that the site is ideally suited for the proposed use.
- It will support the existing commercial and industrial development in the area.
- Noises caused by the development will be in accordance with the uses within the area.

Based on the above benefits to the community the proposed activity, and the resulting rezoning to light industrial, is regarded as the preferred land use alternative.

11.5 No-Go Alternative

It is suggested that to maintain the status quo is not the best option for the macro environment. The do-nothing (“no go”) option would entail not using the site and maintaining the site as is. The site is zoned “Agricultural” in terms of the Ekurhuleni Town Planning Scheme and is currently used for industrial purposes. From certain perspectives this is not a viable option to maintain the site as is, as the character of the area has changed over time as a result of continuous development pertaining to the airport, supporting logistics and industrial uses, proposed and existing provincial and local road infrastructure upgrades as well as regional, metropolitan and local spatial frameworks. The residential nature of the area has transformed into a logistics/commercial/industrial hub in keeping with spatial frameworks as well as development proposals such as the Ekurhuleni Aerotropolis.

This factor makes the proposed workplace a perfect land use to be located within an area where differing land uses exist. By not re-zoning the site, the site will be anomalous in the context of the surrounding land-uses, and some of the direct and indirect socio-economic benefits (i.e. job creation, etc.) will not materialise.

From an environmental perspective, the potential impacts of the proposed activities are positive and not negative impacts. The proposed activities include the re-establishment of the floodline and wetland area in the north of the study site. Presently the existing 100 year floodline is

compressed from the original floodline to a small area in the north of the study site. Construction activities include removing soil backfill that was pushed into the wetland areas to level the area. Re-contouring and reshaping of the lower laying areas (in the north of the study area) to closer to the original, thereby having a positive impact on the floodlines as well as the wetland area. The No-Go development alternative could therefore not be considered the responsible way to manage the site.

12 SPECIALIST INPUT

Specialist input was obtained to investigate the impact of the various alternatives that could accomplish the purpose of the project. The specialist input is summarised as follows:

12.1 Biodiversity Assessment

A Biodiversity Assessment has been conducted by Texture Environmental. Refer to Appendix G. The report identified the following:

Terrestrial Ecology

Vegetation

The study area is situated within the original extent of Soweto Highveld Grassland of the Grassland Biome of South Africa. Soweto Highveld Grassland is a threatened ecosystem with a status of 'vulnerable'. The vegetation of the study site is however, not characteristic of Soweto Highveld Grassland. The vegetation of the site has been totally transformed, and consists almost entirely of Kikuyu grass that is regularly mowed and manicured. In reality, the vegetation of the study site consists of planted gardens and lawns. Even in the area of the wetland little indigenous vegetation remains, with the Kikuyu grass growing up to and through the wetland area. No patches or areas of pristine original grassland remain.

Priority species

No red data or orange data fauna or flora species were observed during field investigations.

Sensitivity analyses

The ecological sensitivity of the study area is determined by combining the sensitivity analyses of both the floral and faunal components. The highest calculated sensitivity unit of the two categories is taken to represent the sensitivity of that ecological unit, whether it is floristic or faunal in nature.

Table 3: Ecological sensitivity analysis

Ecological community	Floristic sensitivity	Faunal sensitivity	Ecological sensitivity	Development Go-ahead
Lawns	Low	Low	Low	Go
Watercourses	Low	Low	Low	Go

In reality the watercourses (as an existing habitat on site) is degraded and modified and has an ecological sensitivity rating of 'Low'. However, all watercourses, by default, are viewed as sensitive and must be approached as such. Therefore, the sensitivity of the watercourses, which is predominantly the wetland area in the north of the study area, is assessed to be sensitive.

Priority areas

The study site is situated within National fresh water ecosystem priority areas (NFEPA) watercourses and wetlands. The site is not situated within any demarcated Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs).

Fatal flaws

There are no fatal flaws and the project may go ahead.

Map 4: Sensitivity map



Recommendation/Mitigation

Construction Phase

- No temporary accommodation or temporary storage sites to be erected within 50m of the any watercourse (including wetlands, canals and dams).
- No cement or concrete is allowed to mixed directly on the bare soil in the veld.
- All excess mixed concrete and cement to be removed to a registered solid waste site.
- No excess imported soils or stone (if used during the construction phase) may be left behind. These materials to be removed on completion of the project.
- Disturbed surface areas in the construction phase to be rehabilitated.
- All hazardous materials such as but not limited to paint, turpentine and thinners must be stored appropriately to prevent these contaminants from entering the terrestrial and water environments.
- All construction material, equipment and any foreign objects brought into the area by contractors and staff to be removed immediately after completion of construction.
- Removal of all waste construction material to an approved waste disposal site.

Maintenance Phase

- Mechanical control and monitoring of alien plants around disturbed areas to be implemented.
- No chemical control (herbicides) of alien plants to be used within 100m of any watercourses. Herbicides could get into the water system and will have a detrimental effect on the environment.
- Potential erosion areas to be inspected and corrected or rehabilitated where necessary.

12.2 Wetland and Riparian: Delineation, Status and Impact Assessment

A Wetland Assessment has been conducted by Texture Environmental. Refer to Appendix G. The report identified the following:

Watercourses in the study area

There are no major perennial rivers in the study area. The closest large river is the Rietvlei River, which is over 4 km away to the east. Where the unnamed tributary of the area flows into the main watercourse, it is at the top of the catchment and is small. The small Unnamed Bredell watercourse (which forms the northern boundary of the study site) is a tributary of an unnamed tributary of the Rietvlei River.

The unnamed Bredell tributary flows in an east-west direction along the northern boundary of the study area. The watercourse has been significantly channelized, with more than one impeding and flow altering structure, like dam walls and changes to the bed and banks of the watercourse. There are also a number of culverts and significant upstream developments that has changed the flow and characteristics of the watercourse.

As described above, the soil (backfill) within the 1:100 floodline will be excavated and placed above the floodline, re-establishing the more original floodline. There will be a significant impact on the banks, but there is no natural vegetation. The natural vegetation within the active stream, the bed of the watercourse will not be impacted on. The mitigation will be that the soil will be excavated during the dry season and vegetation replanted, so that during the rainy season the silted (sedimentation) run-off will be minimal.

Recommendations/Mitigation

- The area and watercourse have been highly modified and are significantly negatively impacted on.
- The proposed changes will improve the flow and characteristics of the watercourse. These are positive impacts to the water environment of the area and not negative impacts.
- Preferably project activities (such as excavations) should be conducted during the dry season (winter).
- Bare areas and stream / canal banks to be rehabilitated and revegetated as part of the project. Revegetation need only be in terms of re-seeding with grasses. Only locally indigenous grass species to be used.
- Stormwater channels to be re-established and realigned.
- Designed flow attenuation within the stormwater channels to be implemented.
- It is important that a submission is made for a General Authorisation. A Water Use Licence Application will not be required.

12.3 Heritage Impact Assessment

Archaetnos Culture & Cultural Resource Consultants conducted an investigation to determine the presence of any heritage resources on the site. Refer to Appendix G.

The findings are summarised as follows:

- The entire site is disturbed. It consists of landscaped gardens, lawns, areas with rubble and buildings.
- No natural vegetation is present on the site – impacted because of landscaping.
- A few trees in the area also are foreign species (e.g. pine) another indication of disturbance.
- The main building is older than 60 years, but will not be impacted on as the development is only planned on the northern section of the site, whereas this building is on the southern side.
- None of the other buildings has any heritage significance.

Recommendations/Mitigation

The Heritage consultant advised that an additional Heritage Impact Assessment (HIA) is not needed for this project. An exemption request is submitted to the South African Heritage Resources Agency.

Should construction work begin for this project:

- The developer should note that due to the nature of archaeological material, such sites, objects or features, as well as graves and burials may be uncovered during construction activities on site.
- Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.
- If any evidence of archaeological sites or remains (eg, remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, or other categories of heritage resources are found during the proposed activities, the provincial heritage authority must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation might be necessary.

This report concludes that the impacts of the proposed development on the cultural and environmental values are not significant.

12.4 Town Planning

Application was made to the Ekurhuleni Metropolitan Municipality: Kempton Park Customer Care Centre, in terms of Section 56 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) read together with Section 2 and the relevant provisions of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) for the rezoning of the property from “Agricultural” to “Industrial 1”.

The site is zoned “Agricultural” in terms of the Ekurhuleni Town Planning Scheme and is currently used for industrial purposes.

Table 4: Contribution calculation table:

Existing zoning	Development Potential	Existing Use	Proposed Zoning	Development Potential
Agricultural	Coverage: 30% FAR: 0,6 Height: 2 storeys	Industrial	Industrial 1	Coverage: 20% FAR: 0,2 Height: 1 storey

The site falls within an area that is earmarked for “mixed use zones” in terms of the City of Ekurhuleni, Local Integrated Development Plan: Areas 6 & 7. Industrial and commercial uses are permitted on application to Council. As mentioned in this application, the township is in-line with the Municipality’s policies and vision for the area and fits in well with the surrounding character of the area.

12.5 Floodline Investigation

A Floodline Report was compiled by CivEc Civil Engineering Consultants during August 2011 for the Proposed Development. Appendix G refers.

The findings are summarised as follows:

- It is proposed to level the first 50 metres from the watercourse, by sloping the ground from the existing stream invert (over a distance of 50m) to a level of at least 1603.2.
- The excess material must be used to raise the existing ground level to an elevation of at least 1603.2. This level must be increased gradually in a southerly direction. This will increase the channel cross section sufficiently to accommodate the 100 year flood event .
- Taking the hydrology, water surface elevations, velocities and risks into consideration, it is safe to shift the flood line as shown by minor earthwork without negatively affecting neighbouring properties.

12.6 Civil Engineering Services

Water, sewer, electricity

The site is situated in an area with sufficient services capacity to accommodate the proposed development. The site currently has services provided by the Ekurhuleni Municipality and no additional supply are requested.

Access

Access to the site is currently gained directly from Seventh Avenue, running south of the site.

Roads

The site is not affected by the planning of any National or Provincial routes and is further notably located within a network of arterial-, collector- as well as distributor roads. Traffic is generally well dispersed within the area.

Traffic

No additional trips will be generated by the re-zoning of the property to Industrial 1 as the commercial activity is existing and a low key operation.

The re-establishment of the floodline will have no effect on the generation of traffic.

Stormwater

Existing Stormwater

There are functional stormwater systems around the site. A Stormwater Management Plan should be submitted to council before any construction starts. Extraneous stormwater from the south will be accommodated over the site.

12.7 Waste Management

The collection of solid waste is carried out by the Ekurhuleni Municipality. A refuse area will be accommodated on site and waste will be disposed of at the municipal dumping site as per the requirements of the Municipal Health Bylaws.

12.8 Flood lines

The subject property is located south of the small unnamed Bredell watercourse (which forms the northern boundary of the study site). This watercourse is a tributary of an unnamed tributary of the Rietvlei River. The site is therefore impacted by flood lines as indicated and endorsed by the relevant engineer.

13 IMPACT ASSESSMENT

The impacts that may result from the planning and design, construction, operational, decommissioning and closure phases as well as proposed management of identified impacts and proposed mitigation measures have been addressed in the Basic Assessment Report.

14 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

An Environmental Management Programme was prepared to detail a plan of action to ensure that recommendations for preventing the negative environmental impacts (and where possible improving the environment) are implemented during the life-cycle of the project.

15 CONCLUSION

In summary the following is recommended for authorisation:

The maps attached in Appendix A indicates/highlights the whole area (inclusive of floodline area) that was investigated to inform GDARD on the area that is part of the authorisation. The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage). Should small changes be done to the layout of the site after authorisation it will not be considered crucial and will not warrant a new application.

There will be no development within the 1:100 year flood line area, except for the specific activities as are required and to be allowed within the 1:100 floodline (open space) for the protection, rehabilitation, and maintenance of the watercourse on the applicant's property as authorised by the General Authorisation, by the Department of Water and Sanitation.
