



# **Appendix G7**

Town Planning Memorandum

## 1. EXECUTIVE SUMMARY

1.1 This memorandum is submitted in support of an application in terms of the provisions of Section 21 of The City of Johannesburg Municipal Planning By-Law, 2016 for the amendment of the Johannesburg Town-Planning Scheme, 1979, by the rezoning of Erven 1130 & Erf 1131, Ormonde Extension 24, subject to certain conditions.

1.2 Application is made for the amendment of the Johannesburg Town-Planning Scheme, 1979, by way of the rezoning of the subject property from Residential 3\_ with a density of 25 dwelling units per hectare; FAR of 0.4; Height of 3 storeys; and coverage of 30%\_to Residential 3\_ with a density of 113 dwelling units per hectare, and subject to the following conditions:

Floor Area Ratio	:	0.7
Coverage	:	30%
Height	:	Four (4) storeys
Parking requirements	:	1.3 parking bays per unit
Building lines	:	In accordance with an approved site development plan
Number of Units	:	192 units

1.3 The purpose of this application is to obtain the appropriate land use rights to enable the registered property owner to develop a higher residential development on the erf.

1.4 Note that a separate application for the consolidation of the two properties, in terms of the provisions of Section 33 of the City of Johannesburg Municipal Planning By-Law, 2016, was also submitted to the Municipality. Even though the rezoning and consolidation applications are submitted separately, approval of both applications will be required before submission of any building plans to Council and before construction can commence.

1.5 This memorandum provides the relevant property information, and motivates the merits of the development proposal from a development planning perspective.

1.6 The consolidation application is submitted separately and will be handled as a separate application, but will form part of the rezoning of the erven.

## 2. PROPERTY INFORMATION

### 2.1 Locality

The subject property is situated along Milkwood Road in Ormonde, to the north of the M1 Freeway and to the south of Akker Street. A Locality Plan is attached hereto as Annexure A. The site is situated in close proximity to Rand Show Road, Nasrec Road and the M1-Highway.

The figure below gives the context of the application site.





Figure 1: Aerial view of the property

## 2.2 Property description, ownership and size

Details pertaining to property description, ownership and extent of the subject properties are provided in the table below.

PROPERTY DESCRIPTION	REGISTERED OWNER	DEED OF TRANSFER NUMBER	SIZE
Ormonde X24: Erf 1130	Matla Projects (Pty) Ltd	T46456/2013	1.0615 ha
Ormonde X24: Erf 1131	Matla Projects (Pty) Ltd	T27313/2009	1.0429 ha

Deeds of Transfer T46456/2013 and T27313/2009 are attached as Annexures B to form part of the application documentation.

The signed and completed Company Resolution, Power of Attorney and Proof of Directors are attached as Annexure C respectively.

## 2.3 Zoning

The subject properties are currently zoned Residential 3, in terms of the Johannesburg Town-Planning Scheme, 1979, subject to the following conditions:

Floor Area Ratio	:	0.4
Density	:	25 Dwelling units per ha
Coverage	:	30%
Height	:	Three storeys

The relevant Zoning Certificate is attached hereto as Annexure D.



The zoning regime of the surrounding area includes the following zonings:

Residential 1; Residential 3; Business 3; Institutional and Municipal.

## 2.4 Land Use

A land use plan, based on a visual survey, is attached as Annexure E. The subject property is currently vacant, while surrounding land uses include:

- ¿ Dwelling houses;
- ¿ Open Spaces; and
- ¿ Public Roads.

It becomes clear that the area is a predominantly residential area. The proposal to develop the subject property for higher density residential uses will contribute to the livelihood of the area and create additional housing opportunities.

The proposed land-use will have no detrimental effect on any of the surround properties on municipal infrastructure.

## 3. BONDS, CONDITIONS OF TITLE AND SERVITUDES

### 3.1 Mortgage Bond

There is currently no bond registered over the property. The consent from a bondholder is therefore not required.

### 3.2 Conditions of title

The subject property is not affected by any conditions of title which may prove to be restrictive to the proposed development. No removal of restrictions is therefore required.

### 3.3 Servitudes

In terms of Deed of Transfers T46456/2013 and T27313/2009 the properties are subject to the following servitude:

- é A servitude for sewer and other municipal services purposes 2 metres wide, in favour of the City Council of Johannesburg along any two boundaries other than a street boundary.

This servitude will be retained and accommodated in the development proposal and on the final Site Development Plan.

## 4. DEVELOPMENT PROPOSAL

### 4.1 Application Particulars and Development Proposal

- 4.1.1 Application is made in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the amendment of the Johannesburg Town-Planning Scheme, 1979, by the simultaneous rezoning of Erf 1130 & Erf 1131, Ormonde Extension 24, subject to the following conditions:





Floor Area Ratio	:	0.7
Coverage	:	30%
Height	:	Four (4) storeys
Parking requirements	:	1.3 parking bays per unit
Building lines	:	In accordance with an approved site development plan
Number of Units	:	192 units

- 4.1.2 All parking and manoeuvring space will be provided on-site. No parking within the road reserve will be allowed or will be necessary. The proposed site plan is attached hereto as Annexure G. Parking will be provided at a ratio of 1.3 parking bays per unit, with a total of 250 parking bays being required. A total of 250 parking bays will be provided on-site, to ensure sufficient parking for residents and visitors. All parking and manoeuvring space will be covered with a permanent dust-free surface.
- 4.1.3 Access to the development will be obtained via Milkwood Road. Access will be provided to the satisfaction of the municipality. The current road network is sufficient to accommodate the minimal increase in traffic. If so required by Council, upgrades to the road and services network can be made through a service agreement between the developer and Council.
- 4.1.3 Sufficient open space (gardens / lawns) will be provided within the development, as per the minimum requirements from Council.
- 4.1.4 The privacy of the neighbouring properties will be protected by means of building design, landscaping and building lines. The height of the proposed development will be limited to four storeys and building lines will be determined in accordance with an approved site development plan.
- 4.2 Existing vs Proposed Zoning
- 4.2.1 The proposed scheme document is attached hereto as Annexure F.
- 4.2.2 The type of housing unit that is being proposed is IHS C-Type (3-4 levels). The design of the units will be done by Boogertman & Partners Architects. A formal Site Development Plan and Building Plans will be submitted to Council after approval of the rezoning application. A concept plan is attached to form part of the application documentation.
- 4.2.3 The following table compares the current and proposed land use rights:



CURRENT ZONING (ERVEN 1130 & 1131)	PROPOSED ZONING (ERVEN 1130 & 1131)
Existing Zoning: Residential 3_	Proposed Zoning: Residential 3_
Permitted land uses: Residential dwelling units	Permitted land uses: Residential dwelling units
Permitted Density: 25 units/ha	Proposed Density: 113 units/ha
Number of Units allowed: 52 sectional title units	Number of Units allowed: 192 sectional title units
Height Restriction: Three (3) storeys	Proposed Height Restriction: Four (4) storeys
Coverage: 30%	Proposed Coverage: 30%
Floor Area Ratio: 0.4	Proposed Floor Area Ratio: 0.7
Parking: 1 parking space per dwelling unit of 3 or less habitable rooms. 2 parking space per dwelling unit of 4 or more habitable rooms. Plus 0.3 parking spaces per dwelling unit for visitors.	Parking: 1.3 parking bays per unit Required: 250 Provided: 250
Building lines: 0m on all street fronts	Building lines: In accordance with an approved site development plan

## 5. MUNICIPAL SERVICES

- 5.1 The region is generally well provided with civil service infrastructure. Development pressure in this area challenges the rate at which bulk infrastructure can be provided to accommodate expansion. Existing infrastructure will however be capable of accommodating the proposed additional land-use rights.
- 5.2 During the application stage, the different engineering departments will get an opportunity to indicate whether additional engineering studies will be required before the rezoning application can be approved. If so required, Professional Engineers will be appointed to investigate the civil services and compile an outline scheme document.
- 5.3 The amount of Bulk Services Contributions for civil services payable to the City of Joburg will be determined with the finalisation of the rezoning application. Rebate will be given for the existing land use rights on the final amounts.
- 5.4 A formal Traffic Access Study is currently being prepared by the project Engineers. It will be submitted to Council as soon as it is received.
- 5.5 The electricity connection has been discussed with City Power. Adequate capacity is currently available for the development at the nearby Crown substation and an estimated 2,2 MVA can therefore be made available for planned developments in the Ormonde area, of which this application forms part of.



Capacity can be released by shifting loads between the various distributor areas. A feeder cable from Crown substation is thus not required. A detailed Electrical Report and/or Outline Scheme Report will be submitted to Council in due course.

## 6. POLICIES

### 6.1 National Development Guidelines

#### 6.1.1 Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)

Section 7 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) confirms that the following principles applies to spatial planning, land development and land use management:

#### 7(a) The principle of spatial justice, whereby:-

- (i) Past spatial and other development imbalances must be redressed through improved access to and use of land.

It is our opinion that the greater community of this area will benefit from the development proposal through various new housing opportunities.

The development will enhance the urban environment through the strengthening of the residential character and the creation of economic growth, as required in terms of local policies.

- (ii) Spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation.
- (iii) Spatial planning mechanism, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons.
- (iv) Land use management system must include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas.
- (v) Land development procedures must include provisions that accommodate access to secure tenure and incremental upgrading of informal areas.
- (vi) A Municipal Planning Tribunal considering an application before it, may not be implemented or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application.

Principles (7)(a) (ii) to (vi) relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

#### 7(b) The principle of spatial sustainability, whereby spatial planning and land use management systems must:-

- (i) Promote land development that is within the fiscal, institutional and administrative means of the Republic.

The proposed development, as motivated, complies with the fiscal, institutional and



administrative means of the Republic as well as the Local Authority.

Development Policies, related administration and laws (City of Johannesburg Municipal Planning By-Law, 2016) and the National Environmental Management Act, 1998, do allow for the application, as submitted, to be entertained. The proposal has been discussed with the relevant Town Planners at Council before submission of the application.

- (ii) Ensure that special consideration is given to the protection of prime and unique agricultural land.

The property is surrounded by existing urban infrastructure, and in terms of Municipal policy, the property is earmarked for higher density residential development.

- (iii) Uphold consistency of land use measures in accordance with environmental management instruments.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (iv) Promote and stimulate the effective and equitable functioning of land markets.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (v) Consider all current and future cost to all parties for the provision of infrastructure and social services in land developments.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (vi) Promote land development in locations that are sustainable and limit urban sprawl.

The subject property is situated within Region F of the City of Johannesburg and will not contribute to urban sprawl. The proposed development will serve as infill development and will ensure the optimisation of developable land and municipal infrastructure and services.

According to relevant policy guidelines of the Municipality (i.e. the Municipal Spatial Development Framework), the subject property is earmarked for purposes of higher density residential development. The proposal is, in principle, supported by Council.

- (vii) Result in communities that are viable.

The proposed development is in close proximity to other residential, some commercial, lifestyle and educational opportunities. It is furthermore located near public transport facilities and is also ideally situated in terms of the main through routes in the area (i.e. the M1-Highway).

- 7(c) The principle of efficiency, whereby:-

- (i) Land development optimises the use of existing resources and infrastructure.



The proposed development will promote efficient land development, as it entails the development of residential housing in close proximity to commercial, lifestyle and educational opportunities. Public transport is also available in close proximity.

The subject property is strategically situated in relation to transportation routes, e.g. M1 Freeway and Shakespeare Avenue.

Civil services are also available in the area for the proposed development.

- (ii) Decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (iii) Development application procedures are efficient and streamlined and timeframes are adhered to by all parties.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- 7(d) Principal of spatial resilience whereby flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks.

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- 7(e) The principle of good administration, whereby:-

- (i) All spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act.

This principle relates to obligations imposed on local government. The application will be circulated to relevant internal municipal departments for their comments.

- (ii) All government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial planning frameworks.

This principle relates to obligations imposed on local government.

- (iii) The requirements of any law relating to land development and land use are met timeously.

This principle relates to obligations imposed on local government.

- (iv) The preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them.

This principle relates to obligations imposed on local government. It is also confirmed



that the application will be advertised by the applicant in the prescribed manner.

- (v) Policies, legislation and procedures must be clearly set in order to inform and empower members of the public.

This principle relates to obligations imposed on local government.

### 6.1.2 National Development Plan, 2030

The National Development Plan identifies five principles for spatial development: spatial justice, spatial sustainability, spatial resilience, spatial quality and special efficiency.

It confirms that South African cities are highly fragmented, as little has been achieved in reversing apartheid geography. The Plan proposes that the situation be addressed by establishing new norms and standards: amongst others by densifying cities, improving transport and locating jobs where people live.

The containment of urban sprawl is particularly highlighted in the Plan, confirming that sprawl be contained and reversed (if possible), "as denser forms of development are more efficient in terms of land usage, infrastructure cost and environmental protection."

The proposed development aligns with the vision of the National Development Plan, as it will promote compaction of the city and limiting urban sprawl (by means of infill development), by the redevelopment of a property which is currently vacant instead of developing outside the urban edge.

## 6.2 Provincial Development Guidelines

### 6.2.1 Gauteng Metropolitan Spatial Development Framework, 2011

The Gauteng Metropolitan Spatial Development Framework (MSDF), 2011, was, amongst others, compiled to specify a clear set of spatial objectives for municipalities to achieve in order to ensure realisation of the future provincial spatial infrastructure; and to enable and direct growth.

The MSDF aims to articulate the spatial objectives of the Gauteng region to assist the alignment of neighbouring municipalities' spatial plans. It is proposed that key principles in local municipality SDFs should include (applicable to this application):

- ¿ Promotion of densification in specific areas to utilise resources more efficiently;
- ¿ Establishment of a hierarchy of nodes and supporting existing development nodes.

The MSDF confirms that "it remains the intention to limit urban sprawl as a fundamental tenet of urban growth policy and to promote the intentions of intensification and densification, together with a transformed urban structure that de-emphasises the need for outward expansion of the urban system."

The development proposal will not contribute to urban sprawl and should be regarded as infill development.

### 6.2.2 Gauteng Spatial Development Framework, 2011

The Gauteng Spatial Development Framework (SDF), 2011, was, amongst others, compiled to specify a clear set of spatial objectives for municipalities to achieve in order to ensure realisation of the future provincial spatial infrastructure; and to enable and direct growth.

The SDF aims to articulate the spatial objectives of the Gauteng region to assist the alignment of neighbouring municipalities' spatial plans. It is proposed that key principles in local municipality SDFs should include (applicable to this application):





- ¿ Promotion of densification in specific areas to utilise resources more efficiently;
- ¿ Establishment of a hierarchy of nodes and supporting existing development nodes.

The SDF confirms on page 128 that it remains the intention to limit urban sprawl as a fundamental tenet of urban growth policy and to promote the intentions of intensification and densification, together with a transformed urban structure that de-emphasises the need for outward expansion of the urban system.

The SDF furthermore identified four critical factors for development in the province, relevant to this development:

- ¿ Contained urban growth:

To contain urban growth, an Urban Edge was identified to curb urban sprawl. The idea behind the urban edge is to limit development within certain areas of a city. Only certain types of developments are allowed on the outside of the urban edge. The goal is to curb urban sprawl and thereby protecting the natural environment. One way to do this is to increase the densities of the built environment within the urban edge.

This edge is however not set in stone and can be amended if development pressure in an area requires the alteration of this line or edge. Normally, areas identified for future development or as future development nodes are not included within the urban edge of a municipality. Amendments to the relevant spatial legislation and frameworks of the municipality usually later include these areas within the edge, so the development potential can be unlocked. Approval of net land-use rights and applications in an area indicates that the characteristics of the area have changed over the years.

- ¿ Resourced based economic development:

Resource based economic development should result in identification of the economic core. Development should be encouraged in close proximity to existing resources, which includes infrastructure such as roads, water and electricity.

The proposed development is situated near existing and adjacent to approved proposed developments and infrastructure networks. Recent similar approved township establishment applications indicate that there is a growing economic base in the area.

- ¿ Re-direction of urban growth:

Developments in economically non-viable areas should be limited and thereby achieving growth within the economic growth sphere. This part of the Municipality is a fast growing sector in Joburg and growth should be encouraged in the precinct.

- ¿ Increased access and mobility:

The proposed land development area could be regarded as highly accessible.

### 6.3 Local Development Guidelines

#### 6.3.1 Spatial Development Framework (SDF), 2011

The SDF was compiled to realise the vision of the Municipality through spatial restructuring and to integrate all aspects of spatial planning.

The subject property is earmarked for purposes of residential development. The Ormonde area is situated



within a mixed use area, focussing on sporting / entertainment facilities, light industrial with a very large residential component.

In light of the above, it is apparent that the proposed development is consistent with the principles contained in the SDF.

### 6.3.2 Integrated Development Plan (IDP), 2012/2016

The Municipality has adopted an Integrated Development Plan (IDP) for 2012/2016 in terms of Section 25 of the Local Government, Municipal Systems Act, 2000 (Act No. 32 of 2000), which plan integrates and coordinates plans and aligns the resources and capacity of the Municipality to implement these plans. The compilation of Spatial Development Frameworks forms part of the IDP.

The Johannesburg Municipality seeks to focus its efforts to complement National and Provincial Government to accomplish the following strategic objectives through the IDP:

- ∩ Provide quality basic services and infrastructure;
- ∩ Facilitate higher and shared economic growth and development;
- ∩ To fight poverty, build clean, healthy, safe and sustainable communities;
- ∩ Foster participatory democracy through a caring, accessible and accountable service; and
- ∩ To ensure good governance, financial viability and optimal institutional transformation with capacity to execute its mandate.

The Strategic Levers emanating from the city's macro and long-term strategy, including the medium-term plan reflect Joburg's attempts in actively working towards achieving the targets set out at national and provincial level

The IDP confirms the status of the Ormonde area which focusses on the residential component as indicated in the SDF. The proposed development therefore finds support in the IDP.

## 7. MOTIVATION AND BURDEN OF PROOF

### 7.1 Need

- 7.1.1 The need for the development of residential units on the property is acknowledged in the land use policies of the Municipality, particularly the SDF which confirms that the property is earmarked for purposes of residential development. This confirms that the need for the development on the property is also acknowledged from a policy perspective.
- 7.1.2 The proximity of the subject property to important transport routes (e.g. the, M1 freeway and Shakespeare Avenue), public transport, job opportunities and most importantly renders that the property ideal for the intended land use.
- 7.1.3 Open and vacant, unutilised land within a build-up area can be perceived as a weakness due to the security threat that vacant land imposes, as well as the negative influence it has on the image of a neighbourhood. Unused open or vacant land, which implies lower densities, makes the provision of essential municipal services less viable and more expensive to provide. By developing the existing land, the development of urban fibre can be stimulated through the strengthening of the development node and region. The proposed land use rights of the erf accommodated in this application is in accordance with the proposals of the Integrated Development Plan (IDP), as the IDP earmarks this area for medium to high density residential uses.
- 7.1.4 The proposed development will positively influence the income base of the Municipality. The income generated by rates is a function of land value, which is in turn a function of the land use. The establishment of the residential townships (which includes a retail erf) broadens the economic base of the area. The development will also ensure the following:



- ¿ Infill development - The application site is a vacant portion of land situated adjacent to an existing and future residential townships, within the Municipality;
- ¿ New work opportunities in close proximity to place of residence during construction; and
- ¿ Optimal use of existing infrastructure.

7.1.5 The proposed development is also consistent with approved land use policies in Johannesburg. The need for the proposed development is substantiated by the principles of the IDP, i.e. the infill of vacant land and the optimal use of existing infrastructure, as well as from current market forces.

## 7.2 Desirability

7.2.1 There is a need for more residential units within the Ormonde area and this development will contribute to this need. Mounting development pressure within the municipality is resulting in all available developable land being developed.

7.2.2 The development proposal is also consistent with, and will promote, the land use policy guidelines of the Municipality. The development can be regarded as being desirable and will have several beneficial social and economic impacts on the area, which can be summarised as follow:

- ¿ Optimum utilisation of services and infrastructure;
- ¿ Increase in property values of surrounding properties;
- ¿ Increased security;
- ¿ Compatibility with surrounding land uses; and
- ¿ Increased housing opportunities

7.2.3 The proposed development will maximize the potential of the subject property and is consistent with the strategic location of the site. The proposed development will additionally contribute to the overall efficiency, sustainability and improved quality of the greater area. The development will have several beneficial social, economic and ecological impacts once the construction thereof is finalised, which can be summarised as follow:

- ¿ Reduction of potential dumping areas and informal settlements;
- ¿ Optimum utilisation of services and infrastructure;
- ¿ Expansion of municipal infrastructure and services;
- ¿ Increase in property values of surrounding properties;
- ¿ Increased security;
- ¿ Eradication of invasive species;
- ¿ Compatibility with surrounding land uses; and
- ¿ Landscaping could improve fauna numbers and species.

As mentioned above, the proposed development will include community and will be easy accessible through public transport. The need for social and economic facilities in this area is identified in various planning policies and policy frameworks of the Municipality. The development will provide much needed residential and retail facilities for the area, and thus make a positive contribution with regards to social welfare.

7.2.4 The proposed development will align with the existing urban form and character of the area. It will uplift the area economically and might attract other potential developers to the area as well. Thus, in effect, it might have a very positive financial influence to the precinct. Furthermore, the proposed development will contribute to an economic base in the area. Thus, it is argued that the proposed development will have a positive influence to the area.

7.2.5 When considering that the Building Plans and Site Development Plans which must be submitted to the Municipality, will have to comply with the relevant design guidelines and development parameters of land use policies, the proposed development can be perceived as desirable from a land use perspective.



- 7.3 Compliance with SPLUMA principles
- 7.3.1 With reference to Section 7.1.1 of this Memorandum, it is confirmed that the development proposal complies with the principles of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013).
- 7.4 Public interest in terms of Section 47(2) of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
- 7.4.1 The proposed development is in the public interest, as the land use rights is consistent with approved policy guidelines on national, provincial and local level.
- 7.5 Facts and circumstances of application in terms of Section 42 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
- 7.5.1 This memorandum is submitted in support of an application in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of Erf 1130 & Erf 1131, Ormonde Extension 24, from Residential 3\_ with 25 dwelling units per hectare to `Residential 3: with 113 dwelling units per hectare\_.
- 7.5.2 The proposed development aligns with approved policy guidelines on national, provincial and local level.
- 7.6 Rights and obligations of affected parties in terms of Section 42 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
- 7.6.1 The rights and obligations of affected parties will be taken into account in the following manner:
- ¿ The application will be advertised as prescribed in Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016, by the publications of notices in the Gauteng Provincial Gazette, Beeld and Citizen during February/ March 2017, and by the simultaneous display of a notice on site for fourteen (14 days). An objection period of 28 days will be afforded to any affected parties; and
  - ¿ The City Planning Department will circulate the application for comments from internal departments of the Municipality. Any concerns raised will have to be dealt with to the satisfaction of the relevant department.
- 7.7 Interested persons in terms of Section 45 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
- 7.7.1 The application will be advertised as prescribed in Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016, granting any person the opportunity to register as an interested party.
- 7.8 Impact on engineering services, social infrastructure and open space in terms of Sections 42 and 49 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013), read with Section 46, 47 and 48 of the City of Johannesburg Municipal Planning By-Law, 2016
- 7.8.1 The impact of the proposed development will be confirmed by the internal departments of the Municipality who will be afforded an opportunity to comment on the application.
- 7.8.2 Any adverse impacts will be mitigated and addressed by suitable solutions, which may include service agreements and/or payment of bulk contributions to upgrade existing services infrastructure.



## 7.9 Reply to objections

- 7.9.1 The applicant will reply to any valid objections to the application.
- 7.9.2 The advertisements will comply with the requirements of the relevant sections of the City of Johannesburg Municipal Planning By-Law, 2016. The rights of potential objectors and or interested parties will be brought to the attention of probable objectors and or interested parties in terms of the requirements of Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016.
- 7.9.3 In submitting this application, applicant has endeavoured to comply with the requirements of the relevant provincial legislation as well as the provisions of the City of Johannesburg Municipal Planning By-Law, 2016, read with the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013).
- 7.9.4 The application clearly indicates the land- use rights, scheme documents, diagrams, layout plans, need and desirability, co-ordinated harmonious development and all other relevant requirements in terms of provincial legislation.
- 7.9.5 The application further complies with the relevant requirements of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013). Specifically, Sections 7, 42, 47 and 49 thereof.

## 8. CONCLUSION

- 8.1 Application is made in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of Erf 1130 & Erf 1131, Ormonde Extension 24, from Residential 3\_ with a density of 25 dwelling units per hectare; FAR of 0.4; Height of 3 storeys; and coverage of 30%\_ to Residential 3\_ with a density of 113 dwelling units per hectare; FAR of 0.7; Height of 4 storeys; and coverage of 30%\_ subject to the following conditions
- 8.2 The purpose of this application is to obtain the appropriate land use rights to enable higher residential development. The application clearly confirms the need and desirability and compliance with all other relevant requirements in terms of relevant policies and legislation.
- 8.3 Note that a separate application for the consolidation of the two properties, terms of the provisions of Section 33 of the City of Johannesburg Municipal Planning By-Law, 2016, was also submitted to the Municipality. Even though the rezoning and consolidation applications are submitted separately, approval of both applications will be required before submission of any building plans to Council and before construction can commence.
- 8.4 We trust that Council will evaluate and consider the application on its merit.

Werner Slabbert B(TRP)  
Professional Planner - Pr. Pln A/2190/2015



URBAN INNOVATE CONSULTING CC  
CK2007/191853/23

November 2016

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LIST OF ANNEXURES

- ☂ ANNEXURE A - LOCALITY PLAN
  - ☂ ANNEXURE B - DEED OF TRANSFER
  - ☂ ANNEXURE C - POWER OF ATTORNEY, COMPANY RESOLUTION & PROOF OF DIRECTORS
  - ☂ ANNEXURE D - ZONING CERTIFICATE AND ZONING MAP
  - ☂ ANNEXURE E - LAND USE MAP
  - ☂ ANNEXURE F - PROPOSED SCHEME DOCUMENTATION
  - ☂ ANNEXURE G - PROPOSED SITE PLAN AND GATEHOUSE DESIGN
  - ☂ ANNEXURE H - GENERAL PLAN/S.G DIAGRAMS
- 





## 1. EXECUTIVE SUMMARY

- 1.1 This memorandum is submitted in support of an application in terms of the provisions of Section 21 of The City of Johannesburg Municipal Planning By-Law, 2016 for the amendment of the Johannesburg Town-Planning Scheme, 1979, by the rezoning of Erven 962 & Erf 963, Ormonde Extension 22, subject to certain conditions.
- 1.2 Application is made for the amendment of the Johannesburg Town-Planning Scheme, 1979, by way of the rezoning of the subject property from *“Residential 3” with a density of “25 dwelling units per hectare; FAR of 0.4; Height of 3 storeys; and coverage of 30%”* to *“Residential 3” with a density of “110 dwelling units per hectare”*, and subject to the following conditions:
- Floor Area Ratio : 0.7
- Coverage : 30%
- Height : Four (4) storeys
- Parking requirements : 1.3 parking bays per unit
- Building lines : In accordance with an approved site development plan
- Number of Units : 176 units
- 1.3 The purpose of this application is to obtain the appropriate land use rights to enable the registered property owner to develop a higher residential development on the erf.
- 1.4 Note that a separate application for the consolidation of the two properties, in terms of the provisions of Section 33 of the City of Johannesburg Municipal Planning By-Law, 2016, was also submitted to the Municipality. Even though the rezoning and consolidation applications are submitted separately, approval of both applications will be required before submission of any building plans to Council and before construction can commence.
- 1.5 This memorandum provides the relevant property information, and motivates the merits of the development proposal from a development planning perspective.
- 1.6 The consolidation application is submitted separately and will be handled as a separate application, but will form part of the rezoning of the erven.

## 2. PROPERTY INFORMATION

### 2.1 Locality

The subject property is situated along Msasa Crescent in Ormonde, towards the north of the M1 Freeway and towards the south of Akker Street. A Locality Plan is attached hereto as **Annexure A**. The site is situated in close proximity to Rand Show Road, Nasrec Road and the M1-Highway.

The figure below gives the context of the application site.





Figure 1: Aerial view of the property

## 2.2 Property description, ownership and size

Details pertaining to property description, ownership and extent of the subject properties are provided in the table below:

PROPERTY DESCRIPTION	REGISTERED OWNER	DEED OF TRANSFER NUMBER	SIZE
Ormonde X22: Erf 962	Matla Projects (Pty) Ltd	T27309/2009	5 942m <sup>2</sup>
Ormonde X22: Erf 963	Matla Projects (Pty) Ltd	T27310/2009	10 274m <sup>2</sup>

Deeds of Transfer T27309/2009 and T27310/2009 are attached as **Annexures B** to form part of the application documentation.

The signed and completed Company Resolution, Power of Attorney and Proof of Directors are attached as **Annexure C** respectively.

## 2.3 Zoning

The subject properties are currently zoned "Residential 3", in terms of the Johannesburg Town-Planning Scheme, 1979, subject to the following conditions:

Floor Area Ratio	:	0.4
Density	:	25 Dwelling units per ha
Coverage	:	30%
Height	:	Three storeys

The relevant Zoning Certificate is attached hereto as **Annexure D**.



The zoning regime of the surrounding area includes the following zonings:

*“Residential 1”; “Residential 3;” “Business 3”; “Institutional” and “Municipal”.*

## 2.4 **Land Use**

A land use plan, based on a visual survey, is attached as **Annexure E**. The subject property is currently vacant, while surrounding land uses include:

- Dwelling houses;
- Open Spaces; and
- Public Roads.

It becomes clear that the area is a predominantly residential area. The proposal to develop the subject property for higher density residential uses will contribute to the livelihood of the area and create additional housing opportunities.

The proposed land-use will have no detrimental effect on any of the surround properties on municipal infrastructure.

## 3. **BONDS, CONDITIONS OF TITLE AND SERVITUDES**

### 3.1 **Mortgage Bond**

There is currently no bond registered over the property. The consent from a bondholder is therefore not required.

### 3.2 **Conditions of title**

The subject property is not affected by any conditions of title which may prove to be restrictive to the proposed development. No removal of restrictions is therefore required.

### 3.3 **Servitudes**

In terms of Deed of Transfers T27309/2009 and T27310/2009 the properties are subject to the following servitude:

- A servitude for sewer and other municipal services purposes 2 metres wide, in favour of the City Council of Johannesburg along any two boundaries other than a street boundary.

This servitude will be retained and accommodated in the development proposal and on the final Site Development Plan.

## 4. **DEVELOPMENT PROPOSAL**

### 4.1 **Application Particulars and Development Proposal**

- 4.1.1 Application is made in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the amendment of the Johannesburg Town-Planning Scheme, 1979, by the simultaneous rezoning of Erf 962 & Erf 963, Ormonde Extension 22, subject to the following conditions:



Floor Area Ratio	:	0.7
Coverage	:	30%
Height	:	Four (4) storeys
Parking requirements	:	1.3 parking bays per unit
Building lines	:	In accordance with an approved site development plan
Number of Units	:	176 units

- 4.1.2 All parking and manoeuvring space will be provided on-site. No parking within the road reserve will be allowed or will be necessary. The proposed site plan is attached hereto as **Annexure G**. Parking will be provided at a ratio of 1.3 parking bays per unit, with a total of 229 parking bays being required. A total of 230 parking bays will be provided on-site, to ensure sufficient parking for residents and visitors. All parking and manoeuvring space will be covered with a permanent dust-free surface.
- 4.1.3 Access to the development will be obtained via Msasa Crescent. Access will be provided to the satisfaction of the municipality. The current road network is sufficient to accommodate the minimal increase in traffic. If so required by Council, upgrades to the road and services network can be made through a service agreement between the developer and Council.
- 4.1.3 Sufficient open space (gardens / lawns) will be provided within the development, as per the minimum requirements from Council.
- 4.1.4 The privacy of the neighbouring properties will be protected by means of building design, landscaping and building lines. The height of the proposed development will be limited to four storeys and building lines will be determined in accordance with an approved site development plan.
- 4.2 Existing vs Proposed Zoning**
- 4.2.1 The proposed scheme document is attached hereto as **Annexure F**.
- 4.2.2 The type of housing unit that is being proposed is IHS C-Type (3-4 levels). The design of the units will be done by Boogertman & Partners Architects. A formal Site Development Plan and Building Plans will be submitted to Council after approval of the rezoning application. A concept plan is attached to form part of the application documentation.
- 4.2.3 The following table compares the current and proposed land use rights:



CURRENT ZONING	PROPOSED ZONING
<b>Existing Zoning:</b> "Residential 3"	<b>Proposed Zoning:</b> "Residential 3"
<b>Permitted land uses:</b> Residential dwelling units	<b>Permitted land uses:</b> Residential dwelling units
<b>Permitted Density:</b> 25 units/ha	<b>Proposed Density:</b> 110 units/ha
<b>Number of Units allowed:</b> 40 sectional title units	<b>Number of Units allowed:</b> 176 sectional title units
<b>Height Restriction:</b> Three (3) storeys	<b>Proposed Height Restriction:</b> Four (4) storeys
<b>Coverage:</b> 30%	<b>Proposed Coverage:</b> 30%
<b>Floor Area Ratio:</b> 0.4	<b>Proposed Floor Area Ratio:</b> 0.7
<b>Parking:</b> 1 parking space per dwelling unit of 3 or less habitable rooms. 2 parking space per dwelling unit of 4 or more habitable rooms. Plus 0.3 parking spaces per dwelling unit for visitors.	<b>Parking:</b> 1.3 parking bays per unit Required: 229 Provided: 230
<b>Building lines:</b> 0m on all street fronts	<b>Building lines:</b> In accordance with an approved site development plan

## 5. MUNICIPAL SERVICES

- 5.1 The region is generally well provided with civil service infrastructure. Development pressure in this area challenges the rate at which bulk infrastructure can be provided to accommodate expansion. Existing infrastructure will however be capable of accommodating the proposed additional land-use rights.
- 5.2 During the application stage, the different engineering departments will get an opportunity to indicate whether additional engineering studies will be required before the rezoning application can be approved. If so required, Professional Engineers will be appointed to investigate the civil services and compile an outline scheme document.
- 5.3 The amount of Bulk Services Contributions for civil services payable to the City of Joburg will be determined with the finalisation of the rezoning application. Rebate will be given for the existing land use rights on the final amounts.
- 5.4 A formal Traffic Access Study is currently being prepared by the project Engineers. It will be submitted to Council as soon as it is received.
- 5.5 The electricity connection has been discussed with City Power. Adequate capacity is currently available for the development at the nearby Crown substation and an estimated 2,2 MVA can therefore be made available for planned developments in the Ormonde area, of which this application forms part of.



Capacity can be released by shifting loads between the various distributor areas. A feeder cable from Crown substation is thus not required. A detailed Electrical Report and/or Outline Scheme Report will be submitted to Council in due course.

## 6. POLICIES

### 6.1 National Development Guidelines

#### 6.1.1 **Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)**

Section 7 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) confirms that the following principles applies to spatial planning, land development and land use management:

#### **7(a) *The principle of spatial justice, whereby:-***

- (i) *Past spatial and other development imbalances must be redressed through improved access to and use of land.*

It is our opinion that the greater community of this area will benefit from the development proposal through various new housing opportunities.

The development will enhance the urban environment through the strengthening of the residential character and the creation of economic growth, as required in terms of local policies.

- (ii) *Spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation.*
- (iii) *Spatial planning mechanism, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons.*
- (iv) *Land use management system must include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas.*
- (v) *Land development procedures must include provisions that accommodate access to secure tenure and incremental upgrading of informal areas.*
- (vi) *A Municipal Planning Tribunal considering an application before it, may not be implemented or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application.*

Principles (7)(a) (ii) to (vi) relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

#### **7(b) *The principle of spatial sustainability, whereby spatial planning and land use management systems must:-***

- (i) *Promote land development that is within the fiscal, institutional and administrative means of the Republic.*

The proposed development, as motivated, complies with the fiscal, institutional and





administrative means of the Republic as well as the Local Authority.

Development Policies, related administration and laws (City of Johannesburg Municipal Planning By-Law, 2016) and the National Environmental Management Act, 1998, do allow for the application, as submitted, to be entertained. The proposal has been discussed with the relevant Town Planners at Council before submission of the application.

- (ii) *Ensure that special consideration is given to the protection of prime and unique agricultural land.*

The property is surrounded by existing urban infrastructure, and in terms of Municipal policy, the property is earmarked for higher density residential development.

- (iii) *Uphold consistency of land use measures in accordance with environmental management instruments.*

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (iv) *Promote and stimulate the effective and equitable functioning of land markets.*

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (v) *Consider all current and future cost to all parties for the provision of infrastructure and social services in land developments.*

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (vi) *Promote land development in locations that are sustainable and limit urban sprawl.*

The subject property is situated within Region F of the City of Johannesburg and will not contribute to urban sprawl. The proposed development will serve as infill development and will ensure the optimisation of developable land and municipal infrastructure and services.

According to relevant policy guidelines of the Municipality (i.e. the Municipal Spatial Development Framework), the subject property is earmarked for purposes of higher density residential development. The proposal is, in principle, supported by Council.

- (vii) *Result in communities that are viable.*

The proposed development is in close proximity to other residential, some commercial, lifestyle and educational opportunities. It is furthermore located near public transport facilities and is also ideally situated in terms of the main through routes in the area (i.e. the M1-Highway).

**7(c) The principle of efficiency, whereby:-**

- (i) *Land development optimises the use of existing resources and infrastructure.*



The proposed development will promote efficient land development, as it entails the development of residential housing in close proximity to commercial, lifestyle and educational opportunities. Public transport is also available in close proximity.

The subject property is strategically situated in relation to transportation routes, e.g. M1 Freeway and Shakespeare Avenue.

Civil services are also available in the area for the proposed development.

- (ii) *Decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts.*

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- (iii) *Development application procedures are efficient and streamlined and timeframes are adhered to by all parties.*

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- 7(d) *Principal of spatial resilience* whereby flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks.**

This principle relates to obligations imposed on local government, and in this regard the legislation is clear in respect of the procedures to facilitate the development to the property.

- 7(e) *The principle of good administration, whereby-***

- (i) *All spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act.*

This principle relates to obligations imposed on local government. The application will be circulated to relevant internal municipal departments for their comments.

- (ii) *All government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial planning frameworks.*

This principle relates to obligations imposed on local government.

- (iii) *The requirements of any law relating to land development and land use are met timeously.*

This principle relates to obligations imposed on local government.

- (iv) *The preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them.*

This principle relates to obligations imposed on local government. It is also confirmed



that the application will be advertised by the applicant in the prescribed manner.

- (v) *Policies, legislation and procedures must be clearly set in order to inform and empower members of the public.*

This principle relates to obligations imposed on local government.

### 6.1.2 National Development Plan, 2030

The National Development Plan identifies five principles for spatial development: spatial justice, spatial sustainability, spatial resilience, spatial quality and special efficiency.

It confirms that South African cities are highly fragmented, as little has been achieved in reversing apartheid geography. The Plan proposes that the situation be addressed by establishing new norms and standards: amongst others by densifying cities, improving transport and locating jobs where people live.

The containment of urban sprawl is particularly highlighted in the Plan, confirming that sprawl be contained and reversed (if possible), “... as denser forms of development are more efficient in terms of land usage, infrastructure cost and environmental protection.”

The proposed development aligns with the vision of the National Development Plan, as it will promote compaction of the city and limiting urban sprawl (by means of infill development), by the redevelopment of a property which is currently vacant instead of developing outside the urban edge.

## 6.2 Provincial Development Guidelines

### 6.2.1 Gauteng Metropolitan Spatial Development Framework, 2011

The Gauteng Metropolitan Spatial Development Framework (MSDF), 2011, was, amongst others, compiled to specify a clear set of spatial objectives for municipalities to achieve in order to ensure realisation of the future provincial spatial infrastructure; and to enable and direct growth.

The MSDF aims to articulate the spatial objectives of the Gauteng region to assist the alignment of neighbouring municipalities’ spatial plans. It is proposed that key principles in local municipality SDFs should include (applicable to this application):

- Promotion of densification in specific areas to utilise resources more efficiently;
- Establishment of a hierarchy of nodes and supporting existing development nodes.

The MSDF confirms that “*it remains the intension to limit urban sprawl as a fundamental tenet or urban growth policy and to promote the intentions of intensification and densification, together with a transformed urban structure that de-emphasises the need for outward expansion of the urban system*”.

The development proposal will not contribute to urban sprawl and should be regarded as infill development.

### 6.2.2 Gauteng Spatial Development Framework, 2011

The Gauteng Spatial Development Framework (SDF), 2011, was, amongst others, compiled to specify a clear set of spatial objectives for municipalities to achieve in order to ensure realisation of the future provincial spatial infrastructure; and to enable and direct growth.

The SDF aims to articulate the spatial objectives of the Gauteng region to assist the alignment of neighbouring municipalities’ spatial plans. It is proposed that key principles in local municipality SDFs should include (applicable to this application):



- Promotion of densification in specific areas to utilise resources more efficiently;
- Establishment of a hierarchy of nodes and supporting existing development nodes.

The SDF confirms on page 128 that *“it remains the intension to limit urban sprawl as a fundamental tenet or urban growth policy and to promote the intentions of intensification and densification, together with a transformed urban structure that de-emphasises the need for outward expansion of the urban system”*.

The SDF furthermore identified four critical factors for development in the province, relevant to this development:

- **Contained urban growth:**

To contain urban growth, an Urban Edge was identified to curb urban sprawl. The idea behind the urban edge is to limit development within certain areas of a city. Only certain types of developments are allowed on the outside of the urban edge. The goal is to curb urban sprawl and thereby protecting the natural environment. One way to do this is to increase the densities of the built environment within the urban edge.

This edge is however not set in stone and can be amended if development pressure in an area requires the alteration of this “line” or edge. Normally, areas identified for future development or as future development nodes are not included within the urban edge of a municipality. Amendments to the relevant spatial legislation and frameworks of the municipality usually later include these areas within the edge, so the development potential can be unlocked. Approval of net land-use rights and applications in an area indicates that the characteristics of the area have changed over the years.

- **Resourced based economic development:**

Resource based economic development should result in identification of the economic core. Development should be encouraged in close proximity to existing resources, which includes infrastructure such as roads, water and electricity.

The proposed development is situated near existing and adjacent to approved proposed developments and infrastructure networks. Recent similar approved township establishment applications indicate that there is a growing economic base in the area.

- **Re-direction of urban growth:**

Developments in economically non-viable areas should be limited and thereby achieving growth within the economic growth sphere. This part of the Municipality is a fast growing sector in Joburg and growth should be encouraged in the precinct.

- **Increased access and mobility:**

The proposed land development area could be regarded as highly accessible.

## 6.3 Local Development Guidelines

### 6.3.1 Spatial Development Framework (SDF), 2011

The SDF was compiled to realise the vision of the Municipality through spatial restructuring and to integrate all aspects of spatial planning.



The subject property is earmarked for purposes of residential development. The Ormonde area is situated within a mixed use area, focussing on sporting / entertainment facilities, light industrial with a very large residential component.

In light of the above, it is apparent that the proposed development is consistent with the principles contained in the SDF.

### 6.3.2 Integrated Development Plan (IDP), 2012/2016

The Municipality has adopted an Integrated Development Plan (IDP) for 2012/2016 in terms of Section 25 of the Local Government, Municipal Systems Act, 2000 (Act No. 32 of 2000), which plan integrates and coordinates plans and aligns the resources and capacity of the Municipality to implement these plans. The compilation of Spatial Development Frameworks forms part of the IDP.

The Johannesburg Municipality seeks to focus its efforts to complement National and Provincial Government to accomplish the following strategic objectives through the IDP:

- Provide quality basic services and infrastructure;
- Facilitate higher and shared economic growth and development;
- To fight poverty, build clean, healthy, safe and sustainable communities;
- Foster participatory democracy through a caring, accessible and accountable service; and
- To ensure good governance, financial viability and optimal institutional transformation with capacity to execute its mandate.

The Strategic Levers emanating from the city's macro and long-term strategy, including the medium-term plan reflect Joburg's attempts in actively working towards achieving the targets set out at national and provincial level

The IDP confirms the status of the Ormonde area which focusses on the residential component as indicated in the SDF. The proposed development therefore finds support in the IDP.

## 7. MOTIVATION AND BURDEN OF PROOF

### 7.1 Need

- 7.1.1 The need for the development of residential units on the property is acknowledged in the land use policies of the Municipality, particularly the SDF which confirms that the property is earmarked for purposes of residential development. This confirms that the need for the development on the property is also acknowledged from a policy perspective.
- 7.1.2 The proximity of the subject property to important transport routes (e.g. the, M1 freeway and Shakespeare Avenue), public transport, job opportunities and most importantly renders that the property ideal for the intended land use.
- 7.1.3 Open and vacant, unutilised land within a build-up area can be perceived as a weakness due to the security threat that vacant land imposes, as well as the negative influence it has on the image of a neighbourhood. Unused open or vacant land, which implies lower densities, makes the provision of essential municipal services less viable and more expensive to provide. By developing the existing land, the development of urban fibre can be stimulated through the strengthening of the development node and region. The proposed land use rights of the erf accommodated in this application is in accordance with the proposals of the Integrated Development Plan (IDP), as the IDP earmarks this area for medium to high density residential uses.
- 7.1.4 The proposed development will positively influence the income base of the Municipality. The income generated by rates is a function of land value, which is in turn a function of the land use. The establishment of the residential townships (which includes a retail erf) broadens the economic base of the area. The



development will also ensure the following:

- Infill development – The application site is a vacant portion of land situated adjacent to an existing and future residential townships, within the Municipality;
- New work opportunities in close proximity to place of residence during construction; and
- Optimal use of existing infrastructure.

7.1.5 The proposed development is also consistent with approved land use policies in Johannesburg. The need for the proposed development is substantiated by the principles of the IDP, i.e. the infill of vacant land and the optimal use of existing infrastructure, as well as from current market forces.

## 7.2 **Desirability**

7.2.1 There is a need for more residential units within the Ormonde area and this development will contribute to this need. Mounting development pressure within the municipality is resulting in all available developable land being developed.

7.2.2 The development proposal is also consistent with, and will promote, the land use policy guidelines of the Municipality. The development can be regarded as being desirable and will have several beneficial social and economic impacts on the area, which can be summarised as follow:

- Optimum utilisation of services and infrastructure;
- Increase in property values of surrounding properties;
- Increased security;
- Compatibility with surrounding land uses; and
- Increased housing opportunities

7.2.3 The proposed development will maximize the potential of the subject property and is consistent with the strategic location of the site. The proposed development will additionally contribute to the overall efficiency, sustainability and improved quality of the greater area. The development will have several beneficial social, economic and ecological impacts once the construction thereof is finalised, which can be summarised as follow:

- Reduction of potential dumping areas and informal settlements;
- Optimum utilisation of services and infrastructure;
- Expansion of municipal infrastructure and services;
- Increase in property values of surrounding properties;
- Increased security;
- Eradication of invasive species;
- Compatibility with surrounding land uses; and
- Landscaping could improve fauna numbers and species.

As mentioned above, the proposed development will include community and will be easy accessible through public transport. The need for social and economic facilities in this area is identified in various planning policies and policy frameworks of the Municipality. The development will provide much needed residential and retail facilities for the area, and thus make a positive contribution with regards to social welfare.

7.2.4 The proposed development will align with the existing urban form and character of the area. It will uplift the area economically and might attract other potential developers to the area as well. Thus, in effect, it might have a very positive financial influence to the precinct. Furthermore, the proposed development will contribute to an economic base in the area. Thus, it is argued that the proposed development will have a positive influence to the area.

7.2.5 When considering that the Building Plans and Site Development Plans which must be submitted to the Municipality, will have to comply with the relevant design guidelines and development parameters of land





use policies, the proposed development can be perceived as desirable from a land use perspective.

### **7.3 Compliance with SPLUMA principles**

7.3.1 With reference to Section 7.1.1 of this Memorandum, it is confirmed that the development proposal complies with the principles of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013).

### **7.4 Public interest in terms of Section 47(2) of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)**

7.4.1 The proposed development is in the public interest, as the land use rights is consistent with approved policy guidelines on national, provincial and local level.

### **7.5 Facts and circumstances of application in terms of Section 42 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)**

7.5.1 This memorandum is submitted in support of an application in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of Erf 962 & Erf 963, Ormonde Extension 22, from "Residential 3" with 25 dwelling units per hectare to "**Residential 3**" with "**110 dwelling units per hectare**".

7.5.2 The proposed development aligns with approved policy guidelines on national, provincial and local level.

### **7.6 Rights and obligations of affected parties in terms of Section 42 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)**

7.6.1 The rights and obligations of affected parties will be taken into account in the following manner:

- The application will be advertised as prescribed in Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016, by the publications of notices in the Gauteng Provincial Gazette, Beeld and Citizen during February/ March 2017, and by the simultaneous display of a notice on site for fourteen (14 days). An objection period of 28 days will be afforded to any affected parties; and
- The City Planning Department will circulate the application for comments from internal departments of the Municipality. Any concerns raised will have to be dealt with to the satisfaction of the relevant department.

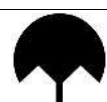
### **7.7 Interested persons in terms of Section 45 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)**

7.7.1 The application will be advertised as prescribed in Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016, granting any person the opportunity to register as an interested party.

### **7.8 Impact on engineering services, social infrastructure and open space in terms of Sections 42 and 49 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013), read with Section 46, 47 and 48 of the City of Johannesburg Municipal Planning By-Law, 2016**

7.8.1 The impact of the proposed development will be confirmed by the internal departments of the Municipality who will be afforded an opportunity to comment on the application.

7.8.2 Any adverse impacts will be mitigated and addressed by suitable solutions, which may include service agreements and/or payment of bulk contributions to upgrade existing services infrastructure.



## 7.9 Reply to objections

- 7.9.1 The applicant will reply to any valid objections to the application.
- 7.9.2 The advertisements will comply with the requirements of the relevant sections of the City of Johannesburg Municipal Planning By-Law, 2016. The rights of potential objectors and or interested parties will be brought to the attention of probable objectors and or interested parties in terms of the requirements of Section 21(2) of the City of Johannesburg Municipal Planning By-Law, 2016.
- 7.9.3 In submitting this application, applicant has endeavoured to comply with the requirements of the relevant provincial legislation as well as the provisions of the City of Johannesburg Municipal Planning By-Law, 2016, read with the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013).
- 7.9.4 The application clearly indicates the land- use rights, scheme documents, diagrams, layout plans, need and desirability, co-ordinated harmonious development and all other relevant requirements in terms of provincial legislation.
- 7.9.5 The application further complies with the relevant requirements of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013). Specifically, Sections 7, 42, 47 and 49 thereof.

## 8. CONCLUSION

- 8.1 Application is made in terms of the provisions of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of Erf 962 & Erf 963, Ormonde Extension 22, from *“Residential 3” with a density of “25 dwelling units per hectare; FAR of 0.4; Height of 3 storeys; and coverage of 30%” to “Residential 3” with a density of “110 dwelling units per hectare; FAR of 0.7; Height of 4 storeys; and coverage of 30%”,* subject to the following conditions
- 8.2 The purpose of this application is to obtain the appropriate land use rights to enable higher residential development. The application clearly confirms the need and desirability and compliance with all other relevant requirements in terms of relevant policies and legislation.
- 8.3 Note that a separate application for the consolidation of the two properties, terms of the provisions of Section 33 of the City of Johannesburg Municipal Planning By-Law, 2016, was also submitted to the Municipality. Even though the rezoning and consolidation applications are submitted separately, approval of both applications will be required before submission of any building plans to Council and before construction can commence.
- 8.4 We trust that Council will evaluate and consider the application on its merit.

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**Werner Slabbert B(TRP)**  
**Professional Planner - Pr. Pln A/2190/2015**



**URBAN INNOVATE CONSULTING CC**

CK2007/191853/23

November 2016

R16026



**LIST OF ANNEXURES**

- 
- |   |            |   |  |
|---|------------|---|--|
| ☂ | ANNEXURE A | - | LOCALITY PLAN  |
| ☂ | ANNEXURE B | - | DEED OF TRANSFER   |
| ☂ | ANNEXURE C | - | POWER OF ATTORNEY, COMPANY RESOLUTION & PROOF OF DIRECTORS |
| ☂ | ANNEXURE D | - | ZONING CERTIFICATE AND ZONING MAP                          |
| ☂ | ANNEXURE E | - | LAND USE MAP   |
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| ☂ | ANNEXURE G | - | PROPOSED SITE PLAN AND GATEHOUSE DESIGN                    |
| ☂ | ANNEXURE H | - | GENERAL PLAN / S.G DIAGRAMS                                |
- 





# **Appendix G8**

## Storm Water Management Plan



ORMONDE EXT 24 – ERVEN (1130 & 1131)  
ORMONDE EXT 22 – ERVEN (962 & 963)

STORMWATER MANAGEMENT REPORT

C2284-SMP-REPORT

OCTOBER 2016

CIVIL CONCEPTS CONSULTING ENGINEERS, Civil Concepts (Pty) Ltd, 50 15th Street, Menlo Park, Pretoria, 0102 Tel: 012 460 0008, Fax 012 460 0005, Email: Mail@civilconcepts.co.za

**STORMWATER**



**1. INTRODUCTION**

Civil Concepts (Pty) Ltd was appointed to conduct a stormwater management investigation of the Erven 1130 & 1131 Ormonde Ext 24 as well as Erven 962 & 963 Ormonde Ext 22. Both properties are currently zoned as residential 3 and it is proposed to consolidate the property and increase the density from 25 units per hectare to 112.94 units per hectare and 110 units per hectare respectively.

This report contains the details of the proposed Stormwater Management for consolidation of Erven 1130 & 1131 Ormonde Ext 24 and Erven 962 & 963 Ormonde Ext 22, Johannesburg.

**2. RELEVANT INFORMATION**

The owner has launched an application for consolidation and increase the density for Residential 3.

**2.1 Owner Information**

Name : Matla Projects (Pty) Ltd  
Contact Person : Mr J Pienaar  
Physical Address : 470 Killarney Road, Bredell, 1623  
Postal Address : P O Box 14152, Bredell, 1623  
Telephone : (011) 571 3906  
Fax Number : (011) 396 2708

**2.2 Consultant Details**

Name : Civil Concepts (Pty) Ltd  
Postal Address : P.O. Box 36148, Menlo Park, 0102  
  
Contact person : Werner Stander  
Prof. Reg. No. : 20060017  
Telephone : (012) 460 0008  
Fax Number : (012) 460 0005  
Cell Phone : (084) 619 5838  
E-mail : [werner@civilconcepts.co.za](mailto:werner@civilconcepts.co.za)

**2.3 Locality**

The development is situated in Ormonde Ext 24 on Erven 1130 & 1131 and Ormonde Ext 22 on Erven 962 & 963, Johannesburg, also refer to the attached locality map in **Annexure A**.

De Villiers Graaf Motorway forms the southern boundary with Milkwood Road on the western side. The tributary of the Bloubos Spruit forms the eastern boundary.

**2.4 Zoning**

The existing zoning for Erven 1130 & 1131 includes for two Residential 3 Erven. It is the intention to consolidate and increase the zoning of the two erven from 25 units per hectare to 112.94 units per hectare. The total size of the consolidated erven will be 1.7 ha with approximately 192 units. Refer to **Annexure B** for the layout of consolidated erven, and building layout.

The existing zoning for Erven 962 & 963 includes for two Residential 3 Erven. It is the intention to consolidate and increase the zoning of the two erven from 25 units per hectare to 110 units per hectare. The total size of the consolidated erven will be 1.62 ha with approximately 176 units. Refer to **Annexure B** for the layout of consolidated erven, and building layout.

**2.5 Servitudes**

No Servitudes are registered over the property.





**2.6 Professional Engineer**

Mr. W. Stander is a registered professional engineer, Professional Registration Number 20060017. He has over 14 years' experience in Stormwater Master Planning and have completed several projects of similar nature.

**3. SOFTWARE AND PARAMETERS**

HydroCube software is used for simulating the Stormwater Master Plan and to determine the runoff values.

The parameters used are provided in Table 3 below.

**Table 3**

<b>SUMMARY OF SIMULATION PARAMETERS : 5 AND 25 YEAR STORMS</b>	
Infiltration routine	HORTON
Decay constant	0,00115/s
Routing methodology	Time-Shift
Rainfall distribution type	Triangular
Aerial reduction factor applied	No
Manning's 'n' concrete pipes and culverts	0.012
Manning's 'n' paved streets	0.015
Shortest duration	20 min for 5 year, 30 min for 25 year
Longest duration	120 min
Storm duration increment	10 min
Storm recurrence interval	5 and 25 years
Number of Sub-Catchments	42
Number of Routes + Channels	36
Number of Attenuation Structures	2
Total Study Area	3.81
<b>REGIONALISED TRIANGULAR SYNTHETIC DISTRIBUTION PARAMETERS</b>	
Mean annual precipitation	750 mm
Time to peak ratio	0.35
Simulation duration	240 min
Simulation time step	1 min

Please note that the MAP value of 750 mm is prescribed in the JRA Stormwater Management Policy statement.



**4. PRE-DEVELOPMENT CATCHMENT CHARACTERISTICS**

The total size of the study area is 3.81 ha and the pre-developed scenario is considered as an open field.

**Table 4.1**

Sub-Catchment	Area (ha)	Length (m)	Slope (m/m)	% Imp	Dpr Per	Dpr Imp	Inf i	Inf f	'n' Per	'n' Imp
					(mm)		(mm/hr)			
Pre-Developed Combined Property (Erven 1130 & 1131)	2.19	260	.034	5	3	1	45	6	0.1	0.032
Pre-Developed Combined Property (Erven 962 & 963)	1.62	142	.057	5	3	1	45	6	0.1	0.032

Catchment Parameters:

- Depression Storage
  - Medium Slope
  - Pervious – 3.0 mm
  - Impervious – 1.0 mm
- Terrain Infiltration Settings – Loamy Soil (Damp)
  - Initial – 45
  - Final – 6
- Overland Manning Factors – Existing Open Field
  - Pervious Fraction – 0.1
  - Impervious Fraction – 0.032

The calculated Pre-Development Runoff values determined by the HydroCube simulation are summarised below:

Sub Catchment	Q5 (m³/s)	Q25 (m³/s)
Pre-Developed Combined Property (Erven 1130 & 1131)	0.279	0.552
Pre-Developed Combined Property (Erven 962 & 963)	0.311	0.585

These values will be used as the target values for the Stormwater Management Plan at the outlet position.

**5. EXTERNAL SERVICES**

The Bloubos Spruit borders Erven 1130 & 1131 on the eastern side and Erven 962 & 963 on the western side.

Both sites currently drains overland to the Bloubos Spruit.

The proposed attenuation the pre-developed scenario will be simulated and subsequently will not increase the runoff draining towards the Bloubos Spruit.





## **6. STORMWATER MANAGEMENT PLAN**

### **6.1 New Development Layout**

The consolidated erven and building layout entails housing units, open areas, parking and road surfacing, etc. A SDP Layout is included in C2284-SDP-A-001 and C2284-SDP-B-001 for Erven 1130 & 1131 and Erven 962 & 963 respectively, **Annexure B**.

### **6.2 Development Areas and Characteristics**

The catchment will consist of pervious areas for example lawns and general open areas. Impervious areas are combinations of paved and roof areas.

The catchment sizes, parameters and route data are given in **Annexure C**.

Some important assumptions are:

- Each sub-catchment's used an impervious factor of 80%,
- Parking areas are constructed with asphalt and concrete pavers, hence no infiltration is assumed;
- In most cases drainage from catchments are overland to pervious areas. The HydroCube model was built accordingly.

### **6.3 Design Principles**

The JRA Stormwater Management Policy Statement dated 21 June 2006 is used as basis for the management plan. In addition WSUD principles will be incorporated, if not already used.

Certain assumptions and design principles were used to compile the management plan and are listed below:

- Roof runoff is mostly discharged onto pervious areas increasing possible infiltration.
- Existing systems will be utilised to maximum capacity.
- One attenuation structure is planned along the north eastern corner. Volume will be created by excavating the structure with an average depth of 1.5m deep with the embankment side slopes of 1:2. The basin and side slopes will be grassy areas to allow for infiltration and a pipe outlet.
- Emergency overflow will also be provided and is planned along the northern boundaries of each site at the Bloubos Spruit. Refer to the SMP Plan for details.
- All external runoff is diverted from the site and no external runoff has to be accommodated in the internal network.
- The storm water management measures to be implemented in this development must accommodate all the additional storm water to be generated and the post-construction flow from the study area to the adjacent property must remain similar to the pre-construction flow.
- The storm water and rehabilitation was designed to function fully within its core and without a need to buffer, because the internal engineered system can more than accommodate the 1:100-year flood events and ecological systems to be established.



#### **6.4 Internal Stormwater Network Layout**

The SMP is briefly described below. Refer to **Annexure D** for a detailed layout of the SMP (Plan SMP/ORM/2/001).

##### **Catchment 1 – Erven 1130 & 1130**

The sub catchment mainly consists of residential dwellings. The following drainage principles will apply:

- Roof down pipes discharge onto grass areas;
- Drainage occurs overland in a north eastern direction towards an attenuation structure from which it will outlet to Bloubos Spruit.
- A cut-off grass swale must be provided along the eastern boundary of the catchment to drain towards the attenuation structure.
- The southern portion of the catchment drains directly towards the Natural Stream. Sufficient attenuation has been provided at the attenuated areas plus the direct runoff to the Natural Stream is still below the Pre-Developed runoff.

##### **Catchment 2 – Erven 962 & 963**

The sub catchment mainly consists of residential dwellings. The following drainage principles will apply:

- An earth berm will be provided along the southern boundary of the development to prevent drainage of the De Villiers Graaf Motorway to the development.
- Roof down pipes discharge onto grass areas;
- Drainage occurs overland in a north western direction towards an attenuation structure from which it will outlet to Bloubos Spruit.
- A cut-off grass swale must be provided along the western boundary of the catchment to drain towards the attenuation structure.
- The southern portion of the catchment drains directly towards the Natural Stream. Sufficient attenuation has been provided at the attenuated areas plus the direct runoff to the Natural Stream is still below the Pre-Developed runoff.

WSUD principles will be discussed later in the report, but typically the downpipe outlets will drain runoff to garden or grass areas.

Drainage will occur overland to the downstream grass swale and the proposed attenuation structure in the north eastern corner of the catchment.

The Catchment is a combination of buildings, hard surfaces and grass areas.

A final outlet pipe and structure has to be installed from the attenuation structure in the north eastern corner to discharge into the Bloubos Spruit.

#### **6.5 Attenuation Structures**

One attenuation structures is proposed per catchment. It is the intention to utilise existing open grass areas as attenuation areas. Volume will be created by excavating the structure with an average depth of 1.5m deep with the embankment side slopes of 1:2. The basin and side slopes will be grassy areas.

The outlets will consist of pipe outlets according to the sizing indicated from the HydroCube Results.

Table 6.5 below summarises the attenuation structures data.

**Table 6.5**

<b>Structure</b>	<b>Plan Area</b>	<b>Max Depth</b>	<b>Volume</b>	<b>Pipe Outlet Size</b>
RES0001	≈ 508 m <sup>2</sup>	1 m	740 m <sup>3</sup>	450 mm ø
RES0002	≈ 915 m <sup>2</sup>	1 m	525 m <sup>3</sup>	450 mm ø



Refer to typical detail of Attenuation Structure on SDP Plans.

**7 RESULTS OF SIMMULATION**

**7.1 Pipe Sizing**

The HydroCube output results with indicated flows, pipe diameters, etc are included in **Annexure E**. Minimum pipe diameters of 450 mm were used. All diameters were determined for both 1:5 and 1:25 year recurrence periods.

**7.2 Comparison with Pre Developed Flow Values**

The result of the proposed attenuation is compared with the Pre Developed flow values in Table 7.2.

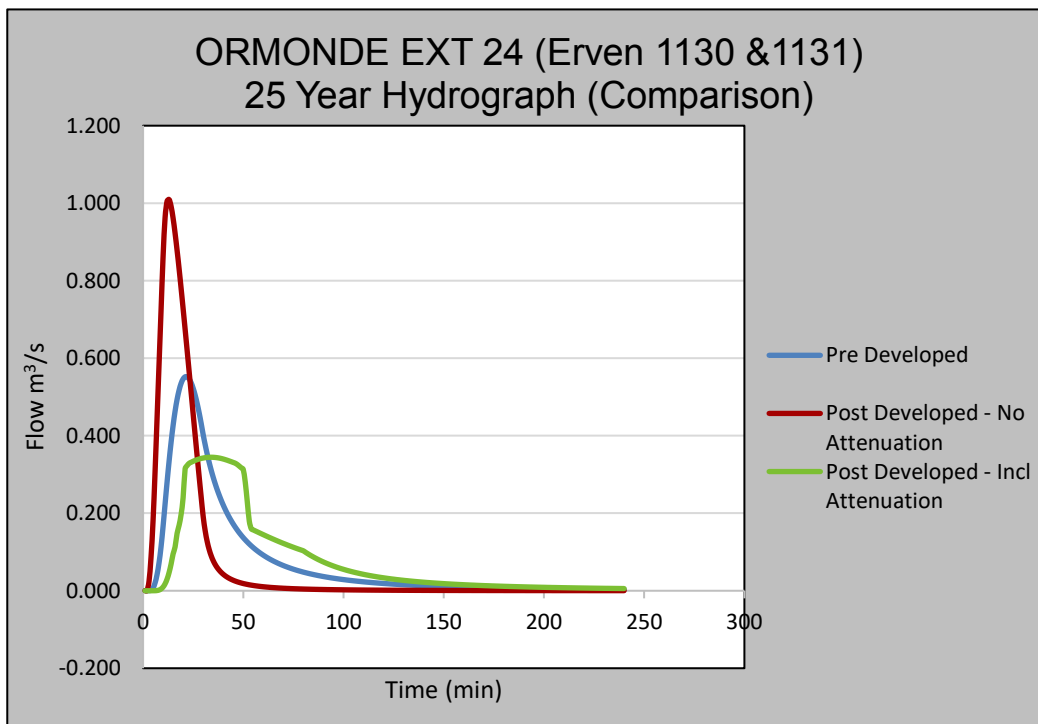
**Table 7.2**

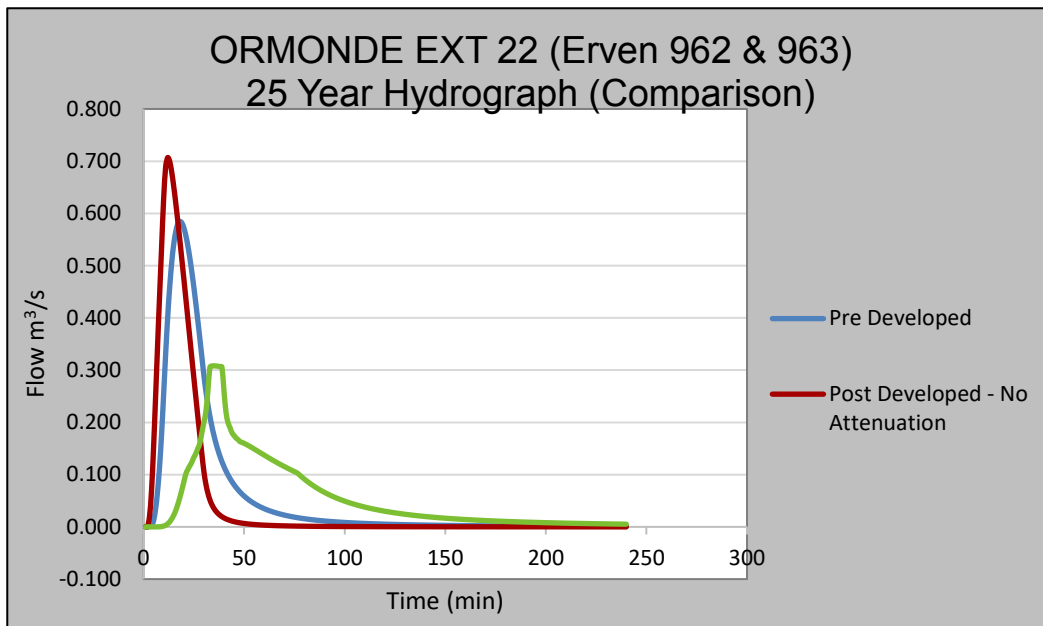
PRE DEVELOPMENT RUNOFF			POST DEVELOPMENT RUNOFF		
	Q5	Q25		Q5	Q25
D1-1 + D1-2	0.59 m <sup>3</sup> /s	1.137 m <sup>3</sup>	R1-1 + R2-1 + R2-17 + D1-19 + D1- 20 + D1-21	0.468 m <sup>3</sup> /s	0.93 m <sup>3</sup>
<b>Q5 PRE &gt; Q5 POST</b> <b>Q25 PRE &gt; Q25 POST</b>					

The total outflow to the municipal system from the development site is less to the pre-developed scenarios. The final outflow to the Natural stream is 0.122 m<sup>3</sup>/s less for the 1:5 year recurrence period and 0.207 m<sup>3</sup>/s less for the 1:25 recurrence period than the pre developed scenario.

The final attenuation structure RES0001 equals 740 m<sup>3</sup> / 2.19 ha = 337 m<sup>3</sup>/ha and 525 m<sup>3</sup> / 1.62 ha = 324 m<sup>3</sup>/ha for RES0002.

Please refer to the graphs below of the final outlet node comparing Pre-Development runoff with Post Non-Attenuated Flow and Post Attenuated Flow. It can be seen that the Post Attenuated Flow is less than the Pre Development flow.





**8. WSUD PRINCIPLES**

In general, existing drainage patterns comply with WSUD principle. Almost all roof drainage is directed to gardens or lawns resulting in infiltration.

The main outlet pipes and channels will be diverted to the attenuation structure that will not only attenuate, but infiltrate runoff.

Where possible all drainage routes will be constructed with grass swales or grass ditches shaped to convey runoff. By implementing these measure maximum infiltration will be achieved.

The proposals above with further reference to other infiltration methods in the report maximise on the WSUD drainage principles.

**9. FLOODLINES**

There are floodlines affecting the development as shown on the SDP and SMP Plans

**10. STORMWATER MANAGEMENT DURING CONSTRUCTION**

Stormwater systems or routes will not be affected during any construction. If necessary diversions to grass areas will be implemented.

**11. CONCLUSION**

We trust the report addresses the requirements for Stormwater Management of the intended rezoning and consolidation of Erven 1130 & 1131 Ormonde Ext 24 and Erven 962 & 963 Ormonde Ext 22, Johannesburg.

Yours faithfully



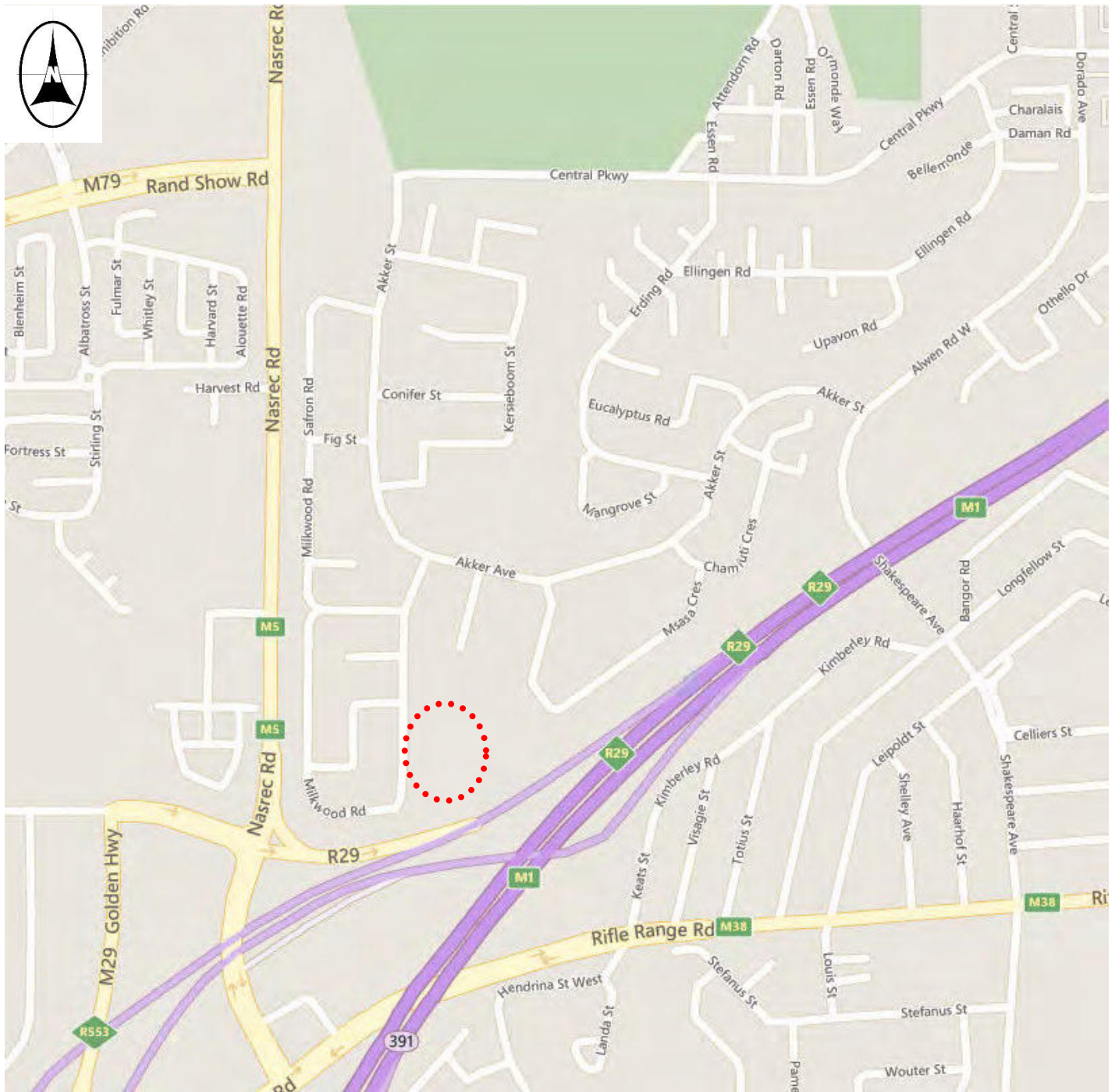
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For CIVIL CONCEPTS (PTY) LTD



**STORMWATER MANAGEMENT REPORT**  
**ERVEN 962 & 963 ORMONDE EXT 22 AND ERVEN 1130 & 1131 ORMONDE EXT 24**  
**OCTOBER 2016**

**Annexures**

**ANNEXURE A**  
**LOCALITY PLAN**

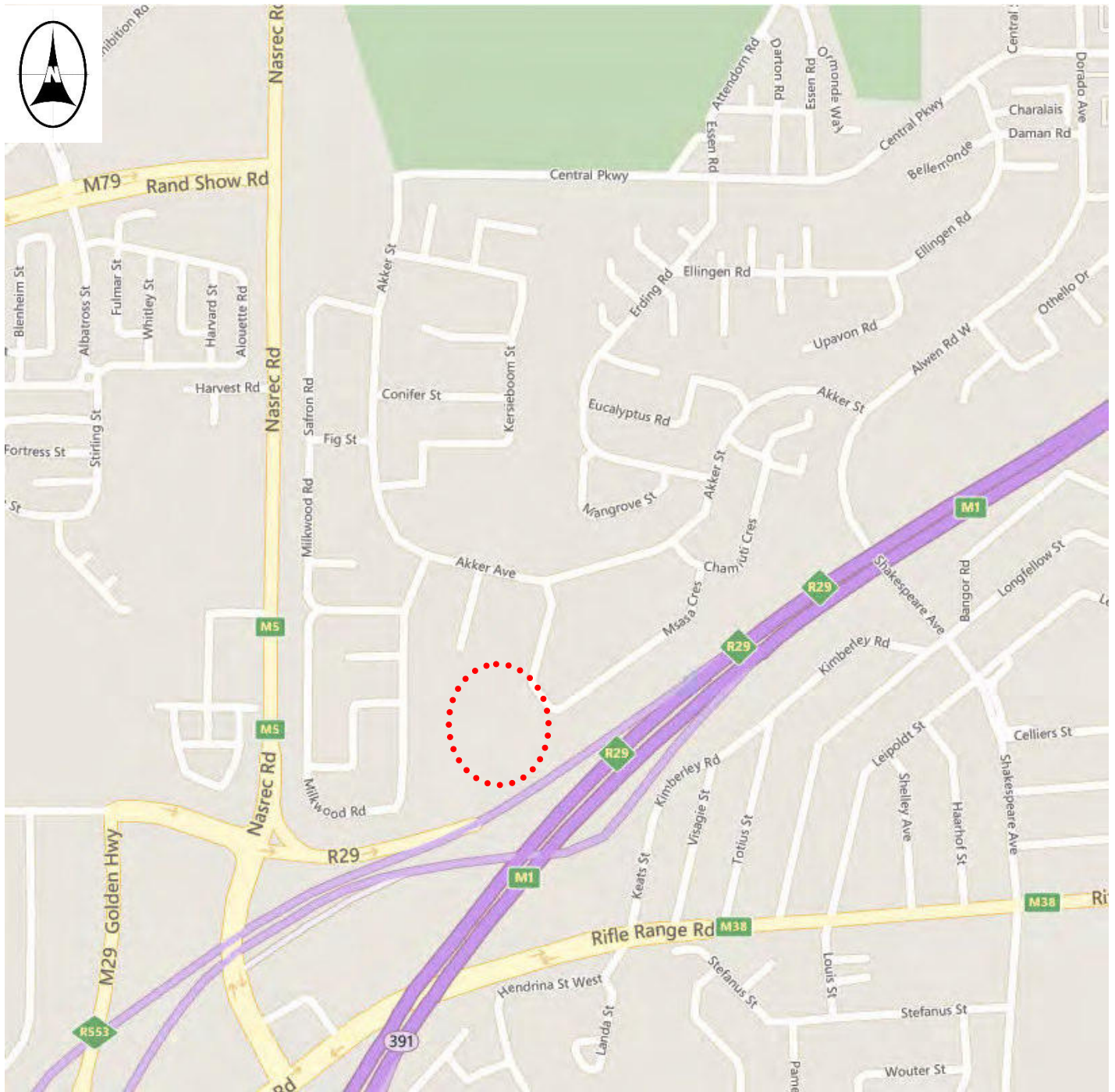


# LOCALITY PLAN

## ORMONDE EXT 24 ERVEN 1130 & 1131







# LOCALITY PLAN

## ORMONDE EXT 22 ERVEN 962 & 963





**STORMWATER MANAGEMENT REPORT**  
**ERVEN 962 & 963 ORMONDE EXT 22 AND ERVEN 1130 & 1131 ORMONDE EXT 24**  
**OCTOBER 2016**

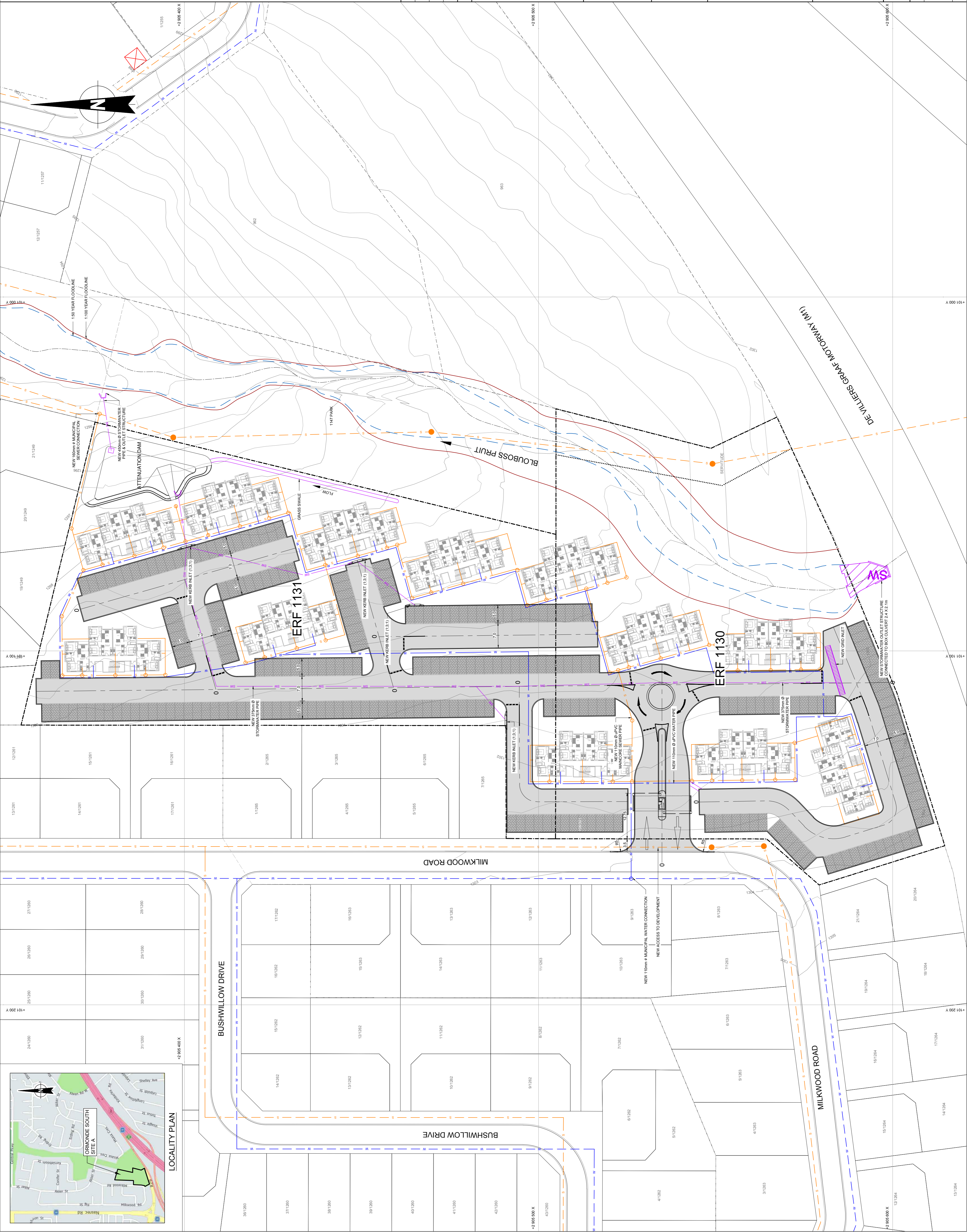
**Annexures**

**ANNEXURE B**  
**SDP / LAYOUT PLANS**

**C2284-SDP-A-001**

**C2284-SDP-B-001**





**GENERAL:**

1. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS REQUIREMENTS.
2. DO NOT SCALE FROM THESE DRAWINGS.
3. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
4. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
5. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
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8. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
9. ALL AREAS AND DIMENSIONS ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY.

**ROADS:**

1. KERBING TO BE AS PER STANDARD DETAIL PLANS A AND B AND SECTION 10 OF VOLUME 1 OF CONTRACT DOCUMENT.
2. ALL DRIVEWAYS MUST COMPLY WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
3. VERTICAL AND HORIZONTAL ALIGNMENT TO FOLLOW THE EXISTING ROAD SURFACE, WITH A MINIMUM CROSS FALL OF 2% (IF APPLICABLE).
4. DRIVEWAYS TO BE FINISHED AS PER ARCHITECTS DETAILS.

**LEGEND:**

- ERF BOUNDARY
- EXISTING ROADS
- NEW ACCESS
- NEW FIG. 7 KERB
- NEW 300mm MOUNTABLE KERB
- 50 YEAR FLOODLINE
- 100 YEAR FLOODLINE
- SEWER
- SEWER MANHOLE
- SEWER CLEANING EYE
- WATER
- WATER VALVE
- STORMWATER

DATE	NO	REVISION

CLIENT

LOCAL AUTHORITY

Civil Concepts (Pty) Ltd  
Consulting Civil & Structural Engineers  
PO Box 36148, Menlo Park, 0102  
Office: +27 12 460 0008  
www.civilconcepts.co.za

PROJECT

**ORMONDE SOUTH**

**SITE A ON ERF 1130 & 1131**

DRAWING TITLE

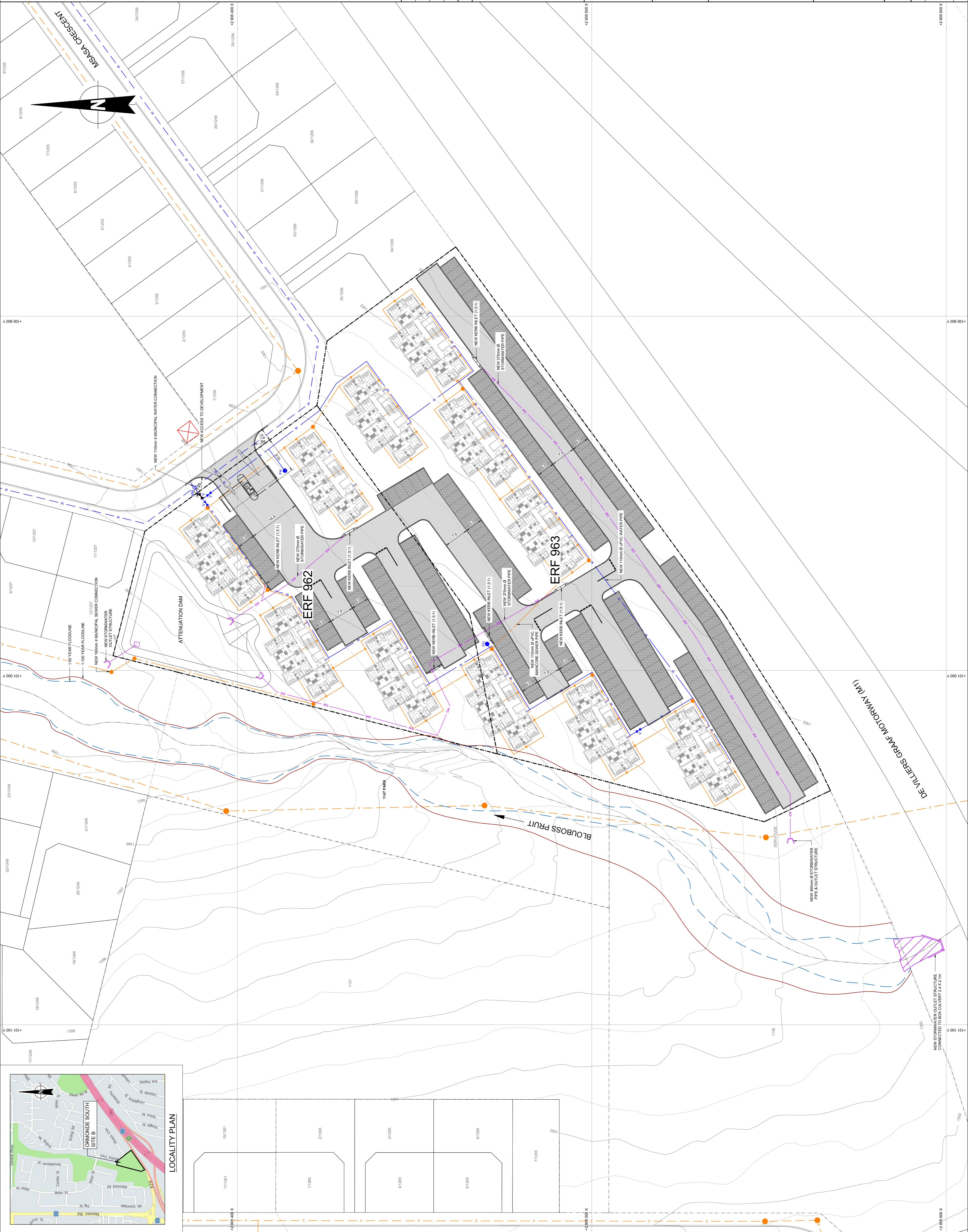
**SITE DEVELOPMENT PLAN**

DRAWING NO	C2284-SDP-A-001
REV. NO	
SCALE	1:500
DATE	OCTOBER 2016
DESIGNED	A. OOSTHUIZEN
DRAWN	A. OOSTHUIZEN
CHECKED	L. ZIETSMAN



LOCALITY PLAN



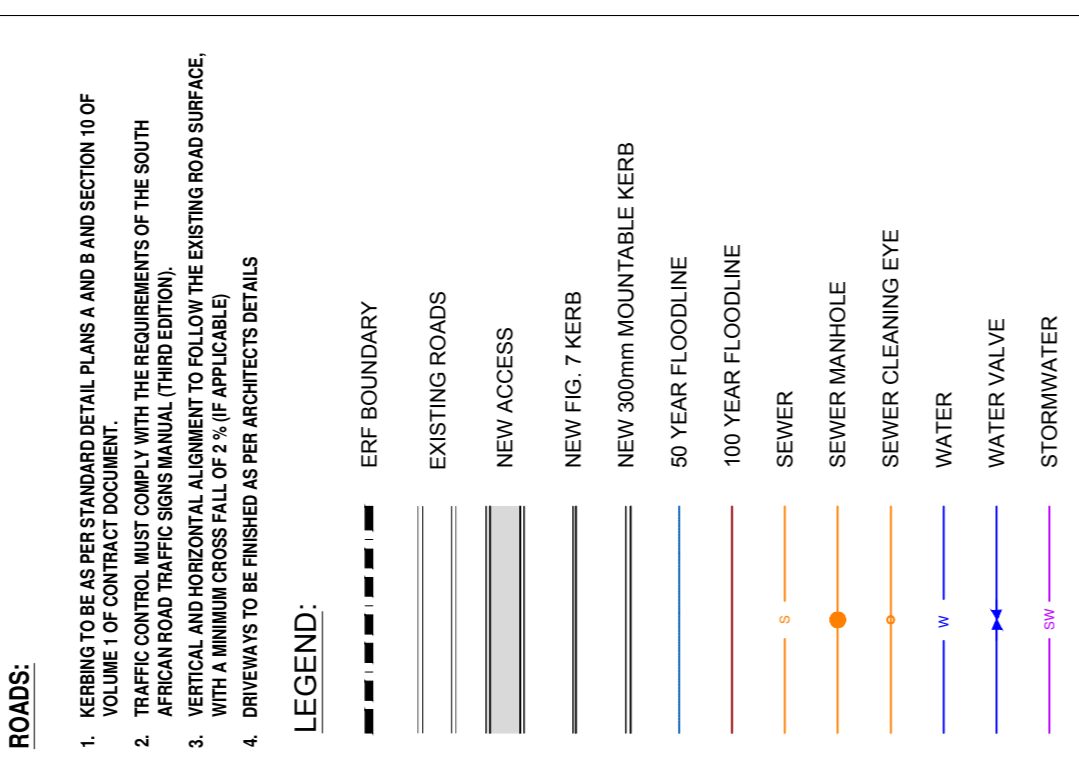


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2. DO NOT SCALE FROM THESE DRAWINGS.
3. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
4. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE STANDARD DRAWING SPECIFICATIONS IN CONNECTION WITH THE STANDARD FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES A.
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6. FINAL POSITION OF SERVICES TO BE DETERMINED ON SITE.
7. ALL AREAS AND DIMENSIONS ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY.

**ROADS:**

1. KERBING TO BE AS PER STANDARD DETAIL PLANS A AND B AND SECTION 10 OF VOLUME 1 OF CONTRACT DOCUMENT.
2. TRAFFIC CONTROL MUST COMPLY WITH THE REQUIREMENTS OF THE SOUTH AFRICAN NATIONAL STANDARD FOR TRAFFIC CONTROL.
3. VERTICAL AND HORIZONTAL ALIGNMENT TO FOLLOW THE EXISTING ROAD SURFACE, WITH A MINIMUM CROSS FALL OF 2% (IF APPLICABLE).
4. DRIVEWAYS TO BE FINISHED AS PER ARCHITECTS DETAILS.



DATE	NO	REVISION

CLIENT

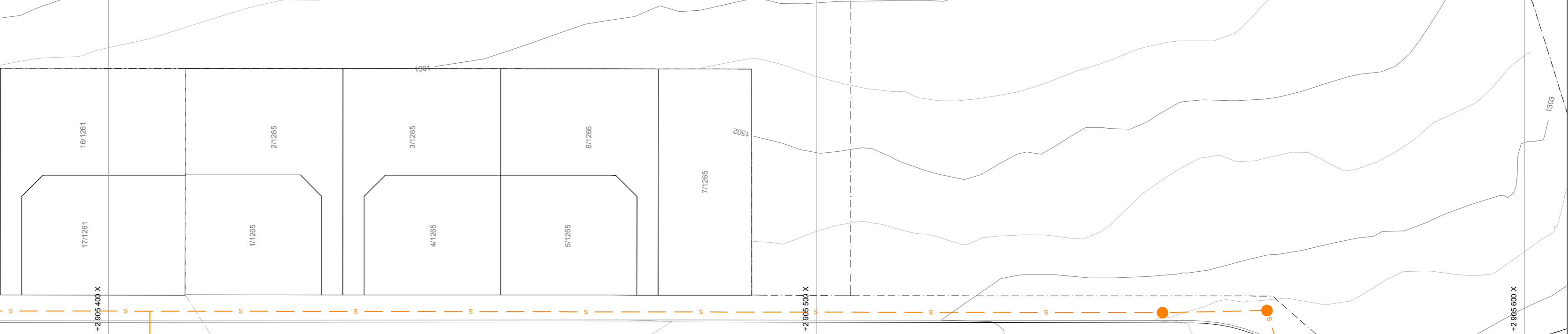
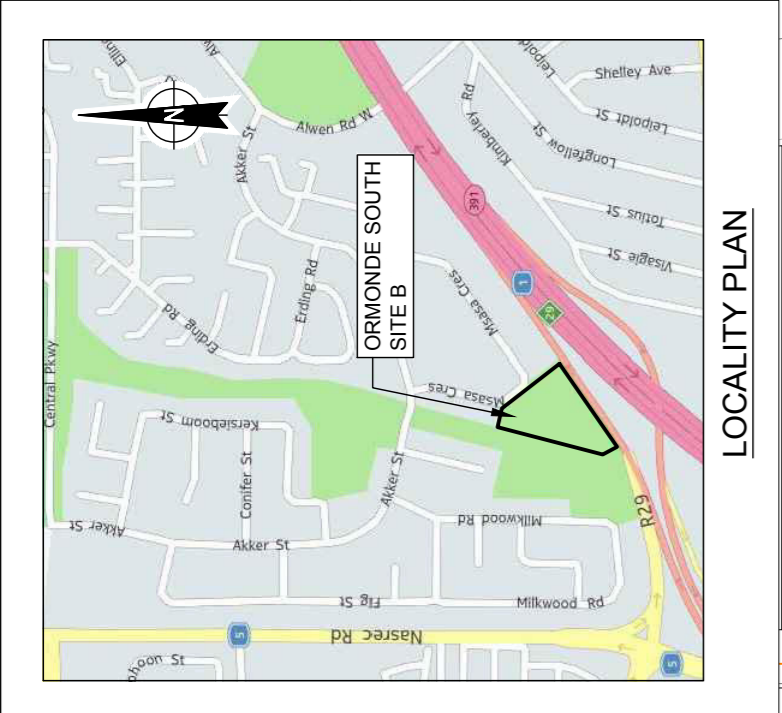
LOCAL AUTHORITY

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 Consulting Civil & Structural Engineers  
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 Office: +27 12 460 0008  
 www.civilconcepts.co.za

PROJECT  
**ORMONDE SOUTH**  
**SITE B ON ERF**  
**962 & 963**

DRAWING TITLE  
**SITE DEVELOPMENT PLAN**

DRAWING NO	C2284-SDP-B-001
REV/NO	
SCALE	1:500
DATE	OCTOBER 2016
DESIGNED	A. OOSTHUIZEN
DRAWN	A. OOSTHUIZEN
CHECKED	L. ZIETSMAN







**ANNEXURE C**  
**CATCHMENT, PIPE**  
**AND CHANNEL**  
**DATA**

Project: ORMONDE

Total Area: 3.81

StormShape: Triangular

M.A.P:750

Catchment	Drain To	Area	Length	Slope	% Imp	% FutImp	Depr	Depr	Infil i	Infil f	n	n
		(Ha)	(M)	(m/m)			Imp	Per	(mm/hr)	(mm/hr)	Per	Imp
D1-1	RES0001	0.06	29.00	0.0760	80	80	1.0	3.0	45	6	0.150	0.020
D1-10	R1-10	0.18	61.00	0.0320	80	80	1.0	3.0	45	6	0.150	0.020
D1-11	R1-11	0.10	51.00	0.0420	80	80	1.0	3.0	45	6	0.150	0.020
D1-12	D1-9	0.06	40.00	0.0360	80	80	1.0	3.0	45	6	0.150	0.020
D1-13	R1-13	0.05	29.00	0.0540	80	80	1.0	3.0	45	6	0.150	0.020
D1-14	R1-14	0.08	54.00	0.0170	80	80	1.0	3.0	45	6	0.150	0.020
D1-15	R1-6	0.26	84.00	0.0120	80	80	1.0	3.0	45	6	0.150	0.020
D1-16	D1-3	0.17	59.00	0.0350	80	80	1.0	3.0	45	6	0.150	0.020
D1-17	R1-17	0.08	29.00	0.0550	80	80	1.0	3.0	45	6	0.150	0.020
D1-18	R1-18	0.09	18.00	0.0360	80	80	1.0	3.0	45	6	0.150	0.020
D1-19	<END>	0.10	59.00	0.0220	80	80	1.0	3.0	45	6	0.150	0.020
D1-2	D1-1	0.07	42.00	0.0480	80	80	1.0	3.0	45	6	0.150	0.020
D1-20	<END>	0.09	57.00	0.0310	80	80	1.0	3.0	45	6	0.150	0.020
D1-21	<END>	0.02	17.00	0.0400	80	80	1.0	3.0	45	6	0.150	0.020
D1-3	R1-3	0.06	43.00	0.0310	80	80	1.0	3.0	45	6	0.150	0.020
D1-4	D1-1	0.06	28.00	0.0340	80	80	1.0	3.0	45	6	0.150	0.020
D1-5	R1-5	0.25	34.00	0.0520	80	80	1.0	3.0	45	6	0.150	0.020
D1-6	R1-6	0.16	82.00	0.0130	80	80	1.0	3.0	45	6	0.150	0.020
D1-7	R1-7	0.11	41.00	0.0320	80	80	1.0	3.0	45	6	0.150	0.020
D1-8	R1-8	0.04	35.00	0.0320	80	80	1.0	3.0	45	6	0.150	0.020
D1-9	R1-9	0.11	42.00	0.0370	80	80	1.0	3.0	45	6	0.150	0.020
D2-1	RES0002	0.12	36.00	0.0620	80	80	1.0	3.0	45	6	0.150	0.020
D2-10	R2-10	0.03	30.00	0.0510	80	80	1.0	3.0	45	6	0.150	0.020
D2-11	R2-11	0.15	49.00	0.0380	80	80	1.0	3.0	45	6	0.150	0.020
D2-12	R2-12	0.14	49.00	0.0580	80	80	1.0	3.0	45	6	0.150	0.020
D2-13	R2-13	0.03	31.00	0.0480	80	80	1.0	3.0	45	6	0.150	0.020
D2-14	R2-14	0.08	30.00	0.0550	80	80	1.0	3.0	45	6	0.150	0.020
D2-15	R2-15	0.11	30.00	0.0640	80	80	1.0	3.0	45	6	0.150	0.020
D2-16	D2-1	0.06	30.00	0.0620	80	80	1.0	3.0	45	6	0.150	0.020
D2-17	R2-17	0.10	48.00	0.0220	80	80	1.0	3.0	45	6	0.150	0.020
D2-18	R2-18	0.05	32.00	0.0300	80	80	1.0	3.0	45	6	0.150	0.020
D2-19	R2-18	0.06	28.00	0.0310	80	80	1.0	3.0	45	6	0.150	0.020
D2-2	R2-2	0.12	38.00	0.0780	80	80	1.0	3.0	45	6	0.150	0.020
D2-20	R2-20	0.06	31.00	0.0380	80	80	1.0	3.0	45	6	0.150	0.020
D2-21	R2-21	0.05	30.00	0.0400	80	80	1.0	3.0	45	6	0.150	0.020
D2-3	R2-3	0.07	31.00	0.0430	80	80	1.0	3.0	45	6	0.150	0.020
D2-4	R2-4	0.07	27.00	0.0580	80	80	1.0	3.0	45	6	0.150	0.020
D2-5	R2-5	0.07	27.00	0.0450	80	80	1.0	3.0	45	6	0.150	0.020
D2-6	R2-6	0.09	40.00	0.0370	80	80	1.0	3.0	45	6	0.150	0.020
D2-7	R2-7	0.04	25.00	0.0710	80	80	1.0	3.0	45	6	0.150	0.020
D2-8	R2-8	0.08	40.00	0.0450	80	80	1.0	3.0	45	6	0.150	0.020
D2-9	R2-9	0.05	26.00	0.0410	80	80	1.0	3.0	45	6	0.150	0.020

Project: ORMONDE

Total Area: 3.81

StormShape: Triangular

M.A.P:750

Pipe	Drain	Overflow	Diameter	Length	Slope	Mannings	Kerb Eff	Max Cap
			(m)	(m)	(m/m)		(m3/s)	(m3/s)
R1-1	<END>	<NONE>	0.450	19	0.1110	0.0120	100	1.11
R1-10	R1-9	<NONE>	0.450	11	0.0080	0.0120	100	0.30
R1-11	R1-10	<NONE>	0.450	38	0.0200	0.0120	100	0.47
R1-13	R1-5	<NONE>	0.450	49	0.0190	0.0120	100	0.46
R1-14	R1-13	<NONE>	0.450	20	0.0430	0.0120	100	0.69
R1-5	RES0001	<NONE>	0.450	16	0.0680	0.0120	100	0.87
R1-6	R1-5	<NONE>	0.450	40	0.0550	0.0120	100	0.78
R1-7	R1-6	<NONE>	0.450	85	0.0080	0.0120	100	0.30
R1-8	R1-7	<NONE>	0.450	9	0.0480	0.0120	100	0.73
R1-9	R1-7	<NONE>	0.450	40	0.0080	0.0120	100	0.30
R2-0	RES0002	<NONE>	0.450	10	0.0900	0.0120	100	1.00
R2-1	<END>	<NONE>	0.450	24	0.0680	0.0120	100	0.87
R2-10	R2-8-1	<NONE>	0.450	13	0.0580	0.0120	100	0.80
R2-11	R2-8-1	<NONE>	0.450	8	0.0550	0.0120	100	0.78
R2-12	R2-0	<NONE>	0.450	5	0.0560	0.0120	100	0.79
R2-13	R2-0	<NONE>	0.450	26	0.0760	0.0120	100	0.92
R2-17	<END>	<NONE>	0.450	9	0.0210	0.0120	100	0.48
R2-18	R2-17	<NONE>	0.450	52	0.0150	0.0120	100	0.41
R2-19	R2-18	<NONE>	0.450	36	0.0150	0.0120	100	0.41
R2-2	RES0002	<NONE>	0.450	5	0.0450	0.0120	100	0.70
R2-2-1	R2-2	<NONE>	0.450	18	0.0480	0.0120	100	0.73
R2-20	R2-19	<NONE>	0.450	31	0.0120	0.0120	100	0.36
R2-21	R2-20	<NONE>	0.450	33	0.0120	0.0120	100	0.36
R2-3	R2-2-1	<NONE>	0.450	29	0.0470	0.0120	100	0.72
R2-8	R2-3	<NONE>	0.450	21	0.0430	0.0120	100	0.69
R2-8-1	R2-8	<NONE>	0.450	20	0.0650	0.0120	100	0.85

Project: ORMONDE

Total Area: 3.81

StormShape: Triangular

M.A.P:750

Channel	Drain To	Overflow to	Bottom Width (m)	L-Slope (m/m)	R-Slope (m/m)	Height (m)	Length (m)	Slope (m/m)	Manning	KerbInflow Rate (m3/s)	KerbInflow Eff	Max Cap (m3/s)
R1-17	RES0001	<NONE>	0.30	1.0000	1.0000	0.50	25	0.0340	0.070	0.399	100	0.40
R1-18	R1-17	<NONE>	0.30	1.0000	1.0000	0.50	34	0.0340	0.070	0.399	100	0.40
R1-3	RES0001	<NONE>	0.30	1.0000	1.0000	0.50	49	0.0560	0.070	0.513	100	0.51
R2-14	D2-13	<NONE>	0.30	1.0000	1.0000	0.50	24	0.0180	0.070	0.291	100	0.29
R2-15	D2-11	<NONE>	0.30	1.0000	1.0000	0.50	26	0.0100	0.070	0.217	100	0.22
R2-4	R2-3	<NONE>	0.30	1.0000	1.0000	0.50	30	0.0340	0.070	0.399	100	0.40
R2-5	R2-4	<NONE>	0.30	1.0000	1.0000	0.50	34	0.0300	0.070	0.375	100	0.38
R2-6	R2-5	<NONE>	0.30	1.0000	1.0000	0.50	21	0.0340	0.070	0.399	100	0.40
R2-7	R2-2-1	<NONE>	0.30	1.0000	1.0000	0.50	21	0.0250	0.070	0.342	100	0.34
R2-9	R2-4	<NONE>	0.30	1.0000	1.0000	0.50	21	0.0250	0.070	0.342	100	0.34



**STORMWATER MANAGEMENT REPORT**  
**ERVEN 962 & 963 ORMONDE EXT 22 AND ERVEN 1130 & 1131 ORMONDE EXT 24**  
**OCTOBER 2016**

**Annexures**

**ANNEXURE D**  
**SMP PLAN**

**SMP/ORM/2/001**



NOTES:

1. RUN-OFF CALCULATION PERFORMED WITH HYDROCUBE COMPUTER PROGRAM, USING THE FOLLOWING CONSTANTS:

- a) RETURN PERIOD:
  - MAJOR SYSTEM : 25 YR
  - MINOR SYSTEM : 5 YR
- b) MAP = 750 mm
- c) % IMPERVIOUSNESS:
  - RESIDENTIAL : 80%
  - ROADS : 80%

LEGEND

- 50 YEAR FLOODLINE
- 100 YEAR FLOODLINE
- RIVER
- STORMWATER NODES
- STORMWATER ROUTES
- GRASS SWALES
- SUB CATCHMENTS
- ATTENUATION POND

0	10/2016	FIRST ISSUE
REVISION		
CLIENT		

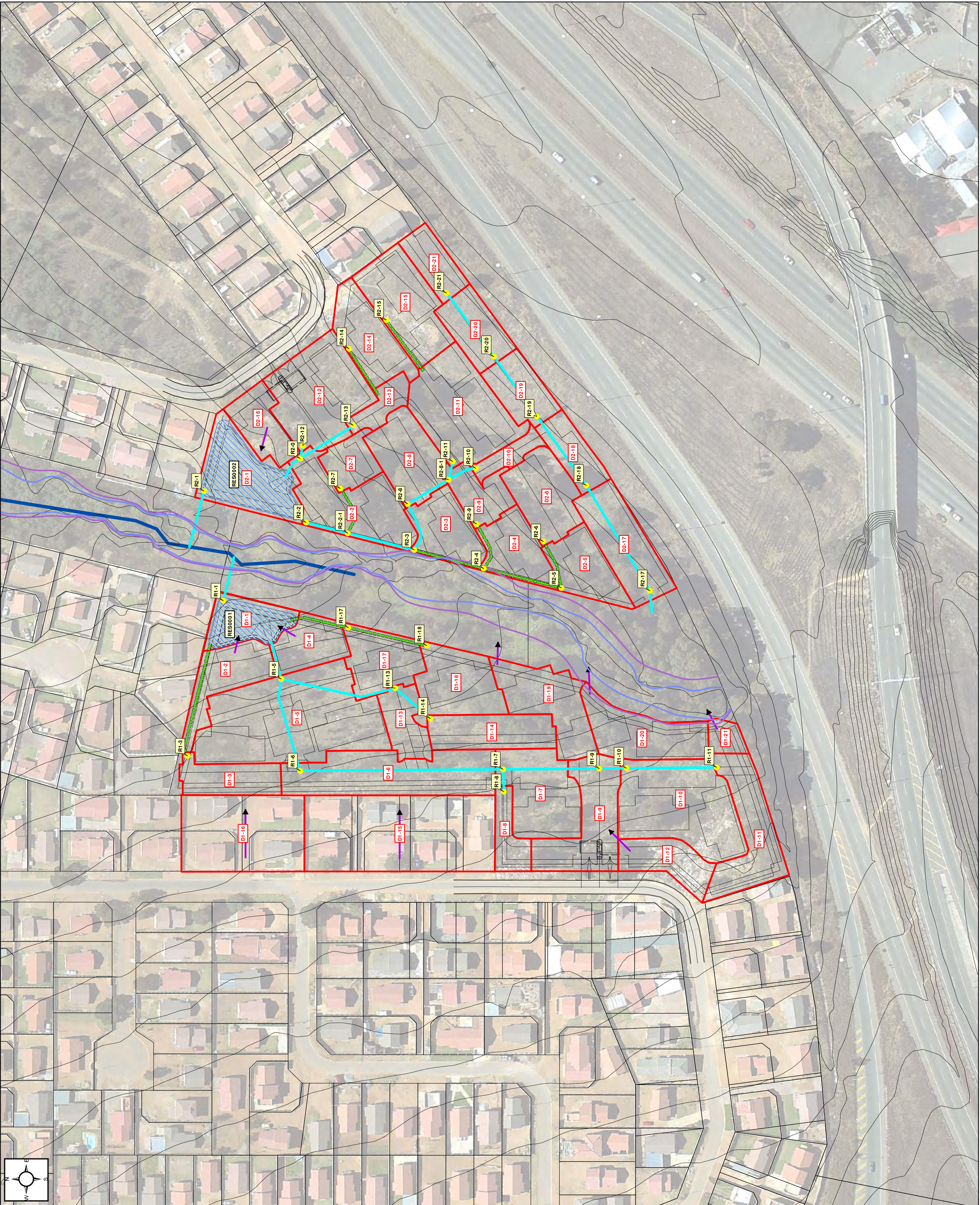
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PROJECT  
STORMWATER MASTER PLANNING

TOWNSHIP  
ERVEN 962 & 963 ORMONDE EXT 22  
ERVEN 1130 & 1131 ORMONDE EXT 24

DRAWING NO	SMP/FORM/2/001
SCALE 1 : 1 000	DESIGNED W STANDER
	DRAWN T VAN NIEKERK
	CHECKED W STANDER







**STORMWATER MANAGEMENT REPORT**  
**ERVEN 962 & 963 ORMONDE EXT 22 AND ERVEN 1130 & 1131 ORMONDE EXT 24**  
**OCTOBER 2016**

**Annexures**

**ANNEXURE E**  
**5 / 25 YEAR RUNOFF DATA**

Project :ORMONDE SMP

Total Area: 3.81

StormShape:Triangular

M.A.P:750

Recurrence Interval:5(yrs)

Pipe	InletPeak	Peakflow	Capacity	Auto	Required	Velocity	Storage	Excess-Q	Storm
No	(m3/sec)	(m3/sec)	(m3/sec)		Diameter(m)	(m/sec)	(m3)	(m3/sec)	Duration(min)
R1-1	0.000	0.166	1.107	Y	0.450	4.75	0	0.00	60
R1-10	0.060	0.098	0.297	Y	0.450	1.57	0	0.00	20
R1-11	0.037	0.037	0.470	Y	0.450	1.67	0	0.00	20
R1-13	0.019	0.044	0.458	Y	0.450	1.71	0	0.00	20
R1-14	0.025	0.025	0.689	Y	0.450	1.95	0	0.00	20
R1-5	0.099	0.463	0.866	Y	0.450	5.18	0	0.00	20
R1-6	0.117	0.325	0.779	Y	0.450	4.42	0	0.00	20
R1-7	0.040	0.213	0.297	Y	0.450	1.90	0	0.00	20
R1-8	0.014	0.014	0.728	Y	0.450	1.73	0	0.00	20
R1-9	0.062	0.160	0.297	Y	0.450	1.79	0	0.00	20
R2-0	0.000	0.097	0.997	Y	0.450	3.76	0	0.00	20
R2-1	0.000	0.117	0.866	Y	0.450	3.60	0	0.00	60
R2-10	0.010	0.010	0.014	Y	0.100	1.86	0	0.00	20
R2-11	0.095	0.095	0.779	Y	0.450	3.12	0	0.00	20
R2-12	0.053	0.053	0.786	Y	0.450	2.67	0	0.00	20
R2-13	0.044	0.044	0.916	Y	0.450	2.79	0	0.00	20
R2-17	0.035	0.116	0.481	Y	0.450	2.36	0	0.00	20
R2-18	0.041	0.082	0.407	Y	0.450	1.86	0	0.00	20
R2-19	0.000	0.042	0.407	Y	0.450	1.53	0	0.00	20
R2-2	0.047	0.323	0.705	Y	0.450	4.06	0	0.00	20
R2-2-1	0.000	0.277	0.728	Y	0.450	3.99	0	0.00	20
R2-20	0.024	0.042	0.364	Y	0.450	1.42	0	0.00	20
R2-21	0.018	0.018	0.364	Y	0.450	1.10	0	0.00	20
R2-3	0.028	0.261	0.720	Y	0.450	3.89	0	0.00	20
R2-8	0.032	0.136	0.689	Y	0.450	3.18	0	0.00	20
R2-8-1	0.000	0.105	0.847	Y	0.450	3.41	0	0.00	20

Project :ORMONDE SMP

Total Area: 3.81

StormShape:Triangular

M.A.P:750

Recurrence Interval:5(yrs)

Channel No	Peakflow (m3/sec)	Capacity (m3/sec)	Auto	HR-Factor	Rating	Chan-Depth (m)	Flow-Depth (m)	Chan-Width (m)	Velocity (m/sec)	Storage (m3)	Excess-Q (m3/sec)	Storm Duration(Min)
R1-17	0.065	0.066	Y	9	Low	0.21	0.205	0.30	0.44	0.00	0.00	20
R1-18	0.037	0.038	Y	5	Low	0.15	0.153	0.30	0.41	0.00	0.00	20
R1-3	0.077	0.078	Y	11	Low	0.20	0.198	0.30	0.57	0.00	0.00	20
R2-14	0.032	0.033	Y	5	Low	0.17	0.168	0.30	0.30	0.00	0.00	20
R2-15	0.041	0.044	Y	6	Low	0.23	0.229	0.30	0.25	0.00	0.00	20
R2-4	0.100	0.101	Y	13	Low	0.26	0.257	0.30	0.48	0.00	0.00	20
R2-5	0.057	0.058	Y	8	Low	0.20	0.199	0.30	0.42	0.00	0.00	20
R2-6	0.031	0.031	Y	5	Low	0.14	0.138	0.30	0.39	0.00	0.00	20
R2-7	0.016	0.017	Y	2	Low	0.11	0.106	0.30	0.31	0.00	0.00	20
R2-9	0.019	0.020	Y	3	Low	0.12	0.116	0.30	0.32	0.00	0.00	20

Project :ORMONDE SMP

Total Area: 3.81

StormShape:Triangular

M.A.P:750

Recurrence Interval:25(yrs)

Pipe	InletPeak	Peakflow	Capacity	Auto	Required	Velocity	Storage	Excess-Q	Storm
No	(m3/sec)	(m3/sec)	(m3/sec)		Diameter(m)	(m/sec)	(m3)	(m3/sec)	Duration(min)
R1-1	0.00	0.34	1.107	Y	0.450	5.82	0	0.00	40
R1-10	0.09	0.14	0.297	Y	0.450	1.74	0	0.00	30
R1-11	0.05	0.05	0.470	Y	0.450	1.86	0	0.00	30
R1-13	0.03	0.07	0.458	Y	0.450	1.92	0	0.00	30
R1-14	0.04	0.04	0.689	Y	0.450	2.21	0	0.00	30
R1-5	0.14	0.70	0.866	Y	0.450	5.70	0	0.00	30
R1-6	0.19	0.50	0.779	Y	0.450	4.89	0	0.00	30
R1-7	0.06	0.31	0.448	Y	0.525	2.10	0	0.00	30
R1-8	0.02	0.02	0.728	Y	0.450	1.89	0	0.00	30
R1-9	0.09	0.24	0.297	Y	0.450	1.94	0	0.00	30
R2-0	0.00	0.14	0.997	Y	0.450	4.18	0	0.00	30
R2-1	0.00	0.31	0.866	Y	0.450	4.73	0	0.00	50
R2-10	0.01	0.01	0.014	Y	0.100	1.96	0	0.00	30
R2-11	0.14	0.14	0.779	Y	0.450	3.48	0	0.00	30
R2-12	0.08	0.08	0.786	Y	0.450	2.98	0	0.00	30
R2-13	0.06	0.06	0.916	Y	0.450	3.11	0	0.00	30
R2-17	0.05	0.17	0.481	Y	0.450	2.61	0	0.00	30
R2-18	0.06	0.12	0.407	Y	0.450	2.10	0	0.00	30
R2-19	0.00	0.06	0.407	Y	0.450	1.73	0	0.00	30
R2-2	0.07	0.47	0.705	Y	0.450	4.46	0	0.00	30
R2-2-1	0.00	0.41	0.728	Y	0.450	4.41	0	0.00	30
R2-20	0.03	0.06	0.364	Y	0.450	1.60	0	0.00	30
R2-21	0.02	0.02	0.364	Y	0.450	1.24	0	0.00	30
R2-3	0.04	0.38	0.720	Y	0.450	4.31	0	0.00	30
R2-8	0.05	0.20	0.689	Y	0.450	3.53	0	0.00	30
R2-8-1	0.00	0.15	0.847	Y	0.450	3.80	0	0.00	30

Project :ORMONDE SMP

Total Area: 3.81

StormShape:Triangular

M.A.P:750

Recurrence Interval:25(yrs)

Channel No	Peakflow (m3/sec)	Capacity (m3/sec)	Auto	HR-Factor	Rating	Chan-Depth (m)	Flow-Depth (m)	Chan-Width (m)	Velocity (m/sec)	Storage (m3)	Excess-Q (m3/sec)	Storm Duration(Min)
R1-17	0.093	0.095	Y	12	Low	0.25	0.248	0.30	0.47	0.00	0.00	30
R1-18	0.052	0.054	Y	7	Low	0.18	0.184	0.30	0.43	0.00	0.00	30
R1-3	0.115	0.116	Y	15	Low	0.24	0.242	0.30	0.61	0.00	0.00	30
R2-14	0.046	0.046	Y	6	Low	0.20	0.202	0.30	0.32	0.00	0.00	30
R2-15	0.060	0.062	Y	8	Low	0.27	0.273	0.30	0.26	0.00	0.00	30
R2-4	0.147	0.148	Y	17	Low	0.31	0.311	0.30	0.51	0.00	0.00	30
R2-5	0.083	0.085	Y	11	Low	0.24	0.242	0.30	0.45	0.00	0.00	30
R2-6	0.045	0.046	Y	6	Low	0.17	0.169	0.30	0.42	0.00	0.00	30
R2-7	0.023	0.024	Y	3	Low	0.13	0.129	0.30	0.33	0.00	0.00	30
R2-9	0.027	0.028	Y	4	Low	0.14	0.140	0.30	0.34	0.00	0.00	30



# **Appendix H**

Environmental Management  
Programme

**Environmental Management Programme  
(EMPr)**

For the Proposed Ormonde South Residential

on Erven 1130 & 1131, Ormonde Ext 24 and Erven 962 & 963,  
Ormonde Ext 22 and Bloubos Spruit (Erf 1147)

City of Johannesburg Metropolitan Municipality, Gauteng  
Province.

**February 2017**

**BOKAMOSO**

LANDSCAPE ARCHITECTS AND ENVIRONMENTAL CONSULTANTS CC

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## **1 Project Outline**

### **1.1 Background**

Bokamoso Landscape Architects and Environmental Consultants CC were appointed by Matla Projects (Pty) Ltd to conduct a Basic Assessment Application to obtain Environmental Authorisation for the proposed Ormonde South Residential development.

### **1.2 Project description**

The Proposed Ormonde South Residential development will be situated on Erven 1130 & 1131, Ormonde Ext 24 and Erven 962 & 963, Ormonde Ext 22 and Bloubos Spruit (Erf 1147), City of Johannesburg Metropolitan Municipality, Gauteng Province.

An Environmental Authorisation process is underway in order to obtain authorisation to develop a residential development.

#### **Timeframe for construction:**

Will be provided when Environmental Authorisation is received. Therefore the timeframe for construction is still unknown.

The developer will be responsible for the on-site activities. The EMPr will be a binding document for purposes of compliance.

### **1.3 Receiving Environment**

#### **Biodiversity:**

- The proposed study area falls within the Ecological Support Area which is dominated by the Soweto Highveld Grassland. However, the site has been heavily invaded by alien invasive trees.



- Majority of the study area is regarded as degraded with some illegal dumping taking place. The dumped waste stockpile material is also visible from the M1 Highway and this is also a negative impact to the environment.

**Hydrology:**

- A wetland/ watercourse occur within the study area.
- The study area is affected by floodlines.
- The wetland/ watercourse occurs in the middle of the site.

**Cultural /Historical:**

- No cultural heritage resources are expected to be present on the proposed development area.

**Visual:**

- The proposed development will be visible from the M1 Highway (to the north of M1 Highway).

## **2 EMPr Objectives and context**

**Objectives**

The objectives of this plan are to:

- Identify the possible environmental impacts of the proposed activity;
- Develop measures to minimise, mitigate and manage these impacts;
- Meet the requirements of the Environmental Authorisation of GDARD and requirements of other authorities; and
- Monitor the project.

## **EMPr context**

This EMPr fits into the overall planning process of the project by carrying out the conditions of consent set out by the Gauteng Department of Agriculture and Rural Development.

This EMPr addresses the following three phases of the development:

- Pre-construction planning phase;
- Construction phase; and
- Operational phase.

## **3 Monitoring**

In order for the EMPr to be successfully implemented all the role players involved must have a clear understanding of their roles and responsibilities in the project.

These role players may include the Authorities (A), other Authorities (OA), Developer/ Proponent (D), Environmental Control Officer (ECO), Construction Manager (CM), Contractors (Principal)(C), Environmental Assessment Practitioner (EAP) and Environmental Site Officer (ESO). Landowners, Interested and Affected Parties (I&APs) and the relevant environmental and project specialists are also important role players.

### **3.1 Roles and responsibilities**

#### **Developer (D)**

The developer is ultimately accountable for ensuring compliance with the EMPr and conditions contained in the Environmental Authorisation. The developer must appoint an independent Environmental Control Officer (ECO), for the duration of the pre-construction and construction phases, to ensure compliance with the

requirements of this EMPr. The developer must ensure that the ECO is integrated as part of the project team.

### **Construction Manager (CM)**

The Construction Manager is responsible for the coordination of various activities and ensures compliance with this EMPr through delegation of the EMPr to the contractors and monitoring of performance as per the Environmental Control Officer's monthly reports.

### **Environmental Control Officer (ECO)**

An independent Environmental Control Officer (ECO) shall be appointed, for the duration of the pre-construction and construction phases of the development, by the developer to ensure compliance with the requirements of this EMPr.

- The Environmental Control Officer shall ensure that the contractor is aware of all the specifications pertaining to the project.
- Any damage to the environment must be repaired as soon as possible after consultation between the Environmental Control Officer, Consulting Engineer and Contractor.
- The Environmental Control Officer shall ensure that the developer staff and/or contractor are adhering to all stipulations of the EMPr.
- The Environmental Control Officer shall be responsible for monitoring the EMP throughout the project by means of site visits and meetings. This should be documented as part of the site meeting minutes.
- The Environmental Control Officer shall be responsible for the environmental training program.
- The Environmental Control Officer shall ensure that all clean up and rehabilitation or any remedial action required, are completed prior to transfer of properties.

- A post construction environmental audit is to be conducted to ensure that all conditions in the EMPr have been adhered to.

**Principal Contractor (C):**

The Principal contractor shall be responsible for ensuring that all activities on site are undertaken in accordance with the environmental provisions detailed in this document and that the sub-contractors and laborers are duly informed of their roles and responsibilities in this regard.

The Principal Contractor will be required, where specified to provide method statements setting out in detail how the management actions contained in the EMPr will be implemented.

The Principal Contractors will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the environmental regulations.

**Environmental Site Officer (ESO):**

The ESO is appointed by the developer and then finally the home owner as his/her environmental representative to monitor, review and verify compliance with the EMPr by the contractor. The ESO is not an independent appointment but must be a member of the contractor's management team. The ESO must ensure that he/she is involved at all phases of the construction (from site clearance to rehabilitation). For this project, the Health and Safety Officer on site will also take the responsibility of the Environmental Site Officer. This individual should convey any queries or concerns the ECO has.

**Authority (A):**

The authorities are the relevant environmental department that has issued the Environmental Authorisation. The authorities are responsible for ensuring that the monitoring of the EMPr and other authorisation documentation is carried out by means of reviewing audit reports submitted by the ECO and conducting regular site visits.

**Other Authorities (OA):**

Other authorities are those that may be involved in the approval process of the EMPr.

**Environmental Assessment Practitioner (EAP):**

According to Section 1 of NEMA the definition of an Environmental Assessment Practitioner is "the individual responsible for the planning, management and coordination of Environmental Impact Assessments, Strategic Environmental Assessments, Environmental Management Programmes or any other appropriate environmental instruments through regulations".

**3.2 Lines of Communication**

The Environmental Control Officer in writing should immediately report any breach of the EMPr to the Project Manager. The Project Manager should then be responsible for rectifying the problem on-site after discussion with the contractor. Should this require additional cost, then the developer should be notified immediately before any additional steps are taken.

### **3.3 Reporting Procedures to the Developer**

Any pollution incidents must be reported to the Environmental Control Officer immediately (within 12 hours). The Environmental Control Officer shall report to the Developer on a regular basis (site meetings).

### **3.4 Site Instruction Entries**

The site instruction book entries will be used for the recording of general site instructions as they relate to the works on site. There should be issuing of stop work order for the purposes of immediately halting any activities of the contractor that may pose environmental risk.

### **3.5 ESA/ESO (Environmental Site Officer) Diary Entries**

Each of these books must be available in duplicate, with copies for the Engineer and Environmental Site Officer. These books should be available to the authorities for inspection or on request. All spills are to be recorded in the ESA/Environmental Site Officer's diary.

### **3.6 Methods Statements**

Methods statements from the contractor will be required for specific sensitive actions on request of the authorities or ESA/ESO (Environmental Site Officer). All method statements will form part of the EMPr documentation and are subject to all terms and conditions contained within the EMPr document. For each instance wherein it is requested that the contractor submit a method statement to the satisfaction of ESA/ESO, the format should clearly indicate the following:

- What – a brief description of the work to be undertaken;
- How – a detailed description of the process of work, methods and materials;
- Where – a description / sketch map of the locality of work; and

- When – the sequencing of actions with due commencement dates and completion date estimate.

The contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ESA/ESO.

### **3.7 Record Keeping**

All records related to the implementation of this Management Programme (e.g. site instruction book, ESA/ESO dairy, methods statements etc.) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for two years at any time be available for scrutiny by any relevant authorities.

### **3.8 Acts**

#### **3.8.1. The National Water Act, 1998 (Act No: 36 of 1998)**

The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that take into account, amongst other factors, the following:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Reducing and preventing pollution and degradation of water resources;
- Facilitating social and economic development; and
- Providing for the growing demand for water use.

**Impact on proposed Development:**

There is a possibility of a Water Use License Application or General Authorisation Application that need to be submitted to the Department of Water and Sanitation as a wetland/watercourse traverses the site. The Department of Water and Sanitation will however need to confirm whether such application will be required and which process to be followed.

**3.8.2. Atmospheric Pollution Prevention Act (Act 45 of 1965)**

The NEM: AQA serves to repeal the Atmospheric Pollution Prevention Act (45 of 1965) and various other laws dealing with air pollution and it provides a more comprehensive framework within which the critical question of air quality can be addressed.

The purpose of the Act is to set norms and standards that relate to:

- ❑ Institutional frameworks, roles and responsibilities
- ❑ Air quality management planning
- ❑ Air quality monitoring and information management
- ❑ Air quality management measures
- ❑ General compliance and enforcement

Amongst other things, it is intended that the setting of norms and standards will achieve the following:

- The protection, restoration and enhancement of air quality in South Africa;
- Increased public participation in the protection of air quality and improved public access to relevant and meaningful information about air quality;
- The reduction of risks to human health and the prevention of the degradation of air quality.

The Act describes various regulatory tools that should be developed to ensure the implementation and enforcement of air quality management plans. These include:



- Priority Areas, which are air pollution 'hot spots';
- Listed Activities, which are 'problem' processes that require an Atmospheric Emission License;
- Controlled Emitters, which includes the setting of emission standards for 'classes' of emitters, such as motor vehicles, incinerators, etc.;
- Control of Noise;
- Control of Odours.

**Impact on proposed Development:**

The Act have relevance to the proposed services and roads installations during the construction phase. Dust pollution could be a concern primarily during the construction phase of the proposed project. Dust control would be adequately minimised during this phase by way of water spraying and possible dust-nets, when working close to existing residential dwellings or roads/highways. It is not foreseen that the proposed services and roads would contribute significantly to pollution in terms of emissions and noise during its operational phase.

**3.8.3 National Environmental Management Act (Act 107 of 1998)**

The NEMA is primarily an enabling Act in that it provides for the development of environmental implementation plans and environmental management plans. The principles listed in the act serve as a general framework within which environmental management and implementation plans must be formulated.

The principles in essence state that environmental management must place people and their needs at the forefront of its concern and that development must be socially, environmentally and economically sustainable.

**Impact on proposed Development:**

Section 28 (1) of NEMA stated that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring,

continuing or recurring, or, as far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

The EMP is compiled in terms of Section 28 of NEMA.

#### **3.8.4. The National Environmental Management: Waste Act (Act 59 of 2008)**

This Act came into effect on 11 June 2009. It aims to consolidate waste management in South Africa, and contains a number of commendable provisions, including:

- The establishment of a national waste management strategy, and national and provincial norms and standards for, amongst others, the classification of waste, waste service delivery, and tariffs for such waste services;
- Addressing reduction, reuse, recycling and recovery of waste;
- The requirement for industry and local government to prepare integrated waste management plans;
- The establishment of control over contaminated land;
- Identifying waste management activities that requires a licence, which currently include facilities for the storage, transfer, recycling, recovery, treatment and disposal of waste on land;
- Co-operative governance in issuing licenses for waste management facilities, by means of which a licensing authority can issue an integrated or consolidated license jointly with other organs of state that has legislative control over the activity; and
- The establishment of a national waste information system.

On 3 July 2009 the Minister of Environmental Affairs and Tourism promulgated a list of waste management activities that might have a detrimental effect on the environment. These listed activities provide the activities that require a Waste Management License. Two Categories is specified: Category A and Category B. As part of a Category A: Waste Management License application, a Basic

Assessment in terms of Section 24(5) of the National Environmental Management Act (Act 107 of 1998) must be submitted to the relevant Authority. As part of a Category B: Waste Management License application, a Scoping and EIA process in terms of Section 24(5) of the National Environmental Management Act (Act 107 of 1998) must be followed and submitted to the relevant Authority.

On 29 November 2013 the Minister of Environmental Affairs and Tourism amended the list of waste activities that might be detrimental to the environment and this was published under Government Notice 921.

**Impact on proposed Development:**

No Waste Management License is expected to be required during the construction or operational phase of the proposed residential development.

**3.8.5. The Municipal Systems Act (Act 32 of 2000)**

This Act was introduced to provide for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and ensure universal access to essential services that are affordable to all.

The proposed development will support the local authority in complying with the principles of the Municipal Systems Act, by assisting in providing the community with essential services, such as water and sewage infrastructure.

**Impact on proposed Development:**

The proposed development will contribute to the municipal services to an extent through paying of the municipal rates.

### **3.8.6 National Veld and Forest Fire Act, 1998 (Act No. 101, 1998)**

The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. Furthermore the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

#### **Impact on proposed Development:**

Fires of construction workers may only be lit in the designated site camp as indicated in assistance with the ECO. It is important that a site development camp be located on a part of the application site that is already disturbed.

### **3.8.7 National Heritage Resources Act, 1999 (Act No. 25 of 1999)**

The National Heritage Resources Act legislates the necessity and heritage impact assessment in areas earmarked for development, which exceed 0.5ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

#### **Impact on proposed Development:**

No features of Heritage importance are expected to be found on the proposed study area. If any such features are discovered during construction activities and clearing of the application site, the correct "procedures for an Environmental incident" (at the end of the EMPr) must be followed.

### **3.8.8. Conservation of Agricultural Resources Act (Act No. 43 of 1983)**

This Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

**Impact on proposed Development:**

According to the Gauteng Agriculture Potential Atlas (GAPA 3) the study area has mostly a low to a very low agricultural potential.

**3.8.9. National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)**

The purpose of the Biodiversity Act is to provide for the management of South Africa's biodiversity within the Framework of the NEMA and the protection of species and ecosystems that warrant National protection. As part of the implementation strategy, the National Spatial Biodiversity Assessment was developed.

**Impact on proposed Development:**

Majority of the study area is regarded as degraded with some illegal dumping taking place. The proposed study area falls within the Ecological Support Area which is dominated by the Soweto Highveld Grassland. However, the site has been heavily invaded by alien invasive trees.

**3.8.10. National Spatial Biodiversity assessment**

The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

**Impact on proposed Development:**

The proposed study area falls within the Ecological Support Area which is dominated by the Soweto Highveld Grassland. However, the site has been heavily invaded by alien invasive trees.

### **3.8.11. Protected Species – Provincial Ordinances**

Provincial ordinances were developed to protect particular plant species within specific provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species. Permits are administered by the Provincial Departments of Environmental Affairs.

#### **Impact on proposed Development:**

Majority of the study area is regarded as degraded with some illegal dumping taking place. The proposed study area falls within the Ecological Support Area which is dominated by the Soweto Highveld Grassland. However, the site has been heavily invaded by alien invasive trees.

### **3.8.12. National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)**

The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological biodiversity and its natural landscapes.

#### **Impact on proposed Development:**

The site is not situated near any Protected Areas.

**4 Project activities**

**4.1 Pre-Construction Phase**

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
<b>General</b>	<b>Project contract</b>	To make the EMPr enforceable under the general conditions of the contract.	The EMPr document must be included as part of the tender documentation	The EMPr is included as part of the tender documentation	Developer	-
<b>Design and planning</b>	<b>Stability of structures and restriction of land use due to geology</b>	To ensure stability of structures	The layout and land uses must correspond to the stability zonation and development types recommended by the geotechnical engineer.	The land uses and layout corresponds to the recommended stability zonation and development types.	Individual Developer Engineer	-
			Deep strip footings or other alternatives approved by the engineer should be used for the foundations of construction.	Excavations and foundations remain stable	Engineer Individual Developer	
			More detailed foundation investigation shall be done for each of the structures.	More detailed foundation investigations done.	Engineer Individual Developer	-
	<b>Stability of excavations due to geology</b>	To ensure stability of excavations	Sides of excavations should be either shored or else battered back.	Excavations remain stable.	Engineer Individual Developer	
	<b>Storm water design</b>	Erosion of drainage lines	1) Appropriate flow diversion and erosion control structures i.e. earth embankments must be put in place in areas where soil may be exposed to high levels of erosion due to steep slopes etc. 2) Any damage, displacement or loss of soil resulting from unforeseen events is to be recorded and remediated immediately. Should this occur due to negligence on the contractor's behalf, the contractor shall carry remediation costs.			

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			<p>3) Storm water at the site camp must be managed so as to reduce/ minimise the silt loads in the watercourse channel.</p> <p>4) Construction on steep slopes and in soft or erodible material will require erosion control measures and appropriate grassing/ hydroseeding measures.</p> <p>5) All construction areas should be suitably top-soiled and vegetated as soon as it is possible after construction; and disturbed areas to be rehabilitated must be ripped and the area must be backfilled with topsoil.</p> <p>Storm water structure design should block amphibians from entering the road surface.</p>			
		Watercourse – increased sediment input	<p>1) To prevent erosion of material that is stockpiled for long periods, the material must be retained in a bermed area.</p> <p>2) All topsoil within the area to be developed must be removed and stockpiled on site.</p> <p>3) The temporary storage of topsoil must be above the 100yr floodline or at least 20m from the top of any bank or drainage lines.</p> <p>4) An earth bank is to be constructed around the upslope portion of any stockpiles in order to direct runoff and prevent scouring of stockpiles.</p> <p>5) A silt fence is to be erected around any stockpiles in order to trap sediment and prevent stockpile sediment loss.</p>			
	<b>Light pollution</b>	To minimise light pollution	The generation of light by night events, security lighting and other lighting shall be effectively designed so as not to spill	Lighting effectively designed	Architect/ Landscape Architect	-



<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			unnecessary outward into the oncoming traffic, or into the yards of the neighbouring properties, oncoming traffic on highway or open spaces.			
	<b>Visual impact</b>	To minimise the visual impact of the proposed development.	Architectural guidelines to minimize the visual impact: 1) Roof colour will blend in tastefully with the surrounding environment. Building design must be aesthetically pleasing. 2) Suitable plant materials should be used at strategic points to screen off impacts caused by roofs, cars in large parking areas. 3) Mature existing trees (not alien and invasive trees) should be retained as far as possible. The trees will soften the impact of the proposed development. 4) Rubble and litter must be removed on a weekly basis and be disposed of at a suitably registered landfill site.	Architectural guidelines minimise visual impact	Architect	-
<b>Climate</b>	<b>Extreme change in micro climate temperatures</b>	To prevent the extreme change in micro climate temperatures	Where open parking bays are involved, one tree for every two parking bays shall be indicated on the Landscape Development Plan which shall be approved by the Design Review Committee/ Local Authority.	Landscape Development Plan complies	Landscape Architect	-
<b>Fauna and flora</b>	<b>Floral biodiversity and ecological health</b>	To ensure that the species introduced to the area, are compatible with the current and future quality of the ecological processes.	1) The Landscape Development Plan for the proposed development shall be submitted to the local authority for approval. 2) It is important that all the plant positions, quantities and coverage per m <sup>2</sup> be indicated on a plan. 3) The proposed planting materials for the areas to be landscaped shall be non-invasive, and preferably indigenous and/ or endemic. Indigenous tree species will	The landscape development plan submitted to the local authority for approval.	Landscape Architect	-

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			aid in habitat creation that will attract indigenous faunal species into the area. 4) Where possible, trees naturally growing on the site should be retained as part of the landscaping.			
<b>Preparing Site Access</b>	<b>Environmental integrity</b>	To avoid erosion and disturbance to indigenous vegetation	1) Designated routes shall be determined for the construction vehicles and designated areas for storage of equipment. 2) Clearly mark the site access point and routes on site to be used by construction vehicles and pedestrians. 3) Provide an access map to all contractors whom in turn must provide copies to the construction workers. Instruct all drivers to use access point and determined route.	Access to site is erosion free.  Minimum disturbance to surrounding vegetation.  Vehicles make use of established access routes.	Contractor	Continuous
		Entrance of Vehicles	Entrance by vehicles, especially off-road cars and bakkies, off-road bicycles and quad bikes and construction staff should be prohibited, both during the construction phase and during the lifespan of the project.			
	<b>Waste storage</b>	To control the temporary storage of waste.	Temporary waste storage points on site shall be determined. These storage points shall be accessible by waste removal trucks and these points should not be located in sensitive areas/areas highly visible from the properties of the surrounding land-owners/tenants/in areas where the wind direction will carry bad odours across the properties of adjacent tenants or landowners.		Contractor ESO	-
		Ensure waste storage area does not generate	Build a bund around waste storage area to stop overflow into storm water.		Contractor	-

<i><b>TYPE</b></i>	<i><b>Environmental risk or issue</b></i>	<i><b>Objective or requirement</b></i>	<i><b>Mitigation measure</b></i>	<i><b>Performance indicator</b></i>	<i><b>Responsibility</b></i>	<i><b>Frequency of Action</b></i>
		pollution				

**4.2 Construction Phase**

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
<b>Contractors Camp</b>	<b>Vegetation and topsoil</b>	To minimize damage to and loss of vegetation and retain quality of topsoil	1) Site to be established under supervision of ECO. 2) Clearing and relocation of plants to be undertaken in accordance with site specific requirements.	Minimal vegetation removed/ damaged during site activities.	Contractor	As and when required
	<b>Surface and ground water pollution</b>	To minimize pollution of surface and Groundwater resources.	1) Sufficient and temporary facilities including ablution facilities must be provided for construction workers operating on the site. 2) A minimum of one chemical toilet shall be provided per 10 persons. The contractor shall keep the toilets in a clean, neat and hygienic condition. Toilets provided by the contractor must be easily accessible and a maximum of 50m from the works area to ensure they are utilized. The contractor (who must use reputable toilet-servicing company) shall be responsible for the cleaning, maintenance and servicing of the toilets. The contractor (using reputable toilet-servicing company) shall ensure that all toilets are cleaned and emptied before the builders' or other public holidays. 3) No person is allowed to use any other area than chemical toilets. 4) No French drain systems may be installed. 5) No chemical or waste water must be allowed to contaminate the run-off on site. 6) Avoid the clearing of the site camp (of specific phase) or paved surfaces with soap.	Effluents managed Effectively.  No pollution of water resources from site.  Workforce use toilets provided.	Contractor ESO	As and when required
		To minimize pollution of surface	1) Drip trays and/ or lined earth bunds must be provided under vehicles and equipment,	No pollution of the environment	Contractor ESO	Daily

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
		and Groundwater resources due to spilling of materials.	to contain spills of hazardous materials such as fuel, oil and cement. 2) Repair and storage of vehicles only within the demarcated site area. 3) Spill kits must be available on site. 4) Oils and chemicals must be confined to specific secured areas within the site camp. These areas must be bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks. 5) All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste site. 6) No leaking vehicle shall be allowed on site. The mechanic/ the mechanic of the appointed contractor must supply the environmental officer with a letter of confirmation that the vehicles and equipment are leak proof. 7) No bins containing organic solvents such as paints and thinners shall be cleaned on site, unless containers for liquid waste disposal are placed for this purpose on site.			
		To minimize pollution of surface and groundwater resources by cement	The mixing of concrete shall only be done at specifically selected sites, as close as possible to the entrance, on mortar boards or similar structures to prevent run-off into drainage lines, watercourses and natural vegetation.	No evidence of contaminated soil on the construction site.	Contractor ESO	Daily
		To minimize pollution of surface and Groundwater resources due to effluent.	No effluent (including effluent from any storage areas) may be discharged into any water surface or ground water resource.	No evidence of contaminated water resources.	Contractor ESO	Daily
	<b>Pollution of the environment</b>	To prevent unhygienic usage on the site and	1) Weather proof waste bins must be provided and emptied regularly. 2) The contractor shall provide laborers to	No waste bins overflowing	Contractor ESO	Daily Weekly

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
		pollution of the natural assets.	clean up the contractor's camp and construction site on a daily basis. 3) Temporary waste storage points on the site should be determined. THESE AREAS SHALL BE PREDETERMINED AND LOCATED IN AREAS THAT IS ALREADY DISTURBED. These storage points should be accessible by waste removal trucks and these points should be located in already disturbed areas /areas not highly visible from the properties of the surrounding land-owners/ in areas where the wind direction will not carry bad odours across the properties of adjacent landowners. This site should comply with the following: <ul style="list-style-type: none"> <li>• Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. paint, lubricants, etc.;</li> <li>• Small lightweight waste items should be contained in skips with lids to prevent wind littering;</li> <li>• Bunded areas for containment and holding of dry building waste.</li> </ul> 4) No solid waste may be disposed of on the site. 5) No waste materials shall at any stage be disposed of in the open veld of adjacent properties. 6) The storage of solid waste on the site, until such time as it may be disposed of, must be in a manner acceptable to the local authority and DWS. 7) Cover any wastes that are likely to wash away or contaminate storm water.	No litter or building waste lying in or around the site		
		Recycle material where possible and	1) Waste shall be separated into recyclable and non-recyclable waste, and shall	Sufficient containers	Contractor ESO	Daily Weekly

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
		correctly dispose of unusable wastes	be separated as follows: <ul style="list-style-type: none"> <li>• General waste: including (but not limited to) construction rubble,</li> <li>• Reusable construction material.</li> </ul> 2) Recyclable waste shall preferably be deposited in separate bins. 3) All solid waste including excess spoil (soil, rock, rubble etc) must be removed to a permitted waste disposal site on a weekly basis. 4) No bins containing organic solvents such as paints and thinners shall be cleaned on site, unless containers for liquid waste disposal are placed for this purpose on site. 5) Keep records of waste reuse, recycling and disposal for future reference. Provide information to ECO.	available on site  No visible signs of pollution		
	<b>Waste</b>	To keep the site clean and tidy.  To ensure waste enters the appropriate waste Watercourse in order to optimize recycling opportunities.	1) Rubble must be removed from the construction site frequently and be disposed of at an approved dumping site. 2) Sufficient and covered containers must be available on the construction site. 3) Such containers are to be emptied frequently. 4) All liquid effluent is to be disposed of in a manner approved of by the Local Authority. 5) Material to be used as backfill during a later stage of the building construction must be covered with a layer of soil to prevent litter from being blown over the site and to prevent unhygienic conditions. 6) Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site. 7) The burning of waste is prohibited. 8) Where possible, waste must be separated into clearly marked containers and		Contractor	Monitor daily

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			<p>subsequent recycling thereof must be a priority.</p> <p>The site camp should not be located in a highly visual area on the study area, or a screen or barrier should be erected as to not have a negative impact on the sense of place. The site camp and the rest of the study area should appear neat at all times;</p> <p>A temporary waste storage point shall be determined and established on site by means of demarcation. This storage points shall be accessible by waste removal vehicles. The temporary storage site may not be highly visible from the properties of the surrounding residents. Waste materials should be removed from the site on a regular basis (at least weekly), to a registered landfill site.</p> <p>All the waste generated by the proposed residential development construction must be temporarily stored at a preselected area on site to be carted to a registered landfill site allowed to take building rubble;</p> <p>Waste storage should occur in areas that have already been disturbed. These small waste receptacles must be emptied at the temporary waste storage area on a weekly basis for removal. All waste must be removed to a registered landfill site on a weekly basis. No waste materials may be disposed of on or adjacent to the site;</p> <p>The storage of solid waste on site, until such time that it may be disposed of, must be in the manner acceptable to the local authority; and</p> <p>Records of waste reused, recycled, and</p>			



<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			disposed must be kept for future reference or inspection by authorities.			
	<b>Increased fire risk to site and surrounding areas</b>	To decrease fire risk.	1) Fires shall only be permitted in specifically designated areas and under controlled circumstances. 2) Food vendors shall be allowed within specified areas. 3) No wood may be collected from the site for fires. 4) Fire extinguishers to be provided in all vehicles and fire beaters must be available on site. 5) Emergency numbers/ contact details must be available on site, where applicable.  • No fires are allowed on the construction site. • Smoking only allowed in designated areas away from vegetation which could possibly catch fire. • Cigarette disposal facilities should be catered for in the designated smoking areas.	No open fires on site that have been left unattended	Contractor	Monitor daily
<b>Construction site</b>	<b>Geology and soils</b>	To protect underground services from alkaline or corrosive attack.	Underground services should be treated appropriately prior to installation.	Underground services are not being corroded	Contractor	Monitor regularly/ as required
		To prevent the damage of the existing soils and geology.	1) The top layer of all areas to be excavated for the purposes of construction shall be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. 2) All surfaces that are susceptible to erosion, shall be protected either by cladding with biodegradable material or with the top layer of soil being seeded with grass seed/planted	Excavated materials correctly stockpiled  No signs of erosion	Contractor	Monitor daily

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			with a suitable groundcover.			
		<p>To prevent the loss of topsoil</p> <p>To prevent siltation &amp; water pollution.</p>	<p>1) Stockpiling will only be done in designated places where it will not interfere with the natural drainage paths of the environment.</p> <p>2) In order to minimize erosion and siltation and disturbance to existing vegetation, it is recommended that stockpiling be done/ equipment is stored in already disturbed/ exposed areas.</p> <p>3) Cover stockpiles and surround downhill sides with a sediment fence to stop materials washing away.</p> <p>4) Remove vegetation only in areas designated during the planning stage.</p> <p>5) Rehabilitation/ landscaping are to be done immediately after the involved works are completed.</p> <p>6) All compacted areas should be ripped prior to them being rehabilitated/ landscaped by the contractor as appointed by the developer/ individual erf owner.</p> <p>7) The top layer of all areas to be excavated must be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. This stockpiled material should be used for the rehabilitation of the site and for landscaping purposes.</p> <p>8) Strip topsoil at start of works and store in stockpiles no more than 1,5 m high in designated materials storage area.</p> <p>9) During the laying of any cables, pipelines or infrastructure (on or adjacent to the site) topsoil shall be kept aside to cover the disturbed areas immediately after such activities are completed.</p>	<p>Excavated materials correctly stockpiled</p> <p>No visible signs of erosion and sedimentation</p> <p>Minimal invasive weed growth</p> <p>Vegetation only removed in designated areas</p>	Contractor of the Individual Developer/ Engineer	Monitor daily

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			Recommendations made by engineers to be incorporated into design and constructed as per design.			
	<b>Erosion and siltation</b>	To prevent erosion and siltation	<p>1) It is recommended that the construction of the development be done in phases.</p> <p>2) Each phase should be rehabilitated immediately after the construction for that phase has been completed. The rehabilitated areas should be maintained by the appointed rehabilitation contractor until a vegetative coverage of at least 80% has been achieved as appointed by the developer/ individual erf owner.</p> <p>3) Mark out the areas to be excavated.</p> <p>4) Large exposed areas during the construction phases should be limited. Where possible areas earmarked for construction during later phases should remain covered with vegetation coverage until the actual construction phase. This will prevent unnecessary erosion and siltation in these areas.</p> <p>5) Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided.</p> <p>6) All embankments must be adequately compacted and planted with grass to stop any excessive soils erosion and scouring of the landscape if required.</p> <p>7) The eradication of alien vegetation should be followed up as soon as possible by replacement with indigenous vegetation to ensure quick and sufficient coverage of exposed areas by the individual erf owner.</p> <p>8) Storm water outlets shall be correctly designed to prevent any possible soil erosion.</p>	<p>No erosion scars</p> <p>No loss of topsoil</p> <p>All damaged areas successfully rehabilitated</p>	Contractor ESO	Monitor daily

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			<p>9) All surface run-offs shall be managed in such a way so as to ensure erosion of soil does not occur.</p> <p>10) Implementation of temporary storm water management measures that will help to reduce the speed of surface water by the individual erf owner / developer.</p> <p>11) All surfaces that are susceptible to erosion shall be covered with a suitable vegetative cover as soon as construction is completed by the individual erf owner / developer.</p>			
	<b>Stability of structures due to geology</b>	To ensure stability of structures	Preventative foundation designs shall be done. Detailed foundation inspections should be carried out at the time of construction to identify any variances and adjust foundation designs accordingly if need be. The foundation recommendations from the geotechnical engineers must be adhered to.		Engineers / Contractor / Individual Developer	When required
	<b>Seepage of groundwater into excavations</b>	To ensure that excavations do not become flooded	Provision should be made for the removal of groundwater from excavations.		Contractor	Monitor daily
	<b>Cracking of structures</b>	To ensure that built structures do not crack due to collapsible soils and settlement	<p>1)The floors of foundation excavations should be compacted by a hand-operated vibratory roller or else by a machine equivalent to a Wacker Rammer (a mechanised tamping device); a test section should firstly be compacted under supervision of the Engineer in order to determine the number of roller passes. The structures may then be constructed by conventional means.</p> <p>Additional precautionary measures that can be employed are:</p>	Built structures show no sign of cracks	Engineer/ Contractor	As required

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			2) The provision of expansion joints in the walls of structures; 3) A concrete walkway of 1,0m in width around the perimeter of each structure; and 4) The shaping of the walkway and the ground surface in the vicinity of the structures so as to drain water away from each structure so that no ponding of surface water can take place in the vicinity of the structures.			
	<b>Hydrology</b>	To minimise pollution of soil, surface and groundwater	1) Increased run-off during construction must be managed using berms and other suitable structures as required to ensure flow velocities are reduced. 2) The contractor shall ensure that excessive quantities of sand, silt and silted water do not enter the storm water system.	No visible signs of erosion.  No visible signs of pollution	Contractor	Monitor daily
		To minimise pollution of soil, surface and groundwater.	1) Containment of run-off from construction areas should be implemented and the Watercourses closed off from access by construction workers. 2) Cut-off drains should be trenched between the Watercourses and the construction activities and hay bales should be stacked along the trenches where possible to contain siltation. 3) All spillages must be cleaned up and contaminated soil removed as hazardous waste. 5) Affected soil must be treated with DRIZIT or similar product.	No visible signs of erosion.  No visible signs of pollution.	Contractor	
	<b>Wetland</b>	Preserving Wetland areas.	A wetland/ watercourse that runs from south to north on the site must be protected by using bio-swales to filter storm water before it enters the wetland.  1) The delineated wetland area with its	No visible signs of pollution	Contractor	

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			<p>associated buffer zones should be clearly marked prior to construction. These areas are strictly excluded from development and should remain open space during the proposed development activities.</p> <p>2) Construction of water control structures to prevent and control any erosion on the site.</p> <p>3) Prevent contamination of wetland areas from polluted runoff/ seepage/ drainage water by utilizing relevant control measures.</p> <p>4) During the construction phase, no dumping and no stockpiling of materials within the wetland areas and associated buffers should take place.</p> <p>5) No construction or dumping of activities should take place within the floodline/ wetland or a horizontal distance of 100m from a water resource unless authorized by DWS.</p> <p>6) No vehicles should be allowed to indiscriminately drive through the wetland areas. Fence-off sensitive areas prior to construction and apply temporary storm water management measures outside the watercourse and watercourse buffer zones to prevent entry into the wetland areas and drainage line by construction vehicles and prevent storing or dumping of topsoil, construction material and other waste in the wetland/drainage line.</p> <p>7) The area should be prepared with sandbags or other applicable measures to avoid siltation into the wetland area.</p> <p>This wetland area must be rehabilitated and must be left as natural areas which will contribute to the aesthetics of the approved</p>			



TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			vegetation can become re-established. In this regard special mention of the following is made: ♦ All areas of disturbed and compacted soils need to be compacted and reprofiled. ♦ Ongoing removal of alien vegetation from the area must take place after the completion of the structure to prevent the uncontrollable species. 6) Care must be taken to ensure that construction activities remain within the boundary of the planned sewer pipeline. 7) Limited access to the water of the wetland should be given to construction vehicles by fencing off all access points to the water, except at the predetermined water-intake point.	rehabilitated.		
	<b>Fauna and flora</b>	To protect the existing fauna and flora.	1) All exotic invaders and weeds must be eradicated on a continuous basis. 2) Exotic invaders must be included in an alien management program for the site. Eradication must occur every 3 months. 3) No plants not indigenous to the area, or exotic plant species, especially lawn grasses and other ground-covering plants, should be introduced in the communal landscaping of the proposed site, as they will drastically interfere with the nature of the area. 4) Where possible, trees naturally growing on the site should be retained as part of the landscaping.	No exotic plants used for landscaping	Contractor ESO / Home Owners Association / Design Review Committee	As and when required  Every 6 months
		To protect the existing fauna and flora.	1) Trees that are intended to be retained shall be clearly marked on site. 2) Snaring and hunting of fauna by construction workers on or adjacent to the study area are strictly prohibited and the Council shall prosecute offenders.	No measurable signs of habitat destruction	Contractor ESO	As and when required



TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			<p>3) All mitigation measures for impacts on the indigenous flora of the area should be implemented in order to limit habitat loss as far as possible and maintain and improve available habitat, in order to maintain and possibly increase numbers and species of indigenous fauna.</p> <p>4) Wood harvesting of any trees or shrubs on the study area or adjacent areas shall be prohibited.</p> <p>5) Where possible, work should be restricted to one area at a time.</p> <p>6) Noise should be kept to a minimum and the development should be done in phases to allow faunal species to temporarily migrate into the conservation areas in the vicinity.</p> <p>7) The integrity of remaining wildlife should be upheld, and no trapping or hunting by construction personnel should be allowed. Caught animals should be relocated to the conservation areas in the vicinity.</p> <p>8) Entrance by vehicles, especially off-road cars and bakkies, off-road bicycles and quad bikes and construction staff into the application site should be prohibited, both during the construction phase and during the lifespan of the project.</p>			
		To protect the existing fauna and flora.	<p>1) Retain natural habitat elements such as tree stumps, termite mounds, etc. where possible.</p> <p>2) Preserve, maintain and construct biological corridors where possible, as well as retaining green belts interconnected with these corridors.</p>	No measurable signs of habitat destruction	Contractor ESO	As and when required
<b>Social</b>	<b>Noise impact</b>	To maintain noise levels below	1) Site workers must comply with the Provincial noise requirements as outlined in	No complaints from surrounding	Contractor	Monitored daily

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
		"disturbing" as defined in the national Noise Regulations.	Provincial Notice No. 5479 of 1999: Gauteng Noise Control Regulations. 2) Noise activities shall only take place during working hours.	residents and I & APs		
	<b>Dust impact</b>	Minimise dust from the site	1) Dust pollution could occur during the construction works, especially during the dry months. Regular and effective damping down of working areas (especially during the dry and windy periods) must be carried out to avoid dust pollution that will have a negative impact on the surrounding environment. 2) When necessary, these working areas should be damped down in the mornings and afternoons.	No visible signs of dust pollution  No complaints from surrounding residents and I & APs	Contractor	Monitored daily
	<b>Safety and security</b>	To ensure the safety and security of the public.	1) Although regarded as a normal practice, it is important to erect proper signs indicating the operations of heavy vehicles in the vicinity of dangerous crossings and access roads or even in the development site if necessary. 2) Construction vehicles and activities to avoid peak hour traffic times 3) Presence of law enforcement officials at strategic places must be ensured 4) Following actions would assist in management of safety along the road <ul style="list-style-type: none"> <li>▪ Adequate road marking</li> <li>▪ Adequate roadside recovery areas</li> <li>▪ Allowance for pedestrians and cyclists where necessary</li> <li>▪ Although regarded as a normal practice, it is important to erect proper signs indicating the danger of the excavation in and around the development site. Putting temporary fencing around</li> </ul>	No incidences reported	Contractor ESO	Monitored daily

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			excavations where possible.			
		Management of workers staying on the site.	It is important to note that the construction workers stay on the site and is provided with temporary accommodation facilities. There are also ablution facilities that need to be approved by the Health and Safety Officer. There will be a designated area at the accommodation facilities where fire can be made for food and/or warmth. There will be a shop/cafeteria on the site where food can be bought. There should also be bins for general waste. It is also important to take cognisance of the fact that as construction activities increase on site, the amount of workers and accommodation facilities will also increase. Due to the aforementioned it will be essential to monitor this area carefully and have the Health and Safety Officer to daily checks to ensure that all is compliant.	No incidences reported and the environment is not degraded.	Contractor Developer ESO Health and Safety Officer	Monitored daily
	<b>Blasting</b>	To ensure safety during blasting operations.	1) Surrounding residents must be informed of blasting exercises at least one week in advance. 2) Blasting operations should be carefully controlled and the necessary safety precautions must be implemented.	Surrounding residents informed. Safety precautions in place.	Engineer Project Manager	
	<b>Infrastructure and services</b>	Installation of services	Discuss possible disruptions with affected parties to determine most convenient times for service disruptions and warn affected parties well in advance of dates that service disruptions will take place.	No complaints from I & AP	Contractor ESO	When required
		To reduce the traffic of the affected main roads	1) Construction vehicles and activities to avoid peak hour traffic times i.e. between 7am. and 9 am. and again between 4 pm. and 6 pm. On weekdays. 2) It is important to erect warning signs on existing routes when impacted on by the construction of the pipeline (i.e. construction			

TYPE	Environmental risk or issue	Objective or requirement	Mitigation measure	Performance indicator	Responsibility	Frequency of Action
			of intersections / bridges). 3) Traffic on existing routes should be controlled during construction activities impacting on these routes (i.e. construction works at intersections, construction of bridges). 4) Heavy vehicles must be instructed to only use the main roads during off-peak hours. 5) These vehicles should use only specific roads and strictly keep within the speed limits and abide to all traffic laws. No speeding or reckless driving should be allowed. Access to the site for construction vehicles should be planned to minimize the impact on the surrounding network.			
	<b>Cultural Resources</b>		If any graves or archaeological sites are exposed during construction work it should immediately be reported to a museum. The report from the archaeologist must be provided to GDARD if any graves are recovered.	No destruction of or damage to graves or known archaeological sites	Contractor ESO	Monitor daily
	<b>Visual impact</b>	In order to minimise the visual impact.	1) The disturbed areas shall be rehabilitated immediately after the involved construction works are completed. 2) Shade cloth must be used to conceal and minimise the visual impact of the site camps and storage areas.	Visual impacts minimized	Contractor ESO	Monitor daily
	<b>Vegetation</b>	Landscaping	1) When planting trees, care should be taken to avoid the incorrect positioning of trees and other plants, to prevent the roots of trees planted in close proximity to the line of water-bearing services from causing leaking in, or malfunctioning of the services. 2) The proposed planting materials for the areas to be landscaped should preferably be endemic and indigenous. 3) All new trees and shrubs to be planted on	Landscaping done according to landscape development plan	Landscape architect Contractor / Individual Developer	When required

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			<p>the study area shall be inspected for pests and diseases prior to them being planted.</p> <p>4) The inspection shall be carried out by the maintenance contractor at the property of the supplier and not on the study area.</p> <p>5) All trees to be planted shall be in minimum 100L containers with a height of approximately 3 metres and a main stem diameter of approximately 80 mm.</p>			
		Loss of plants	<p>1) Aerate compacted soil and check and correct pH for soils affected by construction activities.</p> <p>2) Make sure plant material will be matured enough and hardened off ready for planting. Water in plants immediately as planting proceeds.</p> <p>3) Apply mulch to conserve moisture. Plant according to the layout and planting techniques specified by the Landscape Architect in the Landscape Development plans for the site.</p>	Landscaping done according to landscape development plan	Landscape architect Contractor / Individual Developer	When required
		Spread of weeds	<p>Ensure that materials used for mulching and topsoil/ fertilisers are certified weed free. Collect certifications where available.</p> <p>Control weeds growth that appears during construction.</p>	Weed growth controlled	Landscape architect Contractor	When required
		To ensure rehabilitation of the site	<p>1) Compacted soils shall be ripped at least 200mm.</p> <p>2) All clumps and rocks larger than 30mm diameter shall be removed from the soil to be rehabilitated.</p> <p>3) The soil shall be leveled before seeding</p> <p>4) Hydroseed the soil with Potch mixture</p> <p>5) Watering shall take place at least once per day for the first 14 days until germination of seeds have taken place</p> <p>6) Thereafter watering should take place at</p>	Grass have hardened off	Landscape architect Contractor	Once a day Then every 4 days

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Performance indicator</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
			least for 20 minutes every 4 days until grass have hardened off.			
		Rehabilitation of area directly surrounding Watercourse	<p>1) Vehicles and workers associated with construction should not have free access to the watercourse and unnecessary disturbance to the watercourse should be avoided.</p> <p>2) No vegetation may be removed from the wetland area unless stipulated in a Water Use License granted to the owner of the site.</p> <p>3) Erosion control measures should be implemented on all open soils and steep slopes.</p> <p>4) Upon completion of the construction in the area, the area should be rehabilitated to a level that will ensure that wetland vegetation can become re-established. In this regard special mention of the following is made:</p> <ul style="list-style-type: none"> <li>• All areas of disturbed and compacted soils need to be compacted and reprofiled.</li> <li>• Ongoing removal of alien vegetation from the area must take place after the completion of the structure to prevent the uncontrollable recruitment of these species.</li> </ul>	No erosion surrounding wetland and attenuation ponds	Landscape architect Contractor	Immediately after construction

**4.3 Operational Phase**

<b>TYPE</b>	<b>Environmental risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
<b>Site cleanup and preparation for use</b>	<b>Storm water pollution</b>	Do not allow any materials to wash into the storm	Remove erosion and sediment controls only if all bare soil is sealed, covered or re-vegetate. Sweep roadways clean and remove all debris	Contractor	-

<b>TYPE</b>	<b>Environmenta l risk or issue</b>	<b>Objective or requirement</b>	<b>Mitigation measure</b>	<b>Responsibility</b>	<b>Frequency of Action</b>
		water system.	from kerb and gutter areas. Do not wash into drains.		
		Minimise waste	Decontaminate and collect waste in storage area ready for off-site recycling or disposal Arrange for final collection and removal of excess and waste materials.	Contractor	-
<b>Establishing plants</b>	<b>Slow or no re-vegetation to stabilise soil; loss or degradation of habitat</b>	To ensure re-vegetation to stabilize soil	Agreed schedule for regular follow-up watering, weed control, mulch supplements and amenity pruning, if needed. Replace all plant failures within three month period after planting.	Contractor	To be agreed
<b>Materials failure</b>	<b>Structural damage. Loss of site materials.</b>		Inspect all structures monthly to detect any cracking or structural problems. Confirm with designer if there are design problems. Rectify with materials to match, or other agreed solution.	Contractor	-
<b>Drainage failure</b>	<b>On-site and down watercourse drainage pollution or flooding</b>	Storm water management plan	Inspect all site drainage works and repair any failures. Confer with design engineer and to correct site problems.	Contractor	-
<b>Site audit</b>	<b>Eventual project failure</b>	Successful project establishment	Routinely audit the works and adjust maintenance schedule accordingly.	Contractor	-
<b>General</b>			Open fires and smoking during maintenance works are strictly prohibited.	Contractor	-
	<b>Degradation of the wetland systems.</b>	Protecting the wetland systems and attenuation ponds	People should not litter to the wetlands. People may not remove any fauna or flora species. Children should not be allowed to play on the wetland and attenuation ponds areas.	Developer	
	<b>Water pollution</b>	To prevent water pollution of wetland systems	1) All spillages must be cleaned up and contaminated soil removed as hazardous waste. 2) Affected soil must be treated with DRIZIT or similar product.	Contractor	

## **5 Procedures for environmental incidents**

### **5.1 Leakages & spills**

- Identify source of problem.
- Stop goods leaking, if safe to do so.
- Contain spilt material, using spills kit or sand.
- Notify Environmental Control Officer
- Remove spilt material and place in sealed container for disposal (if possible).
- Environmental Control Officer to follow Incident Management Plan.

### **5.2 Failure of erosion/sediment control devices**

- Prevent further escape of sediment.
- Contain escaped material using silt fence, hay bales, pipes, etc.
- Notify ECO.
- Repair or replace failed device as appropriate.
- Dig/scrape up escaped material; take care not to damage vegetation.
- Remove escaped material from site.
- ECO to follow Incident Management plan.
- Monitor for effectiveness until re-establishment.

### **5.3 Bank/slope failure**

- Stabilize toe of slope to prevent sediment escape using aggregate bags, silt fence, logs, hay bales, pipes, etc.
- Notify ECO.
- ECO to follow Incident Management plan.
- Divert water upslope from failed fence.
- Protect area from further collapse as appropriate.
- Restore as advised by ECO.
- Monitor for effectiveness until stabilized.

### **5.4 Discovery of rare or endangered species**

- Stop work.
- Notify ECO.
- If a plant is found, mark location of plants.
- If an animal, mark location where sighted.
- ECO to identify or arrange for identification of species and or the relocation of the species if possible.
- If confirmed significant, ECO to liaise with Endangered Wildlife Trust.
- Recommence work when cleared by ECO.

### **5.5 Discovery of archeological or heritage items**

- Stop work.
- Do not further disturb the area.



- Notify ECO.
- ECO to arrange appraisal of specimen.
- If confirmed significant, ECO to liaise with National, Cultural and History Museum  
P.O. Box 28088  
SUNNYSIDE  
0132  
Contact Mr. J. van Schalkwyk  
or  
Mr. Naude
- Recommence work when cleared by ECO.

## **6 EMP review**

1. The Site Supervisor is responsible for ensuring the work crew is complying with procedures, and for informing the work crew of any changes. The site supervisor is responsible for ensuring the work crew is aware of changes that may have been implemented by GDARD before starting any works.
2. If the contractor cannot comply with any of the activities as described above, they should inform the ECO with reasons within 7 working days.



# Appendix I

Other information



# **Appendix Ii**

Company Profile and EAP CV



# Bokamoso

**Landscape Architects &  
Environmental consultants**

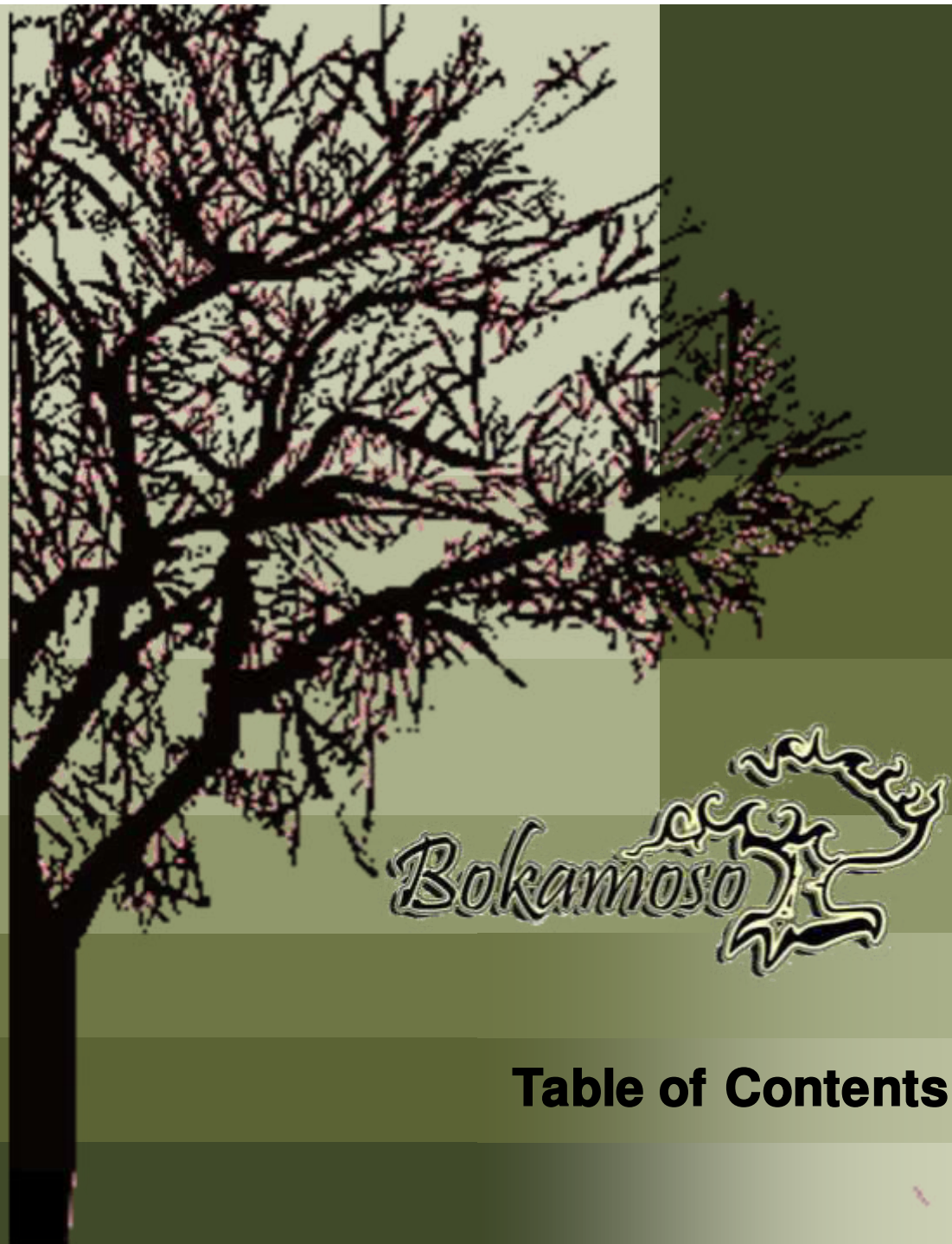
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- 01** Executive Summary
- 02** Vision, Mission & Values
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- 04** Services
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- 08** Indicative Clients
- 09** Tools



## **Table of Contents**

**Bokamoso** specialises in the fields of Landscape Architecture and all aspects of Environmental Management and Planning. Bokamoso was founded in 1992 and has shown growth by continually meeting the needs of our clients. Our area of expertise stretches throughout the whole of South Africa. Our projects reflect the competence of our well compiled team. The diversity of our members enables us to tend to a variety of needs. Our integrated approach establishes a basis for outstanding quality. We are well known to clients in the private, commercial as well as governmental sector.

At Bokamoso we stand on a firm basis of environmental investigation in order to find unique solutions to the requirements of our clients and add value to their operations.



**01 Executive Summary**

**011 Company Overview**





### **Vision:**

At Bokamoso we strive to find the best planning solutions by taking into account the functions of a healthy ecosystem. Man and nature should be in balance with each other.

### **Mission:**

We design according to our ethical responsibility, take responsibility for successful completion of projects and constitute a landscape that contributes to a sustainable environment. We add value to the operations of our clients and build long term relationships that are mutually beneficial.

### **Values:**

Integrity

Respect



**Bokamoso** stands on the basis of fairness. This include respect within our multicultural team and equal opportunities in terms of gender, nationality and race.

We have a wide variety of projects to tend to, from complicated reports to landscape installation. This wide range of projects enables us to combine a variety of professionals and skilled employees in our team.

Bokamoso further aids in the development of proficiency within the working environment. Each project, whether in need of skilled or unskilled tasks has its own variety of facets to bring to the table.

We are currently in the process of receiving our BEE scorecard. We support transformation in all areas of our company dynamics.



**03 Human Resources**

**031 Employment Equity**



## **Lizelle Gregory (100% interest)**

Lizelle Gregory obtained a degree in Landscape Architecture from the University of Pretoria in 1992 and passed her board exam in 1995.

Her professional practice number is PrLArch 97078.

Ms. Gregory has been a member of both the Institute for Landscape Architecture in South Africa (ILASA) and South African Council for the Landscape Architecture Profession (SACLAP), since 1995.

Although the existing Environmental Legislation doesn't yet stipulate the academic requirements of an Environmental Assessment Practitioner (EAP), it is recommended that the Environmental Consultant be registered at the International Association of Impact Assessments (IAIA). Ms. Gregory has been registered as a member of IAIA in 2007.

Ms. Gregory attended and passed an International Environmental Auditing course in 2008. She is a registered member of the International Environmental Management and Assessment Council (IEMA).

She has lectured at the Tshwane University of Technology (TUT) and the University of Pretoria (UP). The lecturing included fields of Landscape Architecture and Environmental Management.

Ms. Gregory has more than 20 years experience in the compilation of Environmental Evaluation Reports:

Environmental Management Plans (EMP);

Strategic Environmental Assessments;

All stages of Environmental input ;

EIA under ECA and the new and amended NEMA regulations and various other Environmental reports and documents.

Ms. Gregory has compiled and submitted more than 600 Impact Assessments within the last 5-6 years. Furthermore, Ms. L. Gregory is also familiar with all the GDARD/Provincial Environmental policies and guidelines. She assisted and supplied GAUTRANS/former PWV Consortium with Environmental input and reports regarding road network plans, road determinations, preliminary and detailed designs for the past 12 years.



**03 Human Resources**

**032 Members**

# Consulting

## Anè Agenbacht

**Introduction to Sustainable Environmental Management—An overview of Principles, Tools, & Issues (Potch 2006)**  
**Leadership Training School (Lewende Woord 2010)**  
**BA Environmental Management (UNISA 2011)**  
**PGCE Education (Unisa 2013) - CUM LAUDE**  
Project Manager  
More than 10 years experience in the compilation of various environmental reports

## Mary-Lee Van Zyl

**MSc Plant Science (UP)**  
**BSc (Hons) Plant Science (UP)**  
**BSc Ecology (UP)**  
More than 3 years working experience in the Environmental field  
Specialises in ECO works, Basic Assessments, EIA's, and Flora Reports  
Compilation of various Environmental Reports

## Dashentha Moodley

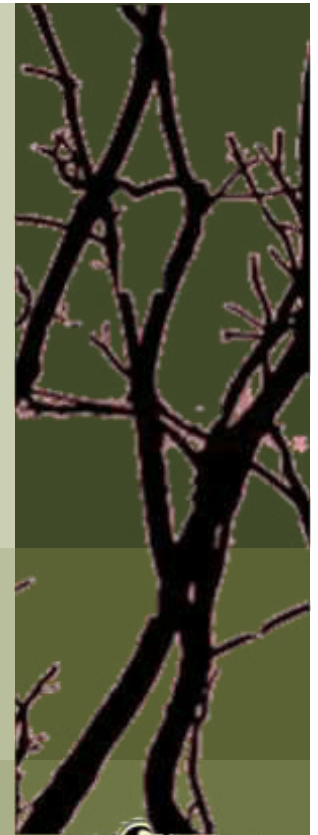
**BA (Hons) Degree in Environmental Management (UNISA) - CUM LAUDE**  
**Bachelor of Social Science in Geography & Environmental Management (UKZN)**  
More than 6 years experience in WUL Applications & Integrated Environmental Management within water resource management.  
Senior Environmental Practitioner & Water Use Licence Consultant  
Specialises in Water Use License & Compilation of various Env. Reports

## Adèle Drake

**BA Geography & History (UP)**  
**NQF Level 7 Air Quality Management (UJ)**  
More than 15 years experience in the field of Environmental Management within Mining Industry (surface and underground), Forestry Industry, Renewable Energy Industry (WEF), and Environmental Consulting. Also ISO 14000, ISO 9000, and Safety Management Auditor.

## Ronell Kuppen

**BSc (Hons) in Geography (UNISA)**  
**BA Environmental and Development (UKZN)**  
More than 5 years experience in Environmental Consulting  
Specializing in WUL Applications, Waste License Applications, EIAs, Basic Assessments, Public Participations, Borrow Pits



**03 Human Resources**

**033 Personnel**

**Ben Bhukwana**

**BSc Landscape Architecture (UP)**

More than 6 years experience in the field of Landscape Architecture (Design, Construction, Implementation, and Management).  
Specialises in landscape design, ECO, rehabilitation plans and compilation various environmental reports and compilation of tender documents

**Juanita de Beer**

**Diploma Events Management and Marketing (Damelin)**

Specializes in Public relations and Public Participation Processes (4 years experience)  
Specialises in compiling various environmental reports

**Alfred Thomas**

**CIW Foundation & Internet Marketing (IT Academy)**

12 years experience in GIS and IT in general.  
GIS Operator and Multimedia Specialist.

**Bianca Reyneke**

**Applying SHE Principles and Procedures (NOSA)  
Intro to SAMTRAC Course (NOSA)**

SHEQ Coordinator and compilation of environmental reports  
Specialises in compiling various environmental reports

**A.E. van Wyk**

**BSc Environmental Sciences (Zoology and Geography)**

Specialises in compiling various environmental reports



**Elsa Viviers**

**Interior Decorating (Centurion College)**

( Accounting/ Receptionist ) and Secretary to Lizelle Gregory

**Loura du Toit**

**N. Dip. Professional Teacher (Heidelberg Teachers Training College )**

Librarian and PA to the Project Manager

**Merriam Mogalaki**

Administration Assistant with in-house training in bookkeeping

## **Landscape Contracting**

**Elias Maloka**

Assisting with Public Participations and Office Admin

Site manager overseeing landscape installations.

Irrigation design and implementation.

Landscape maintenance

More than 18 years experience in landscape construction works.

The contracting section comprises of six permanently employed black male workers. In many cases the team consists of up to 12 workers, depending on the quantity of work.



**03 Human Resources**

**035 Personnel**

# In-house Specialists

## Corné Niemandt

**MSc Plant Science (UP 2015) – Cum Laude**  
**BSc (Hons) Zoology (UP 2012)**  
**BSc Ecology (UP 2011)**  
Specialises in ecological surveys and report writing  
Compilation of fauna and flora specialist reports  
GIS: Generating maps

## Garth van Rooyen

**BSc (Hons) Environmental Soil Science**  
**BSc Geology**  
Soil and Wetland Specialist



**03 Human Resources**

**035 Personnel**





## **01 Environmental Management Services**

- Basic Assessment Reports
- EIA & Scoping Reports
- Environmental Management Plans
- Environmental Scans
- Strategic Environmental Assessments
- EMP for Mines
- Environmental Input and Evaluation of Spatial Development Frameworks
- State of Environmental Reports
- Compilation of Environmental Legislation and Policy Documents
- Environmental Auditing and Monitoring
- Environmental Control Officer (ECO)
- Visual Impact assessments
- Specialist Assistance with Environmental Legislation Issues and Appeals
- Development Process Management
- Water Use License applications to DWA
- Waste License Application



**04 Services**

**041 Consulting Services**

## 02 Landscape Architecture

- Master Planning
- Sketch Plans
- Planting Plans
- Working Drawings
- Furniture Design
- Detail Design
- Landscape Development Frameworks
- Landscape Development Plans (LDP)
- Contract and Tender Documentation
- Landscape Rehabilitation Works

## 03 Landscape Contracting

Implementation of Plans for:

- Office Parks
- Commercial/ Retail / Recreational Development
- Residential Complexes
- Private Residential Gardens
- Implementation of irrigation systems



*Bokamoso* 

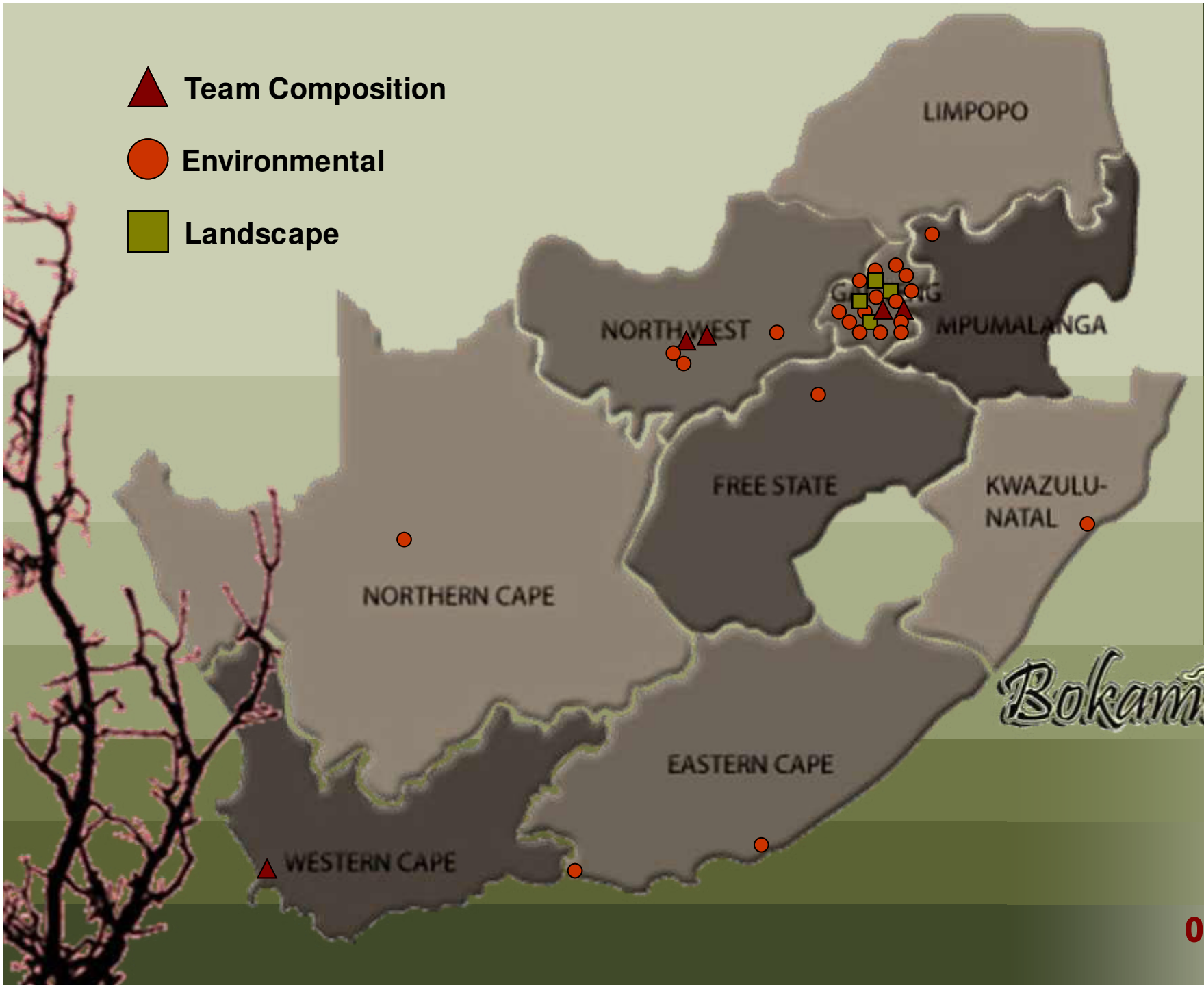
**04 Services**

**042 Contracting Services**

▲ Team Composition

● Environmental

■ Landscape

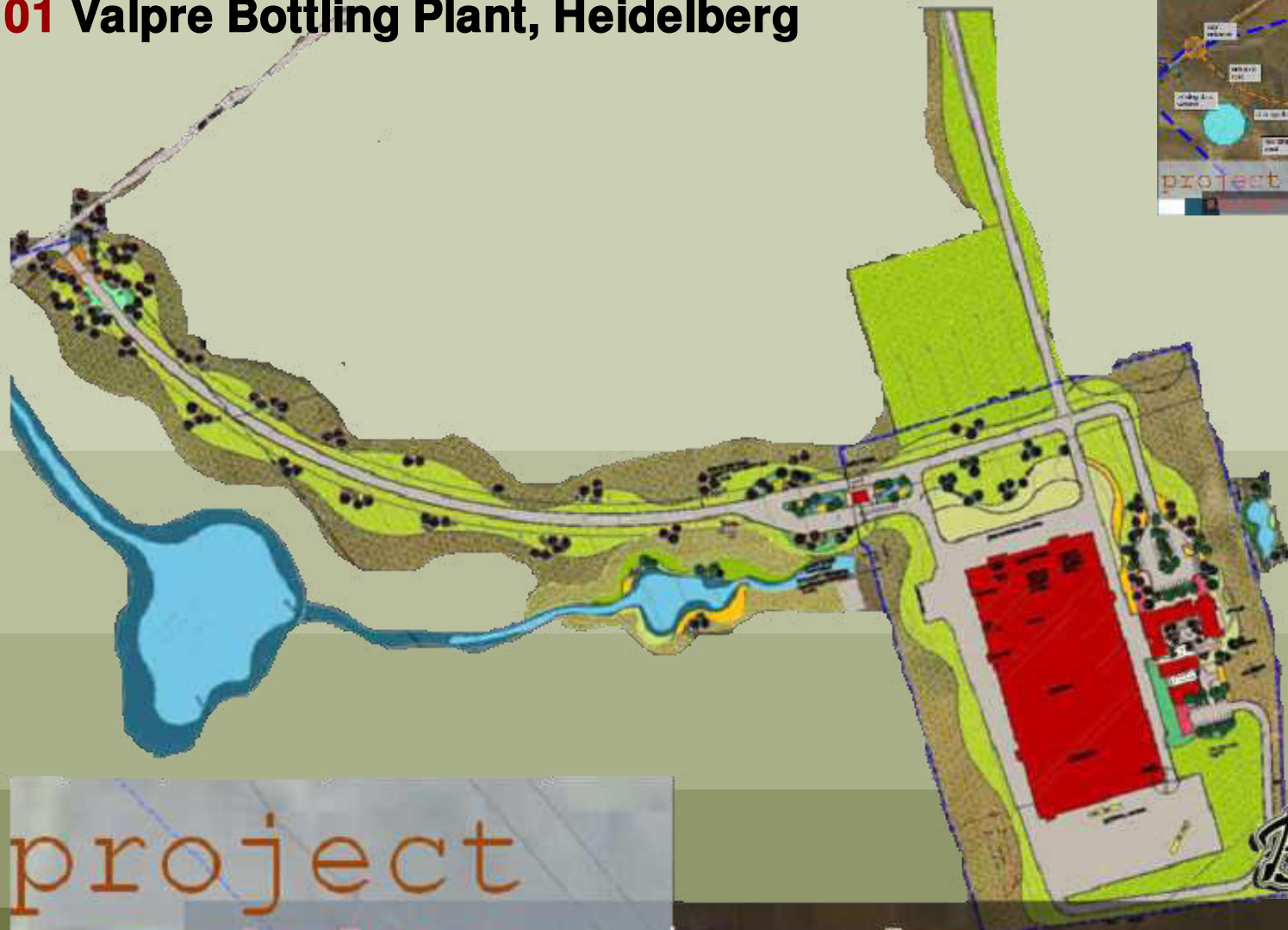


**04 Services**

**043 Orientation**



# 01 Valpre Bottling Plant, Heidelberg



project  
shelter-site plan

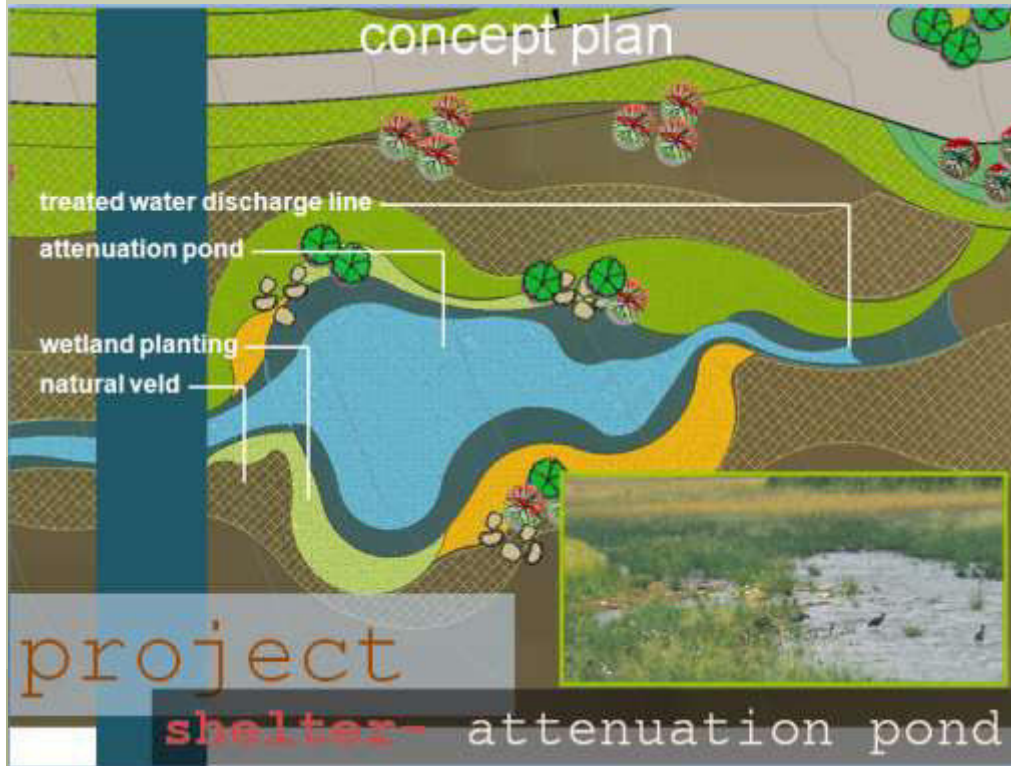
## 05 Landscape Projects- Current

### 051 Commercial





# 01 Valpre Bottling Plant, Heidelberg



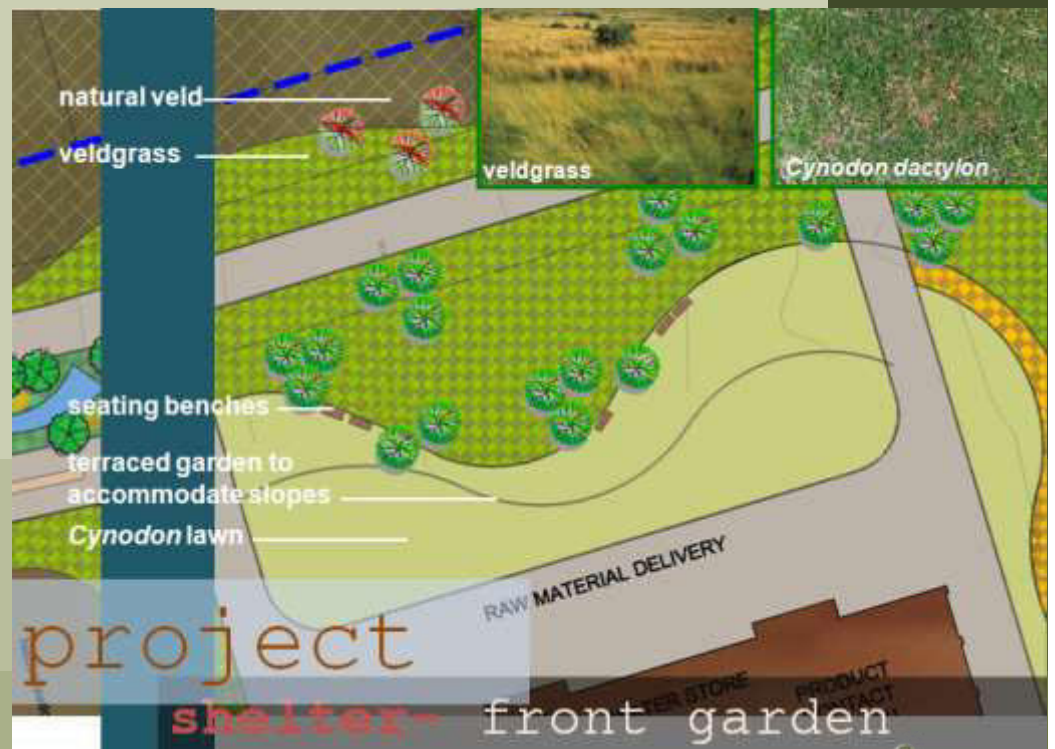
Bokamoso

05 Landscape Projects- Current

051 Commercial



# 01 Valpre Bottling Plant, Heidelberg

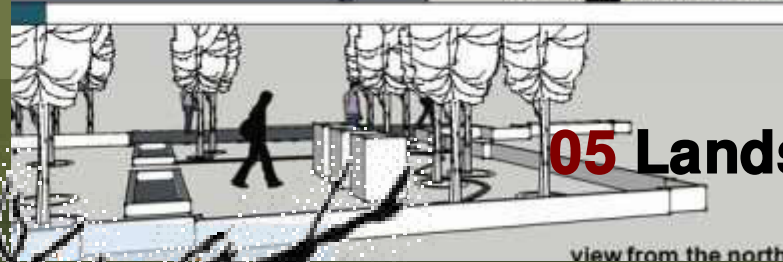
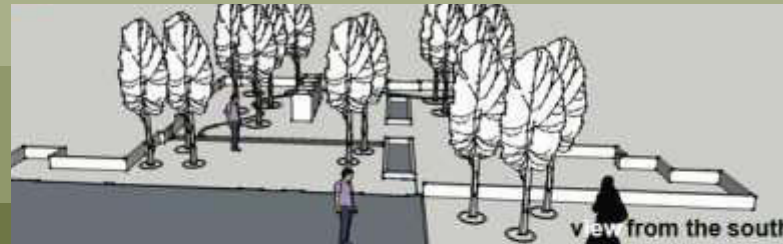


## 05 Landscape Projects– Current

### 051 Commercial



# 01 Valpre Bottling Plant, Heidelberg

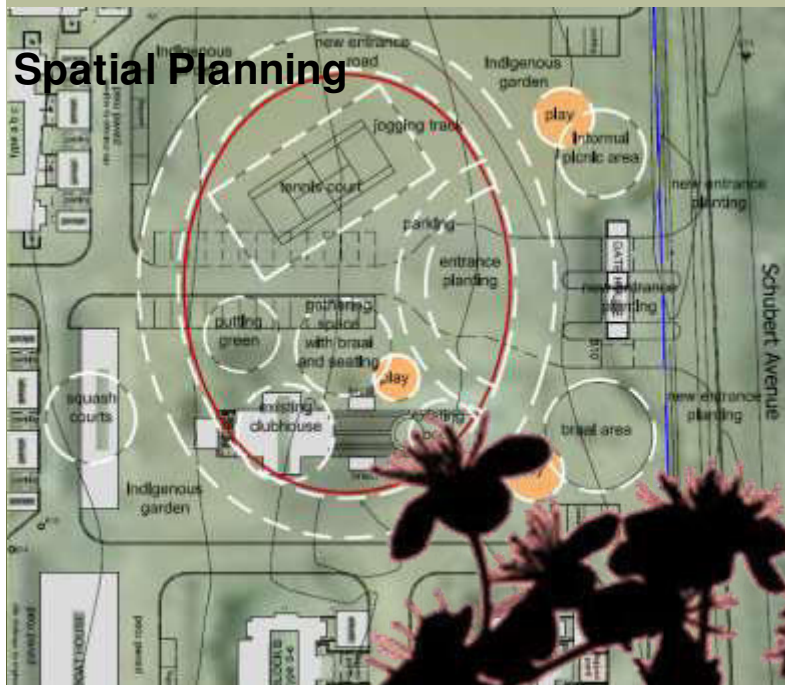


**05** Landscape Projects– Current

**051** Commercial



## 02 Melodie Waters, Hartebeespoortedam



Streetscape

Indigenous Planting



## 05 Landscape Projects – Current

### 052 Commercial/Recreational





## 02 Melodie waters, Hartebeestpoortdam



Rehabilitation



Area Layout

### Development Framework

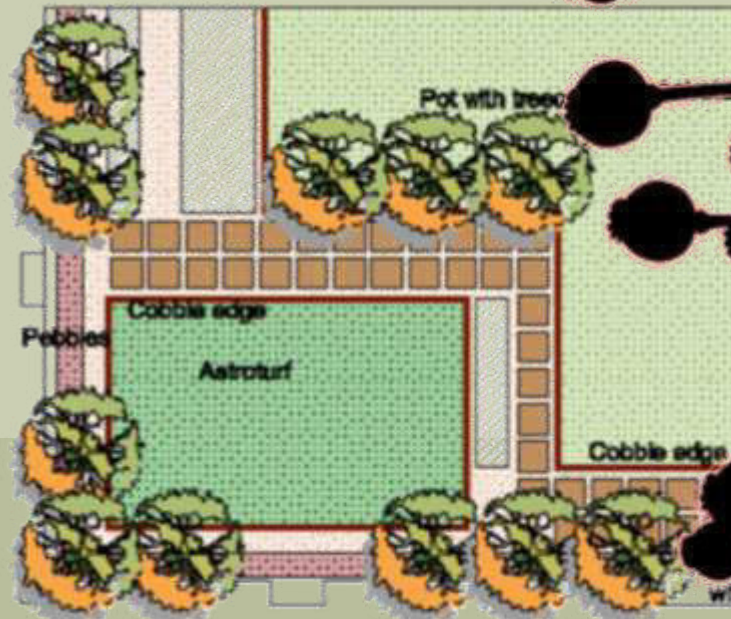


## 05 Landscape Projects– Current

### 052 Commercial/Recreational



### 03 Grain Building, Pretoria



*Bokamoso*

**05** Landscape Projects– Completed

**053** Offices



## 04 Ismail Dawson offices, Pretoria



*Bokamoso*

## 05 Landscape Projects – Conceptual

053 Offices



# 05 Celtic Manor, Pretoria



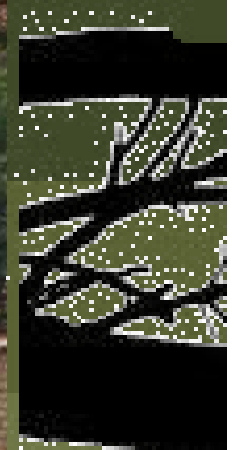
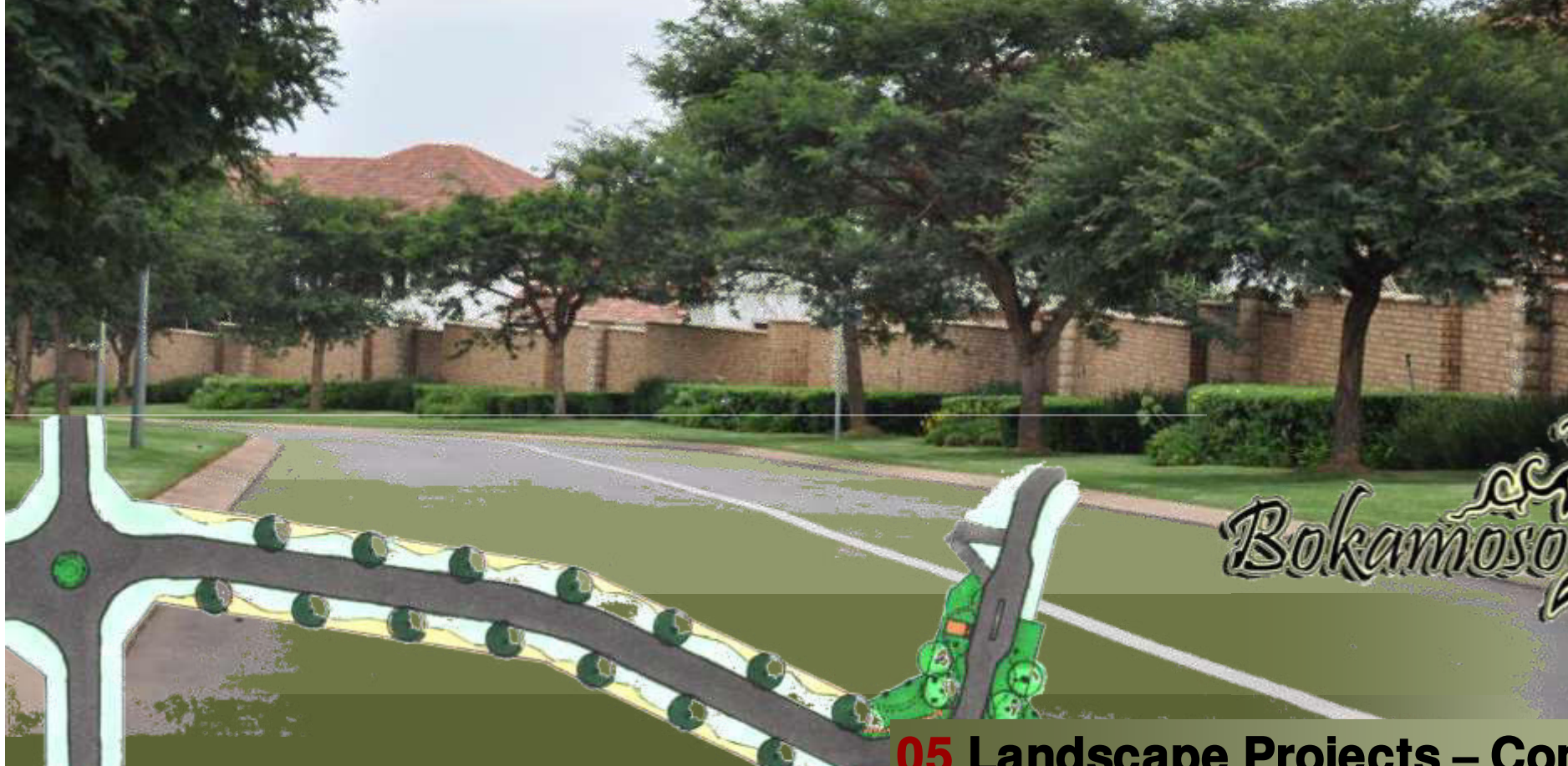
*Bokamoso*

**05 Landscape Projects - Completed**

**054 Complex Development**



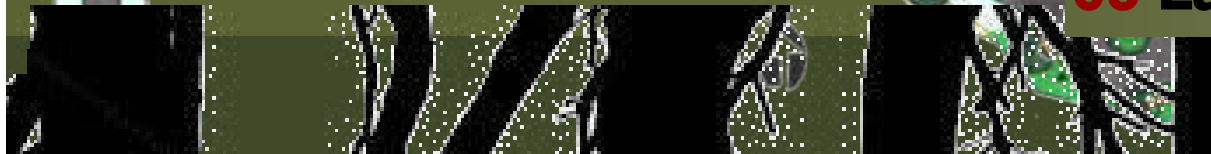
# 06 The Wilds, Pretoria



*Bokamoso*

**05 Landscape Projects – Completed**

**054 Complex Development**





# 07 The Wilds, Pretoria



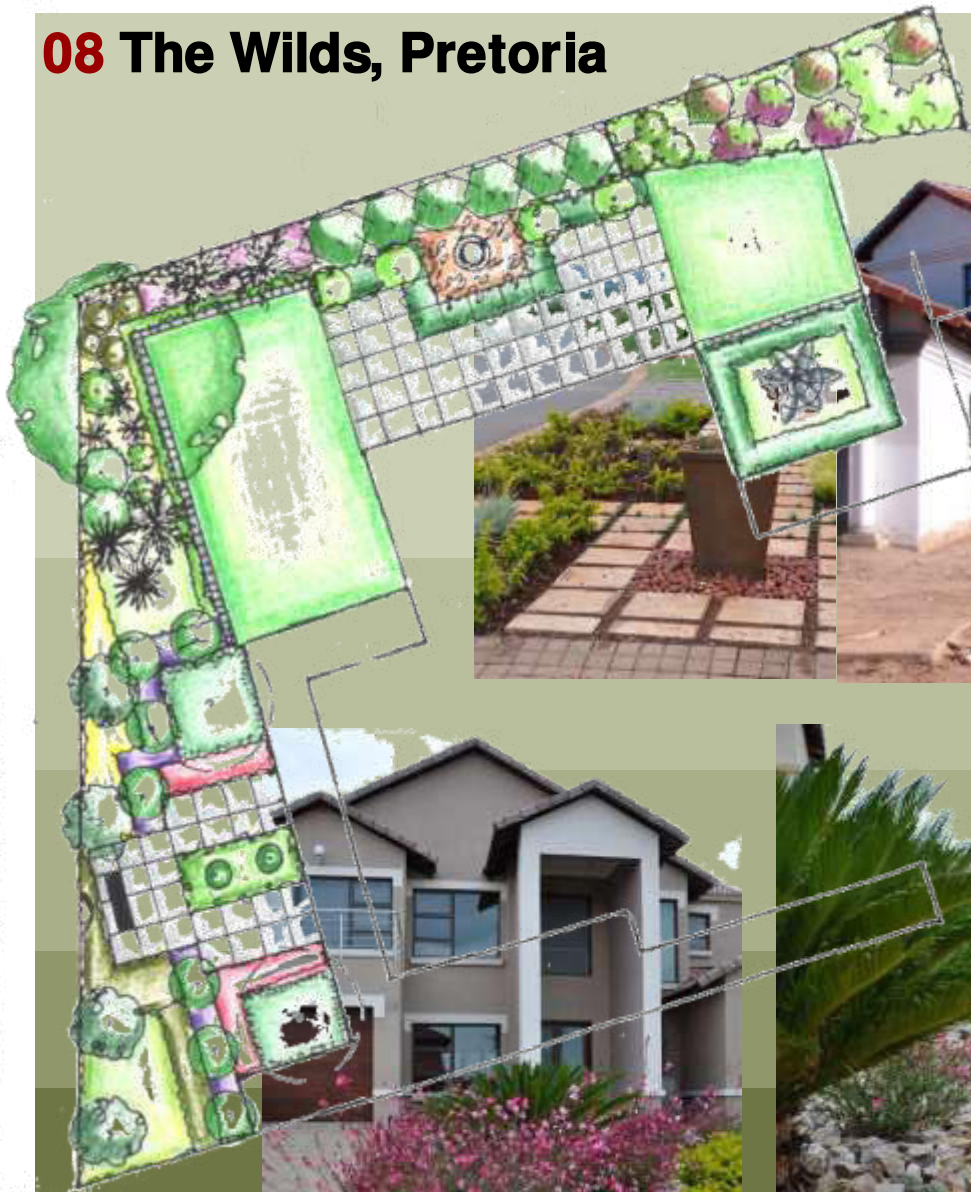
*Bokamoso*

**05 Landscape Projects – Completed**

**055 Residential**



## 08 The Wilds, Pretoria



*Bokamoso*

**05 Landscape Projects – Completed**

**055 Residential**



**09 The Wilds, Pretoria**



*Bokamoso*

**05 Landscape Projects – Completed**

**055 Residential**



# 010 The Wilds, Pretoria



**05 Landscape Projects – Completed**

**055 Residential**



# 011 Governor of Reserve Bank's Residence, Pretoria



Plant Palette



Option 1



Option 2

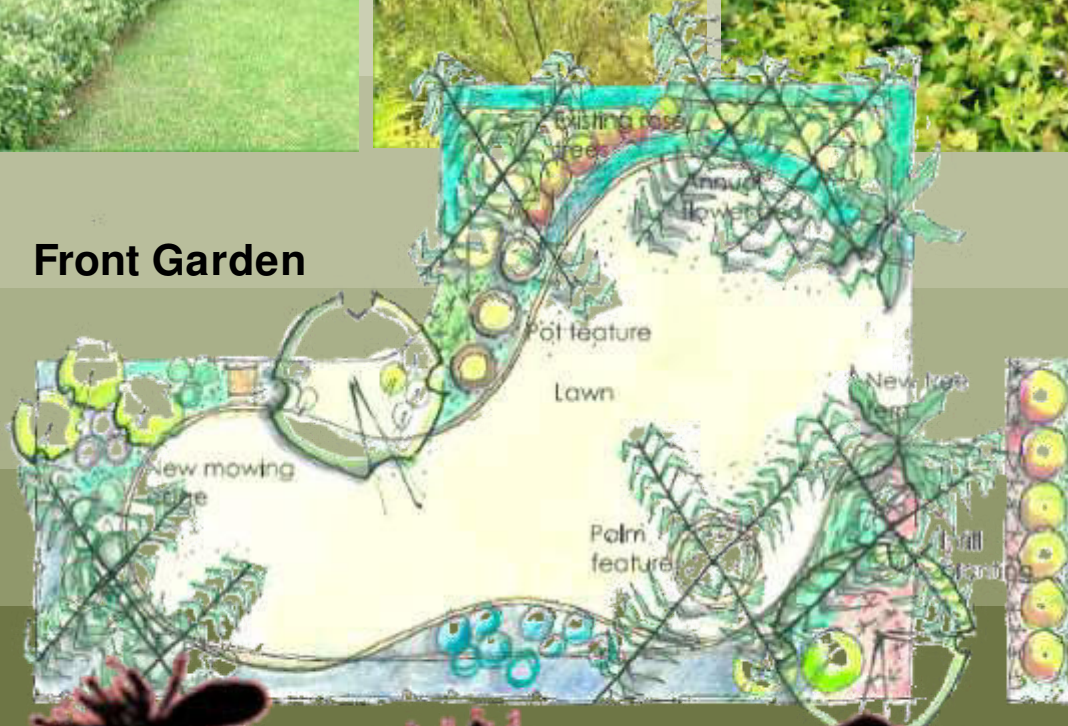




# 012 House Ismail, Pretoria



Front Garden



Back Garden





# 013 Forest Garden, Pretoria

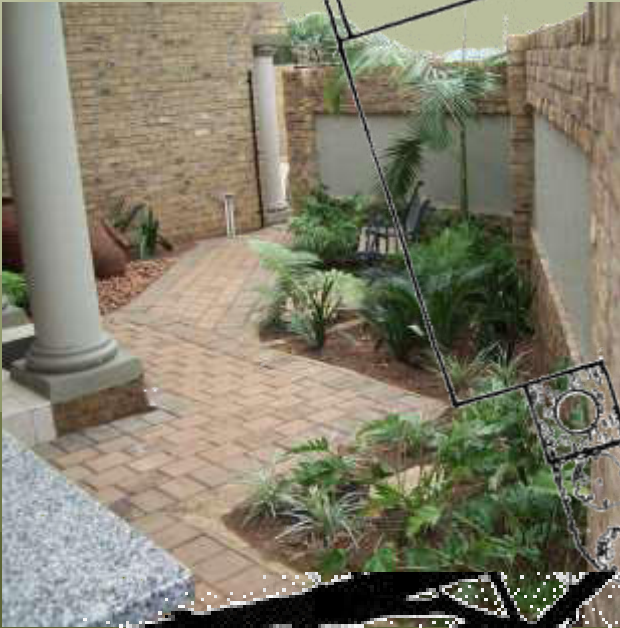


**05 Landscape Projects – Completed**

**055 Residential**



# 015 Forest Garden, Pretoria



*Bokamoso* 

**05** Landscape Projects - Completed

**055** Residential



# 01 Safari Garden Expo

Received a Silver Certificate at the Safari Garden Expo, 2010



06 Corporate Highlights

061 Awards

## **02 UNISA Sunnyside Campus, Pretoria**

**Best Commercial Paving Plan in Gauteng, 1997**

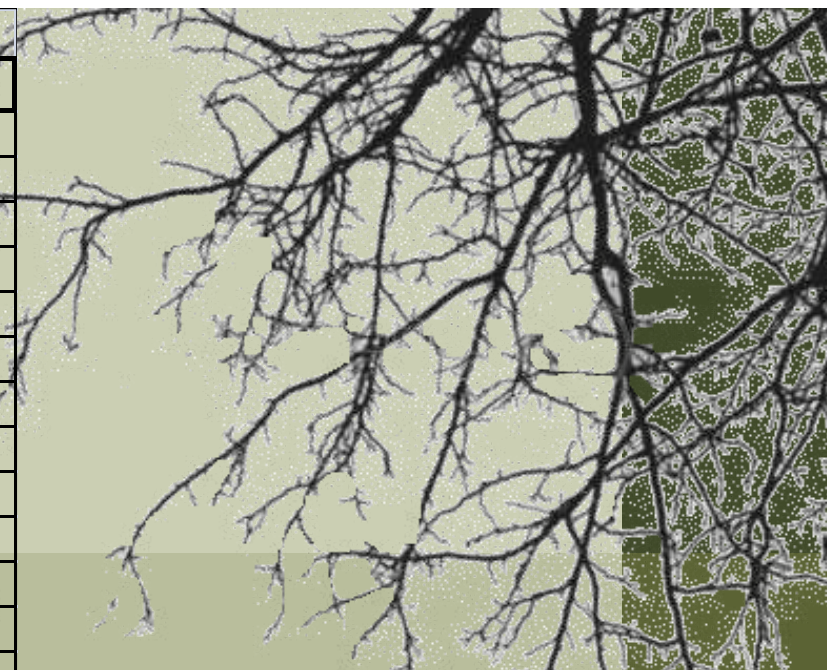


**06 Corporate Highlights**

**061 Awards**



Project Name	Status	Project
<b>Environmental Impact Assessment(EIA) and Scoping Report</b>		
Junction 21	ROD	EIA
5 O'clock site access	In Progress	EIA
Bokamoso X 1	In Progress	Scoping & EIA
Doornvallei Phase 6 & 7	In Progress	EIA
Engen Interchange	In Progress	Scoping & EIA
Erasmia X15	In Progress	EIA
Franschkloof	In Progress	EIA
K113	Amendment of ROD	EIA
K220 East	ROD	EIA
K220 West	ROD	EIA
K54 ROD conditions	In Progress	EIA
Knopjeslaagte 95/Peachtree	ROD	EIA
Knopjeslaagte portion 20 & 21	ROD	EIA
Lillieslief/Nooitgedacht	In Progress	EIA
Mooiplaats 70 (Sutherland)	In Progress	EIA
Naauwpoort 1 - 12/Valley View	In Progress	EIA
PeachTree X5	In Progress	EIA
Strydfontein 60	In Progress	EIA
Thabe Motswere	In Progress	Scoping & EIA
Vlakplaats	In Progress	EIA
Waterval Valley	In Progress	EIA
<b>Environmental Opinion</b>		
Doornkloof 68 (Ross)	In Progress	Opinion
Monavoni X 53	In Progress	BA & Opinion
Mooikloof (USN)	In Progress	Opinion
Norwood Mall/Sandspruit	In Progress	Opinion
Riversong X 9	In Progress	Opinion
Sud Chemie	In Progress	Opinion
USN Benjoh Fishing Resort	In Progress	Opinion



The adjacent list host the status of our current projects. Only a selected amount of projects are displayed.



**07 Current Environmental Projects**

**071 EIA, Scoping & Opinion**

Project Name	Status	Project
<b>Basic Assessment(BA)</b>		
Annlin X 138	In Progress	BA
Clubview X 29	ROD	BA
Darrenwood Dam	In Progress	BA
Durley Holding 90 & 91	In Progress	BA
Elim	In Progress	BA
Fochville X 3	In Progress	BA
Hartebeeshoek 251	In Progress	BA
Klerksdorp (Matlosana Mall)	In Progress	BA
Monavoni External Services	ROD	BA
Monavoni X 45	Amendment of ROD	BA
Montana X 146	In Progress	BA
Rooihuiskraal X29	In Progress	BA
Thorntree Mall	In Progress	BA

<b>Environmental control officer (ECO)</b>		
Grace Point Church	In Progress	ECO
R 81	In Progress	ECO
Highveld X 61	In Progress	ECO
Mall of the North	In Progress	ECO
Olievenhoutbosch Road	In Progress	ECO
Orchards 39	In Progress	ECO
Pierre van Ryneveld Reservoir	In Progress	ECO
Project Shelter	In Progress	ECO

<b>S24 G</b>		
Wonderboom	In Progress	S24 G
Mogwasi Guest houses	Completed	S24 G



**07 Current Environmental Projects**

**072 BA, ECO & S24 G**



Project Name	Status	Project
<b>Objection</b>		
Colesberg WWTW	In Progress	Objection
Nigel Steelmill	Completed	Objection
Chantilly Waters	Completed	Objection

<b>Development facilitation Act- Input (DFA)</b>		
Burgersfort	In Progress	DFA & BA
Doornpoort Filling Station	In Progress	DFA & EIA & Scoping
Eastwood Junction	In Progress	DFA
Ingersol Road (Erf 78, 81 - 83)	In Progress	DFA
Roos Senekal	In Progress	DFA & EIA & Scoping
Thaba Meetse 1	In Progress	DFA & EIA & Scoping

<b>Water Use License Act (WULA)</b>		
Britstown Bulk Water Supply	In Progress	WULA
Celery Road / Green Channel	In Progress	WULA
Clayville X 46	In Progress	WULA
Dindingwe Lodge	In Progress	WULA
Doornpoort Filling Station	In Progress	WULA+DFA+EIA+SC
Eco Park Dam	In Progress	WULA
Groote Drift Potch	In Progress	WULA
Jozini Shopping Centre	In Progress	WULA+BA
K60	Completed	WULA
Maloto Roads	In Progress	WULA
Kwazele Sewage Works	In Progress	WULA
Monavoni External Services	In Progress	WULA+BA
Nyathi Eco Estate	In Progress	WULA
Prairie Giants X 3	In Progress	WULA
Waveside Water Bottling Plant	Completed	WULA



**07 Current Environmental Projects**

**073 Objection, DFA & WULA**

Project Name	Status	Project
<b>Environmental Management Plan(EMP)</b>		
Heidelberg X 12	ROD	EMP
Monavoni Shopping Centre	Completed	EMP
Forest Hill Development	Completed	EMP
Weltevreden Farm 105KQ	Completed	EMP+EIA
Raslouw Holding 93	Completed	EMP+BA
Durley Development	Completed	EMP+BA
Rooihuiskraal North X 28	Completed	EMP

<b>Rehabilitation Plan</b>		
Norwood Mall/Sandspruit	In Progress	Rehabilitation
Project Shelter Heidelberg	In Progress	Rehabilitation
Sagewood Attenuation Pond	ROD	Rehabilitation
Velmore Hotel	Completed	Rehabilitation
Grace Point Church	Completed	Rehabilitation
Mmamelodi Pipeline	Completed	Rehabilitation

<b>Visual Impact Assessment</b>		
Swatzkop Industrial Developme	Completed	Assessment +DFA
Erasmia	Completed	Assessment

<b>Signage Application</b>		
Menlyn Advertising	Completed	Signage
The Villa Mall	Completed	Signage+EMP+BA



## 07 Current Environmental Projects

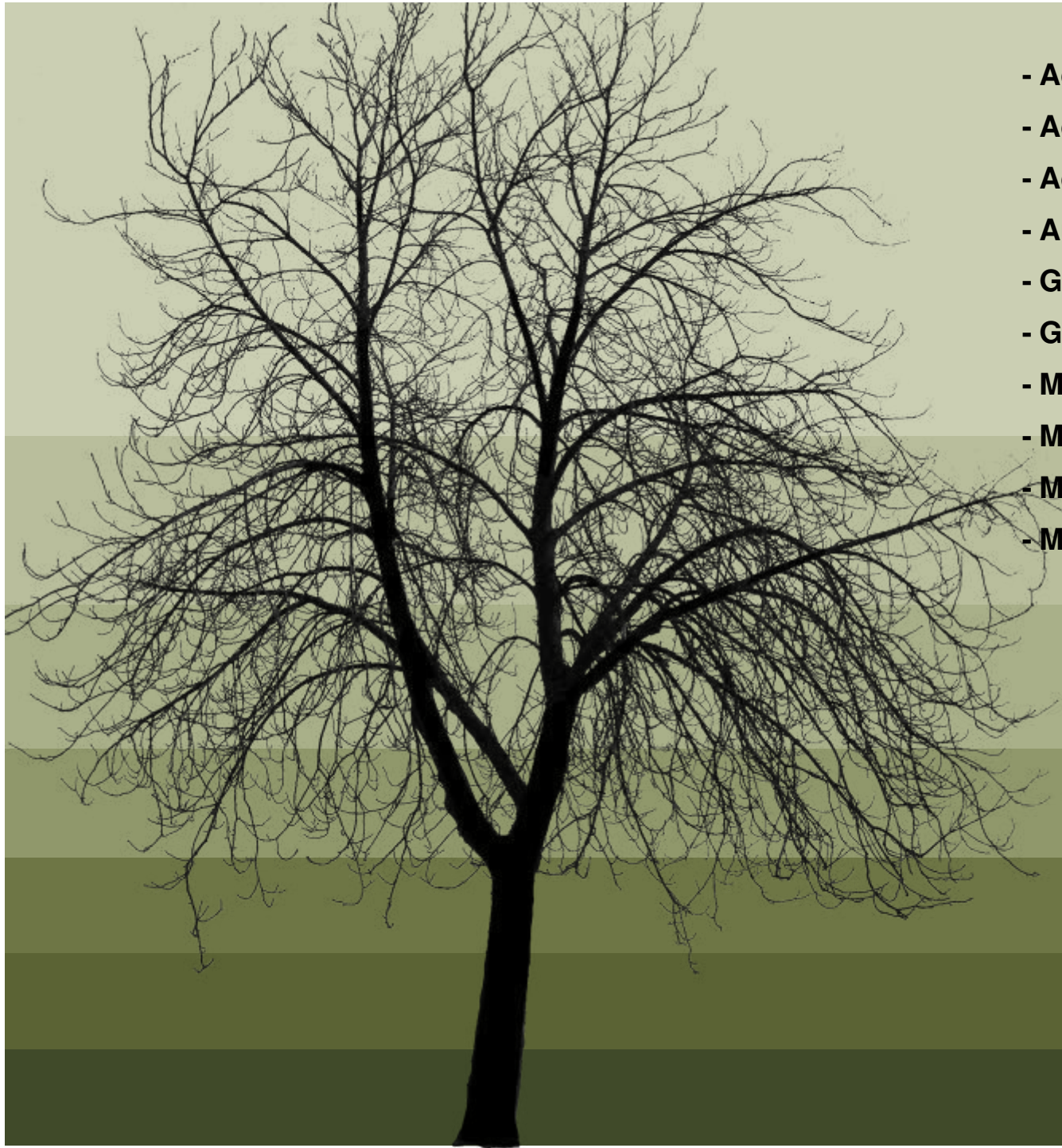
**074 EMP, Rehabilitation , Waste Management & Signage Application**



- Billion Property Group
- Cavaleros Developments
- Centro Developers
- Chaimberlains
- Chieftain
- Century Property Group
- Coca Cola
- Elmado Property Development
- Flanagan & Gerard
- Gautrans
- Hartland Property Group
- Moolman Group
- MTN
- M&T Development
- Old Mutual
- Property Investment Company
- Petroland Developments
- RSD Construction
- SAND
- Stephan Parsons
- Twin City Developments
- Urban Construction
- USN



**08** Indicative Clients



- Adobe Illustrator CS3
- Adobe Photoshop CS3
- Adobe InDesign CS3
- AutoCAD
- Google SketchUP
- GIS
- Microsoft Office Word
- Microsoft Office Excel
- Microsoft Office Publisher
- Microsoft Office Power Point

*Bokamoso* 



# Qualifications And Experience In The Field Of Environmental Planning And Management (Lizelle Gregory (Member Bokamoso)):

## Qualifications:

- Qualified as **Landscape Architect** at UP 1991;
- Qualified as **Professional Landscape Architect in 1997**;
- A Registered Member at The **South African Council for the Landscape Architect Profession (SACLAP)** with Practise Number: **PrLArch97078**;
- A Registered Member at the **International Association for Impact Assessment Practitioners (IAIA)**;
- Qualified as an **Environmental Auditor in July 2008** and also became a Member of the International Environmental Management Association (IEMAS) in 2008.

## Working Experience:

- Worked part time at Eco-Consult – 1988-1990;
- Worked part time at **Plan Associates as Landscape Architect in training** – 1990-1991;
- Worked as Landscape Architect at **Environmental Design Partnership (EDP)** from 1992 - 1994
- Practised under **Lizelle Gregory Landscape Architects** from 1994 until 1999;
- Lectured** at Part-Time at **UP** (1999) – Landscape Architecture and **TUT** (1998- 1999)- Environmental Planning and Plant Material Studies;
- Worked as **part time Landscape Architect and Environmental Consultant at Plan Associates** and **managed their environmental division for more than 10 years** – 1993 – 2008 (assisted the **PWV Consortium** with various road planning matters which amongst others included environmental Scans, EIA's, Scoping reports etc.)
- Renamed business as **Bokamoso in 2000** and is the only member of Bokamoso Landscape Architects and Environmental Consultants CC;
- More than 20 years experience in the compilation of Environmental Reports**, which amongst others included the compilation of various **DFA Regulation 31 Scoping Reports**, EIA's for EIA applications in terms of the applicable environmental legislation, Environmental Management Plans, Inputs for Spatial Development Frameworks, DP's, EMF's etc. Also included EIA Application on and adjacent to mining land and slimes dams (i.e. Brahm Fisherville, Doornkop)

# Qualifications And Experience In The Field Of Landscape Architecture (Lizelle Gregory (Member Bokamoso)):

## Landscape Architecture:

-Compiled landscape and rehabilitation plans for more than 22 years.

### The most significant landscaping projects are as follows:

-Designed the Gardens of the Witbank Technicon (a branch of TUT). Also supervised the implementation of the campus gardens (2004);

-Lizelle Gregory was the Landscape Architect responsible for the paving and landscape design at the UNISA Sunnyside Campus and received a Corobrick Golden Award for the paving design at the campus (1998-2004);

-Bokamoso assisted with the design and implementation of a park for the City of Johannesburg in Tembisa (2010);

-The design and implementation of the landscape gardens (indigenous garden) at the new Coca-Cola Valpre Plant (2012-2013);

-Responsible for the rehabilitation and landscaping of Juksei River area at the Norwood Shopping Mall (Johannesburg) (2012-2013);

-Designed and implemented a garden of more than 3,5ha in Randburg (Mc Arthurpark). Bokamoso also seeded the lawn for the project (more than 2,5 ha of lawn successfully seeded) (1999);

-Bokamoso designed and implemented more than 800 townhouse complex gardens and submitted more than 500 Landscape Development Plans to CTMM for approval (1995 – 2013);

-Assisted with Landscape Designs and the Masterplan at Eco-Park (M&T Developments) (2005-2011);

-Bokamoso designed and implemented an indigenous garden at an office park adjacent to the Bronberg. In this garden it was also necessary to establish a special garden for the Juliana Golden Mole. During a recent site visit it was established that the moles are thriving in this garden. Special sandy soils had to be imported and special indigenous plants had to be established in the natural section of the garden.

-Lizelle Gregory also owns her own landscape contracting business. **For the past 20 years she trained more than 40 PDI jobless people (sourced from a church in Mamelodi)** to become landscape contracting workers. All the workers are (on a continuous basis) placed out to work at nurseries and other associated industries;

-Over the past 20 years the Bokamoso team compiled more than 800 landscape development plans and also implemented most of the gardens. Bokamoso also designed and implemented the irrigation for the gardens (in cases where irrigation was required). Lizelle regarded it as important to also obtain practical experience in the field of landscape implementation.

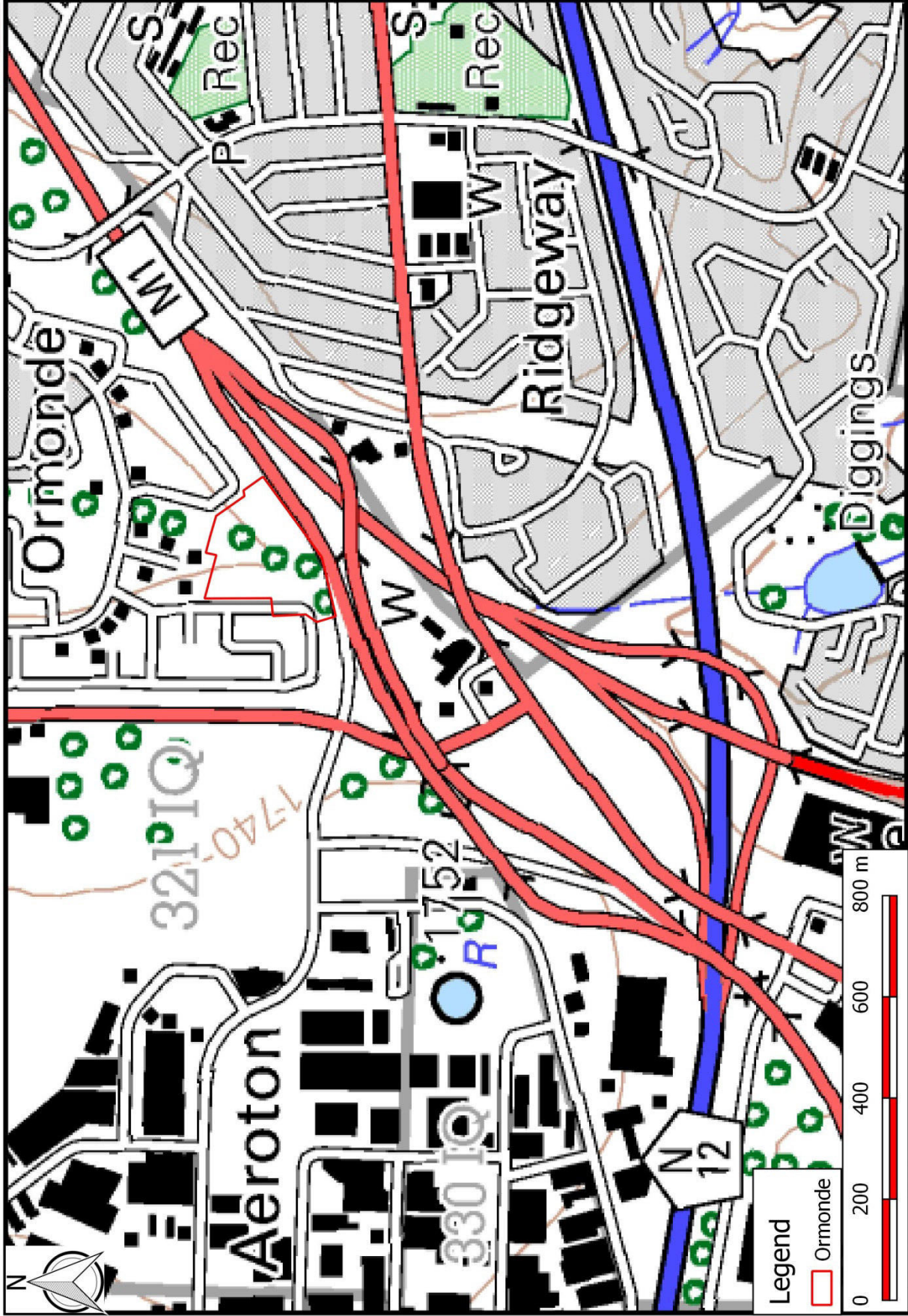


# Appendix Iii

Enlarged Figures



# Locality







## Legend

 Ormonde

0 100 200 300 400 m





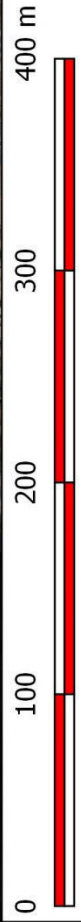
# Aerial

Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelle@mweb.co.za](mailto:Lizelle@mweb.co.za)



## Legend

-  Ormonde
-  Delineated Watercourse

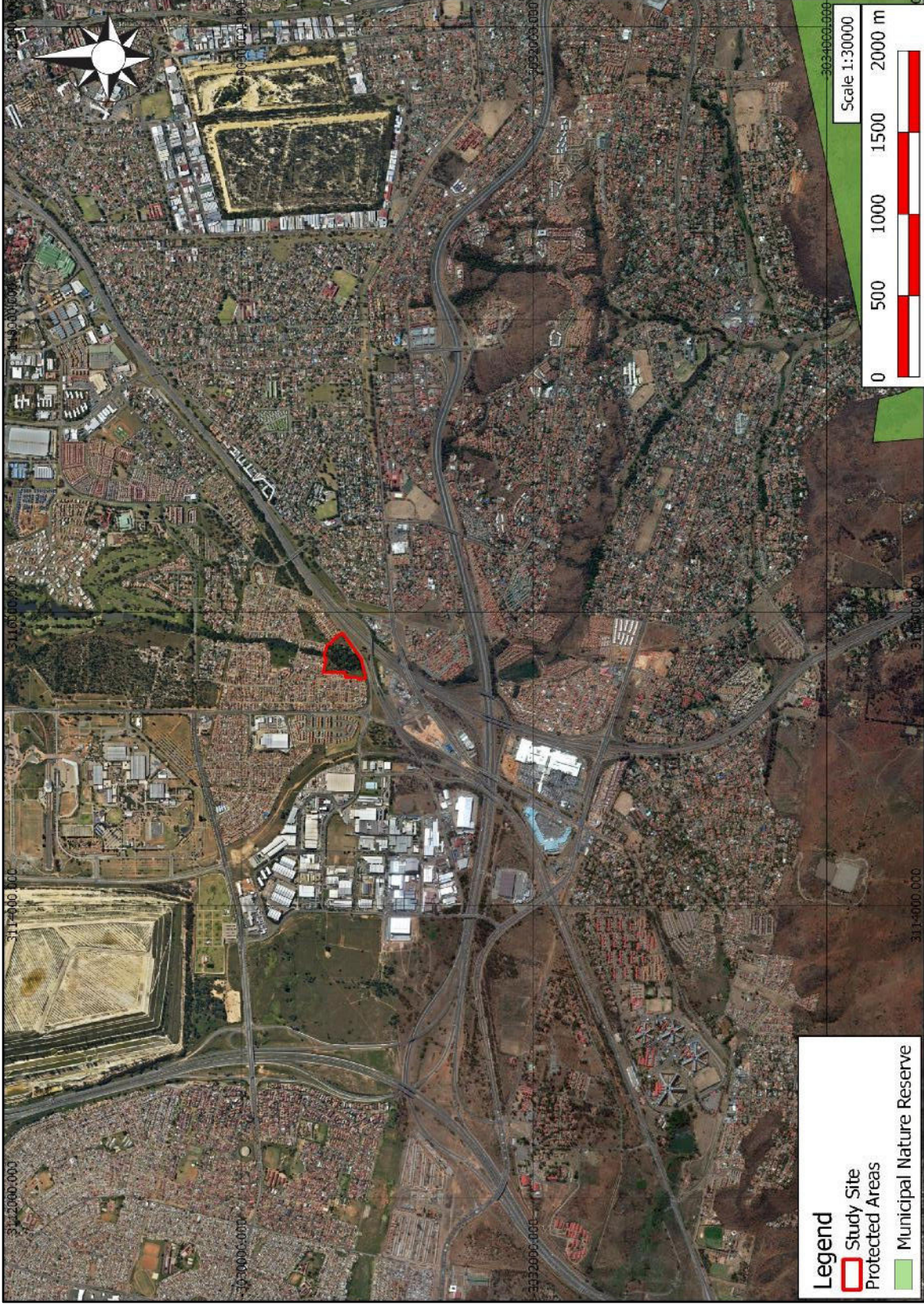


Projection - Transverse Mercator  
Datum - Hartbeeshoek, 1994  
Reference Ellipsoid - WGS 1984  
Central Meridian - 29



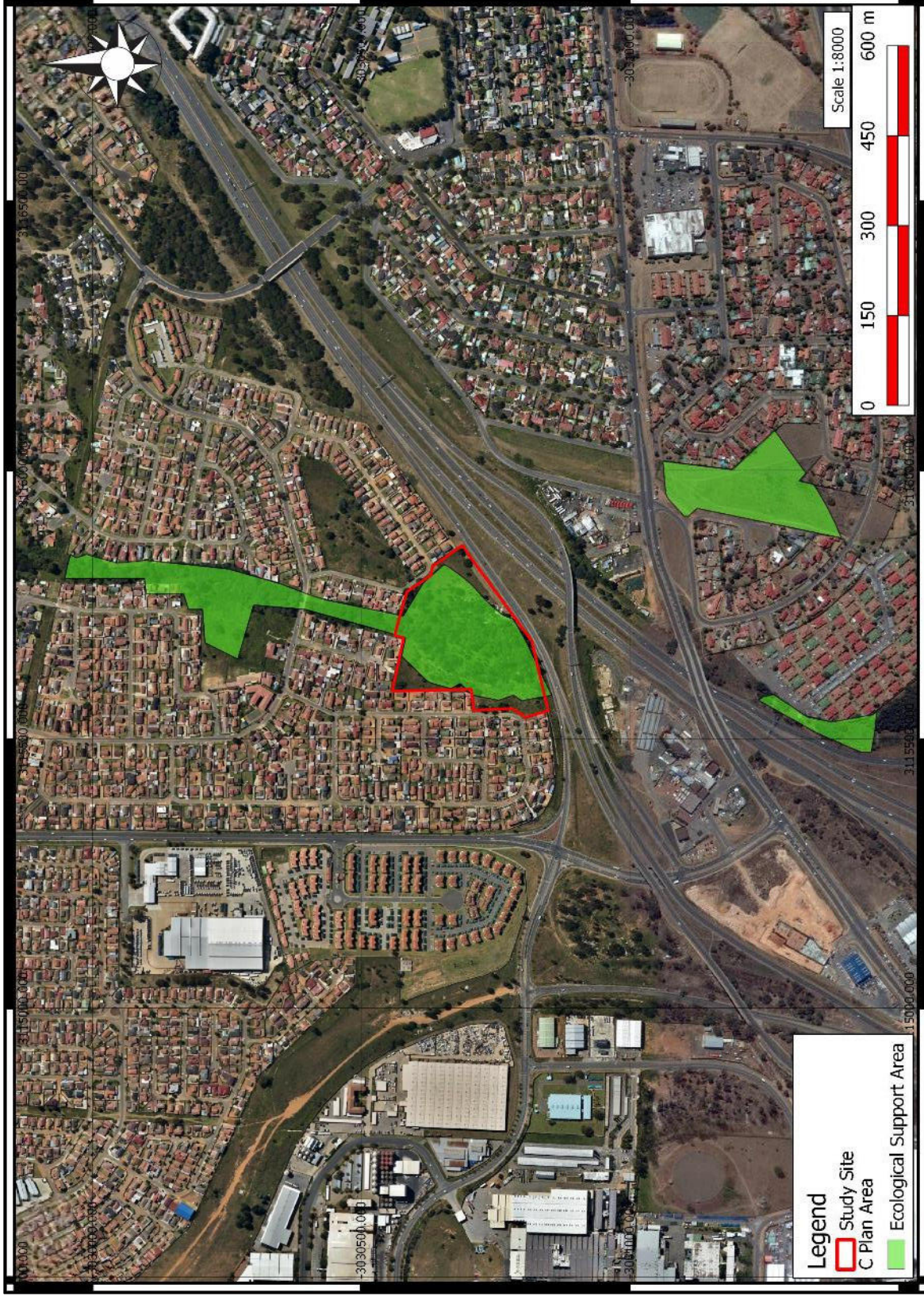
Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelleg@mmweb.co.za](mailto:Lizelleg@mmweb.co.za)

# Ormonde South Protected Areas





# Ormonde South C Plan Area





# Ormonde South

## C Plan Irreplaceable

Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelleg@mweb.co.za](mailto:Lizelleg@mweb.co.za)



**Legend**

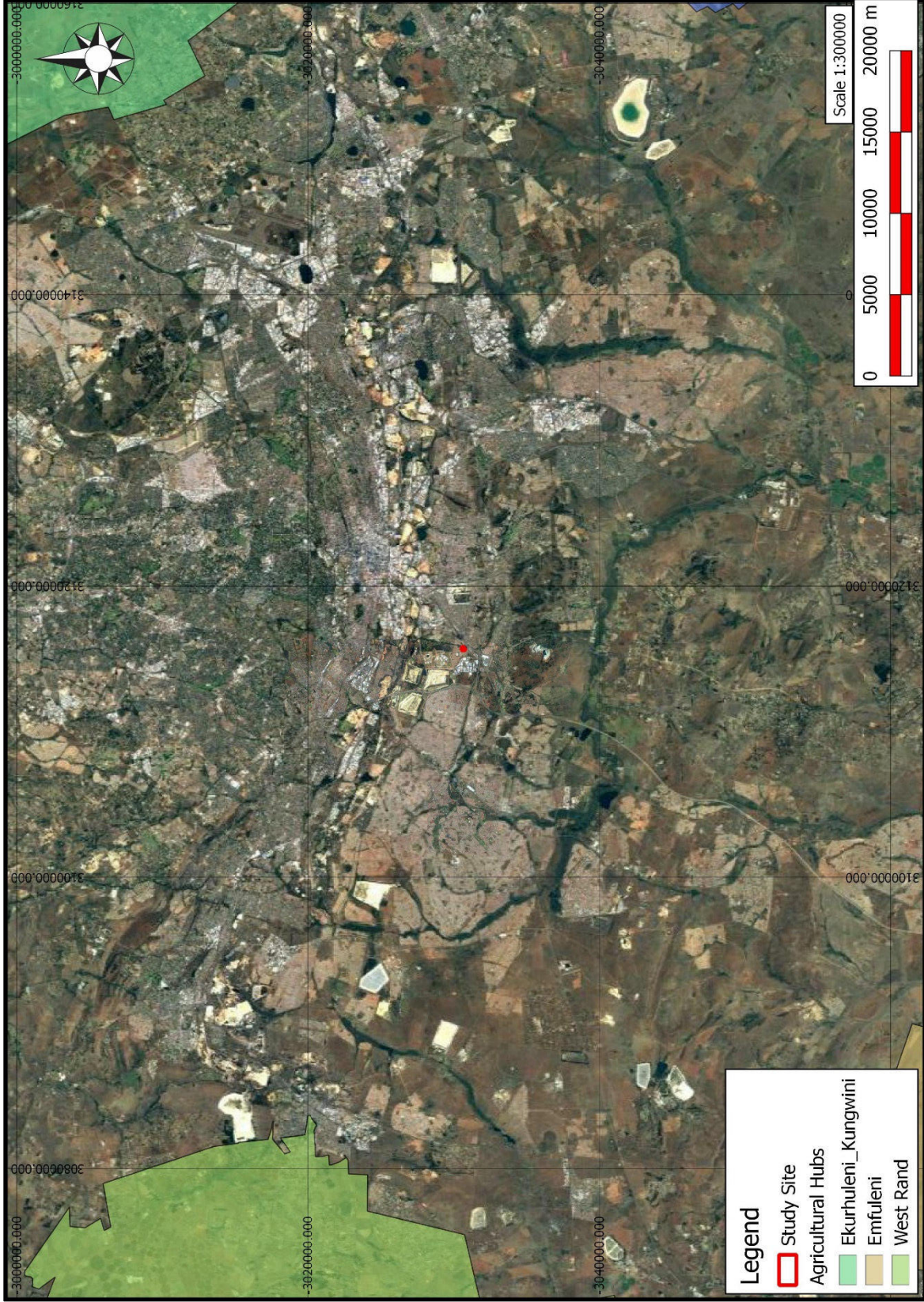
- Study Site
- C plan Irreplaceable
- RL plant conf, RL plant hab, OL plant hab, Prim veg

Projection – Transverse Mercator  
Datum – Hartebeeshoek 1994  
Reference Ellipsoid – WGS 1984  
Central Meridian – 29



# Ormonde South Agricultural Hubs

Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelleg@mweb.co.za](mailto:Lizelleg@mweb.co.za)



**Legend**

- Study Site
- Agricultural Hubs
  - Ekurhuleni\_Kungwini
  - Emfuleni
  - West Rand

Projection – Transverse Mercator  
Datum – Hartbeeshoek 1994  
Reference Ellipsoid – WGS 1984  
Central Meridian – 29





# Ormonde South Ridges

Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelleg@mweb.co.za](mailto:Lizelleg@mweb.co.za)



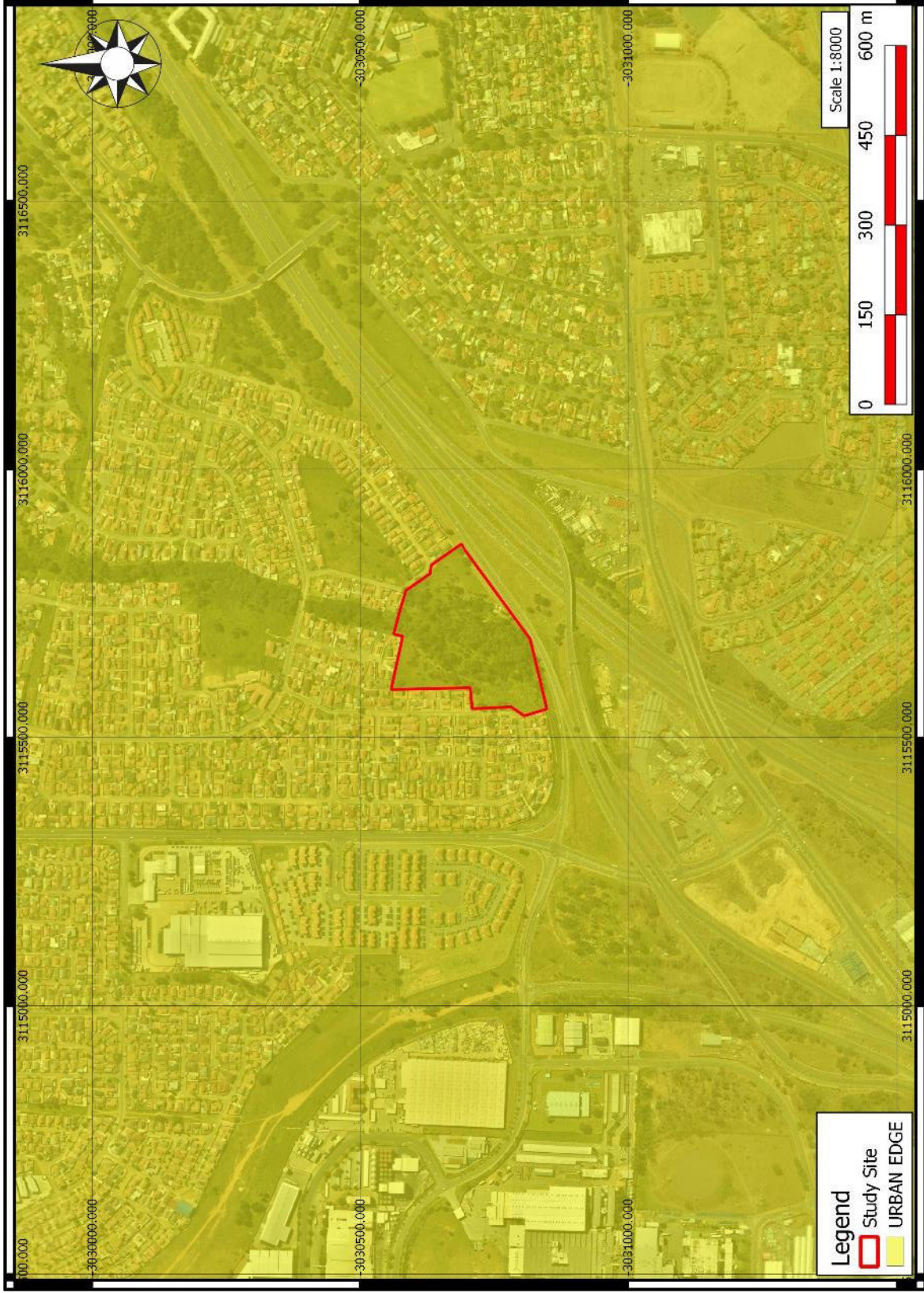
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Datum – Hartbeeshoek 1994  
Reference Ellipsoid – WGS 1984  
Central Meridian – 29



Bokamoso Environmental Consultants  
Website: [www.bokamoso.biz](http://www.bokamoso.biz)  
E-Mail: [Lizelleg@mmweb.co.za](mailto:Lizelleg@mmweb.co.za)

# Ormonde South

## Urban Edge



Projection – Transverse Mercator  
Datum– Hartebeeshoek 1994  
Reference Ellipsoid –WGS 1984  
Central Meridian -29



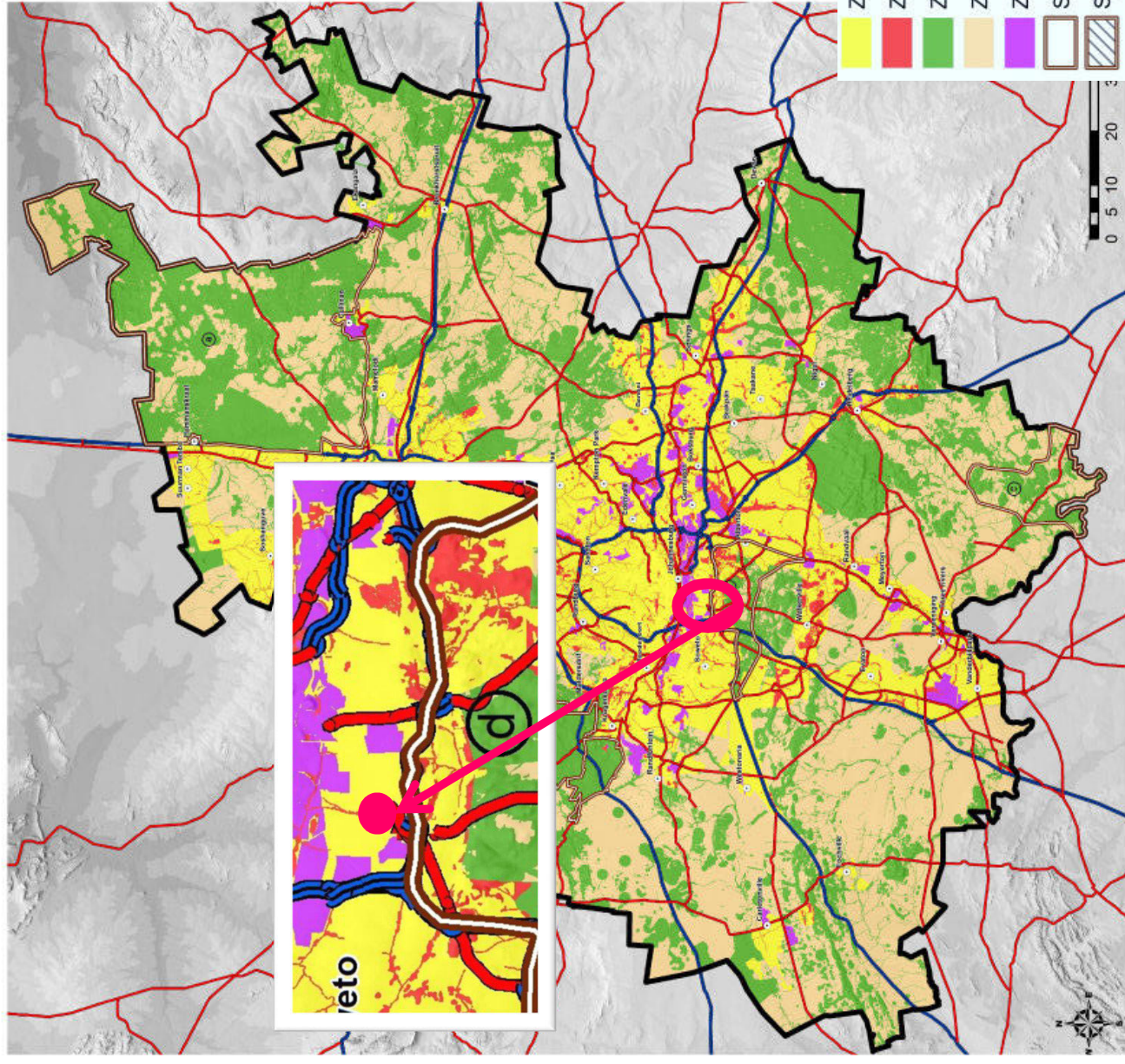
## MAP LEGEND:

### ENVIRONMENTAL MANAGEMENT ZONES

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Special Control Zones
- Special Control Zone for Conservation, Recreation and Tourism

- ### Roads
- Gauteng Provincial Boundary
  - National Road
  - Arterial Road

- ### Special Control Zones:
- (a) Dinokeng
  - (b) COPWHS
  - (c) Vaal Dam
  - (d) JHB South
  - (e) JHB North



### Zone 1: Urban development zone

**Intention**  
The intention with this zone is to streamline urban development activities in it and to promote development, infill, densification and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.

### Zone 2: High control zone (within the urban development zone)

**Intention**  
This zone is sensitive to development activities. Only conservation should be allowed in this zone. Based tourism and recreation activities must be accommodated in areas surrounding this zone.

### Zone 3: High control zone (outside the urban development zone)

**Intention**  
This zone is sensitive to development activities and in several cases also have specific values that need to be protected. Conservation and related tourism and recreation activities should dominate development in this zone.

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Special Control Zones
- Special Control Zone for Conservation, Recreation and Tourism

### Special control zones (SCZ):

Special control zones are areas that have specific additional account in the term SCZ (a): DH The Dinokeng nature reserve has strong natural and cultural values that make it an important area for recreation (especially in the area). Hospitality (especially lodges), rural development that caters for the specific needs of the area, and maintenance of current agricultural activities. Activities that should be avoided as far as possible include:  
• Battery farming and feedlots;  
• Mining and sand winning;  
• Industrial activities; and  
• Large commercial and retail developments.

### Special Control Zones:

- (a) Dinokeng
- (b) COPWHS
- (c) Vaal Dam
- (d) JHB South
- (e) JHB North

**SCZ (d): Johannesburg South**  
This Johannesburg South, special control zone term social in the area and a valuable rural and cultural and on to the various areas in the area. Agriculture, recreation and tourism developments. These activities will form the nature and basis of economic activities in the area and the integration of agricultural, tourism and recreation value chains.

### SCZ (e): Johannesburg North (the Greater KwaZulu Natal Conservancy)

The area is a rural area surrounded by urban areas. It is important to retain its character as it provides specific services to surrounding areas, including:  
• Habitat for threatened species;  
• Equestrian therapy centres (with an exceptional service to the community of Dipolot through their programmes with at-risk youth and disabled individuals);  
• Environmental educational facilities;  
• Nature trails and training of nature guides;  
• Bird watching facilities;  
• Green building resource centre;  
• Projects to increase food employment for neighbouring local indigenous plants and skills;  
• Activities and supporting recreation and tourism

### SCZ (b): Cradle of Humankind World Heritage Site

The purpose of this special zone is to incorporate into the Gauteng EMF. It has its own management zones and management guidelines that must be followed.

## Special Control Zone for Conservation, Recreation and Tourism

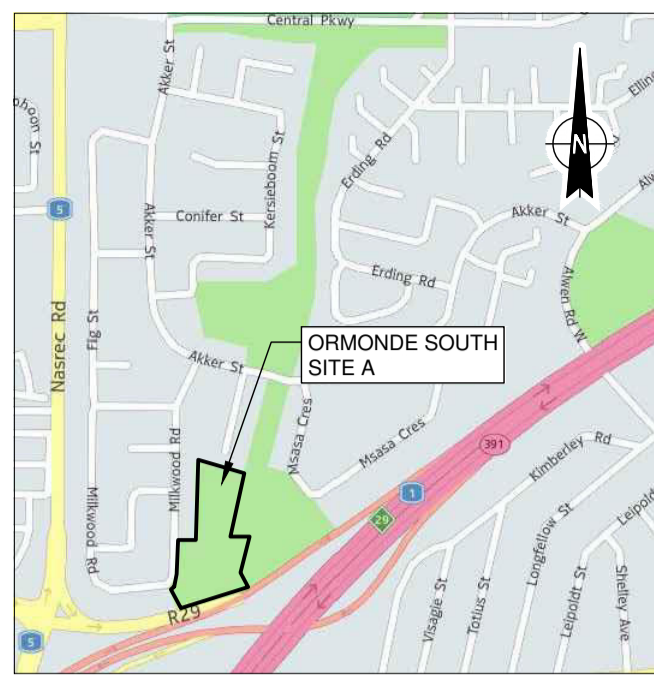
**Intention**  
Where a management plan for a protected area is in place, it will override the GREMF. Where there is no management plan, the area must be treated as Zone 3.

- Local tourism focused on the domestic market;
- Intensive recreation near to the Vaal Dam;
- Conservation of grassland habitat in the area;
- Rural development that focuses on tourism and recreation.

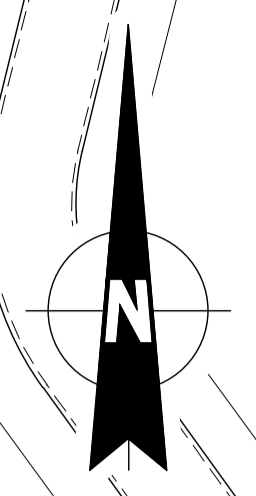
For enquiries, contact: 082 275 7201  
Poster prepared by







LOCALITY PLAN



FEB 2017 - ISSUED FOR APPROVAL

DATE	NO	REVISION

CLIENT



LOCAL AUTHORITY



PROJECT

**ORMONDE SOUTH**  
**SITE A ON ERF**  
**1130 & 1131**

DRAWING TITLE

**SITE LAYOUT PLAN**

DRAWING NO **C2284-A-201**

REV. NO.						
SCALE	1:500	DESIGNED	A.OOSTHUIZEN			
DATE	JANUARY 2017	DRAWN	A.OOSTHUIZEN			
		CHECKED	L.ZIETSMAN			





**LEGEND:**

LEGEND :

- SEWER
- SEWER MANHOLE
- SEWER CLEANING EYE
- WATER
- WATER
- STORMWATER

FEB 2017	-	ISSUED FOR APPROVAL
DATE	NO	REVISION

CLIENT

LOCAL AUTHORITY

a world class African city

**Civil Concepts (Pty) Ltd**  
 Consulting Civil & Structural Engineers  
 PO Box 36148, Menlo Park, 0102  
 Office: +27 12 460 0008  
 www.civilconcepts.co.za

PROJECT

**ORMONDE SOUTH**

**SITE B ON ERF 962 & 963**

DRAWING TITLE

**GENERAL SERVICES LAYOUT PLAN**

DRAWING NO **C2284-B-202-1**

REV. NO.					
SCALE	1:500	DESIGNED	A.OOSTHUIZEN		
		DRAWN	A.OOSTHUIZEN		
DATE	JANUARY 2017	CHECKED	L.ZIETSMAN		



