

PUBLIC OPEN HOUSE MEETING



PROPOSED MIXED USE DEVELOPMENT ON PORTION 7 AND 10 OF FARM 1674, BOSCHENDAL (BOSCHENDAL VILLAGE).



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ENVIRONMENTAL
CONSULTANTS



Piet Louw &
Dave Dewar

Sarah
Winter

Tony Barbour
&
Schalk van der
Merwe



1 SITE DESCRIPTION



Boschendal Estate consists of 28 farm portions which measure 1 813ha in extent.

The site is located on Portion 7 Farm 1674 (West of R310) and Portion 10 Farm 1674 (East of R310). Portion 7 measures approximately 106.6670 ha and Portion 10 is roughly 106.6539 ha in extent. The area to be developed (the site - yellow polygon) is approximately 28ha in size.

Portion 7 is zoned Agriculture Zone I in its entirety. Portion 10 is zoned primarily Agriculture Zone I with a spot zoning for Institutional Zone I (farm school and Institutional III (health clinic).

The Stellenbosch Municipal Spatial Development Framework (SDF) promotes a series of interconnected nodes located at points of highest accessibility. The site is located within the **SDF's** Groot Drakenstein node which is located at the R45/R310 intersection. This node has been identified as a future development node.



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2 OPEN HOUSE MEETING

The purpose of the meeting is to present the development proposals to the public and to give the public an opportunity to discuss the findings with the specialists involved.

WHAT IS AN OPEN HOUSE MEETING?

- ❖ There will be no formal presentation.
- ❖ Information is presented in poster format.
- ❖ Posters are mounted on the wall for public review.
- ❖ Relevant specialists are available to discuss queries and concerns.
- ❖ Please look at the posters and ask questions for clarity.
- ❖ Fill in your comments on the Comments Sheet provided.
- ❖ Hand in your Comments Sheet to us, or forward it to the contact details on the Sheet.



WHAT ARE THE RESPONSIBILITIES OF INTERESTED AND AFFECTED PARTIES (I&APs)?

- ❖ You should take this opportunity to participate in the public participation process.
- ❖ You should provide the project team with accurate and relevant information.
- ❖ You should engage in the process according to the agreed procedures and timeframes.
- ❖ You are not responsible for making a decision about the development. You can however, influence the outcome of the process and/or decision.
- ❖ You are responsible for raising concerns about the project, but avoid making unrealistic demands or claims.
- ❖ Representatives of organisations or various sectors, while in this capacity, must ensure that they voice the views of their constituents, not their own opinions.



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3a LEGISLATION

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) [NEMA]:

According to the EIA Regulations 2014, environmental authorisation is required for the following listed activities:

Listing Notice 1 (GN R. 983):

9. *The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- with an internal diameter of 0,36 metres or more; or with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or (b) where such development will occur within an urban area.*

12. *The development of- canals exceeding 100 square metres in size; channels exceeding 100 square metres in size; bridges exceeding 100 square metres in size; dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; bulk storm water outlet structures exceeding 100 square metres in size; marinas exceeding 100 square metres in size; jetties exceeding 100 square metres in size; slipways exceeding 100 square metres in size; buildings exceeding 100 square metres in size; boardwalks exceeding 100 square metres in size; or infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; - excluding- (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.*

19. *The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving- (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.*

27. *The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.*



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3b LEGISLATION

28. Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.

Listing Notice 3 (GN R. 985):

4. The development of a road wider than 4 metres with a reserve less than 13,5 metres.

6. The development of resorts, lodges, hotels and tourism or hospitality facilities that sleeps 15 people or more.

12. The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

THE NATIONAL RESOURCES HERITAGE ACT, 1999 (ACT NO. 25 OF 1999) [NHRA]:

This Act governs all heritage resources in South Africa and is administered by the South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (HWC) (in the Western Cape). In terms of Section 38 of the NHRA, the heritage process will form part of the EIA and the heritage resources authorities will therefore be key stakeholders in the process, but will not be decision makers for this application.

NATIONAL WATER ACT (ACT 36 OF 1998)[NWA]:

The purpose of the NWA is to provide a framework for the equitable allocation and sustainable management of water resources. The Act aims to regulate the use of water and activities (as defined in Part 4, Section 21 of the NWA), which may impact on water resources through the categorisation of 'listed water uses' encompassing water abstraction and flow attenuation within catchments as well as the potential contamination of water resources. Defined water use activities require the approval of Department of Water and Sanitation (DWS) in the form of a General Authorisation or Water Use Licence authorisation.

SECTION 15(2) OF THE STELLENBOSCH LAND USE PLANNING BY-LAW (2015) [SLUPBL] AND WESTERN CAPE LAND USE PLANNING ACT (NO. 3 OF 2014) [LUPA]:

A planning application will be undertaken as a separate, but parallel process to the EIA.



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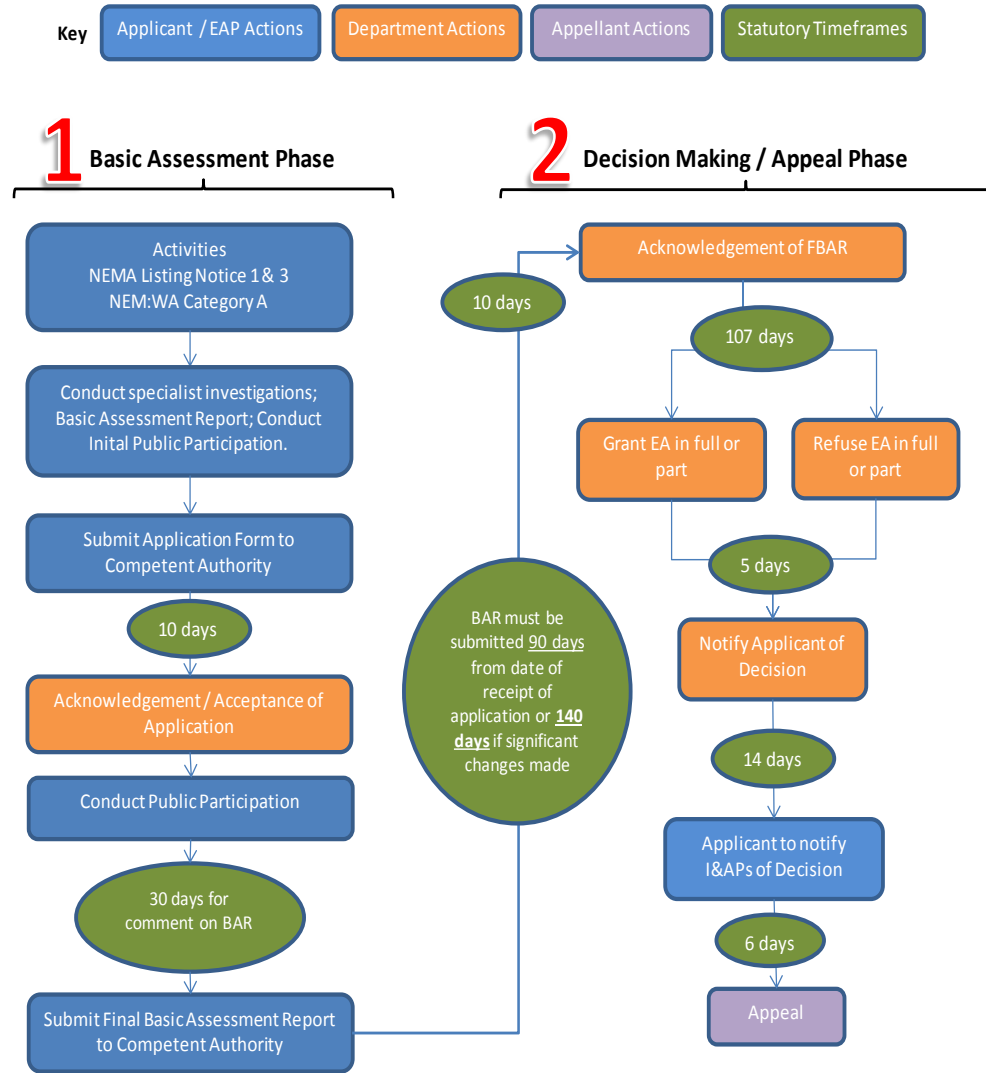
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4a BASIC ASSESSMENT PROCESS

PRE-APPLICATION PHASE TO DATE

- Identified I&APs.
- Appointed specialists to determine the current environmental status of the site and the constraints for development and to determine how significant the impact of the issues raised is likely to be for the different alternatives proposed.
- Distributed the Background Information Document to all identified I&APs.
- Advertised the application the Cape Times, Die Burger and The Eikestadnuus as well as an invitation to the public to register as I&APs and/or raise concerns.
- Allowed a 30-day registration and commenting period.
- Compiled the Draft Basic Assessment Reports (BAR), as well as the DRAFT Environmental Management Programme (EMP), highlighting all issues raised by I&APs, as well as alternatives being considered, site constraints and findings of the specialists impact assessments.
- Submitted the Draft BAR and EMP to DEA&DP and relevant State Departments for comment.
- Advertised the Draft BAR for public comment and an invitation to attend an Open House Meeting, by means of advertisements in the Cape Times, Die Burger and The Eikestadnuus as well as letters to registered I&APs.



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GIBB
UrbanEQ
CONSULTING ENGINEERS



NB NICOLAUS BAUMANN
GREEN CONSERVATION AND PLANNING



Tony Barbour & Schalk van der Merwe



4b BASIC ASSESSMENT PROCESS

PRE-APPLICATION PHASE STILL TO BE FOLLOWED

- ☛ Allow a 30-day commenting period (Open House Meeting to be held during this commenting period) **19 October to 18 November 2016**.
- ☛ Hold an Open House Meeting on **2 November 2016**, where the project team will describe the project and discuss issues with the public.
- ☛ Compilation of the FINAL BAR, incorporating all comments received as well as our responses to these comments.

STATUTORY PHASE TO BE FOLLOWED

- ☛ Notification letters will be posted to all identified I&APs notifying them of the availability of the FINAL Basic Assessment Report (BAR) and commenting period and inviting them to register as an I&AP if they have not already done so.
- ☛ Copies of the report will be delivered to relevant State Departments and Organs of State, for their comment.
- ☛ A letter drop will be undertaken in order to notify as many occupiers of adjacent land and the site, as possible.
- ☛ A site notice will be placed on site.
- ☛ Advertisements will be placed in the Cape Times, Die Burger and The Eikestadnuus, informing the public of the availability of the report for comment.
- ☛ A copy of the report will be lodged at the Pniel Library and on our company website www.dougjeff.co.za
- ☛ The report will be available for a 30 day commenting period.
- ☛ All comments received and our responses to these comments will be included in the final report that will be submitted to DEA&DP for decision.
- ☛ You will be informed of **DEA&DP's** decision.



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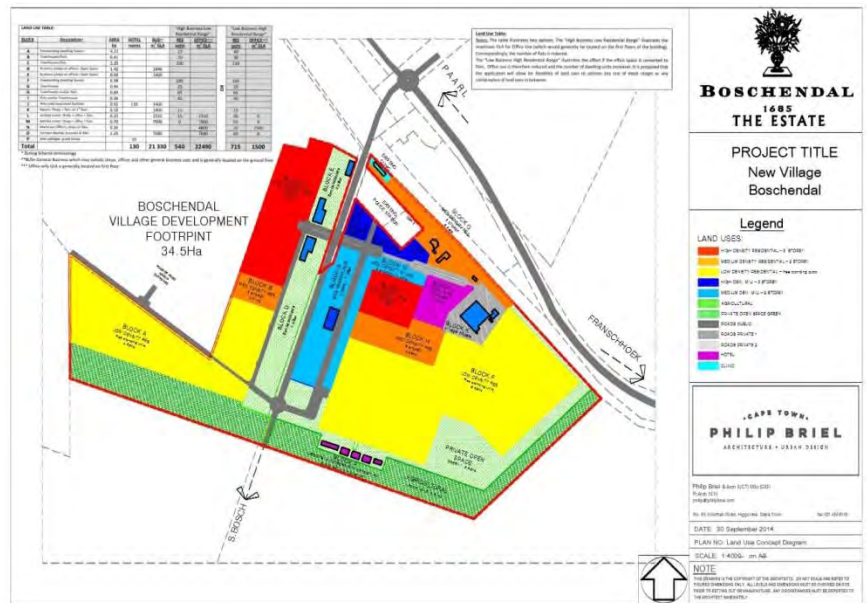
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5b ALTERNATIVES

ALTERNATIVE 3

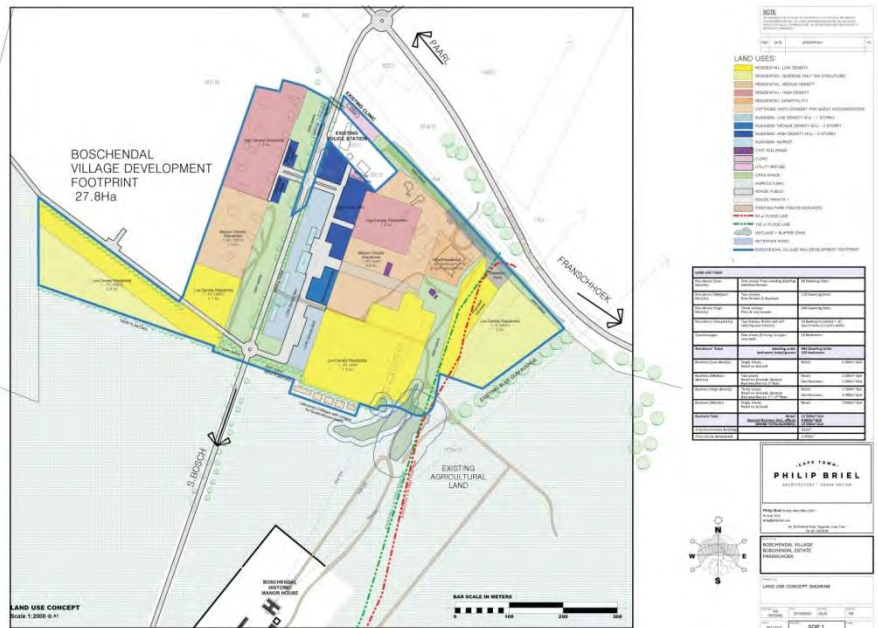
This alternative was developed to explore the concept of rural village. It consists of the following: ±23 000 m² Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, a market, offices and other related businesses; Hotel or guest accommodation of ±110 rooms; 715 Residential dwelling opportunities at various densities (from single dwelling to 3 storey apartments).



ALTERNATIVE 4

The core of the development will comprise 14 500 m² Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, offices and other related businesses; An hotel or guest accommodation of approximately 100 rooms is proposed; Approximately 440 residential units are proposed; A small portion of the development footprint falls within the 1:100 year flood line and requires to be filled in to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village; The proposal takes the wetlands identified within the application area into consideration.

THIS ALTERNATIVE WAS NOT ASSESSED FURTHER SINCE IT WAS NOT CONSIDERED REASONABLE OR FEASIBLE.



THIS ALTERNATIVE WAS NOT ASSESSED FURTHER SINCE IT WAS NOT CONSIDERED REASONABLE OR FEASIBLE.



5c ALTERNATIVES



ALTERNATIVE 5a

Alternative 5a is similar to Alternative 4, but the layout was refined and important design aspects introduced. Most notable being the rotated axis for the grid layout, and the large open space which becomes an open space "werf" linking with the historical werf of the Boschendal Manor on the eastern edge of the village. The clinic is to be relocated to a more appropriate location and a maintenance and refuse recycling area is introduced with access off the R310.

Land use proposals have been finalised as follows: Total dwelling units 425 units; Key workers accommodation 25 units; Guest accommodation 100 bedrooms; Retail 4500m² Gross Leasable Area; General Business 9000m² Gross Leasable Area; Civic + Community buildings 500m²; Clinic 2000m²; Refuse recycling area and maintenance ±200m² building; ±2000m² land area.

A small portion of the development footprint falls within the 1:100 year flood line and requires infill to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village. Their large agrarian landscape gardens will form an appropriate buffer between village and agriculture. The hatched area will have specific landscaping guidelines which will limit it to agrarian landscaping or urban agriculture and a servitude will prohibit buildings within the new 1:100 flood line.

This alternative was not scoped out and has formed part of the assessment process.



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5d ALTERNATIVES

LAND USES:



The development footprint for this alternative is 24.85 Ha

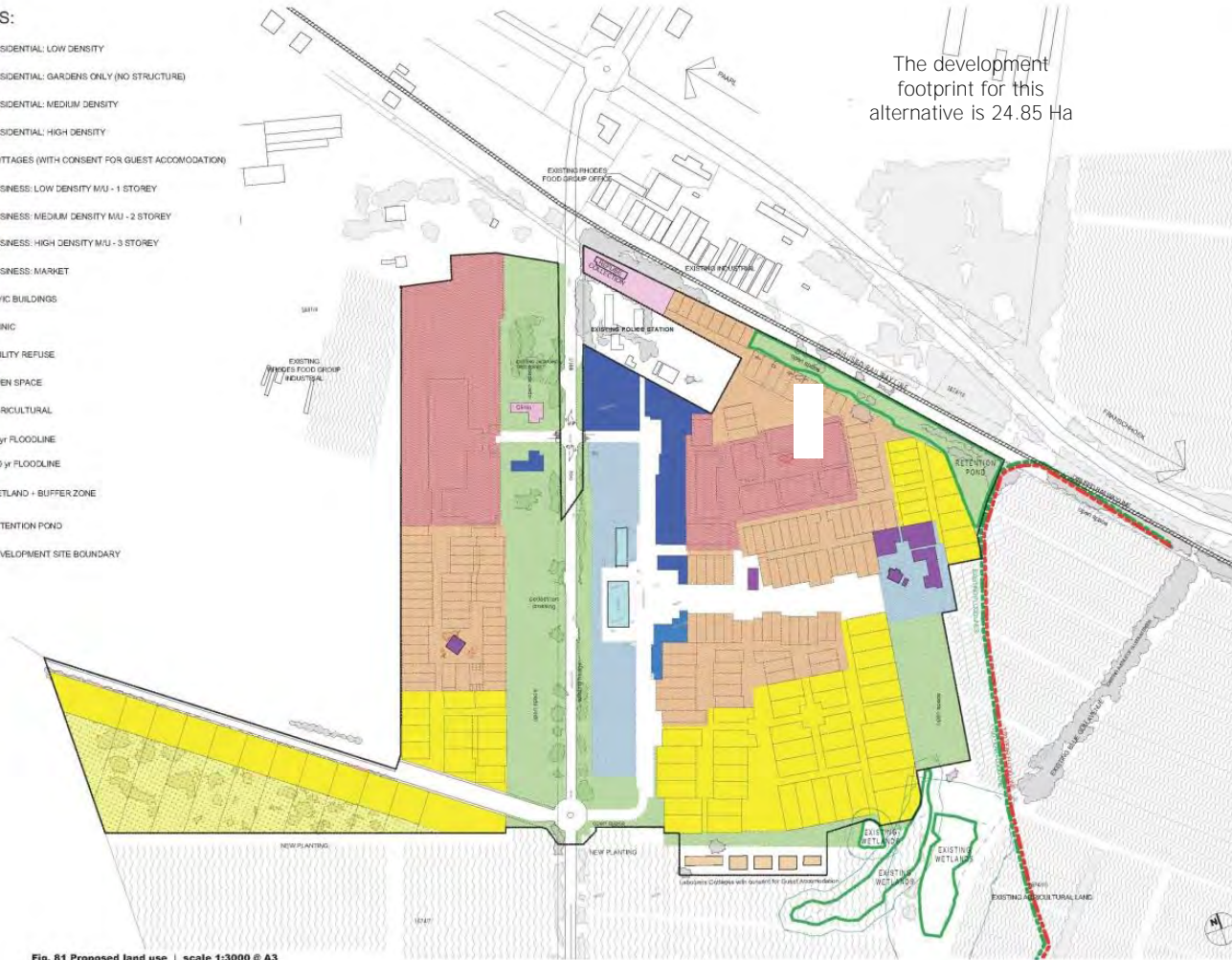


Fig. 81 Proposed land use | scale 1:3000 @ A3

PG.35

ALTERNATIVE 5b

Alternative 5b is similar to Alternative 5a but with the following amendment: No infill proposed below the 1:100 flood line.

This alternative was not scoped out and has formed part of the assessment process.



5e ALTERNATIVES

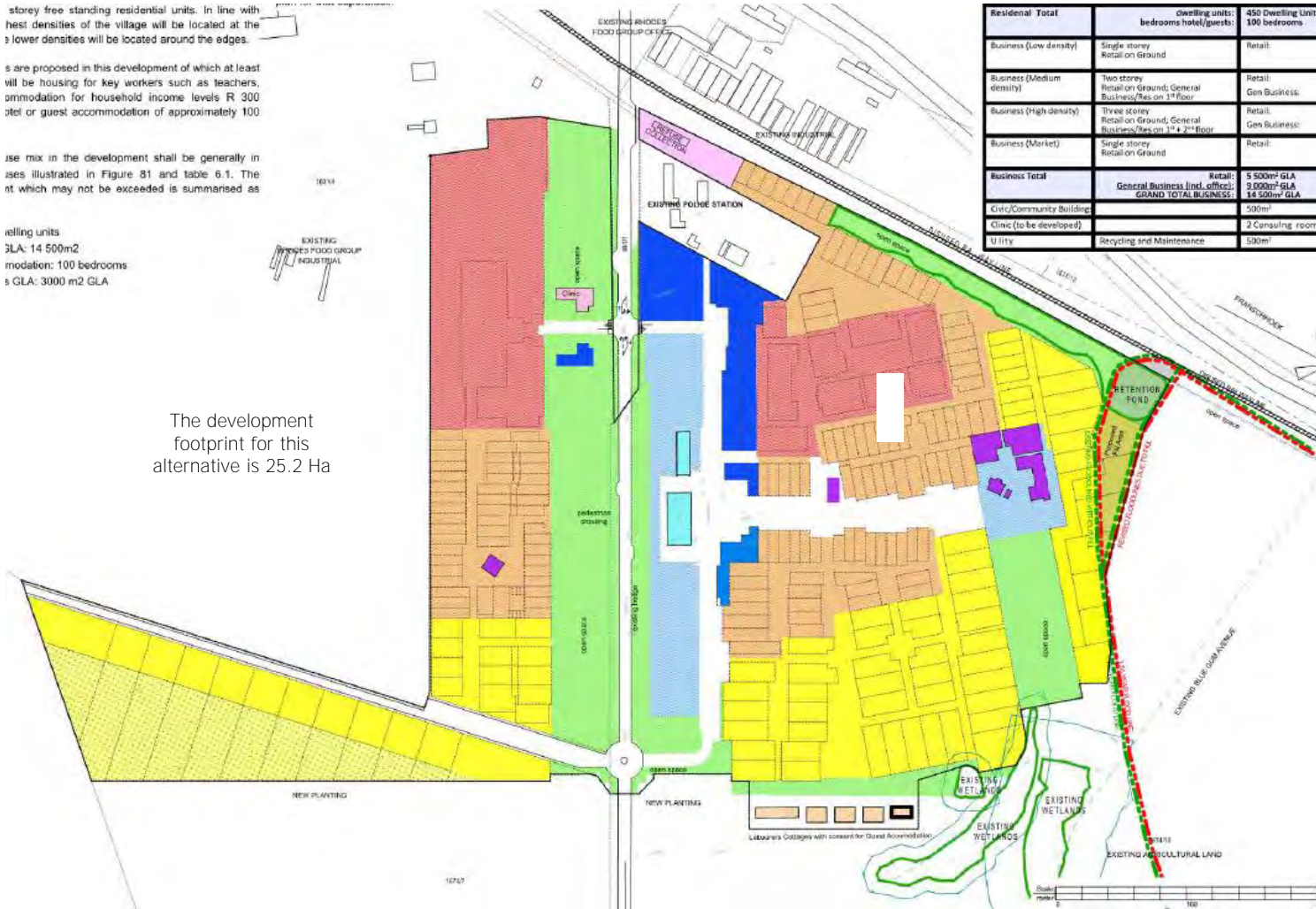
storey free standing residential units. In line with highest densities of the village will be located at the edges. Lower densities will be located around the edges.

Units are proposed in this development of which at least 10% will be housing for key workers such as teachers, nurses, accommodation for household income levels R 300 per month or guest accommodation of approximately 100 units.

The use mix in the development shall be generally in line with uses illustrated in Figure 8.1 and table 6.1. The density at which may not be exceeded is summarised as follows:

Dwelling units
 Net GFA: 14 500m²
 Density: 100 bedrooms
 Net GFA: 3000 m² GLA

The development footprint for this alternative is 25.2 Ha



ALTERNATIVE 5c
 Alternative 5c is similar to Alternative 5a but with the following amendment: The residential units to the east of the village are reduced in size so that they no longer have large garden spaces which are below the 1:100 flood line; Majority of the pear orchard on the eastern edge of the village is retained.

This is the **Applicant's** preferred alternative.

This alternative was not scoped out and has formed part of the assessment process.

6a PLANNING CONTEXT

THE PLANNING APPLICATIONS

Western Cape Land Use Planning Act (No. 3 of 2014)(LUPA)

- Section 53(2) of the Western Cape Land Use Planning Act (No. 3 of 2014)(LUPA) to transform 1.77 ha cultivated land to urban development.

Stellenbosch Land Use Planning By-Law (2015)(SLUPBL)

- **Subdivision of the Village footprint** off parent farm portions 7 and 10 of Farm 1674, Boschendal (Section 15(2)(d));
- **Consolidation** of the two subdivided land portion (Section 15(2)(e));
- **Rezoning** of the consolidated subdivided portions from Agriculture to Subdivisional Area (Section 15(2)(a));
- **Subdivision** of subdivided portions into superblocks (including registration of ROW servitudes) (Section 15(2)(d));
- Registration of **servitudes** for external bulk services (external to the Village footprint area) (Section 15(2)(d));
- **Departure for coverage** to permit coverage of 60% in lieu of 50% in Residential Zone I, Residential Zone III, Residential Zone IV, and Residential Zone V;

- **Departure from all internal common building lines:** building lines and build-to lines should be consistent with the Urban Design Framework.
- **Departure from the floor factor from 1.0** to unrestricted, subject to overall development limits and Urban Design Framework in Residential Zone IV and Residential Zone V so as to allow development which is consistent with the Framework;
- Establishment of an overarching **Owners Association** for the Boschendal Village (Section 29) .

THE PLANNING LEGISLATION

- Western Cape Land Use Planning Act (No. 3 of 2014)(LUPA)
- Stellenbosch Land Use Planning By-Law (2015)(SLUPBL)
- Section 8 Scheme Regulations

OTHER RELATED LEGISLATION/ APPLICATION

- Subdivision of Agricultural Land Act (No. 70 of 1970)



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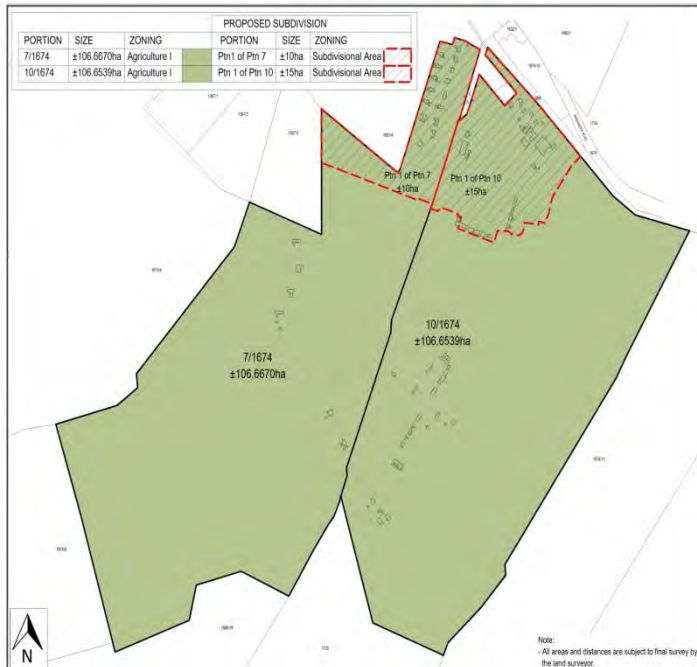


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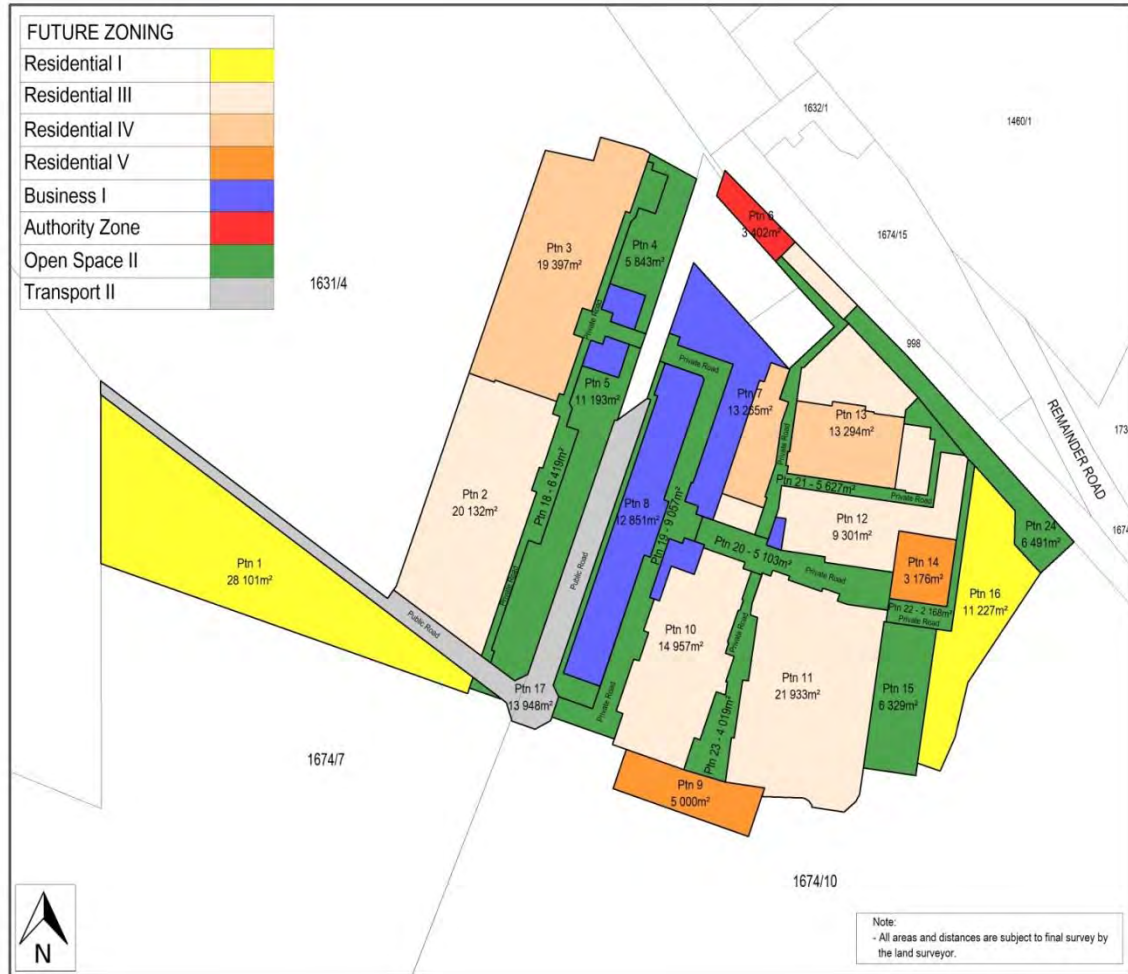


6c PLANNING CONTEXT

BOSCHENDAL VILLAGE: SUBDIVISION



FUTURE ZONING	
Residential I	[Yellow]
Residential III	[Light Orange]
Residential IV	[Orange]
Residential V	[Light Blue]
Business I	[Blue]
Authority Zone	[Red]
Open Space II	[Green]
Transport II	[Grey]



- First subdivision: divide the Village footprint off the larger two farms
- Consolidate the two portions
- Then subdivide into superblocs –future zoning indicated on this plan.
- Superblocks will be further subdivided as indicated on Site Development Plan



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6d PLANNING CONTEXT

BOSCHENDAL VILLAGE: LAND USE MIX

Land Use	Maximum overall development
Dwelling & Row houses	218 Dwellings
Flats	232 Units
Hotel/Guest cottages	100 Bedrooms
Retail	5 500 m ² GLA
General Business	9 000m ² GLA
Clinic	2 consulting rooms
Civic buildings (multi-purpose)	500m ² GLA
Home Owners Utility (maintenance and recycling)	±500m ² GLA



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6e PLANNING CONTEXT

Boschendal Village: Site Development Plan & Indicative final subdivision



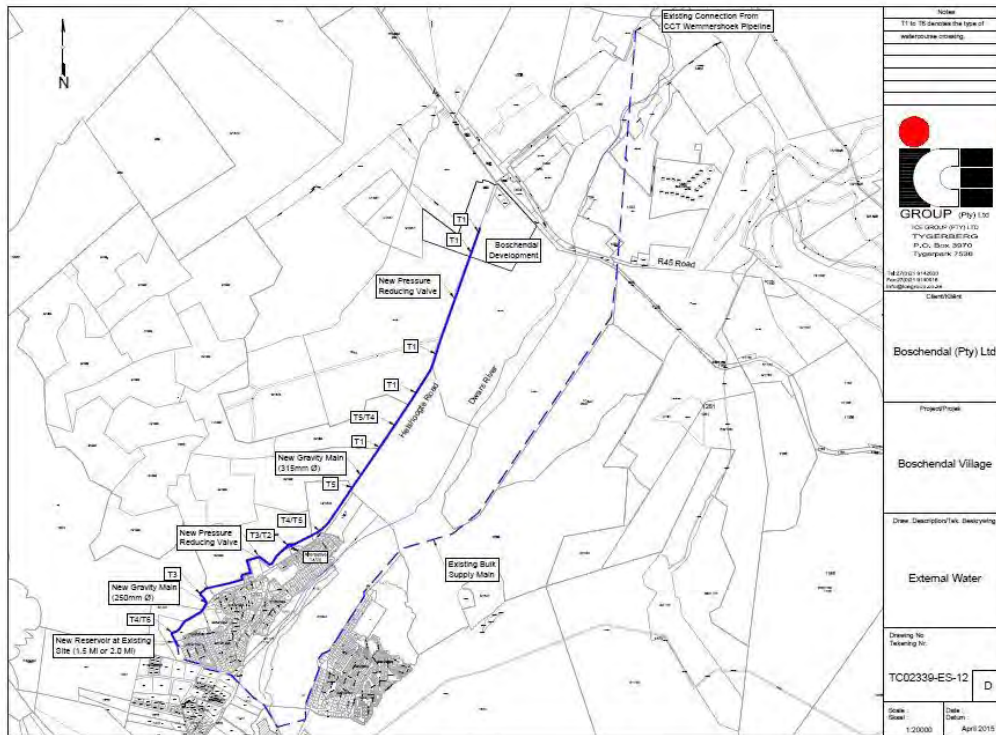
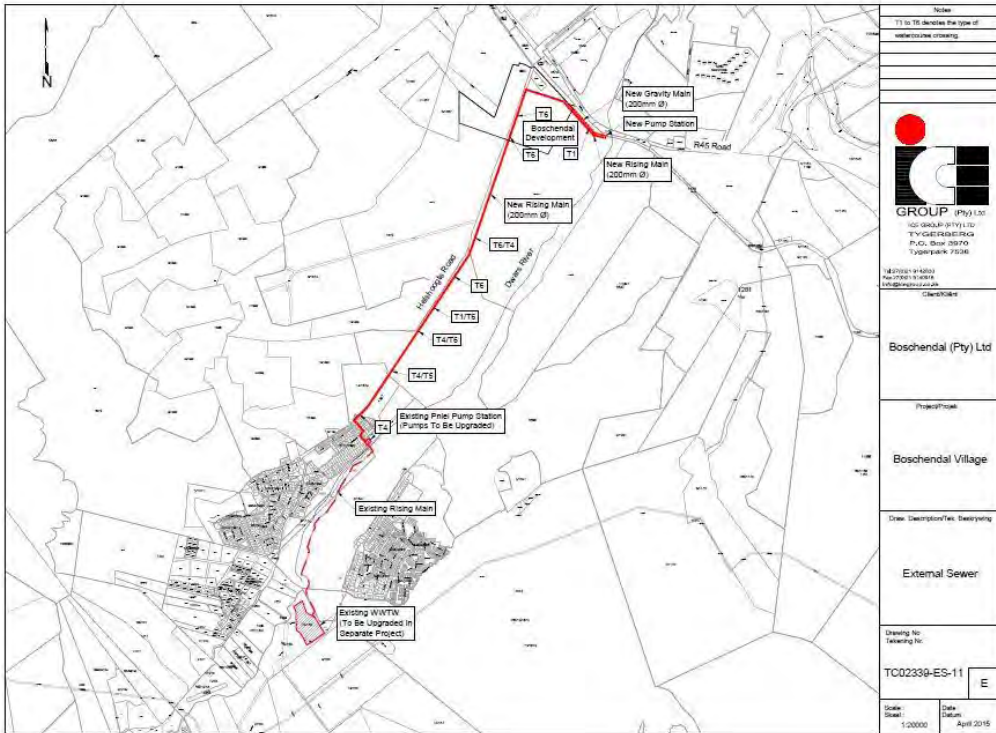
- Development will be undertaken in phases
- Property Owners Association will maintain open spaces & internal roads
- Servitudes registered to ensure public access in village core
- Not a gated village, but certain residential pockets have access control



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7a SERVICES



Sarah Winter

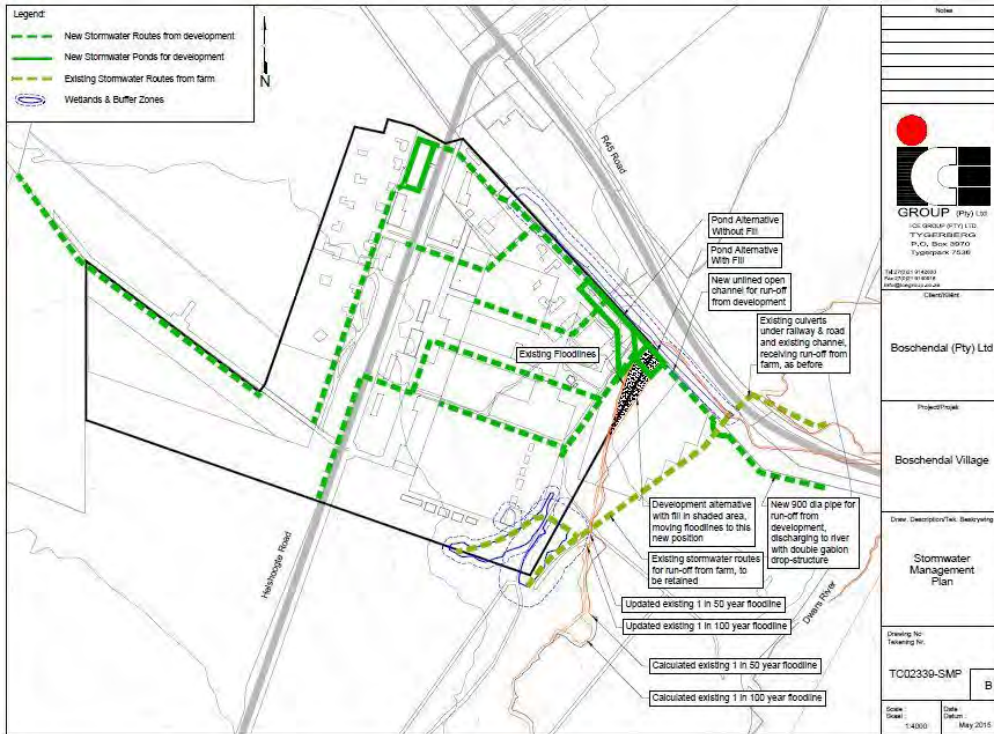
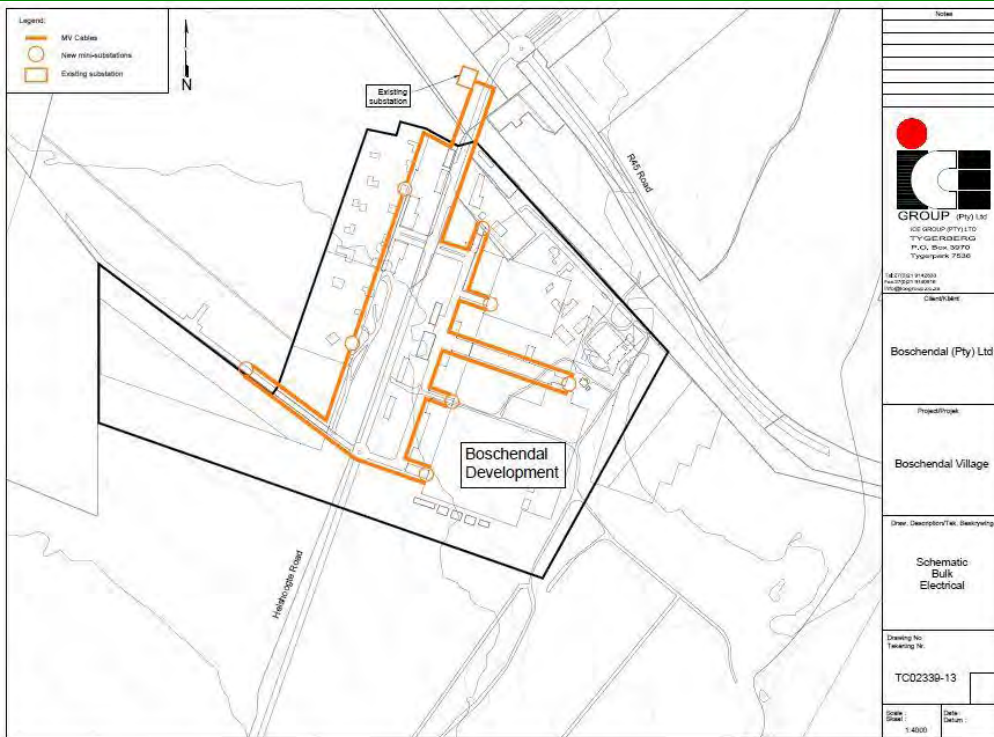
Tony Barbour & Schalk van der Merwe



Piet Louw & Dave Dewar



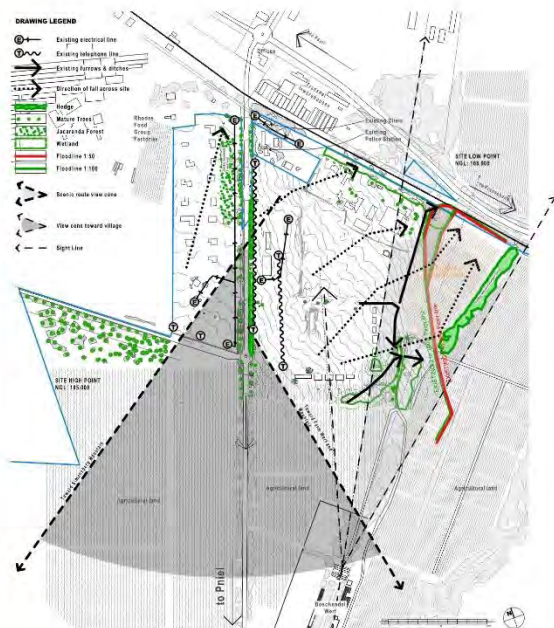
7b SERVICES



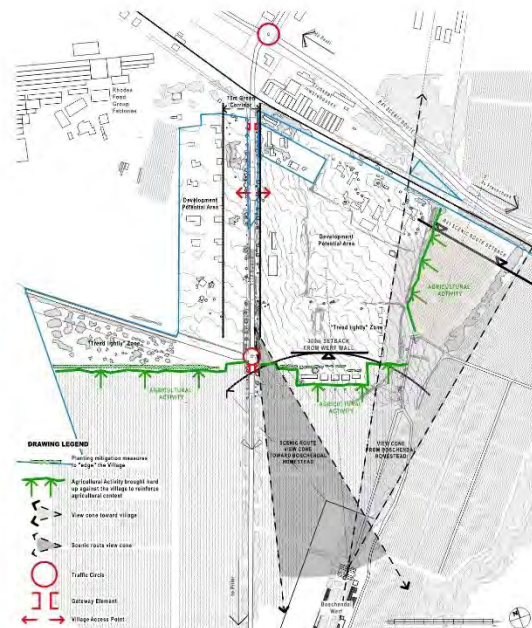
8a DESIGN INDICATORS

The Boshendal heritage indicators and directives (Baumann et al, 2015) identifies the following two issues central to considerations pertaining to the proposed Boschendal village.

- the protection of Boschendal as a significant heritage resource.
- to ensure that authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in a new settlement.



Landscape Character



Composite Site and Design Informants



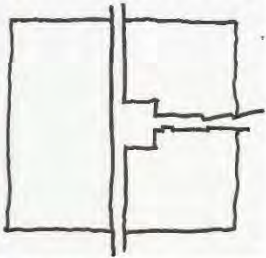
Interpreting the Site and Design Informants

8b DESIGN INDICATORS

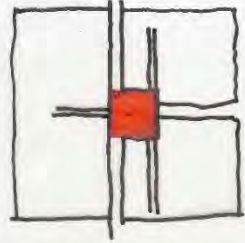
DESIGN FACTORS TO CONSIDER

It was argued that authenticity and retaining the dominance of agriculture in the existing historic cultural landscape is achieved through appropriate integration into the existing landscape and community. The outcome is establishing a settlement with authentic village qualities that detract from typical examples of suburbia and security estates. It is important to discern design qualities that contribute to the creation of an authentic village.

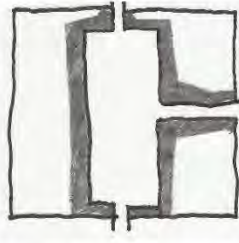
1. Achieve qualities of a rural village, not suburbia



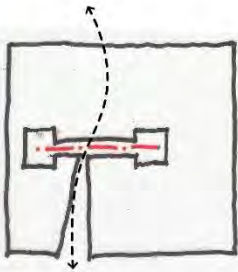
Open public access



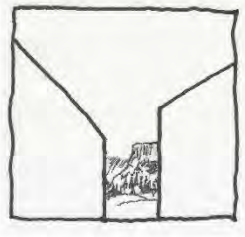
public spaces as a social heart



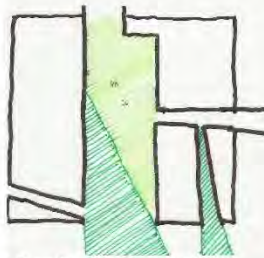
Orientate buildings to define public space



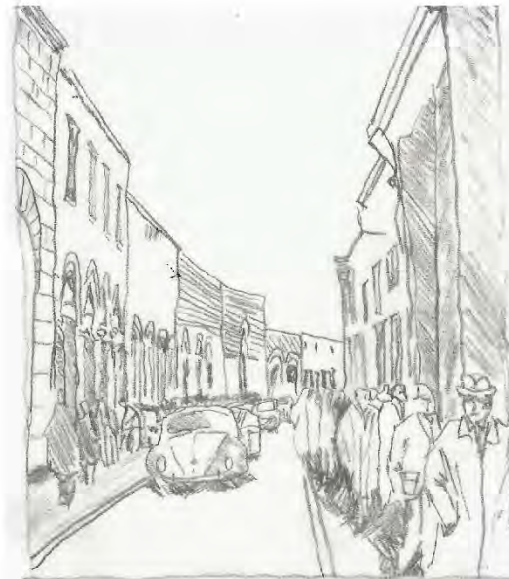
Organic and straight line geometries.



Frame views



Scenic vistas and view lines bring nature into the village



Achieve qualities of 'Street'

- Accomodate various modes of movement.
- Buildings brought to the front edge of plots create a strong street edge, while allowing garden space at the back.
- No rears of buildings should face the streets

8c DESIGN INDICATORS

2. Achieve both unity and diversity in the built form:

- A **continuous 'main street'** which structures the village. A system of much smaller streets should 'network' off this;
- **A water network:** storm water run-off should occur **on the surface** in a system of grachts;
- **A spatial focus (e.g. the village green)** which is the primary social space of the village. The more publicly-orientated buildings should abut, and help make, this space.
- Strategically positioned non-residential uses reinforcing the **hierarchy of publicness**;
- A system of **axial alignments, vistas and focal elements**;
- A pattern of sub-division reinforcing **active street boundaries** and preventing 'dead-edges' from fronting onto the public domain and promoting the concept of the 'hollow' blocks;
- A **gradation of height** reinforcing the **hierarchy of publicness** and gateway spaces;
- A system of **'Cape' rural building typologies** and associated structures and elements: Process is also central to achieving complexity and diversity. As a general principle, no one designer should design more than two buildings in close proximity to each other;
- A **system of building types** which distinguishes between gateway and mid-block pinching buildings, street liners, corner buildings and pavilion buildings. The structural types should reinforce the structural layout of the village;
- A system of **structural planting** reflecting 'Capeness' and 'ruralness';
- Process is also central in achieving **complexity and diversity**. As a general principle, no one designer should design more than four buildings in close proximity to each other

9 URBAN DESIGN RESPONSE

THE ETHOS OF SUSTAINABLE URBAN DEVELOPMENT

The development model resulting in gated, suburban, housing estates on green-field sites is widely regarded as undesirable in terms of good place making. It is the intention of Boschendal, to avoid this type of model by delivering on what is expected to constitute a new benchmark in sustainable development and excellent place making in the wine lands area of the Cape.

In pursuing a philosophy of sustainable development, Boschendal adheres to three important principles: social, economic and environmental sustainability.

1. Social sustainability manifested by:

- provision of public good
- promotion of social cohesion and diversity in communities
- delivering healthy living environments.

2. Economic sustainability to be found in:

- support for the local economy
- the creation of local jobs
- forging symbiotic economic systems

3. Environmental sustainability:

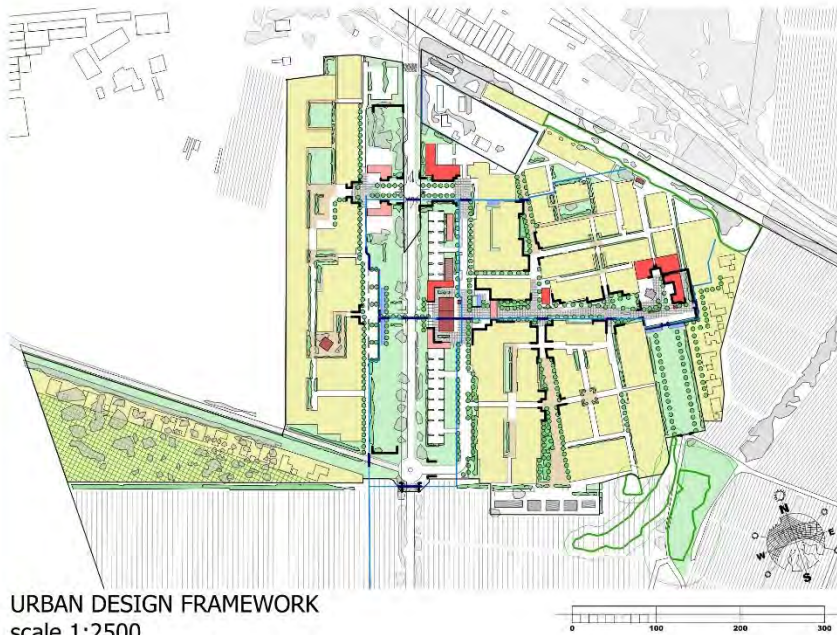
- reducing CO2 emissions
- avoiding greenfield development
- promoting density and reducing sprawl
- reducing waste



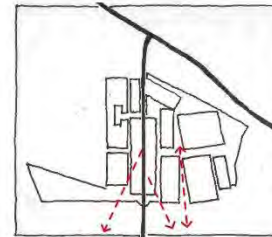
10 URBAN DESIGN CONCEPT

What does the physical form of sustainable development look like?

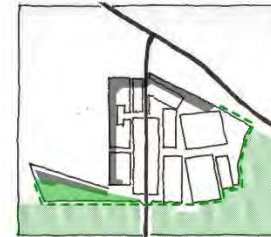
Within the context of a rural village, Boschendal Village embraces the quality of urbanism rather than that of sub-urbanism. It is applied at the full range of scales from a single building to an entire community, without losing its village character.



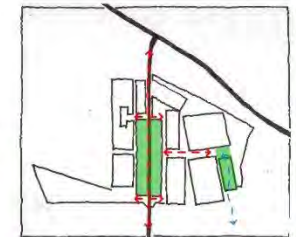
URBAN DESIGN FRAMEWORK
scale 1:2500



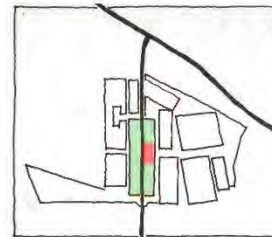
Geometry that acknowledge and connects the village with the surrounding Historic cultural landscape.



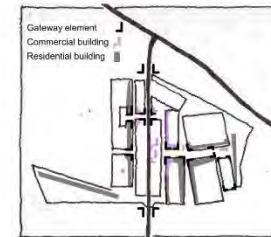
Strong spatial edge definition in response to the surrounding context prevent future expansion or sprawl.



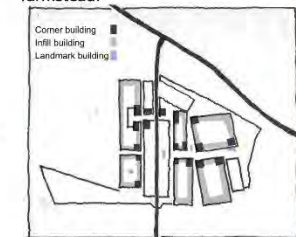
The main axis connects the Market square with the community werf, two key areas that ties the village to the scenic route and historic farmstead.



Designed around a Heart consisting of a village green and a vibrant commercial node.



Edgemarking on public facing areas through the use of gateways, building 'pinch points' and strong street edge definition.



Building types enforce spatial definition and place making.



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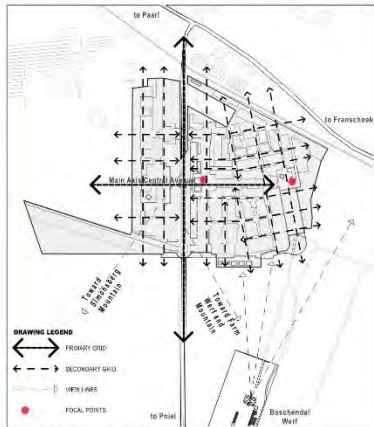
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11a URBAN DESIGN OUTLINE

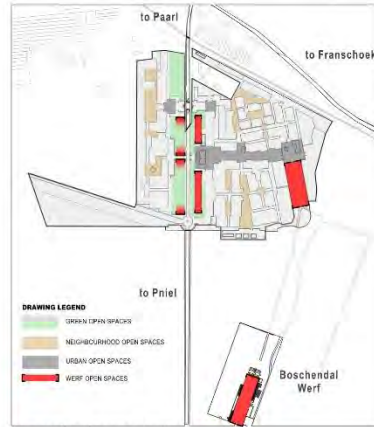
In essence, the character of the proposed development will be that of rural village, characterised by certain urban qualities, discreetly knitted into an agrarian landscape, whilst responding to the historical context of the area



Grid, axial alignments, vistas and focal points

GEOMETRY (Grid, axial alignments, vistas and focal points)

A clear and legible street grid maximise permeability. Visual connections along axis ensure legibility and orientation at all times. The grid twisted along the lower slopes with the existing contours and openings up a view toward the historic manor house and alleviates monotony. Main grid axis reinforce connections within the village and to the surrounding landscape.



Composite of open spaces

OPEN SPACES (Hierarchy and location of public open spaces.)

The urban design of the village is dominated by the location and connection of public open spaces. It consists of a combination of green open spaces as well, as hard open spaces. It not only responds to the genius-loci of the Cape werf, endemic of the area, but also structures open space in such a way that it can be utilised as flexible community spaces or outdoor rooms as these werfs are generally flat open and centrally located. The predominant urban open space is that of the market square which will be characterised by a bustling atmosphere. The surrounding buildings which abut the street



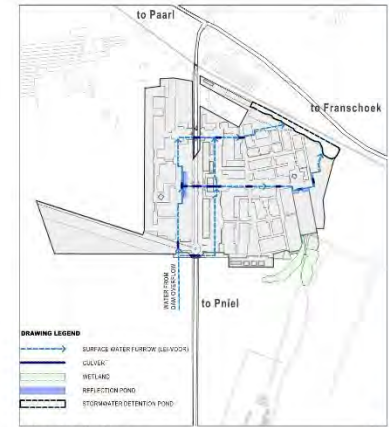
Structural planting and green open space

edge uniformly around all its edges, creates an active edge.

The central avenue space will terminate in a generous community werf at the bottom of the hill. This werf will serve as a flexible outdoor space and will set up an architectural conversation with the existing historical werf at the Boschendal manor house.

STRUCTURAL PLANTING AND GREEN OPEN SPACE.

Structural planting is used to reinforce the spatial design of the village.



Lei-water System

SURFACE WATER STRUCTURE

The availability of stone on site will allow for the building of traditional Cape lei-voor systems. As water could be brought onto site, by means of dam overflow higher up on the farm, the idea of a functioning lei-voor system can be successfully created. The gravity fed system will flow year round and will not only cool the immediate environment in summer but will also contribute to the character of a rural, agrarian plated village. Traversing these waterways means the construction of bridges, culverts and swales which in itself will provide the opportunity to deliver hard landscape architecture which will further re-inforce an agrarian character.



Axial focal point Stellenbosch (Arisal, 2012)



Disent Mill Market



Brak at Stellenbosch as flexible open space (Briel, 2015)



Surface water channel at Groot Constantia (Briel, 2015)



Lei-voor, Stellenbosch (Briel, 2015)

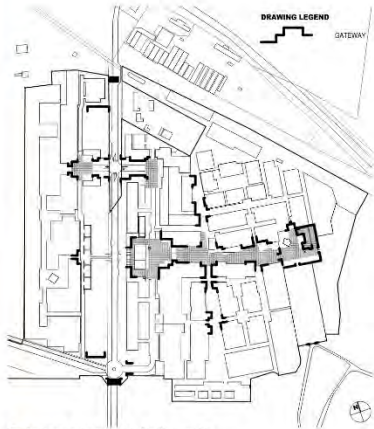


Duck pond and bridge Groot Constantia (Briel, 2015)

Publically accessible, diverse and vibrant | Varied in building typology, size and cost | Mixed use | Quality public space



11b URBAN DESIGN OUTLINE



Gateway spaces and elements

STREET HIERARCHY

The High street: The high street will be regarded as a well-used thoroughfare and should contain pedestrian-oriented edges, blending together two seemingly incompatible characteristics into a highly mobile, yet walkable thoroughfare. The inclusion of on-street parking, bicycle travel, and wide landscaped pedestrian areas will complement the mixed-use character of the high street.

The Central avenue: The central avenue on the main axis should allow for the inclusion of on-street parking, bicycle travel, and wide landscaped pedestrian walkways abutting a 'le-voor' will promote the central avenue as a longitudinal open public space rather than a thoroughfare.



Access

Neighbourhood streets: The side streets are generally one or two narrow lanes only, and serve predominantly local traffic and access to abutting property. Streets will feed into courtyards or mews, which will be mostly where cars will be parked in residential neighbourhoods.

Pedestrian lanes and footpaths: A system of pedestrian lanes, leading onto public open spaces are distributed across the site and not always demarcated, but could simply be open routes between buildings.

The qualities of street, as opposed to road, should be promoted through bringing

buildings forward to the street edge, having buildings face onto the street edge and positively address it by means of stoeps, and through using rural elements such as low water stoops, low walls, tree avenues and hedges, rather than concrete kerbs, to manage storm water and define the thresholds between streets and pavements.

Traffic speed reduction will be promoted through street design.

Design factors that influence target speed:

- Using narrower travel lanes;
- Using physical measures to narrow the roadway;
- Using on-street parking to create side friction;
- Eliminating super elevation;
- Eliminating shoulders, except for bicycle lanes;
- Using smaller curb radii;
- Eliminating channelized right-turn lanes;
- Using paving materials with texture (See fig 41-43.);
- Properly using speed limit, warning, and advisory signs and devices.

Parking:

The use of parking werfs, edged by low walls and hedges is allocated where en-masse parking is required. Some of the bigger mixed-use complexes will contain basement parking as well as surface parking in discreet locations.

GATEWAYS AND THRESHOLDS

Along public roads:

The village is made up of major gateways and gateway spaces along the R310. The utilisation of the werf, as a tool for formalising the landscape provides the opportunity for creating gateways combined with the use of culvert barriers and bridges as thresholds. It is proposed that these elements are used to announce the transition from rural to urban and to deliver design continuation from Priel as these same elements had successfully been used there.

Along private internal roads: Public space and transition zones are emphasised through the use of pinch points and gateways. These pinch points also functions as traffic calming mechanisms and serves the purpose of doorways into outdoor rooms, whilst creating interest on facade plain.

ACCESSIBILITY

The principle of public accessibility is of great importance. This is a fundamental principle to adhere to, as a direct response in counteracting the gated village syndrome. Thus, the creation of the high-street, that is a mixed zone open to the general public on a 24hr basis, is being supported as a mandatory control to ensure accessibility.

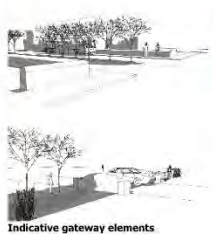
However, the principle of safety and security is a reality that needs consideration. The central axis will be open to the public as the community werf is regarded as an activity zone and collection point for public gatherings and activities. However, the residential precincts, leading off the central avenue may be safeguarded through controlled access points.



Gradation and height variations

HEIGHT AND DENSITY.

Gradation of heights: The gradation of the development in terms of height is informed by the principle of hierarchy as well as visual mitigation from the Boschendal werf and scenic routes. The building increase from one storey to three storeys as it recedes from the quiet edges of the development towards the bustling mixed use centre. No building should exceed 3 storeys in height, and all buildings in the "tread lightly" edge zones should be single storey. Public and institutional or community facilities must occur in visually exposed and highly accessible locations. All of the above aspects have been well-integrated into the proposed village design.



Compact and dense

Interconnected and permeable

Walkable

Responsive to the genius loci



12 SITE DEVELOPMENT PLAN

The site development plan illustrates the overall development intent for the Boschendal Village. It illustrates the public spaces, movement network, planting framework and position of buildings as envisaged for the development.



Site Development Plan | scale 1:3000 @ A3

Quality architecture and urban design | Safe and secure | Environmentally, socially and economically sustainable.



13a ARCHITECTURE

Broad architectural design principles

The architectural design principles is an extension of the overall village concept and support the design principles discussed.

Three levels of concern is addressed in the Boschendal Heritage Impact assessment (Baumann et al, 2015) and architectural guidelines:

1. Generic Indicators; These follow logically from preceding settlement-orientated indicators. However the focus shifts to individual or complexes of buildings. Particular emphasis is placed on the relation buildings have on one another and their impact in contributing to the overall village design and character.
2. Mandatory controls: These relate to the buildings interaction with the 'streetscape' and how a building creates a public interface with the street. These controls contribute to the realization of the generic indicators.
3. Principles of sustainability

Primary Building Forms

The use of **horizontality and wall architecture** is to be the dominant architectural form. This is to mitigate the visual impact, to promote simplicity and to deliver cohesive design.

Certain buildings and nodes will have to deviate from the principal of horizontality in order to allow for legibility, hierarchy and diversity.

The use of **perimeter building blocks** should be widely applied. It results in active street edges and promotes walkability and safety. The building edges, which generally is built to line, results in impermeable, but living walls.

Street edges will be made up of various types of buildings, strung together. These buildings will spill out directly onto streets in some instances (central Avenue) or setback behind narrow gardens and stoeps in other areas (neighbourhood zones).

Corners will be articulated responsively by the introduction of special corner buildings.

Certain buildings are designated **gateway buildings** and should be articulated as such.

Street liners should be filled in amongst these various types and should be generally more recessive.

Colonnaded building edges are compulsory in certain areas as edges to buildings are important in terms of providing human scale. It does not only provide shade and shelter but also reduce the scale of buildings.

Landmark buildings and structures: Certain buildings or structures are designated landmark buildings. It allows for legibility and orientation and emphasizes the hierarchical importance of certain public spaces. These buildings are allowed to deviate from the general rule of horizontality and wall plate architecture and may exceed the limitations on height in a specific location.



Indicative landmark building

Indicative landmark structures



Example of rural free standing cottage - Werf cottages at Boschendal



Market building example Martin Kruger Architects - Birkenhead Brewery.



Alternative Market building example Philip Briel Architects - Olive Press at Boschendal



Triple Storey townhouse example: Alphen, Cape Town.



Indicative corner buildings



Indicative gateway building



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13b ARCHITECTURE

The design of architectural forms and related built elements should:

1. Conform to the principles of the **relationships between buildings to street space**, as defined by the compulsory building lines:
2. Contribute towards 'Green Architecture'
3. Promote a **sense of community**.

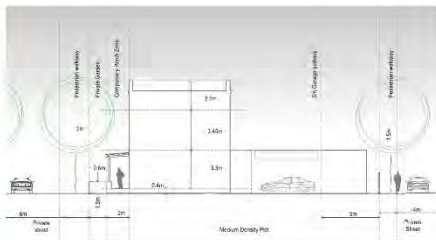


Fig. 116 MEDIUM DENSITY RESIDENTIAL (Precincts: B+D1+D2+D3) scale 1:250 @A3

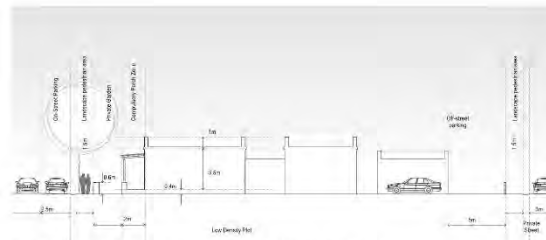


Fig. 118 LOW DENSITY RESIDENTIAL (Precinct: F1+D2) scale 1:250 @A3

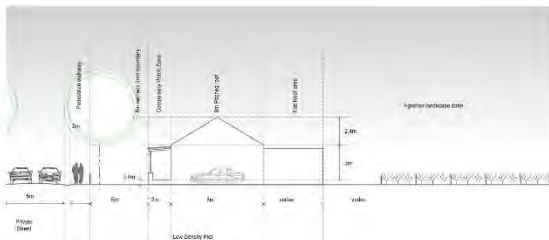


Fig. 117 LOW DENSITY RESIDENTIAL (Precincts: F2 +F3) (Single residential erf) scale 1:250 @A3

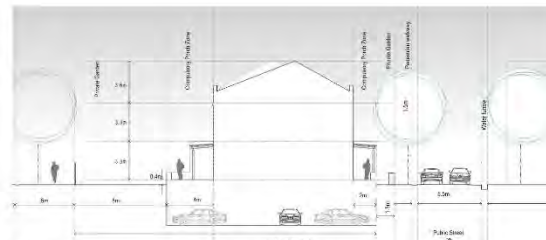
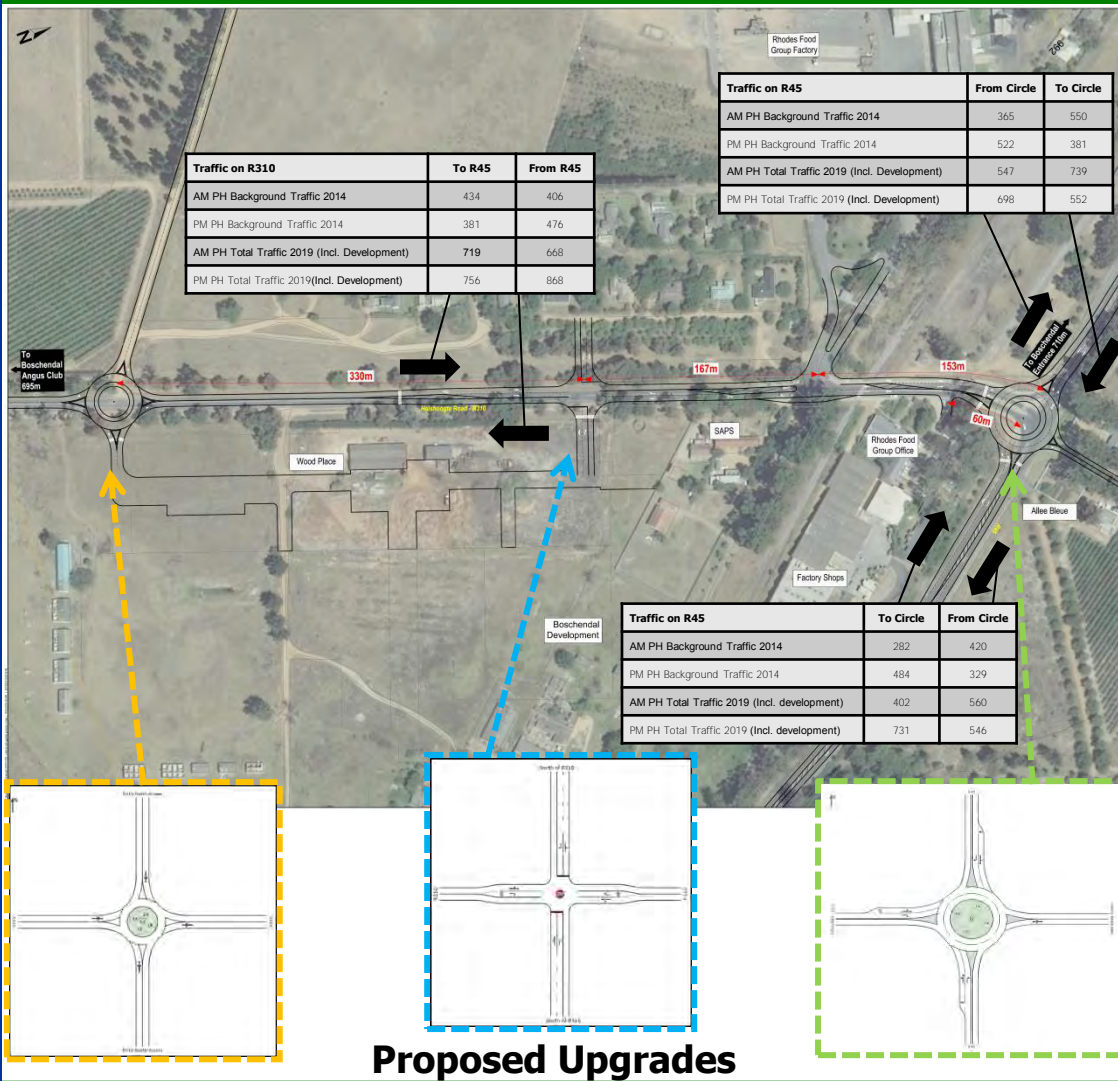


Fig. 119 HIGH DENSITY RESIDENTIAL (Precinct E1+E2) scale 1:250 @A3

TYPICAL SECTIONS THROUGH BUILDING TYPES INDICATING GUIDELINES

15 TRAFFIC IMPACT ASSESSMENT



Key Findings:

- The intersections in the study area are currently operating adequately, with the exception of the Helshoogte Road (R310) / R45 intersection which is starting to approach capacity in the peak periods.
- A single-lane roundabout is proposed on Helshoogte Road (R310) at the Minor Road 6/4 (New Oaks Access) intersection.
- A double-lane roundabout is proposed at the intersection of the Helshoogte Road (R310) and the R45. This is preferred to a signalised intersection due to the traffic calming characteristics of the roundabout.
- A full central access is proposed with opposing right turn lanes (on Helshoogte Road (R310) entering the site and stop controls on the side roads with separate right and left-turn lanes.
- The access points at Rhodes Food Group Offices and Rhodes Food Group Factory will not meet the minimum access spacing requirements and will need to be regularised when the site is developed.

16a HERITAGE INDICATORS

HERITAGE PROCESS

The proposed development triggers Section 38 (1) of the National Heritage Resources Act. Heritage Western Cape has requested that a Heritage Impact Assessment be undertaken that includes an assessment of impacts on cultural landscape, visual resources, built environment and archaeology.

HISTORICAL OVERVIEW

The historical development of the site is largely associated with the history of Rhodes Fruit Farms and the establishment of the fruit export industry during the early 20th century. The intersection of the R45 and R310 became an agro-industrial node facilitated by the construction of the railway line between Paarl and Franschoek in 1904 and the railway station at Groot Drakenstein. A cannery was built in 1903 and a jam factory in 1906. The offices of RFF were also established here. None of the earlier factory buildings remain.

HERITAGE SIGNIFICANCE

The site is located within a Grade I landscape and at the intersection of the R45 and R310 forming part of a regional scenic and tourism route network.

The site is situated on boundary of a highly significant heritage precinct incorporating Boschendal and Rhone and their agricultural settings, the R310 scenic corridor and the Dwars River.

There are no buildings worthy of formal protection in terms of the NHRA. The site is not archaeologically sensitive.



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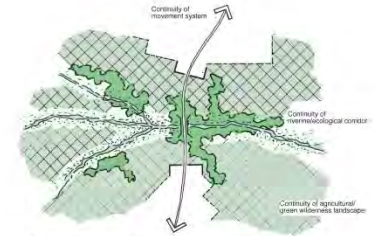
16b HERITAGE INDICATORS

1. Overarching principles: the Starting Points

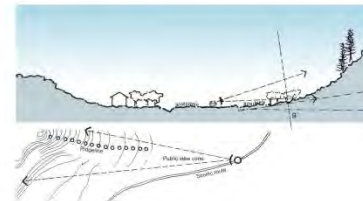
- Boschendal is one the jewels of the Cape Winelands, a cultural landscape of international significance. The appropriate approach to assessment, therefore, should be comprehensive and conservative.
- The real heritage value of the broader site lies in its totality, not only in the parts. It is in the historic dynamic balance between the three landscapes of society (wilderness, rural and urban) which lies at the heart of its value. In terms of this, it is the wilderness and rural landscapes which historically have been, and must remain, dominant.
- Authenticity is the key:
 - wilderness landscape should remain as pristine as possible
 - rural landscapes must take the form of working farms, as opposed to artificial green forms
 - infrastructural forms should be rural, not urban
 - the historical cultural landscape should be conserved and celebrated. Of particular importance in terms of geometries is retaining the orthogonal geometries of rural landscapes and the promotion of horizontality to retain the dominance of sky and agricultural planes
 - settlement should capture qualities of village, not suburbia.



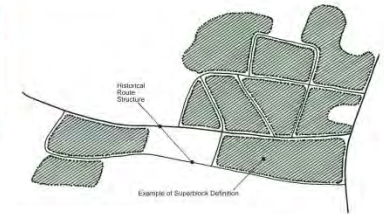
Maintain the Dominance of Wilderness and Working Agricultural Landscape



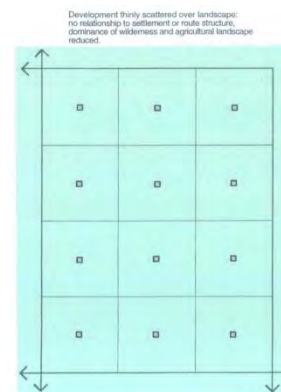
Maintain and Enhance Agricultural Continuity



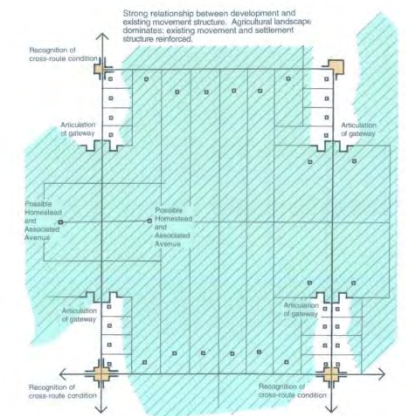
No Development on Ridge-Lines, Steep Slopes
Central Considerations and Principles Relating to Rural Authenticity



Respect the Agricultural



In-principle Approaches to Settlement Formation: The Negative



In-principle Approaches to Settlement-Formation: The Concept of the Agricultural Superblock



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16c HERITAGE INDICATORS

2. Sub-regional Indicators:

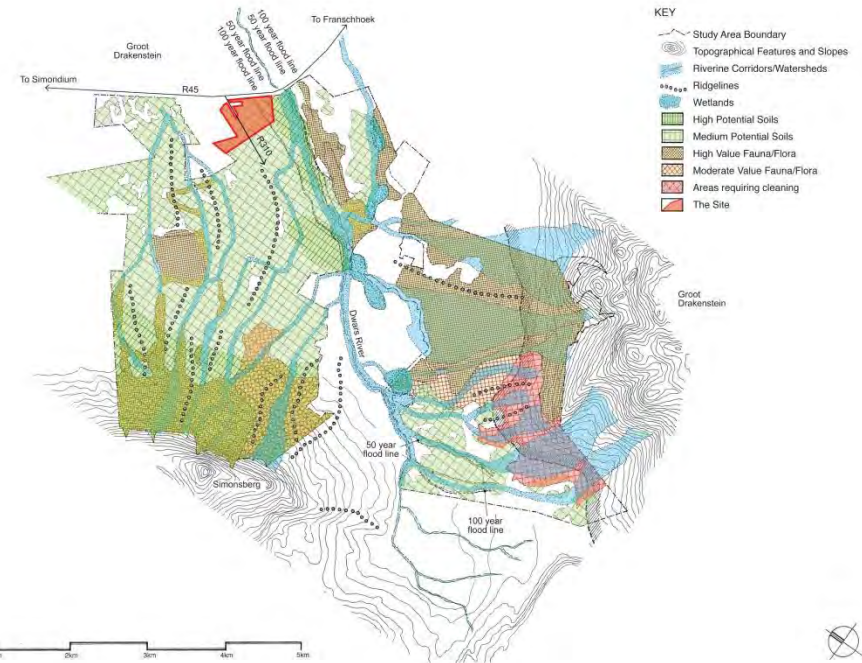
2.1 Location

In order to test the locational suitability of the site and to identify factors which need to inform the design, a strategic analytic method was undertaken:

- o Site analysis - a set of indicators was developed for the broader Boschendal site in three categories: natural systems; the cultural landscape; and public structural and design informants. All of these were mapped and a constraints and informants map was produced for each layer. This information was then synthesized into a composite constraints and informants map.

2.1.1 Natural Landscape: Indicators

STUDY	CRITERIA
CATEGORY A: NATURAL LANDSCAPE	
Landform	<ul style="list-style-type: none"> No development on ridge-lines No development on land steeper than 9 degrees No development on elevated exposed slopes, i.e. above the 320m contour line
Minerals, fault lines and unstable soils	<ul style="list-style-type: none"> No development over these. However, not applicable in this case
Productive quality of soils	<ul style="list-style-type: none"> Classified as good, moderate and poor. No building on good agricultural soils or on embedded moderate soils
Areas prone to flooding Wetlands Floodplains	<ul style="list-style-type: none"> No development in these No development in these No development within 100 year floodplain
Riverine corridors	<ul style="list-style-type: none"> No development within riverine corridors
Botanical ecology	<ul style="list-style-type: none"> No development in areas of high biodiversity value Protect and promote rare or endangered indigenous species or habitats Clear invasive vegetation
Faunal ecology	<ul style="list-style-type: none"> No development in areas of high biodiversity value Protect and promote rare or endangered species or habitats Maintain established migration patterns



The Groot Drakenstein-Simondium Valley: Composite Constraints and Informants Relating to the Natural Environment



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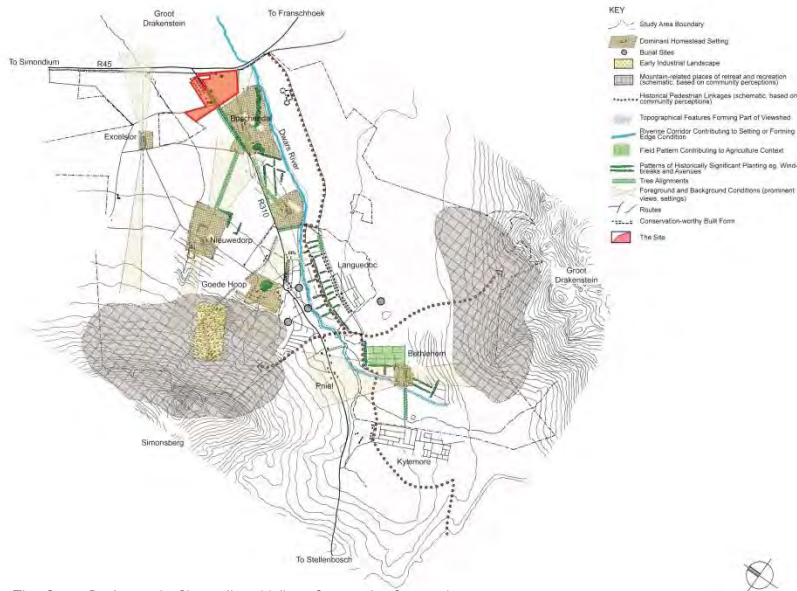
16d HERITAGE INDICATORS

2.1.2 Cultural Landscape: Indicators

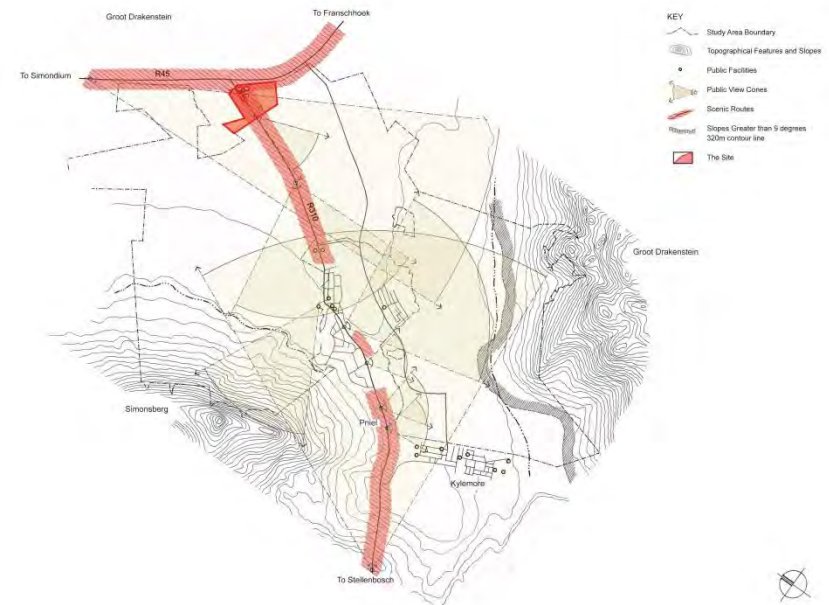
STUDY	CRITERIA
CATEGORY B: CULTURAL LANDSCAPE	
Landscape character	<ul style="list-style-type: none"> Identify landscape types or characters for more detailed precinct study
Archaeology	<ul style="list-style-type: none"> Protect and avoid important archaeological remains; Graded as 1, 2, 3A, 3B & 3C
Historical built form and settings	<ul style="list-style-type: none"> Protect and enhance the historical architectural set pieces of the Valley (e.g. Rhone, Boschendal, Goede Hoop, Bethlehem, Rhodes Cottage/Nieuwedorp) Protect and enhance the range of other conservation-worthy places (e.g. werfs, cottages, grave sites, ruins, outbuildings, social facilities) No or limited new development within zones of high sensitivity, subject to more detailed heritage assessment at a precinct or site specific level Retain and enhance historical fabric Reinforce and enhance landscape settings Allow for the demolition of structures of no or limited heritage significance, which detract from that significance

2.1.3 Public Structural Design Informants: Indicators

CATEGORY C: PUBLIC STRUCTURAL DESIGN INFORMANTS	
Regional settlement and route structure	<ul style="list-style-type: none"> Integrate new development with existing settlement and route structure Do not repeat or reinforce interventions of the past which are at variance with the historical settlement structure
Bulk infrastructure	<ul style="list-style-type: none"> Wherever possible, make use of existing bulk infrastructure
Architecture	<ul style="list-style-type: none"> Ensure that new building development is of a high quality design, craftsmanship and landscaping, appropriate to the significance of the site and its setting Continue the tradition of commissioning pre-eminent architects, urban designers and landscape architects to reflect the significance of the site
Social facilities	<ul style="list-style-type: none"> Where possible, reinforce existing facilities
Planting	<ul style="list-style-type: none"> Protect and enhance planting patterns and trees of stature



The Groot Drakenstein-Simondium Valley: Composite Constraints and Informants Heritage and Cultural Landscape



The Groot Drakenstein-Simondium Valley: Constraints and Informants Relating to Existing Public Structure and Design Factors

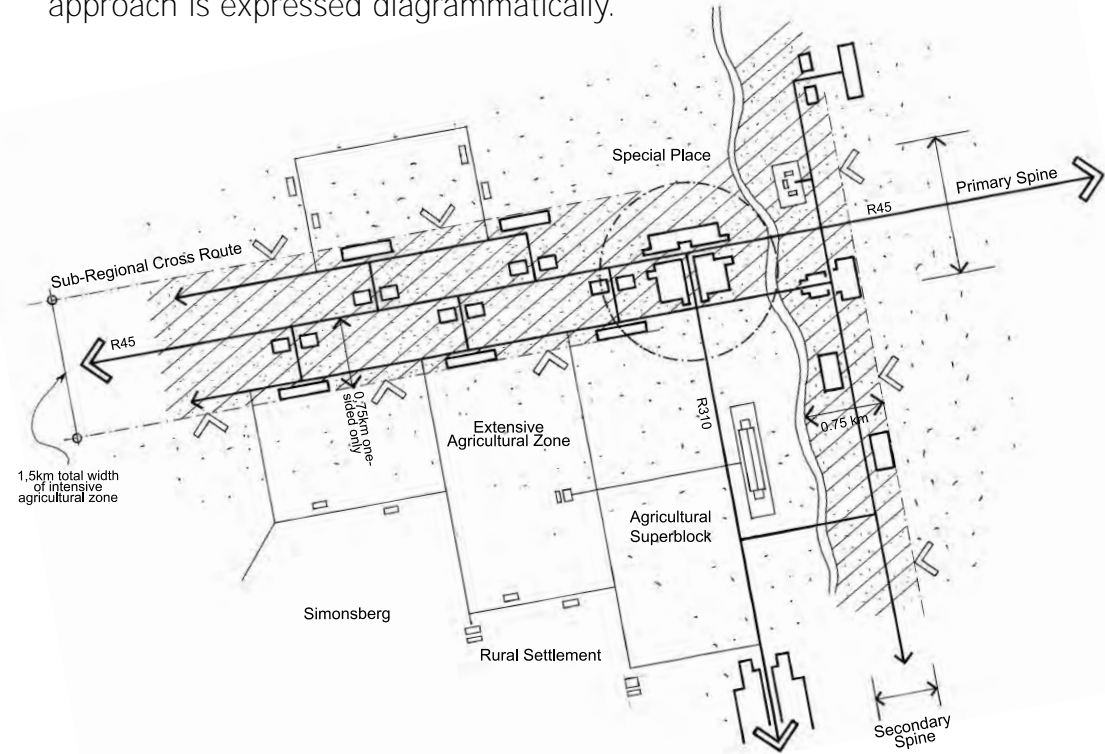
16e HERITAGE INDICATORS

2.1.4 A Conceptual Approach to Development in Regional Space

- An approach to settlement formation in regional space was conceptualized, based on the concern for authenticity. It is underpinned by a number of central principles, based on international theory and precedent:

- Development should not be scattered but should gravitate towards the main regional routes (in this case, the R45 and the R310)
- Development along these routes should not be continuous but should take this form of an hierarchical system of 'beads on a string', with the highest order settlements corresponding with points of highest accessibility. These points correspond with crossover points, where local agricultural superblocs interconnect with higher order routes. In this way, discontinuous regional corridors of development emerge over time. The maximum width of the corridor should be determined by comfortable walking distance (± 750 meter).

- The highest order regional routes should appropriately be rural scenic routes. These routes should run continuously through the rural and wilderness landscapes of which they are a part. Appropriately, settlements should not occur on these routes but should be set-back a minimum of 75 meters from them.
- Similarly, in order to create continuities of agriculture, settlement should not be two-sided traversing the route but should be one-sided only, switching from side to side. In this way, the scenic experience is optimized. This conceptual approach is expressed diagrammatically.



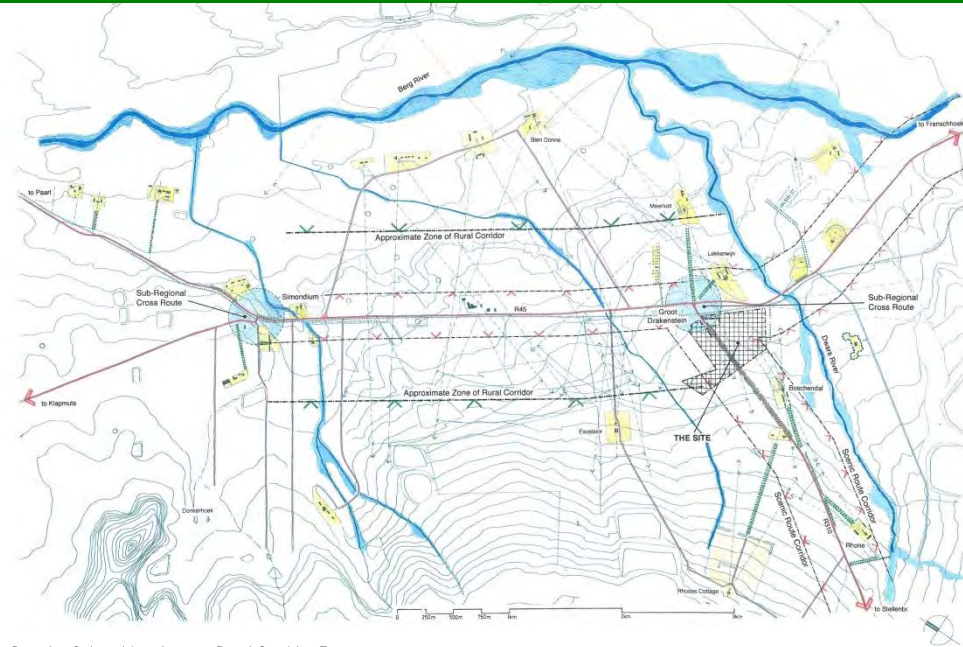
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16f HERITAGE INDICATORS

2.2 Context-specific Sub-regional Indicators

- Within this context, the concept and dimensions of the rural corridors along R45 & R310 should be respected.
- A zone of potential settlement pockets along the R45 between Simondium and Groot Drakenstein should be identified, consistent with the parameters of the rural corridor concept.
- Within the rural corridors along the R45 and R310, the scenic route parameters, in conjunction with the view cones associated with the Boschendal homestead and setting, must be respected.
- The northern edge of the village should be set back from the R45, to acknowledge the scenic nature of the route.
- The southern-most edge of the village should be no closer than 300 meters from the Boschendal homestead werf wall, in order to celebrate its agricultural setting.
- Agricultural activity associated with the Boschendal setting should be brought hard against the edges of the village, to reinforce the agricultural context of the werf and homestead.
- Planting mitigation measures (e.g. avenues, windbreaks) should be used to 'edge' the village, clarify its domain and contribute to the cultural landscape expression.
- Settlement should be announced by strategically located elements creating a gateway, a sense of arrival, the effect of pause way and traffic calming. The preference is for small traffic circles responding to the hierarch of routes, the design of which should acknowledge the rural character.



Broader Cultural Landscape: Rural Corridor Zone

- The speed limit within this zone should not exceed 60km/hour.
- The southern entrance of the R310 into the village should also be announced. The preference is for a small traffic circle.
- The southern and eastern edges of the village should be buffered by 'tread-lightly' zones in order to protect long views from the homestead and from the scenic routes. Tread-lightly zones are zones where a small amount of low impact development, as understated as possible, could be considered but where the dominance of agriculture remains paramount.
- The intersection between the R45 and the R310 should be marked by a traffic circle.



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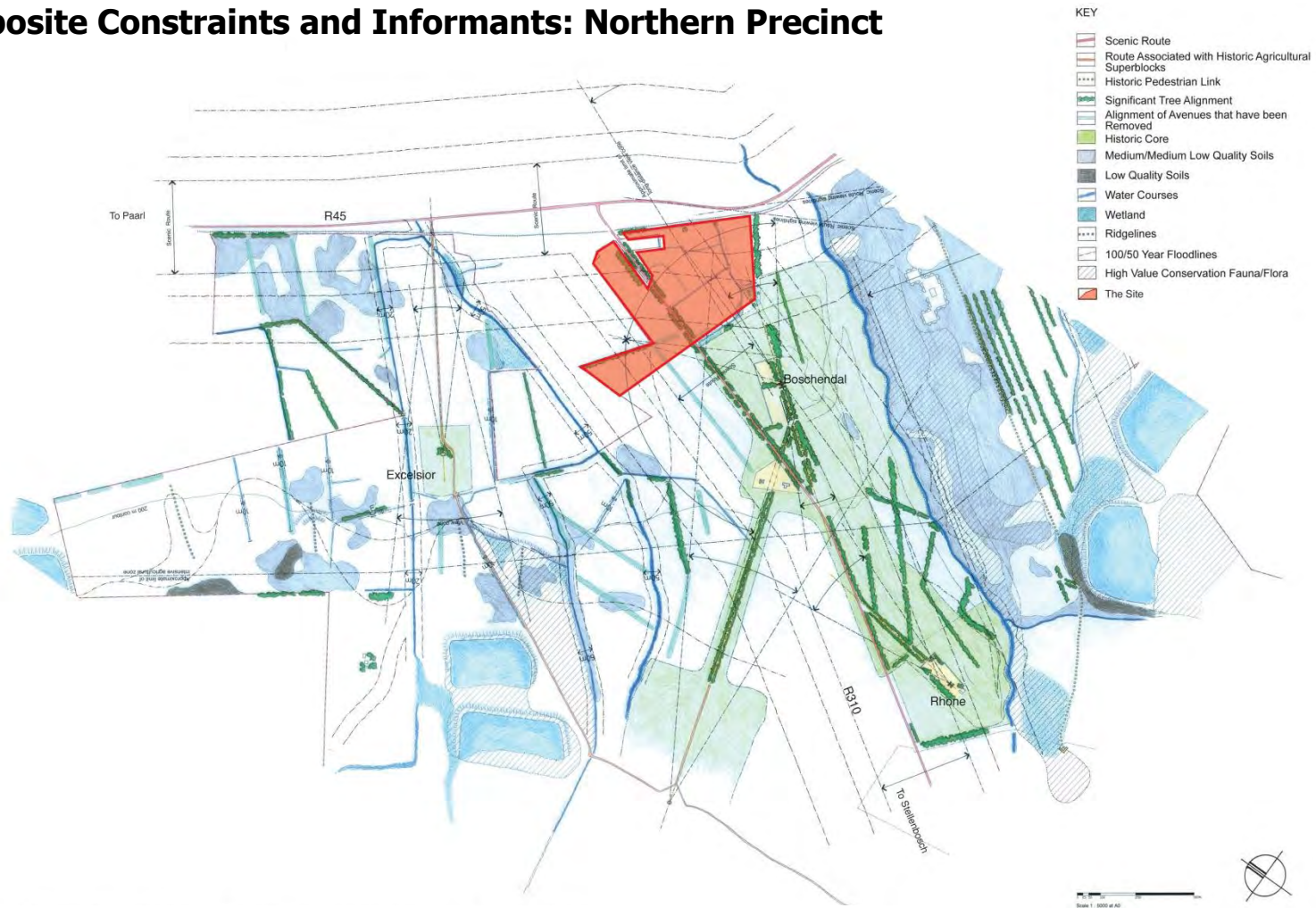
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16g HERITAGE INDICATORS

2.3 Composite Constraints and Informants: Northern Precinct



Composite of Precinct – Specific Refined Constraints and Informants: Northern Precinct



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ARCHITECTURE + URBAN DESIGN



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16h HERITAGE INDICATORS

3. Village Indicators

The central, non-negotiable, challenge with respect to settlement is to create qualities of 'village', not 'suburbia'.

3.1 Qualities of Village

Positively performing villages internationally exhibit a number of qualities:

- Their location is accessible in term of regional movement infrastructure;
- They are relatively small;
- They are mixed-use (for convenience), although the main activities are residential;
- Their economies are supported by the local region, while they predominantly provide goods and services to the Local region;
- They are compact: they do not sprawl, although they allow easy pedestrian access into the surrounding countryside;
- They are social entities, not just a collection of houses: they require places for social gathering and expression;
- There is a clear distinction between more public and more private activities, with more public activities gravitating towards the most accessible locations;
- The qualities of street space are central to the overall quality of the village;
- Pedestrian and NMT movement is dominant, although vehicular access to all parts of the site is possible;
- They are safe, in the sense that there is no residual space that lacks surveillance;
- They offer diverse living conditions to a demographically wide range of inhabitants;
- Large parts of the village are widely accessible: only the most private places may have controlled access;

- Their infrastructure is rural, not urban;
- Their country setting is brought into daily life through 'inside-out' views.

3.1.1 Village Spatial Indicators

- The form of the village should be compact, to discourage sprawling forms, now and in the future. However, cul-de-sacs are discouraged, to enable easy pedestrian access to the countryside.
- Large parts of the village (particularly the more public parts) should be accessible to the public. Some security control may be exercised in more private precincts.
- There should be a range and mix of activities. Non-residential activities should be small-scale and occur on the ground floor in central zones, to encourage a vibrant street life in the central areas.
- There should be a range of choices both in terms of lifestyle (from quite public to very private living), housing types and affordability levels: there should be a clear density gradient.
- The settlement should be organized around an hierarchical 'family' of public or social spaces, with the level of hierarchy largely corresponding the levels of accessibility.
- The highest order space should be the primary gathering space (the village green) for the entire village and for visitors.
- There should be a clear hierarchy of public routes, with the hierarchy corresponding with degrees of continuity of the route.
- The highest order route should be a mixed-use high street.
- The movement hierarchy should be pedestrian and NMT-dominant, while vehicular access should be possible to all parts of the development.
- The movement network must promote permeability. It should take the form of a grid, although the grid may be distorted to soften it.
- Some of these requirements are illustrated, in the context of Boschendal, in figures on poster below..



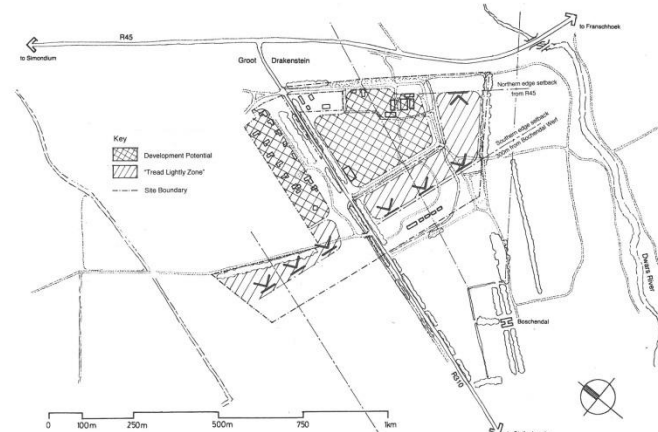
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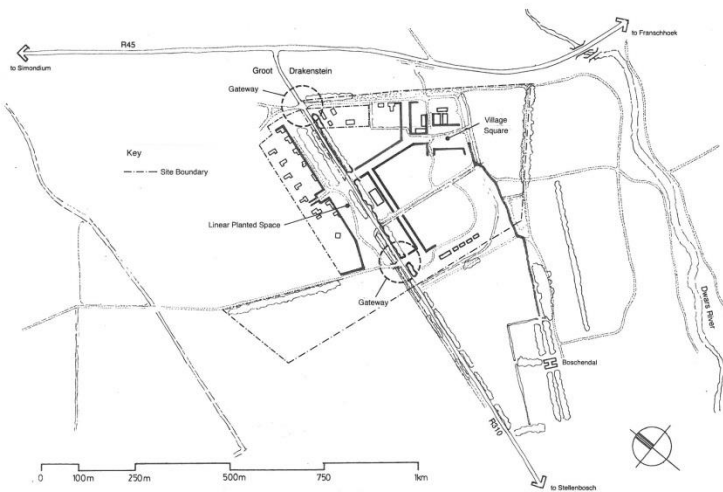
16i HERITAGE INDICATORS



Movement Network Exploration – Option 5



Village Definition and Density Gradient



Hierarchical Public Space Network



Planting Mitigation and Village Edge-Making



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3.2 Generic Village Qualities, Organizational Principles and Indicators

- A significant amount of the village should be open to public access: a gated development is not allowed;
- The village should be seen as a social entity, organized around a social heart: public spaces (for example, the village green) are central to this;
- More publicly-orientated buildings should abut higher order spaces, helping to define the space (they should not occur in the space);
- Bring the rural and wilderness areas surrounding the villages into the daily life of the village through view-lines and vistas focused on prominent natural features;
- Use both organic and straight-line geometries in the layout, when straight lines are used, they should be used for structural reasons (for example, important axial alignments);
- Frame views;
- Achieve qualities of 'street' (a multi-functional space accommodates a number of modes of movement as well as other activities) as opposed to 'road' (a conduit for motor cars);
- To this end, buildings facing onto streets should be brought to the front of the plot and 'build-to' lines should be defined to make the street in terms of important streets. This system also promotes primarily green 'hollow-blocks';
- No rears of buildings should front onto any form of public space;
- Use rural elements (for example, grachts or swales to manage storm-water, low walls, hedges, tree canopies), not urban elements such as kerbs or walls;
- Achieve both unity and diversity in the built form. The main instrument of unification should be the use of a common space syntax, albeit in different forms. The common space syntax should include the following features:
 - A continuous 'main street' which structures the village. A system of much smaller streets should 'network' off this;
 - A water network: stormwater run-off should occur on the surface in a system of grachts;
 - A spatial focus (e.g. the village green) which is the primary social space of the village. The more publicly-orientated buildings should abut, and help make, this space;
 - Strategically positioned non-residential uses reinforcing the hierarchy of publicness;
 - A system of axial alignments, vistas and focal elements;
 - A pattern of sub-division reinforcing active street boundaries and preventing 'dead edges' from fronting onto the public domain;
 - A gradation of height reinforcing the hierarchy of publicness and gateway spaces;
 - A system of 'Cape' rural building typologies and associated structures and elements;
 - A system of building types which distinguishes between gateway and mid-block pinching buildings, street liners, corner buildings and pavilion buildings. The structural types should reinforce the structural layout of the village;
 - A system of structural planting reflecting 'Capeness' and 'ruralness';
 - Process is also central in achieving complexity and diversity. As a general principle, no one designer should design more than four buildings in close proximity to each other.



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16k HERITAGE INDICATORS

4. Generic Structural Indicators

• Movement Network

The following factors should inform the movement network:

- It is necessary to establish a clear village movement network, minimizing excessive repetition and sameness;
- The village should be pedestrian and NMT dominant, while still accommodating vehicles;
- Qualities of 'street' (multifunctional linear spaces which also accommodate movement) as opposed to 'road' (a single purpose conduit for cars) should be captured throughout the development;
- The village should be anchored by a mixed-use high street.

• Public Space

The following factors should inform the approach to public space:

- It is necessary to establish a clear spatial hierarchy;
- The village should be anchored by a village square which is integrated with the high street;
- Primary gateways into the village should be spatially announced; All buildings should be used to define and make public space. The architecture should primarily take the form of background buildings.

• Public Facilities

Any public institution/community facility should occur in exposed (highly accessible) locations.

• Height

The following should hold in relation to height:

- Height policy should respond to access, with the highest density at the most accessible places;

- No building should exceed walk-up forms (3 storeys) in the dense areas. There is a maximum height of storeys in the more embedded, private areas and 1 storey in the 'tread lightly' zone.

5. Street Indicators

Street space contributes the largest amount of public space in almost any settlement. The quality of the streetscape, therefore, fundamentally impacts on the quality of the entire settlement. When they are positive, they reflect a number of characteristics: they are defined, humanly-scaled, multi-functional (in particular, they make NMT a pleasant and safe experience) and they are subject to surveillance.

- The street hierarchy should be clear and legible, with the dominance of the 'high street' apparent.
- Blocks should be relatively small to promote permeability.
- Street edges must be clearly defined (by building fronts, verandas, low walls, fences, hedges and so on). Almost all buildings should be background buildings, the primary role of which is to define public space, including street space. Buildings should be used structurally to define streets.
- Street must be humanly scaled (height of defining elements on the edges should be appropriate to width of street).
- Streets must ensure surveillance in the sense of having 'human eyes' over the street space. Front-defining edges must allow for a degree of transparency.
- Streets should be multi-functional: they should be able to accommodate a range of human conditions. They should not be scaled only to accommodate movement. Part of this is accommodating a range of movement modes in different places.



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161 HERITAGE INDICATORS

- The threshold between public street space and private residential space must be clear (frequently scaling elements such as stoeps and pergolas can be used as modulating devices in house-street relationships).

6. Context Specific Village Indicators

Planning and design responses should respect and work with the following:

- existing elements of the cultural landscape
- the existing water network
- the historical movement network, which should be retained to the greatest degree possible
- the recycling of buildings and structures wherever appropriate

The R10 should run through the village within an extensively planted green corridor, some 75 meters wide (from the western building facade to the edge of the agricultural hedge on the east), creating the visual impression of a linear park with a treed avenue.

- The movement network should tie in with the sub-regional system of movement.
- The movement network should be highly permeable.
- A hierarchical public space network should overlap and correspond to the movement network, knitting together the elements of public significance.
- There should be a clear density gradient in response to the movement hierarchy and to sight-lines and visual indicators. The village should be wrapped on two sides by 'tread lightly' zones.
- Planting mitigation measures (eg. avenues, windbreaks) should be used to 'finish off' the southern edge of the village, while at

the same time consolidating the extent of the northern edge of the agricultural setting of the Boschendal homestead and werf precinct. Orthogonal geometries should be employed to give expression to the cultural landscape of the Winelands of the Cape.

7. Architectural Indicators and Controls

Two levels of concern are addressed in this section:

Generic indicators; these logically flow from the preceding settlement-orientated indicators. However, the focus shifts to individual or complexes of buildings. Particular emphasis is placed on how each building 'works' with its neighbours, in order to contribute jointly towards the character of the village as a whole.

- Mandatory controls to achieve the generic indicators. These generally relate to the public interface and fronts of the units (that portion of the unit which is visible from the street), as well as aspects relating to roof silhouette and sky-lines.

7.1 Generic architectural indicators

- All new buildings should reflect recessive architecture (they should be background buildings).
- More important public buildings should not mimic the architecture of the past (e.g. the use of gables etc.). They should be modern in their architecture. Nevertheless, the 'wall-plate' architecture of the Cape should dominate.
- No architectural themes (e.g. Tuscan).
- Buildings, structures, built elements and landscaping should promote the natural, rural, historical and architectural character of the broader Boschendal precinct within the Valley.
- Existing architecturally significant buildings and homesteads of



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16m HERITAGE INDICATORS

historical or aesthetic importance, including their landscape settings, should be conserved and, where necessary, enhanced.

- The character of new buildings and associated elements must reflect qualities of 'Capeness' and 'ruralness', expressed in the spirit of contemporary design.
- Buildings must be designed to optimize their spatial and design structural role (e.g. gateway buildings, corner buildings, landmark buildings, street-liners, pavilions).
- Most buildings must be designed as background buildings, to make them as unobtrusive and recessive as possible. More prominent buildings should be used strategically (for example, as landmarks or as terminating elements for important axes).
- Buildings and their associated elements (walls, hedges, etc.) must contribute to defining, and thus making, the street along which they are located.
- The geometries of horizontality reflected in the landscape must be respected, especially in terms of roof silhouettes.
- Buildings generally must be kept low but height should be used to reinforce spatial structure.
- Roof silhouettes must be as unobtrusive as possible.
- Proportions must be elegant, with wall surfaces dominating openings and cut-outs (apertures). The apertures should be vertically proportioned.
- Surveillance over public space, including the street, is compulsory: no dead edges are allowed.
- Colours must be muted.
- Where appropriate, use barnyard architecture to define space.

7.2 Mandatory Controls

- Buildings should not occur at an angle to the street boundary.
- Compulsory build-to lines should be defined to ensure that buildings play their spatial and design structural role most effectively, (e.g. buildings close to the street).
- The maximum height is 3 storeys in dense areas, 2 storeys in the more embedded areas and 1 storey in the tread-lightly zones.
- No more than ground floor plus one more floor for flat roofed buildings.
- All flat roofed buildings should have a parapet on three sides order to create a 'boxed feeling. No gutters should appear on the front of the unit but should occur to the rear.
- For pitched-roof buildings, ground floor only is permitted. Upper floor accommodation must be within the pitch.
- When roofs are pitched, the allowable range is between 35 - 45°
- No mono-pitched roofs are allowed.
- No tiled roofs are allowed.
- Significant interruptions to the horizontality promoted by the roof silhouettes (e.g. high chimneys) are not allowed.
- No expressed gable ends (parapets) are allowed. Roof materials must project over the end walls and finish flush with the outside face.
- No dormer windows are allowed in the roof of upper floor accommodation in pitched-roof buildings facing the public street.
- The use of skylights is acceptable, if not visible from the road.
- Windows in the dominant facade must be vertically proportioned, consistent with the traditions of walled architecture.
- Process is important in enhancing diversity: no one designer should be allowed to design more than four contiguous buildings, to prevent monotony.



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17a VISUAL IMPACT ASSESSMENT

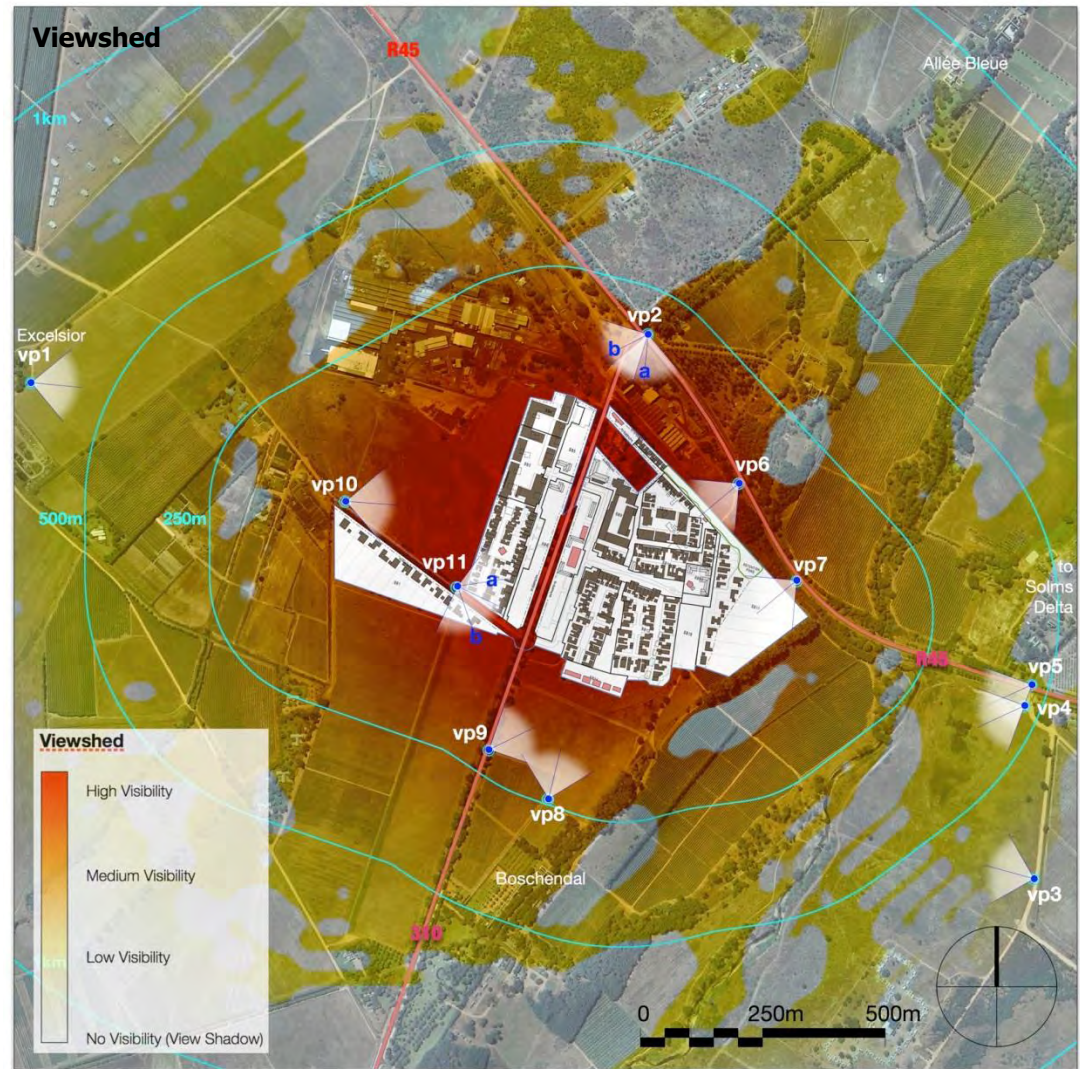
VISUAL ISSUES

- High value of the cultural landscape and heritage significance of the area
- Importance of the wine route and scenic routes for tourism
- Proximity of the historical Boschendal homestead and werf complex
- Visually open landscape represented by the vineyards and their seasonal colours
- The need to retain the predominantly rural character of the area
- The need to avoid fragmentation of the agricultural landscape
- The need to upgrade or remove derelict or unsightly areas/ structures.

VISUAL INDICATORS

Heritage indicators:

- Visual setback along the R45 scenic route
- Agricultural setback from the Boschendal homestead werf wall
- Agriculture to the edge of the proposed village
- Avenues and windbreaks to define edges of the proposed village



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Building Heights:

- Buildings generally restricted to 2 storeys
- 3-storey buildings emphasize focal points
- 1-storey buildings in visually sensitive areas

Open Space and Landscaping:

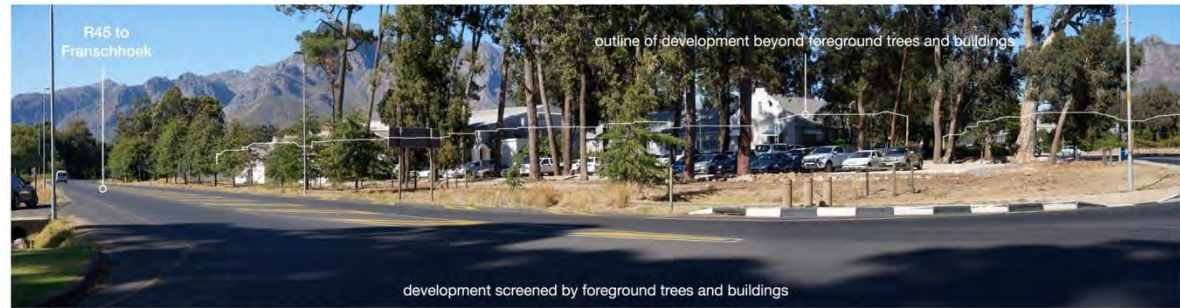
- Continuous system of hard and soft outdoor spaces;
- Landscaping designed in sympathy with the cultural agricultural context
- Gardenesque-type landscaping avoided

Roads and Parking:

- Roads laid out in sympathy with the orthogonal pattern of the farmlands
- Parking areas fronting onto scenic routes avoided
- Parking screened with buildings, walls, berms or trees
- Parking organised into small parking courts

Lighting and Signage:

- Outdoor lighting to be discrete to maintain rural ambience
- Advertising signage, banners and flags avoided



Viewpoint 2a • from Allée Bleu Entrance on R45 • distance 172m



Viewpoint 2b • from from Allée Bleu Entrance on R45 • distance 198m



Viewpoint 6 • from R45 adjacent to Development Site • distance 103m



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17c VISUAL IMPACT ASSESSMENT



Viewpoint 8 • from northern end of Boschendal werf wall • distance 244m



Viewpoint 9 • from R310 at southern buffer edge of development • distance 205m



Viewpoint 10 • from Local Access Road • distance 29m / 285m



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17d VISUAL IMPACT ASSESSMENT



3D Model for Visualization

FINDINGS

The finding of the VIA is that the proposed Boschendal Village could have a potential visual impact of medium to high before mitigation and an acceptable medium significance after mitigation.

Over time, with the growth of extensive new tree planting, the visual impact could reduce further to medium-low significance.

A Cape-style village would not be inappropriate and could benefit the derelict nature of the site.

The general layout and design principles are supported. The building massing could be mitigated through articulation of the elevations and roofscapes.

Given the sensitive nature of the surroundings in visual and heritage terms, the Landscape Framework Plan is an important component of the proposals.

Potential visual impact could be offset by development of incrementally phased precincts over time, with each precinct being fully landscaped.

	Comments	Significance before mitigation	Significance after mitigation*
Village development	Density and building massing could be partly offset by greater articulation of elevations and roofscape. Single residential-type development on the eastern and western edges could be mitigated if orchards are retained and treebelts introduced.	Medium-high significance	Medium significance
Construction Phase	Construction could result in additional visual intrusion from construction equipment. Impacts would be short-term, and mitigated through the EMP.	Medium-high significance	Medium significance
No Development Alternative	Status quo maintained. Vacant, derelict land lacks visual amenity, but could be rehabilitated.	Low significance	Low significance



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18a SOCIAL IMPACT ASSESSMENT

ASSESSMENT OF PLANNING FIT

Key policy and planning reviewed documents include:

- Western Cape Provincial Spatial Development Framework (2014)
- Stellenbosch Draft Integrated Development Plan 2015/ 2016
- Stellenbosch Municipal Spatial Development Framework (2013)
- Stellenbosch Municipality Strategic Framework for Local Economic Development (2013)

The proposed Boschendal Mixed Use Development conforms with and supports the majority of key policy and land use planning principles and objectives contained in the WCPSDF and the Stellenbosch SDF. The majority of the proposed Boschendal Village is also located within the Groot Drakenstein Node Urban Edge. The area has therefore been identified as suitable for development. This finding applies to Alternative 5a, 5b and 5c.

CONSTRUCTION PHASE

- Phase 1: Bulk Services (12 months);
- Phase 2: Commercial Buildings (24 months);
- Phase 3: Medium / High Density Residential (24 months)
- Phase 4: Low Density Residential (24-36 months).

Construction expected to extend over a period of 5-8 years. Likely to be some overlap between Phase 2, 3 and 4 depending on market conditions.

Construction Phase Social Impacts

Potential positive impacts

- Creation of business and employment opportunities

Potential negative impacts

- Impact on local community and family structures associated with the presence of construction workers
- Security and safety impacts associated with the presence of construction workers
- Noise, dust and safety impacts associated with construction related activities

Business opportunities

Total capital expenditure ~ 1.08 billion (2016 rand values). The majority of work likely to be undertaken by local contractors and builders based in the SLM, Cape Winelands and Cape Metropolitan Area. The majority of the building materials associated with the construction phase are also likely to be sourced from locally based suppliers in the SLM, Cape Winelands and Cape Metropolitan Area. The proposed development will therefore represent a positive benefit for the local construction and building sector and the economy of the SLM, DLM and Western Cape as a whole.

Employment

Phase 1: ~ 50, Phase 2 & 3: ~ 300 jobs per annum over a three to four year period, Phase 4: ~ 420 jobs per annum over a 3 year period.



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Total wage bill: ~ R 241 million (2016 rand values). ~ 70 % (R 169 million) earned by low and semi-skilled workers. Majority of employment and associated wage benefits will accrue to Historically Disadvantaged (HD) members of the community.

The significance of all of the potential negative impacts with mitigation was assessed to be of Low Negative Significance. All of the potential negative impacts can therefore be effectively mitigated if the recommended mitigation measures are implemented.

SUMMARY CONSTRUCTION PHASE IMPACTS

Impact	Significance No Mitigation	Significance With Enhancement /Mitigation
Creation of employment and business opportunities	Medium (Positive impact)	High (Positive impact)
Presence of construction workers and potential impacts on family structures and social networks	Low (Negative impact for community as a whole)	Low (Negative impact for community as a whole)
Threat to safety and security	Medium (Negative impact)	Low (Negative impact)
Impact of construction related activities (dust, noise, safety etc.)	Medium (Negative impact)	Low (Negative impact)

OPERATIONAL PHASE SOCIAL IMPACTS

Potential positive impacts

- Creation of rural village, including provision of housing and community facilities
- Creation of employment, training and business opportunities
- Generation of funds for community development initiatives
- Promotion of tourism

Potential negative impacts

- Impact on adjacent properties in the area
- Impact on rural sense of place



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Provision of Housing

The housing component will not address needs of the low income sector. However, the 135 medium and 232 high density units will create opportunities for middle to higher income members of the local community to acquire property in the area.

The developers have also indicated that 5% of the total number of residential units will be allocated as affordable housing for key workers. This will be done in the form of rental housing or a rent-to-buy scheme.

Commercial and retail facilities

The farmers market will provide opportunities for local producers to sell their produce. The restaurants will also create a market for local produce from the area. There is also a need for a small shopping centre to serve the local communities in the area. Local members of the community currently have to travel to Paarl or Stellenbosch to shop.

Community facilities

The market square will create a commercial node for the development and broader area. Public open spaces and a pre-school / crèche that caters for residents and the local community will be established. The existing clinic will be up-graded and moved to a more accessible location.

While the urban design framework highlights the importance of public spaces and access, care must be taken to ensure that members from the local community can access and use these spaces. In this regard there is a risk that members from the local community may be made to feel unwelcome, which would, in turn, limit the benefits of these spaces for the local community.

Employment

Residential component : ~ 176 jobs domestic workers and gardeners etc. Retail and hotel component : ~ 600 and 800 jobs

The majority of employment opportunities are likely to benefit HD members from the local community. Given the nature of the jobs a large percentage are also likely to benefit women.

Training

The operational phase will create an on-going need for training and skills development programmes that will benefit members of the local community. The majority of the beneficiaries are likely to be HD individuals. The new owners have already trained 300 staff members over the period 2014-2015.



18a SOCIAL IMPACT ASSESSMENT

Business opportunities

The retail and commercial component (farmers market, shops, and **restaurant's**, places of entertainment, offices etc.) will create business opportunities. The residential component will also create opportunities for local businesses, such as maintenance and building companies, garden service and security companies, etc.

The proposed Boschendal Village Mixed Use Development will therefore create significant opportunities and benefits for the local economy and members of the local community in the Dwars River Valley.

Support for local development

A trust to support education and skills development in the Dwars River Valley has been established by the current owners. The trust will be funded by a percentage of the value of the initial sale of all properties. The owners of Boschendal have also stressed the importance of ensuring that there is proper management of the trust and full accountability and transparency.

The current owners have also embarked on a number of community initiatives, including the establishment of a pre-school and aftercare facility in the Dwars River Valley and a food nutrition programme for local schools that uses local produce from the farm.

Promotion of tourism

The proposed development is aimed at attracting tourists to the area by incorporating a farmers market, shops, restaurants, open spaces and places of entertainment into the design.

The urban design framework also stresses the importance of linking the proposed development to the historic Boschendal Manor House and werf. The development also benefits from its location relative to Boschendal, La Rhone and a number of other local historic wine farms, including Allée Bleue, Solms Delta, Normandie and **L'Ormarins**.

Impact on rural sense of place

The urban design framework is informed by a set of Heritage Indicators which identify two key issues central to the design of the proposed Boschendal Village and that have a bearing on sense of place. The first highlights the importance of the historic cultural landscape, while the second seeks to ensure that the authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in a new settlement. The issue of sense of place therefore plays a key determining role in the design of the proposed development.



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18a SOCIAL IMPACT ASSESSMENT

SUMMARY OPERATIONAL PHASE IMPACTS

Impact	Significance No Mitigation	With Enhancement /Mitigation
Creation of rural village, including provision of housing and community facilities	Low (Positive impact)	Medium (Positive impact)
Creation of employment, training and business opportunities	Medium (Positive impact)	High (Positive impact)
Promotion of tourism	Low (Negative impact)	Medium (Positive impact)
Impact on adjacent properties	Medium (Negative impact)	Low (Negative impact)
Impact on rural sense of place	Medium (Negative impact)	Low (Negative impact)

CONCLUSIONS

The findings of the SIA indicate that the construction and operational phase of the proposed development will result in a number of positive social benefits for the local community and the area as a whole. These include creation of employment opportunities, creation of commercial, training and skills development opportunities, and generation of funds for community based initiatives.

The majority of the proposed Boschendal Village Mixed Use Development is also located within the Groot Drakenstein Node Urban Edge. The area has therefore been identified as suitable for development.

Based on the findings of the SIA the establishment of the proposed Boschendal Village Mixed Use Development is supported on the condition that the recommended enhancement and mitigation measures contained in the SIA report and other specialist reports are implemented. This recommendation applies to Alternative 5a, 5b and 5c.



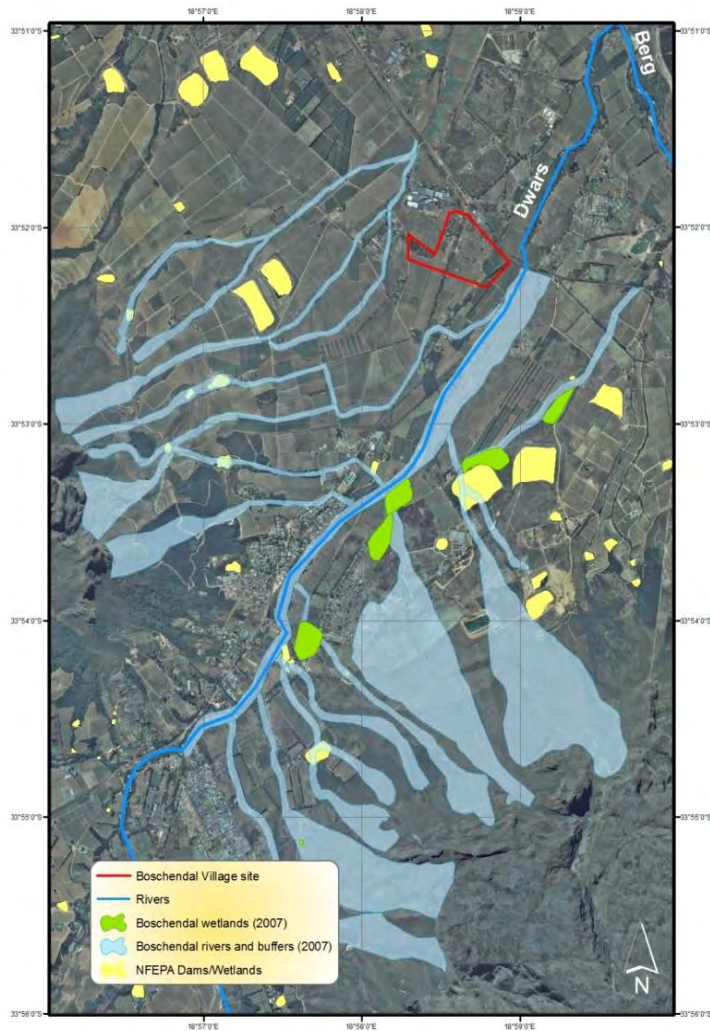
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19a FRESHWATER ECOSYSTEMS



OVERVIEW OF THE AREA

The dominant freshwater ecosystem in the area is the Dwars River, an important perennial tributary of the Berg River. This river is a foothill, cobble-bed system typical of the Fynbos Biome. The underlying geology of the Dwars River Valley is dominated by granites of the Stellenbosch Pluton of the Cape Granite Suite, and the surrounding mountains comprise quartzitic Table Mountain Group sandstones. The bed of the Dwars River is made up of quartzite cobbles and boulders that have been carried down the valley by the river and its tributaries.

Historically, the vegetation on the site would have been Boland Granite Fynbos, an endangered vegetation type found in the Dwars River Valley and on the surrounding mid-slopes. The lower, eastern boundary of the site would have been Swartland Alluvium Fynbos, which is typical of riverine valley floors and floodplains. Currently, most of the site has been heavily disturbed through agricultural activities (primarily orchards, now pears), road and railway construction and use, housing, and small-scale industrial operations. Very little of the original vegetation remains on the site. There are several agricultural drains crossing the site, serving to channel surface water away from buildings and fields.



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19b FRESHWATER ECOSYSTEMS



WETLANDS ON THE SITE

Four wetlands were recorded noted on the site during the field visit, and one saturated area which has been created through water leaking from a broken water pipe. The wetlands are associated with agricultural drains, roads and railway lines but most of them are likely to be remnants of more extensive wetland areas, which have been partially impacted by the surrounding activities.

Wetlands 1 and **2** are hillslope seeps located near the south-eastern corner of the site, and are probably two parts of the same wetland, on either side of a dirt road bisecting this area. The wetlands are dominated by riverbed grass, *Pennisetum macrourum*, an indicator of temporary to seasonal wetness. The soils in this wetland are sandy in texture and light grey in colour with some signs of ferricrete.

Wetland 3 is a small, isolated depression, comprising a patch of *P. macrourum*. Due to its isolation from an obvious surface water source and from wetlands 1 and 2 and its small size, it is difficult to ascertain whether this is a naturally occurring wetland, or one that was created as a result of excavations in the area.

Wetland 4 is a linear seep lying adjacent to the railway line. While this area may always have been seasonal wetland, the shape and location of the wetland area has probably been influenced by the obstruction to subsurface and surface flow presented by the railway line, and the surrounding buildings. This wetland is also dominated by *P. macrourum*.



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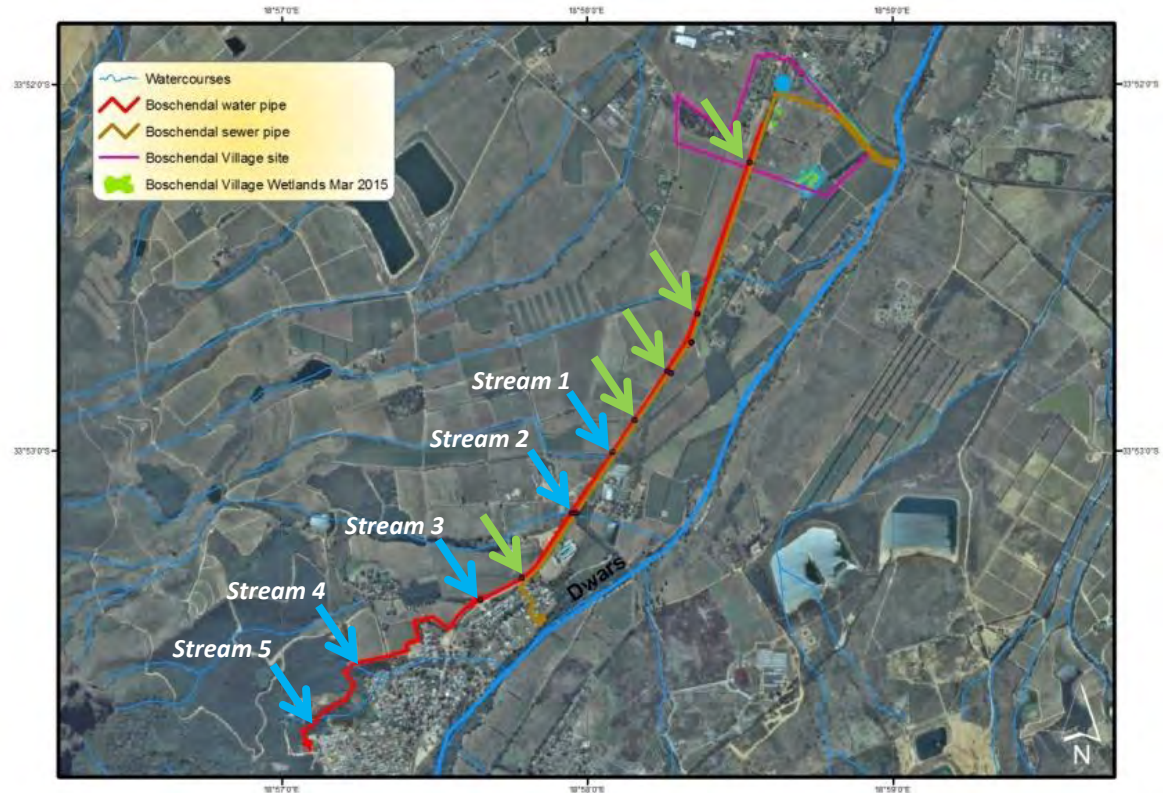
19c FRESHWATER ECOSYSTEMS

WATERCOURSES AFFECTED BY THE DEVELOPMENT

Five small watercourses and a number of agricultural and stormwater ditches will be impacted by the proposed bulk water and sewer pipelines that will run from Pniel to the Village site. The natural channels are all fairly modified from their natural state, due to the proximity of roads, houses, agricultural activities and infestations of acacias. The riparian vegetation is dominated by kikuyu grass, with some reeds (*Phragmites australis*), bulrush (*Typha capensis*) sedges, grasses (mainly *Pennisetum macrourum*) and arum lilies. *Seersia angustifolia* (willow karee) also occurs in clumps in the riparian zone.



Riparian vegetation typical of one of the watercourses affected by the pipeline



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19d FRESHWATER ECOSYSTEMS

Condition and importance of the freshwater ecosystems:

Wetland	Area (ha)	Present Ecological State (condition) for wetlands	Ecological Importance and Sensitivity
Wetland 1	0.31	C – moderately modified from natural	Moderate
Wetland 2	0.34	D – largely modified	Moderate
Wetland 3	0.04	D – largely modified	Moderate
Wetland 4	0.51	E – extensive loss of natural habitat / function	Moderate
Dwars River	n/a	C/D – moderately to largely modified	High to very high
Stream 1	n/a	B/A – largely natural	Moderate
Stream 2	n/a	D – largely modified	Moderate
Stream 3	n/a	B/C – good condition	Moderate
Stream 4	n/a	C – moderately modified	Low to moderate
Stream 5	n/a	B/C – good condition	Moderate

CONSTRUCTION IMPACTS

- Dumping of building material in sensitive areas
- Pollution of wetlands or watercourses through leaking machinery, etc
- Destruction or deterioration of freshwater habitat as a result of foot and vehicular traffic in and around wetlands and watercourses
- Excavation and/or infilling of wetlands or floodplain for construction of pipelines, houses
- Disturbance of freshwater fauna and flora through noise, light, vehicles and trampling
- Increased input of sediments from on-site construction
- Introduction and spread of invasive alien plants such as in topsoil for landscaped areas (IAPs establish well in disturbed soils).

DEVELOPMENT LAYOUT IMPACTS

- Loss of open space between wetlands and watercourses on and next to the site
- Loss of Dwars River floodplain area in order to develop a row of houses (Alt 4, 5a and 5c only)
- Hardening of riverbank to build gabion drop structure for the stormwater system
- Pipe crossings across watercourses or water channels



Pennisetum macrourum dominates the wetlands on the Boschendal Village site



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19e FRESHWATER ECOSYSTEMS

OPERATIONAL IMPACTS

- Increased water demand and water supply infrastructure
- Decrease in water quality from stormwater runoff, or from leaks in sewer pipes
- Increase in water quantity from increased stormwater runoff from hardened areas
- Disturbance of fauna and flora from increased noise, light, vehicles etc
- Spread and establishment of invasive alien plants in landscaped and open areas.



CONCLUSIONS

- All of the impacts associated with the development can be at least partly mitigated, reducing the significance of negative impacts to a low to moderate significance post-mitigation.
- From a freshwater ecological perspective, there are fewer impacts associated with Alternative 1, the status quo, and this is thus the preferred alternative. The wetlands on the site are being maintained by current runoff, and support some wetland plants and probably animals. The Dwars River floodplain is cultivated to some extent, and there is polluted runoff entering the river from current activities on the site, however these are all of lesser negative significance compared with any of the development options. Given the development pressures of the area, the likelihood of the site remaining as is, however, relatively low.
- From a freshwater ecological perspective, the preferred *development option* is Alternative 5b, as this option will lead to less fragmentation of the landscape, and of the connectivity between the wetlands on the site and the Dwars River floodplain. The difference between this option and the others is marginal and generally does not translate into a shift in the significance of impacts, apart from those associated with the layout – loss of open space, and loss of floodplain area – where the significance could be lowered to negligible, with effective implementation of the recommended mitigation measures.



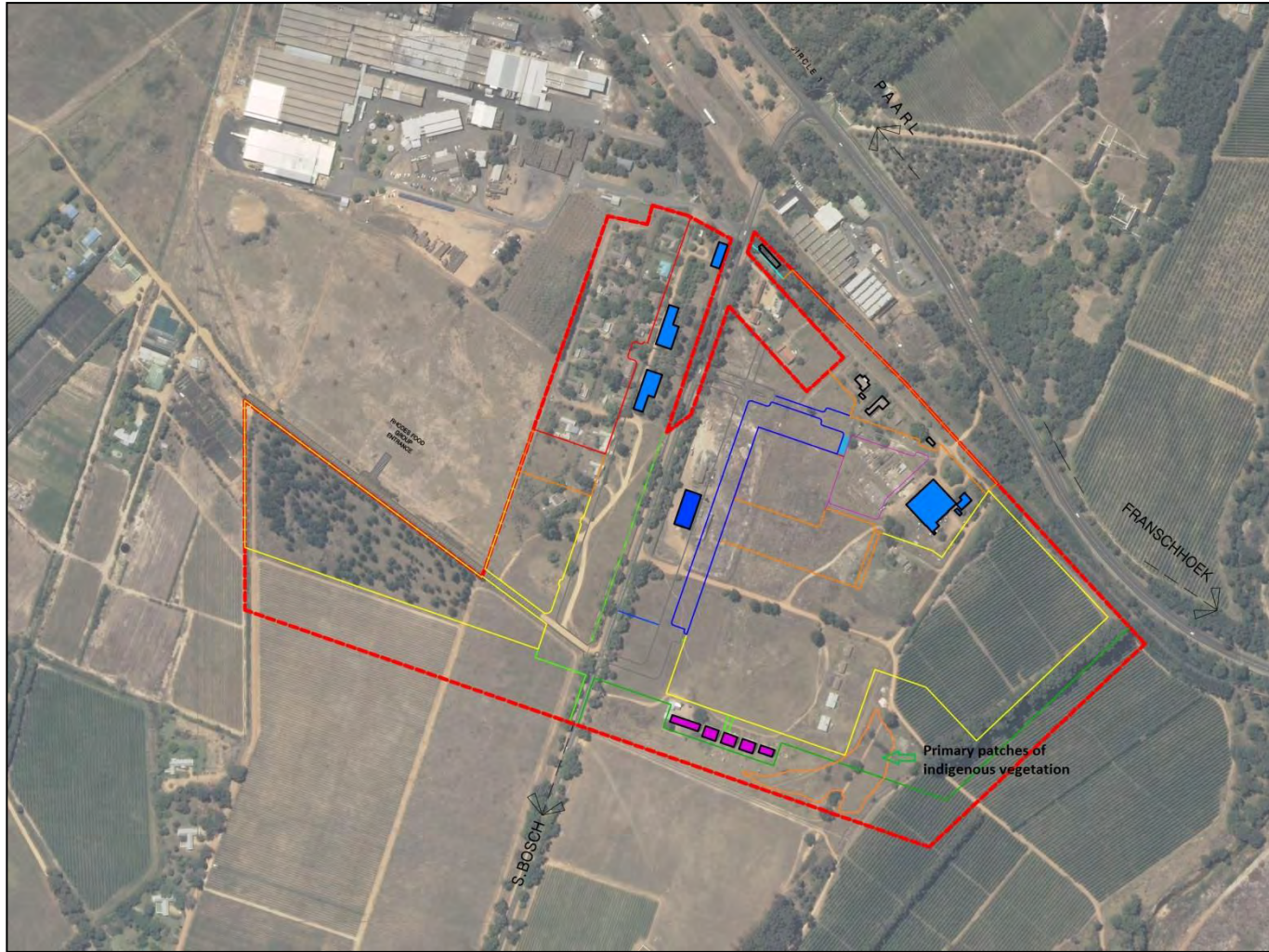
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20 BOTANICAL IMPACTS



VEGETATION

There are no botanical constraints to the proposed development. The entire area is either developed, cultivated or heavily disturbed, and any natural vegetation present is of **very low diversity**, and made up of resilient, widespread species of **no botanical conservation concern**.



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CLOSING DATE FOR COMMENT

If you would like to submit comments or register as an Interested and Affected Party, please forward your comments and contact details to the address below.

Doug Jeffery Environmental Consultants

(Attention Lindsay Speirs)

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Comments must be submitted on or before
18 November 2016.



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ENGINEERING AND CONSTRUCTION

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