Landscape Master Plan and Development Guidelines



Avec la Terre

Portion 11 of Farm 1426 Paarl



Report:

Landscape Master Plan and Development

Guidelines for

Pnt 11 of Farm 1426 Paarl Residential Development

Avec la Terre

Prepared by:

Viridian Consulting (Pty) Ltd for Future Megawatt (Pty) Ltd

November 2022

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1.0 INTRODUCTION

1.1 Scope of Work and Brief

Viridian Consulting Landscape Architects (hereafter 'Viridian/the Landscape Architect') was approached by Future Megawatt (Pty)Ltd (hereafter 'the client') in 2022 to form part of the professional team preparing the development application for the proposed Avec le Terre Residential Development project (hereafter 'the project/proposed "development').

The Landscape Master Plan and Design Guidelines have been developed as part of an integrated design process involving the input of various specialists and the design team professionals.

1.2 Purpose of Report

The purpose of this report is to illustrate the vision for landscape development for this residential development. The landscaping plays an integral role in the daily living experience of residents and must support a comfortable, environmentally sustainable and aesthetically pleasing living environment.

The proposed landscaping structure helps to integrate the development into its current and future context by providing sheltering windbreaks, shaded tree avenues, visual absorption and screening for an urban development within an area with an agricultural character. This report addresses all these design informants and illustrates the proposed design response.

1.3 Site Location & Local Context

The site is located along the R301 between Paarl and Wemmershoek. It can be accessed from the Schuurmansfontein road directly to the north of the site and the R301 directly to the east of the site. It is approximately 8km distance from the N1(8 minute drive).

Please refer to Figure 1.1 and Figure 2.1. The site is located on the flat, even topography of the valley bottom and in close proximity to the foot of the Wemmershoek Mountain. The very gently sloping site drains towards the north west corner of the site towards the Berg River located 1,9km to the west of the site.

The Wemmershoek Mountain to the east of the site forms a major landmark and strongly defines an edge to the visible landscape. The conservation area directly to the north of the site ensures open views from the north towards the site from the R301.

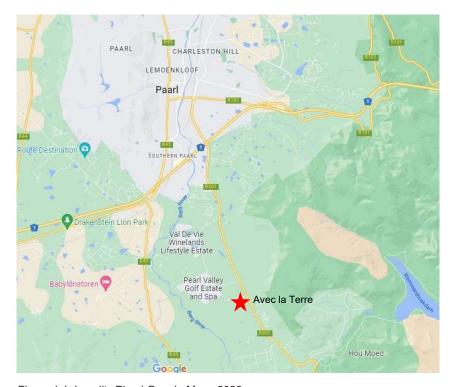


Figure 1.1: Locality Plan | Google Maps 2022

2.0 LANDSCAPE DESIGN INFORMANTS

2.1 Site Analysis & Landscape Design informants

The following section outlines the most important site informants, constraints and opportunities arising from the Landscape Analysis. These were prioritised for consideration in the Landscape Master Plan:

- Site informants include characteristics of the site and terrain such as slope drainage and climatic conditions.
- Prevailing, strong seasonal winds from the north-east and south and site specific wind conditions are a significant aspect influencing liveability.
- Site located in a fairly high- risk area for wildfires, especially related to strong winds in Summer months.
- A large waterbody (wetland) resulting from excavations is located within the site's boundaries and water generally flows towards low points in the south western corner of the site.
- The site is generally flat and slope aspect is predominantly north, south, south west and west.
- The natural soil profile at the site is situated on two sandstone type formations, characterised by deep and hard weathering rock. Soils are generally of a sandy texture, leached and with subsurface accumulation of organic matter, iron and aluminium oxides. A low clay content is a result thereof.
- Drought conditions and local policy require the use of non-potable water for landscape irrigation purposes.
- A portion of the site is covered by trees, mostly exotic species (Eucalyptus, Pinus, Acacia etc.) and most dense around the north western boundary.
- Natural vegetation on site has largely been modified through cultivation of the land
 or by the invasion of alien vegetation. Site is located in an area classified as
 Swartland Alluvium Fynbos (critically endangered) and a site survey confirms that
 there is not much evidence of this fynbos still occurring on the site, due to long history of
 agricultural and other land use activities.
- The vegetation mostly consists of open, sandy pastures and areas of vacant land, and a dense area of vegetation in the north western corner of the site.

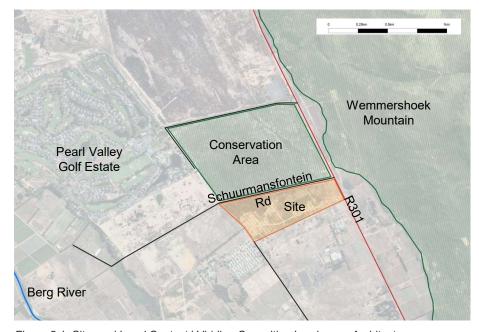
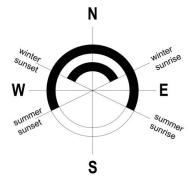


Figure 2.1: Site and Local Context | Viridian Consulting Landscape Architects



3.1 Landscape Design Vision

A residential development with a visual aesthetic and landscape character of a village within a natural and agricultural context. The vision is for a development that is generous in its provision of open space and integrates the service infrastructure of the overall development with the landscape functionally and spatially and displays sensitivity to its context alongside the R301 Scenic Route.

3.2 Landscape Design Principles

- High priority on tree structure and hierarchy
- Trees are a critical element for shelter from the prevailing winds to create liveable spaces and respond to context and landscape setting sensitively.
- Resource efficiency

A focus on two aspects specifically. Cost (use of on-site materials, material palette consisting of long-term durable and sustainable materials, planting palette focus on low maintenance, waterwise planting) and Water resource management (Stormwater integration and sustainable water management practices guide every aspect of the Landscape proposal).

- Integration with Engineering service infrastructure
- Context-sensitivity
- The planting strategy focuses on creating a rural rather than suburban character
- and prioritizes interface and edge treatment with surroundings.
- Appropriate and sufficient open space provision
- Continuous pedestrian circulation
- Focus on increasing biodiversity of flora and fauna

3.3 Structuring Landscape Elements

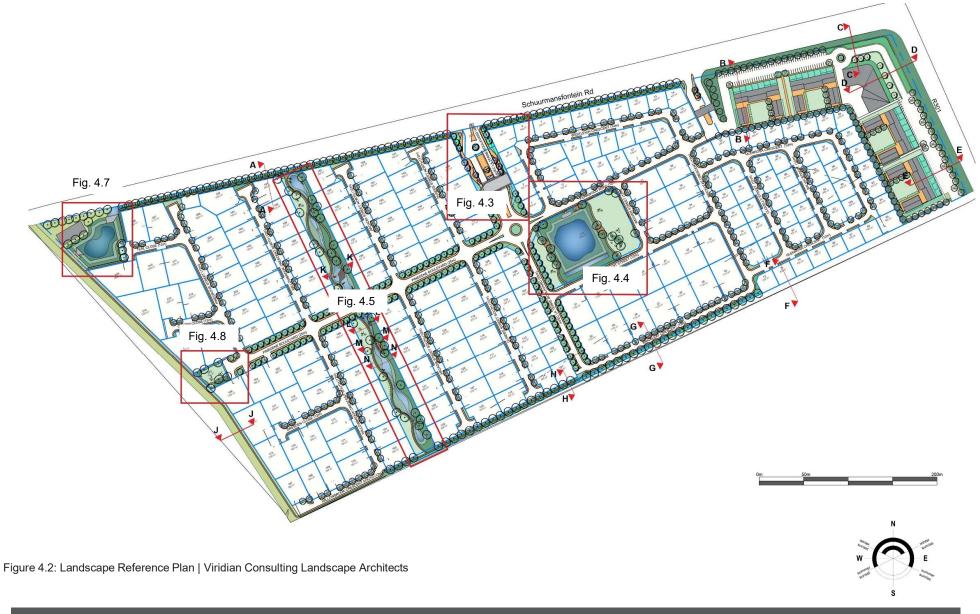
- The tree hierarchy: provision for primary and secondary windbreaks and firebreaks, fire
 management access, screening and view-framing, liveability and climateregulation,
 shading, legibility and landscape character, ecological services;
- Provision of open space and recreational space: maximising verges and parking areas
 for open space provision, ensuring most efficient use of streetscape open spaces and
 parking provision; neighbourhood recreational space within reasonable distance from
 houses, design and layout of the communal recreational spaces to maximise safety,
 efficiency and ease of management in the long-term;
- Pedestrian movement and safety: provision for adequate circulation alongside streets, safe crossings and traffic calming measures; proposal for a jogging-track that encircles the development, linking the road-side pedestrian movement routes through a network of informal pathways through the "open space corridors".
- Stormwater integration and sustainable water management practices guide every aspect of the Landscape proposal: conceptual development alongside the Stormwater engineers, inclusion of integrated storm water management in the landscape proposal, sustainable urban drainage systems, rainwater harvesting, sustainable water source/ resource planning for harvesting, storage and irrigation purposes, etc.

Landscape Master Plan 4.0

4.1 Overall Landscape Master Plan and Description



4.2 Reference Plan



4.3 Entrance



Figure: 4.3: Landscape Master Plan : Entrance Area | Viridian Consulting Landscape Architects

Plant selection:

- meticulous articulation of form and structure defined in the planting palette.
- · locally indigenous species
- water wise
- distinctive use of colour, texture, plant massing
- sense of place, through the arrangement and identity of hard and soft landscaping elements
- Focal points as a beacon of place making

Legend





Street and commercial area trees



Boulevard street trees



Small Evergreen Trees



Open Space Planting



Sidewalk Planting



.



Entrance Planting



Boulevard Planting



Boundary Planting



Lawn



Veld grass



Wetland Planting: Seasonally



wet areas



Permanently wet: ponds/wetland

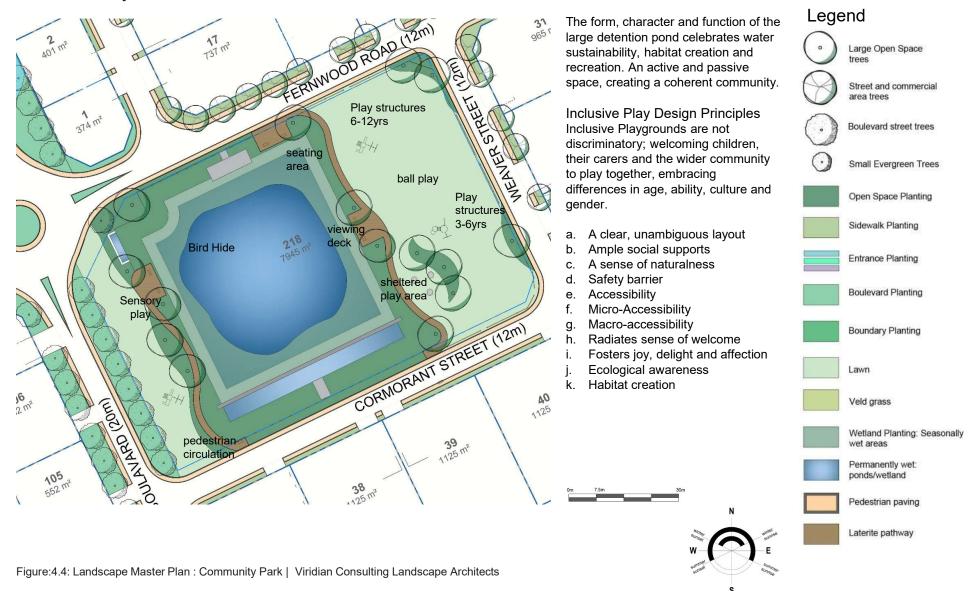


Pedestrian paving



Laterite pathway

4.4 Community Park





4.5 Wetland Park

The primary aim of the wetland corridor is to allow the movement of water and associated biota through the site and provide a level of wetland habitat and functionality within the created habitats. The water will be supplied by the stormwater pond, during times of need, where excess water will be pumped to the high point of the wetland park and be gravity fed from there (see Fig. 4.7). The approximate extent of wetland habitat that would need to be created is about 1-2 ha

The aim would be to introduce habitat diversity accompanied by a series of varying stream-like sections of narrow and then pool/wetland areas.

The intent is to introduce water into this section to add a system and series of water features, of which some more are permanently wet, more aesthetically pleasing features, and some sections of the water system is fed by natural and stormwater drainage. The Wetland Park is designed in such a way to facilitate and integrate stormwater designs and strategies. The created the habitats will be a combination of areas that can attenuate and treat stormwater runoff and then have more natural areas, of a shallower nature and vegetated with plants adapted to being seasonally wet.

The riparian zone along the wetland would generally have slopes that are generally flat, but the idea is establish some steeper banks in the created features, to create a ponding effect with deeper and more permanently wet characteristics due to groundwater infiltration.

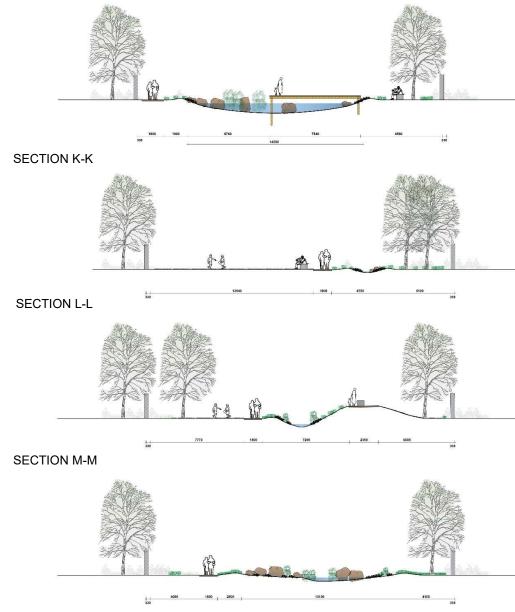
Deeper pool/wetland areas along the watercourse, will have a level of impermeability in the soils to ensure the water is retained for longer periods of time.

The wetland system is the main feature in the park, with the design intent to host multiple recreational opportunities around it. Interactive spaces is a result thereof where the user can pause in the landscape to observe the natural assets.

- Wetland deck /viewpoint
- · Seating under trees, viewing water and play areas
- Landscape features such as rocks for kids to play on and observe (ecological awareness)
- Picnic areas

Active spaces along the park:

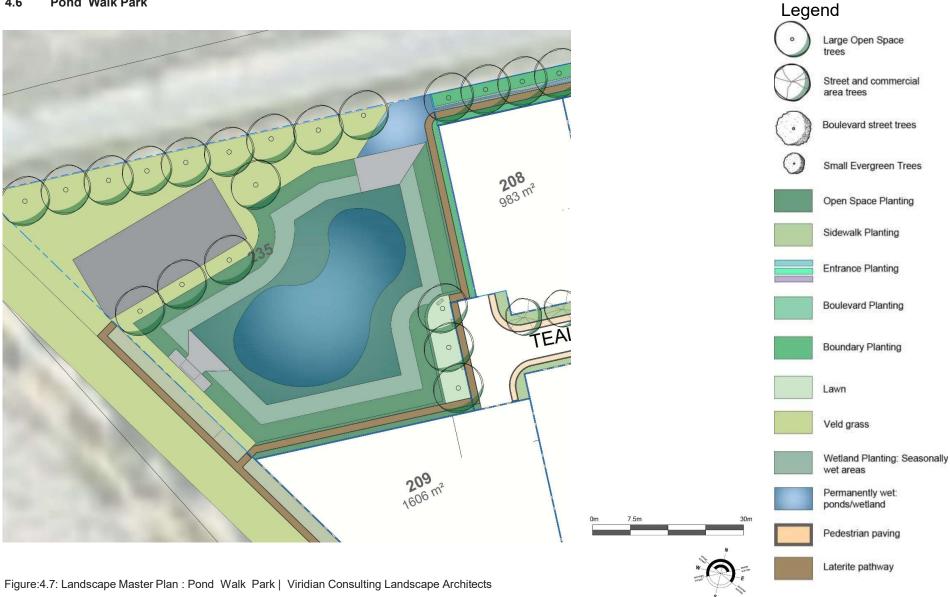
- Jogging trail
- Ample space designated for play areas



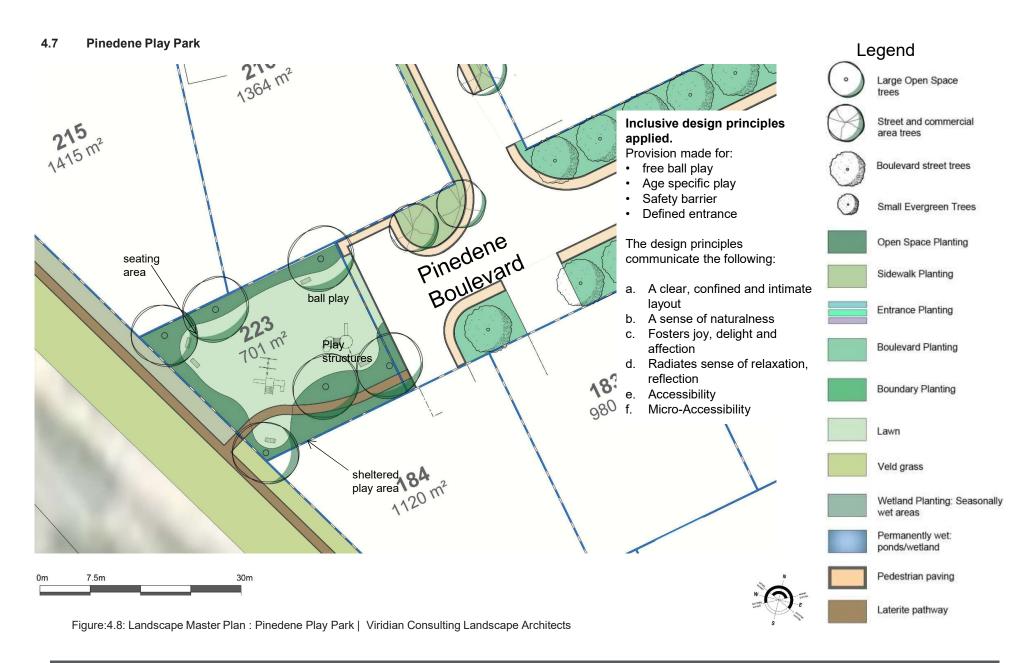
SECTION N-N

Figure: 4.6: Landscape Sections: Wetland Park | Viridian Consulting Landscape Architects

4.6 **Pond Walk Park**



November 2022



4.8 Walking and Jogging Paths

The design intent for pedestrians circulation is to accommodate and promote continuity and to provide substantial walking paths and jogging trails, all adding to a theme of a healthy lifestyle. The pathways treatment and articulation of the ground plane ensures circulation and fluidity throughout the Avec la Terre development, through the use of materials, textures and composition.

Nodal social space, pedestrian routes and functional open spaces have been created and will be extended that would enhance the quality of the recreational and living experience within the development as a whole. The design of streets and paths will express the street hierarchy, which inter alia relates to symbolic gateways, internal nodes and landmarks that provide focus and direction and give legibility to the development.

The primary pedestrian route is extensive and covers a circular length of approximately 2.7km.

Pathways differentiation:

- 1. Paved sidewalk paving
- 2. Open space paving (laterite)

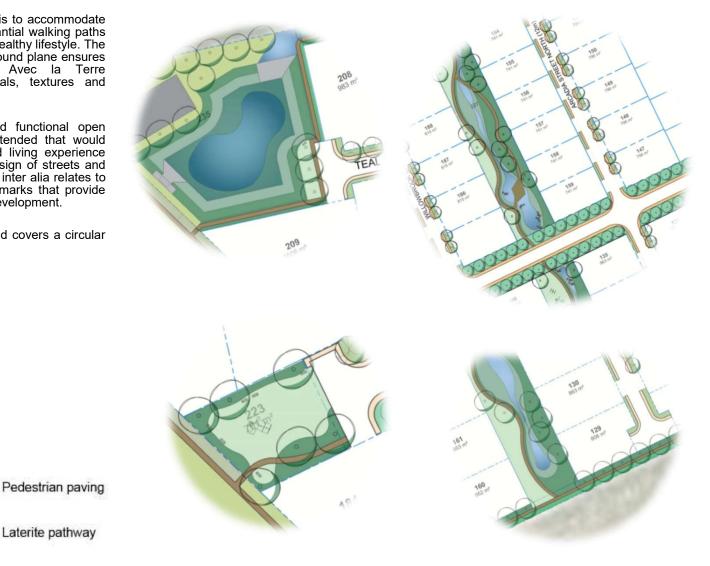


Figure: 4.9: Landscape Master Plan: Walking paths & Jogging Trails | Viridian Consulting Landscape Architects

Laterite pathway

4.9 Boundary Interfaces along Schuurmansfontein Road

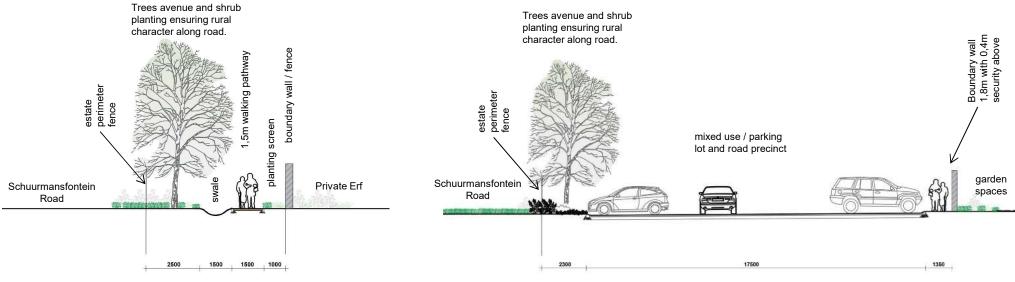


Figure 4.10 Cross section A-A through Schuurmansfontein Rd and Avec la Terre landscaped buffer

Figure 4.11 Cross section B-B through Schuurmansfontein Rd and Mixed Use precinct

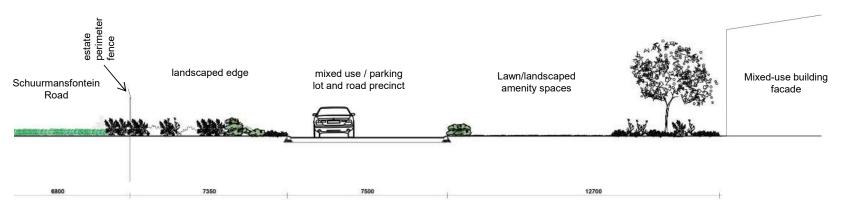


Figure 4.12 Cross section C-C through Schuurmansfontein Rd and Mixed Use precinct amenity area

Boundary Interfaces along R301 4.10

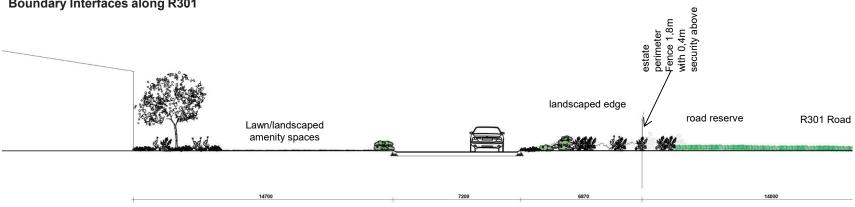
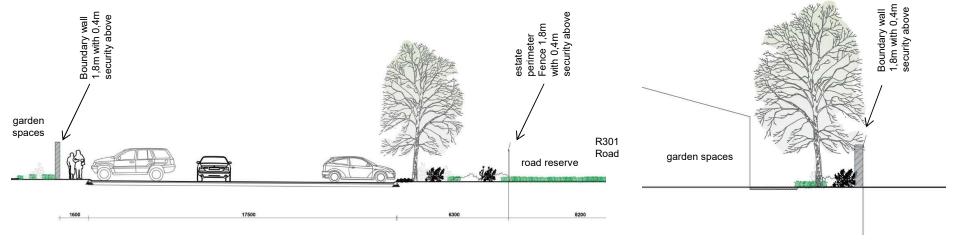


Figure 4.14 Cross section D- D through Schuurmansfontein Rd and Avec la Terre landscaped buffer



Cross section E- E through R301 and Mixed Use Figure 4.15 Precinct

Figure 4.16 Cross section F- F through residential erven and adjacent farm / property

4.11 Boundary Interfaces on South Eastern Boundary and South Western Boundary of Avec la Terre

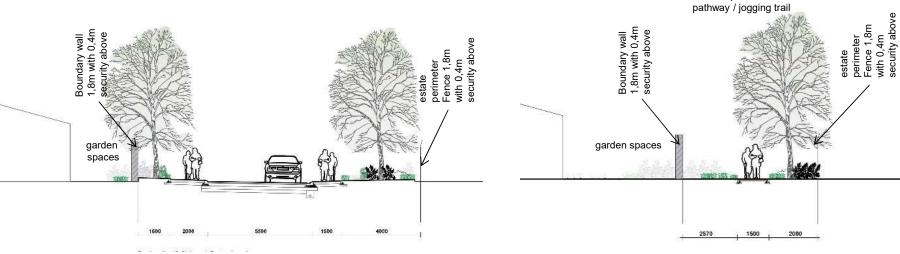


Figure 4.16

Figure 4.17 Cross section G- G through residential erven and adjacent farm property on South Eastern boundary of Avec la Terre

Boundary of Avec la Terre

Boundary wall
1.8m with 0.4m
security above setstee
perimeter
Period

Temporary

Te

Figure 4.18 Cross section J- J through residential erven on South Western estate boundary and 12m future road servitude

Cross section H- H through South Eastern estate boundary and Avec la Terre landscape buffer

Landscape buffer with

4.12 Streetscape: Streets and Boulevards

A hierarchy of boulevards and streets provide a strong, legible spatial structure for Avec la Terre. The main entrance boulevard, Avec la Terre Boulevard, provides the primary spatial landmark for orientation. The main community open space is located on the cross axis with Pinedene Boulevard and reinforces the hierarchical spatial structure, providing excellent orientation and legibility for navigation through the development.

Pinedene Boulevard is orientated to frame the beautiful view towards the Wemmershoek Mountain, drawing the mountain and nature into the heart of the village.

The residential streets are generally configured as a simple grid pattern which retains the strong legibility. The streets either terminate as cul-de-sac streets that connect to pedestrian pathways within open spaces or a quiet turn around space. Other streets form a crescent with t-junction intersections, providing frequent but low conflict connections which aid in legibility, pedestrian accessibility and low vehicular speeds.

Street trees are a major spatial structuring element. The cross sections provided in figures 4.20 - 4.22 show how street trees have been integrated with the underground services infrastructure and above ground circulation surfaces.

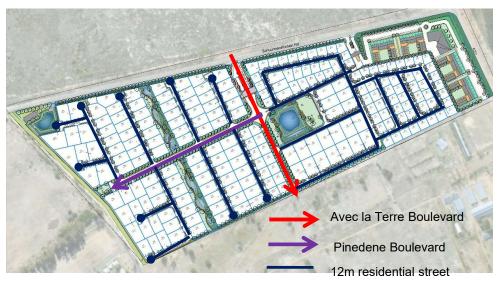


Figure 4.19 Street layout hierarchy

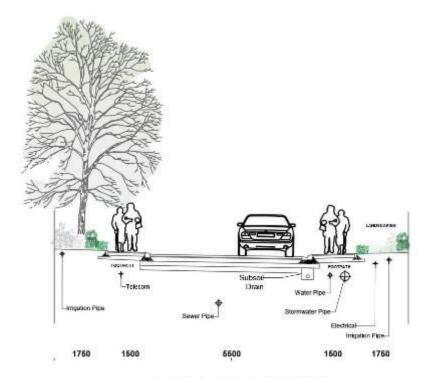


Figure 4.20 Cross section through 12meter wide residential street showing integration with services infrastructure and street trees.

4.12 Streetscape: Streets and Boulevards continued

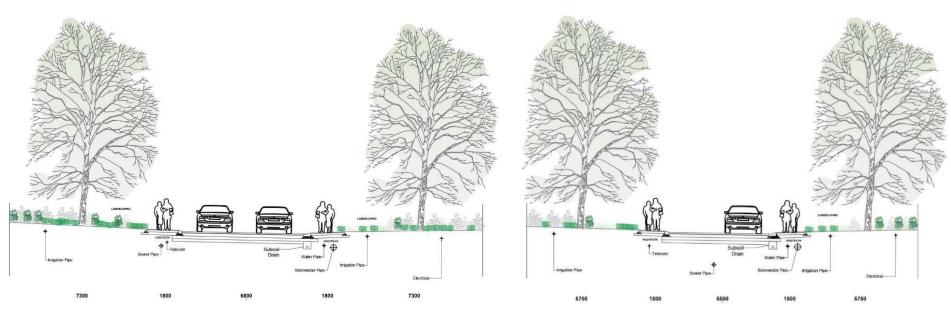


Figure 4.21 Cross section through 25 meter wide Pinedene Boulevard showing integration with services infrastructure and double avenue of street trees.

Figure 4.21 Cross section through 2O meter wide
Avec la Terre Boulevard showing integration with services infrastructure and double avenue of street trees.

Tree Planting Plan 4.13



Figure 4.22 Tree Planting Layout

- Street trees contribute to formation of windbreaks.
- Species selection influenced by wind speeds and force and proximity to infrastructure and services
- Evergreen species:
- Harpephyllum caffrum, Syzigium cordatum, Syzigium guineense Olea europaea subsp. Africana, Podocarpus falcatus Deciduous species: Platanus acerifolia, Quercus nigra, Celtis africana
- Selection of evergreen vs deciduous species to be informed by street orientation and winter sunlight penetration for dwellings. Deciduous tree s to be planted where streets in east-west direction and potential winter shading of dwellings.

- Trees in open spaces can be larger species with bigger root systems
- Trees along estate boundary to be a combination of evergreen and deciduous. Continuous avenues provide strong spatial definition to spaces and screen the development within its surroundings. This high visual absorption contributes to retaining a rural character for the surrounding landscape.

5.0 Hard landscaping

5.1 Design Principles for hard landscaping elements

Urban surfaces: roads and pathways

- Durable
- Sustainable
- · Lighter colours with darker accents
- Earthy colours to match natural soil and rock colours of the site and surroundings

Open space hard surfaces

- Natural compacted in-situ soil pathways
- Compacted laterite / gravel surfaces and pathways
- · Paved surfaces in lighter earthy colours

Vertical elements: low walls, signage supports, fences

- Natural stone
- Masonry plastered and painted in lighter earthy colours
- · Timber (treated)

Material selection for the Avec la Terre development will be guided by the above principles and developed in further detail at site development plan level.



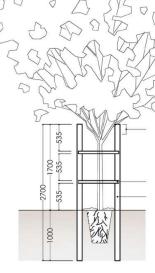
Simple timber bridges over swales and wetlands





Straight Galvanized flatbar bracket, with 5 wire attachments.

Informal compacted laterite / insitu soil pathways



Attach tree to poles with 30mm wide SOFT V RESISTANT webbing, within 300mm from top of pole, forming two continuous loops around each pole and the stem of the tree. End pieces of webbing to be overlapping and stapled on overlap with heavy duty industrial staples penetrating 15mm into poles.

50-79mm diameter 800mm CCA treated half round pole as cross bracing

90-100mm diameter 2700mm CCA treated round pole

Root ball

Estate perimeter fence: visually permeable steel mesh fencing type with timber posts and additional security above.

2500

2500

2500

1800mm Galvanized welded mesh fencing, 50 x 50mm aperture.

150mm G Cylindrical pole, CCA to H4 treated.

1800mm Galvanized welded mesh fencing, 50 x 50mm aperture.

100mm G Cylindrical pole, CCA to H4 treated.

No-dig concrete sill.

Fencing Detail: scale 1: 25

Figure 5.1 Tree Staking detail

Figure 5.2 Hard landscaping elements in open spaces

6.0 Soft landscaping and recommended Plant List

Planting of common areas are guided by the following principles:

- Tree planting as an extension of the patterns found in the surrounding cultural landscape (windbreaks, shade avenues, tree groups & copses in open meadows
- Water sensitive design principles and xeri-scaping
- Locally indigenous plant species and overall landscape character & should maintain elements of a rural look and feel.
- Planting of private gardens to be guided by same principles and avoid tropical look & feel by excluding plants such as: palms, NZ flax, Yucca, Cordyline etc

Trees

For a larger spaces (min 5m away from buildings):

Celtis africana
Ekebergia capensis
Erythrina caffra
Harpephyllum caffrum
Olea europaea subsp. Africana
Platanus acerifolia
Podocarpus falcatus
Quercus nigra
Syzygium cordatum
Syzygium guineense

For small spaces and close to structures:

Apodytes dimidiata
Buddleja saligna
Combretum
erythrophyllum Dais
cotinifolia
Heteropyxis
natalensis Kiggelaria
africana Searsia
chirindensis

Nuxia floribunda

Groundcovers & Perennials

Arctotis sp. Asystasia gangetica
Barleria obtusa/repens
Cineraria saxifraga
Cliffortia ferruginea/odorata
Diascia hybrids
Dymondia margaretae
Felicia amelloides Ficinia
nodosa Gazania sp.
Geranium incanum

Helichrysum sp. Hermannia sp. Lobelia 'Sky Blue' Monopsis lutea/'Royal Flush' Nemesia fruticans Pelargonium sp. Pentas lanceolata Phygelius capensis Plecostachys serpyllifolia Plectranthus sp. Salvia repens Scabiosa sp. Selago sp. Stachys aethiopica Struthiola dodecandra Sutera cordata Syncarpha sp.

Bulbs
Agapanthus hybrids/praecox
Amaryllis belladonna Aristea
africana/major Babiana sp.
Chasmanthe aethiopica/
floribunda Chlorophytum
comosum
Clivia sp.
Crinum delagoense
Crocosmia aurea
Cyrtanthus sp.
Dierama medium/
pulcherrimum
Dietes bicolor/grandiflora
Gladiolus sp.

Haemanthus albiflos

Hypoxis setosalxia hybrids

Lachenalia sp.
Moraea
gigandra
Nerine sp.
Ornithogalum sp.
Scadoxus
multiflorus/puniceus Sparaxis
hybrids
Tritonia deusta/securigera/sp
Tulbaghia violacea
Wachendofia thyrsiflora
Watsonia sp.
Zantedeschia aethiopica

Restios and Grasses Calopsis paniculata

Cannomois grandis
Chondropetalum nudum
Cyperus prolifer/textilis
Elegia sp.
Ficinia dunensis/nigrescens/
Helmuthia membranacea
Ischyrolepsis subverticillata
Juncus effusus/effusus
'Spiralis'
Juncus krausii
Melinis nerviglumis
Restio festuciformis/
quadratus/
Rhodocoma capensis/foliosus/

Thamnochortus sp.

Willdenowia incurvata

Ferns & Fern like plants

Asparagus africanus/ densiflorus/virgatus Asplenium lobatum Blechnum capense/tabulare Cheilanthes viridis Nephrolepis exaltata Pteridum aquilinum Rumohra adiantiformis Todea barbara

Succulents

Aloe sp. Aptenia cordifolia Bulbine frutescens/latifolia Cotyledon orbiculata/woodii Crassula muscosa var. rastafarii/ovata/perfoliata Delosperma cooperi/ lydenburgense/virens Disphyma crassifolium Drosanthemum sp. Euphorbia burmanii/ mauritanica Jordaaniella dubia Lampranthus sp. Othonna capensis/dentata Plectranthus madagascariensis/neochilus Plectranthus thunbergii Portulacaria afra Pseudoselago serrata Ruschia sp.

Climbers

Asparagus falcatus/plumosus Clematis brachiata Dipogon lignosus Jasminum multipartitum 'Creeping Form' Podranea ricasoliana Rhoicissus digitata/tomentosa Senecio macroglossus/ tamoides Thunbergia alata

Senecio mandraliscae/ficoides

Shrubs

Anisodontea capensis Artemesia afra Athanasia parviflora/dentata Bauhinia galpinii Buddleja auriculata/ glomerata/salvifolia Carissa bispinosa/macrocarpa Carissa macrocarpa 'Green Carpet' Crotalaria capensis Duvernoia adhatodoides Ehretia rigida Eriocephalus africanus Euphorbia burmanii/ mauritanica Euryops pectinatus/virgineus Shrubs cont. Felicia echinata Frevlinia lanceolata/tropica/ visserii Gnidia oppositifolia/pinifolia/ squarrosa Gomphostigma virgatum Grewia occidentalis Halleria elliptica Helichrysum dasyanthum Hermannia depressa/ hvssopifolia Hypoestes aristata/'White Butterflv' Indigofera jucunda Jasminum multipartitum 'Bush Coleonema album/pulchellum

Cyclopia intermedia
Diosma aristata
Erica sp.

Leucadendron sp.
Phylica sp.
Protea cynaroides/rei

Protea cynaroides/repens Serruria aemula/rosea Leonotis leonurus

Mackaya bella
Metalasia muricata/
pulcherrima

Myrica quercifolia Nylandtia spinosa Ochna serrulata Orphium frutescens Pelargonium sp. Plectranthus ecklonii/ fruticosus/zuluensis Plumbago auriculata Podalyria calvotrata/sericea Polvgala fruticosa/myrtifolia/ virgata Psoralea pinnata Pteronia divaricata/incana Searsia (Rhus) crenata Ruttya fruticosa Salvia africana-caerulea/ africana-lutea Salvia chamelaeagnea/ dolomitica/murii Stoebe plumosa/juncea/ reginae Sutherlandia frutescens Tecoma capensis Ursinia

Lawn areas

capensis

sericea Vernonia

(Min size plugs @ 150 x 150mm spacing) Cynodon dactylon (full sun) Stenotaphrum secondatum (full sun) Dichondra repens (shade)

Veld grass species for seeding

Eragrostis curvula Digitaria eriantha Cenchrus ciliaris Cynodon dactylon Chloris guvama

AVEC LA TERRE landscape master plan & development guidelines

November 2022

7.0 Irrigation

All newly planted landscaping will be irrigated to aid establishment. Once plants are established, irrigation will be limited to focal areas, trees and recreational lawn spaces and food gardens.

Irrigation water for common areas will be sourced from non-potable water sources such as treated effluent from the package treatment plants, harvested rainfall and borehole.

Automatic irrigation systems will be optimized to run at times when evaporation is lowest. Manual irrigation systems must be operated within restricted times to reduce evaporation losses.

8.0 Maintenance of Estate Common Open Space

Landscaping of all common areas will be developed by the developer. Maintenance of these areas will be the responsibility of the home owners association. This includes all external road verges as required by the local authority.