STIKLAND SOUTH PRECINCT
LANDSCAPE FRAMEWORK

August 2025

VIRIDIANCONSULTING
LANDSCAPE ARCHITECTS

Report:

Landscape Framework
for

Stikland South Precinct

Prepared by:

Viridian Consulting (Pty) Ltd for
City of Cape Town: Human settlements implementation

August 2025

Viridian Consulting landscape Architects: Contact information			
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1. Introduction

1.1 Background and brief

Viridian Consulting Landscape Architects (hereafter 'Viridian/ the Landscape Architect') are part of a professional team, led by ARG Design, to compile a precinct plan for the Stikland South site. Viridian has conducted a tree survey of the existing trees on the site and a high-level landscape analysis and assessment to determine landscape design informants. The tree survey and landscape design informants have been integrated into the development layout by ARG Design. In November 2024 an assessment of the Eucalyptus forest was completed by an arborist which informed new development setback lines for the area surrounding the forest.

This Landscape Framework Report aims to identify and communicate landscape development principles and guidelines for the various landscape typologies relevant to the development framework for Stikland South.

1.2 This Report

This report has three main sections: The introduction, the contextual design informants and the landscape framework. The Landscape Framework consists of the landscape framework plan, the landscape typologies and a table that links the various land parcels to their relevant landscape typologies and design guidelines.

It is intended to form part of a package of documentation that communicates development parameters and potential.

1.3 Site Location

The project site is situated at the intersection of the R101 (Old Paarl Road) and De la Haye Avenue in Bellville situated on the Stikland Hospital site. Remainder of Erf 6300 a coves a total area of 114.1 hectares. Located approximately 25 km from Cape Town's Central Business District and 37.6 km from Paarl, the site is positioned near the eastern edge of Bellville within a residential neighborhood.

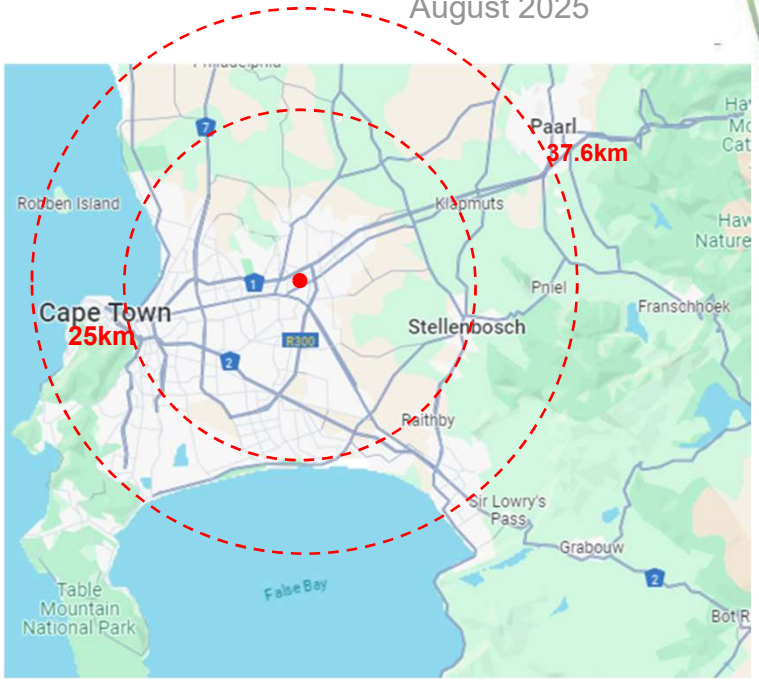


Figure 1.1 Site location plan (Google maps, 2024)

Figure 1.2 Site location 3D view (Google maps, 2024)

2. Contextual Design Informants

2.1 High Level Landscape Analysis

- The largest part of this site's vegetation is classified as the critically endangered Cape Flats Sand Fynbos with a small section to the north classified as critically endangered Swartland Shale Renosterveld. The majority of the site's vegetation has already been altered through the years in relation to the various land use activities and is of low botanical sensitivity. These areas do not support any of the recorded Species of Conservation Concern (SoCC). The botanical information has been extracted from the specialist study prepared by N. Helme 2024.

- The study area supports notable remnants of two Critically Endangered vegetation types, with at least five plant Species of Conservation Concern. At least 8ha of mostly indigenous vegetation remains in the area.

- There are four patches of Very High sensitivity, one of which is a seasonal wetland, and the other three all support the five recorded plant Species of Conservation Concern.

- Surrounding and linking these are two patches of Medium to High sensitivity. In the southeast are three patches of Medium sensitivity that support none of the SoCC except the annual Phyllopodium capillare.

- In line with the mitigation hierarchy (avoid, minimise, mitigate) the Very High and Medium to High sensitivity patches should not be disturbed or developed at all, and should ideally be managed for long term conservation. In the short term this means no mowing in the flowering period of June – mid October, along with proper invasive alien plant removal.

- The Medium sensitivity areas should ideally also be considered and managed as conservation areas, as they have good rehabilitation potential.

- Only the Low sensitivity areas could be developed without significant botanical impact, and even there a large-scale Search and Rescue program would be needed as mitigation, at the appropriate seasons, as these areas still support notable biodiversity, which could be used to rehabilitate other areas

- The general climate is described warm, dry in summer and temperate with an average temperature of 17 °C. Temperatures can rise to a maximum of 28.10 °C in February and drop to a minimum of 7.3 °C in August.

- On average the site area experiences an annual rainfall of 535 mm. With the highest median rainfall of 83mm in June and lowest median rainfall of 9mm in January and February.

- Predominant south south-easterly wind can blow up to mid-30km/h and with the second most predominant wind coming from the South that can blow up to 20 km/h. The majority of the predominant winds blowing between December and April with the calmer winds between June and October.

- Parks and open spaces will require wind breaks along the Southern and Eastern boundaries to protect from the predominant winds

- There are two designated wetland areas within the development that have been marked as areas of importance to retain in their natural state.

- Stormwater design should form part of the storm water management plan of the larger site and opportunities exist for integrating open space and stormwater infrastructure to improve storm water quality.

- The site is flat and open with a gentle slope towards the Southeast.

- The sites soil is classified as Podzolic soil, soil with a sandy texture, leached and with surface accumulation of organic matter, iron / aluminum oxide on a hard or weathering rock substrate. The soil is highly prone to erosion.

- The project site contains a variety of large mature trees and existing windbreaks to be retained as far as possible.

- Irrigation will be a key component of successful tree growth in the proposed development.

- Water wise indigenous fynbos and succulents will be suitable for areas that are not planted with lawn. Lawn is recommended for functional recreational areas.

3. Landscape Framework

3.1 Stikland South Development Framework Plan

Figure 3.1 Stikland South Precinct Development Framework (ARG Design)

3.2 Stikland South Landscape Framework Plan

A. Botanical conservation areas within Stikland Hospital Grounds
B. Mixed-use 4 to 7-Story Landscape
C. 4 Storey Walk Ups Landscape
D. School Grounds / Sports Recreation
E. Green Belt with Cycle / Jogging Track
F. Southern Stormwater Management Swale
G. Adventure Park in Forest
H. De la Haye Park
I. Botanical Conservation Areas within development area

Figure 3.2 Stikland South Precinct Development Framework (Adapted from ARG Design's Development Framework Plan)

4. Landscape Framework Typologies

4.1 Typology A : Botanical Conservation Areas within Hospital Grounds

Landscape and Conservation Management Requirements for Stikland Hospital Grounds:

- Retain existing trees as per the Tree Survey Plan (Annexure A). Adhere to tree protection zone and root protection setbacks with any disturbances required for infrastructure or services development or maintenance.
- The current management regime involves mowing several times a year. The timing of the mowing has a significant impact on the species diversity and must be managed in consultation with a botanical specialist.
- With the awareness of the conservation value that has come about through this planning process, the conservation management plan for these areas of high botanical sensitivity must be developed in consultation with a suitably experienced botanical specialist and conservation management expert.

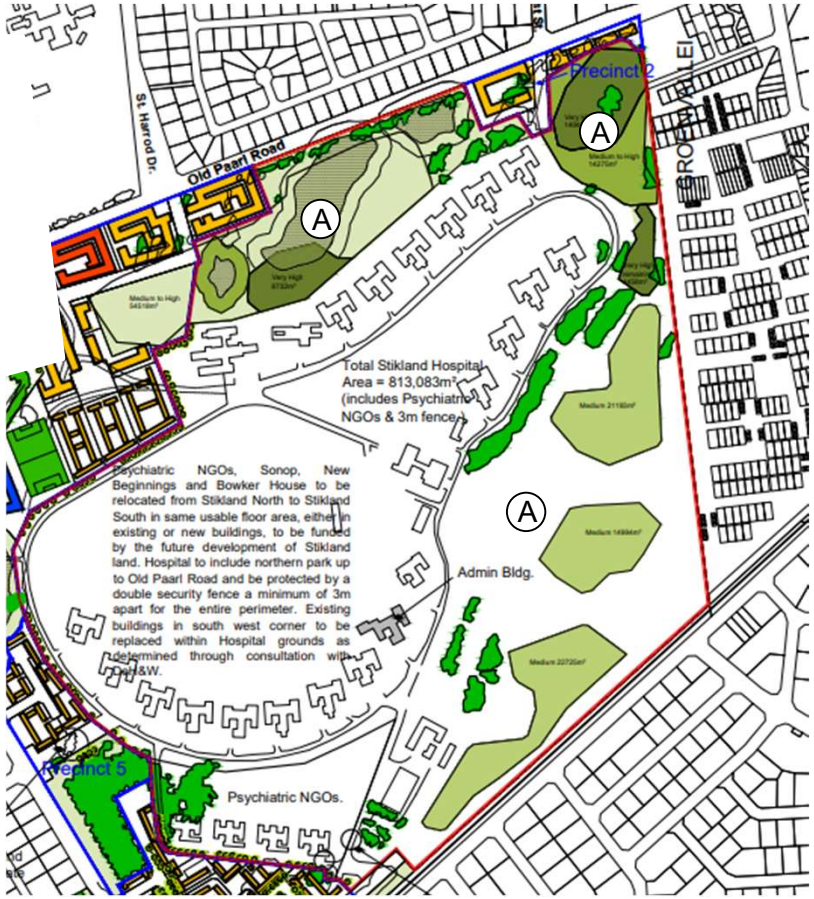


Figure 4.1 Conservation Areas within Hospital Grounds

4.2 Typology B : **Mixed-use 4 to 7-Story Landscape**

Landscape design guidelines and requirements for Mixed-use 4 to 7-Story Landscape :

- Retain existing trees as per the Tree Survey Plan (Annexure A). Adhere to tree protection zone and root protection setbacks. All existing trees to be retained must be shown on the Site Development Plans (SDPs).
- All utility areas need to be screened where adjacent to public open spaces.
- Use permeable fencing where development interfaces with public open spaces.
- Where solid walls are required between the development and adjacent public open space, overlooking features from the second and third floor need to be implemented.
- A landscape buffer is required around the outer perimeter of all building / parcels
- Locate parking areas within the center of the development parcel where possible.
- All parking areas require tree planting in accordance with the CoCT tree parking requirements of 1 tree per every 4 parking bays.

Figure 4.2 Mixed-use 4 to 7-Story Landscape

4.3 Typology C : Four-Story Walkups Landscape

Landscape design guidelines and requirements for Four-Story Walkups :

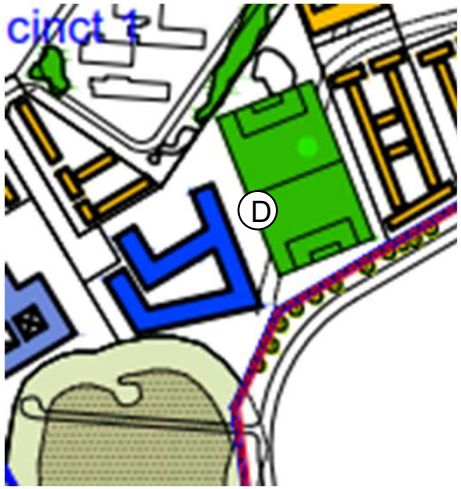
- Retain existing trees as per the Tree Survey Plan (Annexure A). Adhere to tree protection zone and root protection setbacks. All existing trees to be retained must be shown on the Site Development Plans (SDPs).
- All utility areas need to be screened where adjacent to public open spaces.
- Use permeable fencing where development interfaces with public open spaces.
- Where solid walls are required between the development and adjacent public open space, overlooking features from the second and third floor need to be implemented.
- A landscape buffer is required around the outer perimeter of all building / parcels
- Locate parking areas within the center of the development parcel where possible.
- All parking areas require tree planting in accordance with the CoCT tree parking requirements of 1 tree per every 4 parking bays.
- Small private recreation spaces within the four-story walkup clusters must be developed to meet the needs of residents for garden and relaxation spaces and can be associated with drying yard areas and smaller garden spaces.
- Suitable high quality hard surfaces and paving to be selected for durability and low maintenance.

Figure 4.3 Four-Story Walkups Landscape

4.4 Typology D : School Grounds / Sports Recreation

Landscape design guidelines and requirements for School grounds and sports recreation:

- Retain existing trees as per the Tree Survey Plan (Annexure A). Adhere to tree protection zone and root protection setbacks. All existing trees to be retained must be shown on the Site Development Plans (SDPs).
- Sports fields and recreational surfaces must be water wise, durable and must be able to accommodate intensive use. Consider artificial turf surfaces.
- The green belt right of way with cycle / jogging track must be continuous even through the school grounds. Appropriate fencing and access control must be implemented to allow public right of way during daylight hours along the green belt cycle / jogging track.
- Sports fields must be considered for multi-purpose use by communities outside school hours.
- Tree planting in hard & soft stand, please refer to tree planting details (Annexure B). All trees require adequate root zone preparation, irrigation and protection with staking and/or tree cages.
- Irrigation must be supplied with a well point water tank and secure housing for well point equipment and booster pump.
- Playground equipment must be constructed from materials eg. steel/ polywood/ timber suitable for this particular location.
- All play equipment to receive safe fall surfacing according to SANS 51176.
- All benches, tables, litter bins to be from hard wearing vandal resistant materials.
- Suitable high quality hard surfaces and paving to be selected for durability and low maintenance.



4.5 Typology E : Green Belt with Cycle / Jogging Track

Landscape design guidelines and requirements for Green Belt:

- The green belt is intended to be a continuous public right of way, that crosses both public and private land and permits extended recreational use throughout the Stikland South Development Precinct.
- This green belt is intended to have extensive tree planting, providing shade, wind shelter and visual screening for the psychiatric hospital precinct.
- Development interfaces with the green belt may or may not have physical access separation with fencing. All fencing to be visually permeable to ensure high levels of visual surveillance.
- Access control limiting public movement at nighttime may be implemented to improve security of private land parcels situated along the green belt
- Building interfaces with the green belt is encouraged to have overlooking features, entrances and active edges facing towards the green belt
- The green belt must have a continuous pathway system that makes provision for cyclists and pedestrians in such a manner to avoid conflict between cyclists and pedestrians
- Appropriate directional signage must be provided along the green belt indicating entrances, exits and escape routes for users of the green belt

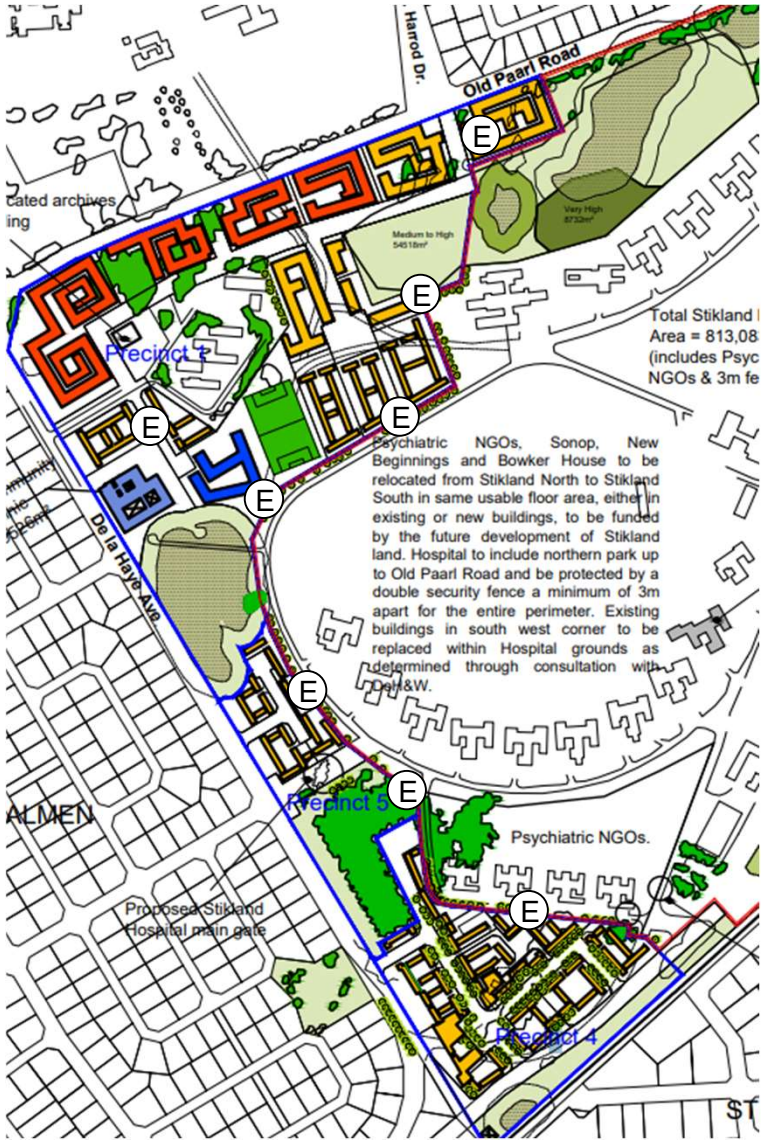


Figure 4.5 Green Belt with Cycle / Jogging Track

4.7 Typology F : Southern Stormwater Management Swale

Landscape design guidelines and requirements for stormwater management swale on Southeastern boundary on Stikland South:

- The stormwater swale needs to form part of the green belt right of way with cycle / jogging track that will rejoin the green belt along the outside perimeter of the Stikland psychiatric hospital precinct.
- Tree planting is limited by the overhead power lines
- An NMT route must be provided along the edge of the swale
- The vegetation in the stormwater swale must be informed by the CoCT SUDS planting list.

Figure 4.7 Southern Stormwater Management Swale

4.8 Typology G : Adventure Park in Eucalyptus Forest

Landscape design guidelines and requirements for Adventure Park in Forest
(refer to Annexure C Eucalyptus Forest Tree Assessment) :

- Existing Eucalyptus forest requires tree management plan with detailed guidelines for remedial pruning, canopy thinning and root zone management. Any tree removal should take place under the guidance of a qualified arborist. (Refer Annexure C)
- The development of any infrastructure within the forest must take into account tree protection zones (TPZ) and critical root zones (CRZ) of the forest trees and must take place under the guidance of a qualified arborist.
- The green belt right of way with cycle / jogging track must be continuous along the eastern boundary of the park and connect to the stormwater management swale along the southeastern boundary of Stikland South.
- Adventure park activities may include, Acrobranch, outdoor climbing walls, cross-fit.
- Provision of a management and service node associated with ablutions facilities for management, possible events pavilion and parking.
- Fencing along the De La Haye Rd boundary and the interface with the Stikland Hospital, should be of a visually permeable type.

Figure 4.8 Adventure Park in Forest

4.9 Typology H : De La Haye Park

Landscape design guidelines and requirements for De La Haye Park:

- Retain existing trees as per the Tree Survey Plan (Annexure A). Adhere to tree protection zone and root protection setbacks. All existing trees to be retained must be shown on the Landscape Master Plan
- The green belt right of way with cycle / jogging track must be continuous along the eastern boundary of the park
- Wetland buffers and setback lines must be adhered to in the development of the Landscape Master Plan.
- The park must be developed with passive spaces and features permitted within the wetland buffer.
- Passive recreational spaces and features may include; walking paths, wetland boardwalks and bird hides, environmental interpretative signage and seating along pathways.
- Minimum one vehicular entrance to the park for maintenance and emergency services access.
- Fencing along the Del La Haye Rd boundary and the interface with the Stikland Hospital, should be of a visually permeable type.
- Interfaces with adjacent development parcels must be visually permeable to allow for visual surveillance of the park. Overlooking features are encouraged.
- Entrances to the park on De La Haye Rd must be legible and have defined gateways, with signage. Entrances along the green belt should have gates that allow access control to the adjacent development parcels at certain times of the day and night.

Figure 4.9 De La Haye Park

4.10 Typology I : Botanical Conservation Area (located in Precinct 1)

- Design guidelines and the management requirements of the Sensitive Botanical and Conservation Area, as well as the potential treatment of the space to ensure both its conservation and practical integration into the development. Guidelines provided by N Helme, botanist responsible for the Botanical Assessment study (2024).

- In line with the mitigation hierarchy (avoid, minimise, mitigate) the Very High and Medium to High sensitivity patches should not be disturbed or developed at all, and should ideally be managed for long term conservation. In the short term this means no mowing in the flowering period of June – mid October, along with proper invasive alien plant removal (methodology as per Martens et al 2021).

- The Medium sensitivity areas should ideally also be considered and managed as conservation areas, as they have good rehabilitation potential, and their loss would be associated with Medium negative botanical impact, which if not avoided, could trigger the need for a biodiversity offset

- The focus should be on minimizing ecological disturbance while enhancing biodiversity.

- **Minimal Impact Footpath Design**:
  - **Footpath Materials:** It is recommended to use permeable, non-invasive materials that blend seamlessly with the natural environment (e.g., crushed gravel, boardwalks, or stabilized sand). These materials will help reduce surface runoff and prevent erosion.
  - **Footpath Alignment:** Paths should be carefully located to avoid sensitive plant populations. Meandering paths or raised walkways can minimize soil compaction and preserve habitats.
  - **Width and Frequency:** Footpath width should be kept to a minimum to reduce disturbances. A width of 1-1.5 meters for pedestrian paths is ideal. Low-impact, narrow paths that encourage infrequent use should be prioritized.
  - **Separation from Sensitive Areas:** Footpaths should be designed to avoid critical habitats or sensitive botanical zones, ensuring that plant communities are not disturbed or trampled by foot traffic.

- **Edge Treatments and Buffer Zones:** The edges of conservation and botanical areas should be managed to reduce fragmentation, protect vegetation, and support ecological functions. For example, incorporating soft edges, buffer zones, and indigenous planting can create a smooth transition between residential areas and conservation zones, preserving both ecological integrity and visual appeal.

- **Management of Conservation and Sensitive Botanical Areas: Conservation Maintenance Plan**: A clear, long-term maintenance plan will be required to manage the conservation areas effectively. This will ensure the sustainability of the plant communities and ongoing protection of biodiversity.

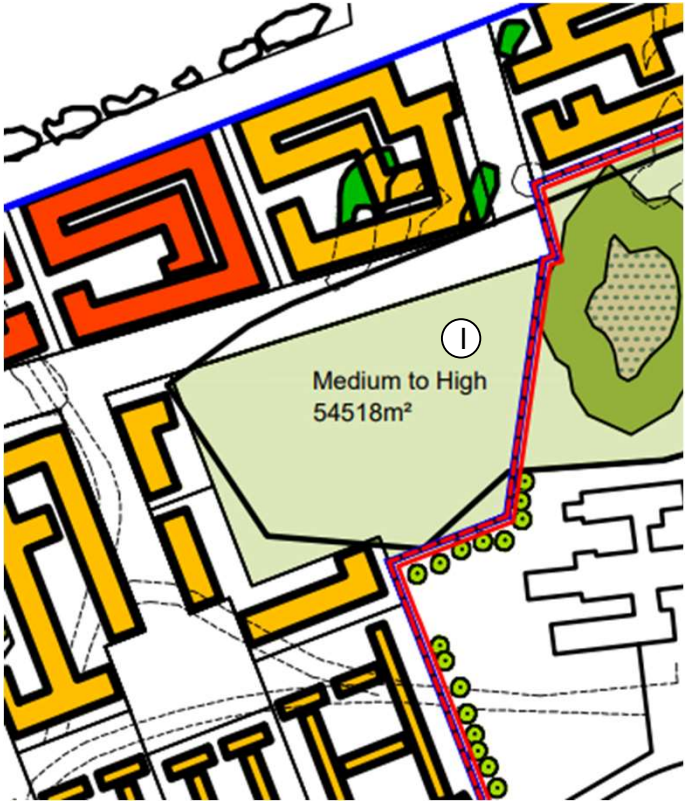


Figure 4.10 Botanical Conservation Area located within the development area

5. Land Parcels and Relevant Landscape Typologies

	A	B	C	D	E	F	G	H	I
S1		x							
S2		x							
S3		x							
S4			x						
S5			x						
S6			x						
S7 existing									
S8			x						
S9			x						
S10	I								
S11			x						
S12			x		x				
S49					x	x			
S50			x						
S51			x						
S52			x						

A. Botanical conservation areas within Stikland Hospital Grounds
B. Mixed-use 4 to 7-Story Landscape
C. 4 Storey Walk Ups Landscape
D. School Grounds / Sports Recreation
E. Green Belt with Cycle / Jogging Track
F. Southern Stormwater Management Swale
G. Adventure Park in Forest
H. De la Haye Park
I. Botanical Conservation Area within development area

5. Land Parcels and Relevant Landscape Typologies

	A	B	C	D	E	F	G	H	I
S51			x						
S52			x						
S53			x		x				
S54			x		x				
S55			x		x				
S56			x						
S58			x						
S59			x						
S60			x		x				
S61			x		x				
S62			x						
S64			x		x				
S65					x		x		
S68			x		x				
S69			x		x				
S70			x						
S71			x		x				
S73			x						

A. Botanical conservation areas within Stikland Hospital Grounds
B. Mixed-use 4 to 7-Story Landscape
C. 4 Storey Walk Ups Landscape
D. School Grounds / Sports Recreation
E. Green Belt with Cycle / Jogging Track
F. Southern Stormwater Management Swale
G. Adventure Park in Forest
H. De la Haye Park
I. Botanical Conservation Area within development area

5. Land Parcels and Relevant Landscape Typologies

	A	B	C	D	E	F	G	H	I
S73			x						
S74								x	
S75			x						
S76			x						
S78				x					
S79			x		x				
S80			x		x				
S81			x						
S82			x		x				

A. Botanical conservation areas within Stikland Hospital Grounds
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I. Botanical Conservation Area within development area

ANNEXURE A

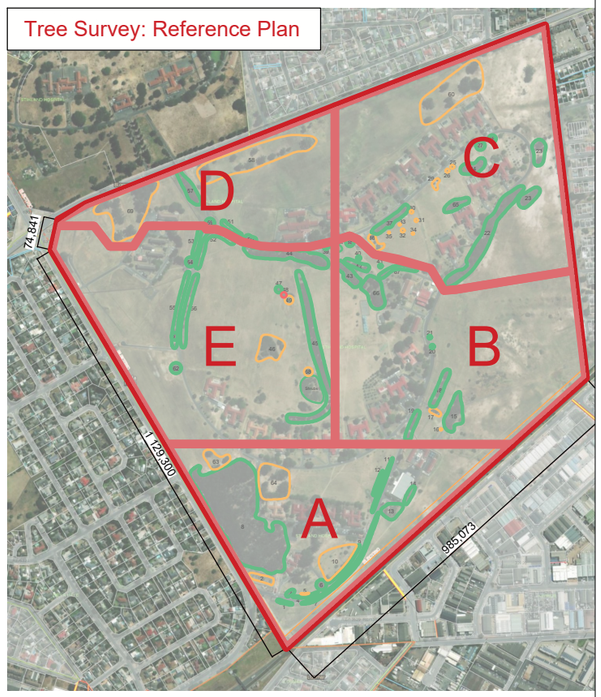
Tree Survey Plan

NOTES:

- Trees must be retained
- Recommended trees to be retained
- Trees to be retained where possible (If not in conflict with development footprint)
- Trees to be removed

63 64 11 12 14 13 8 STIKLAND HOSPITAL 9 985 ELECTRIC 10 2 6 3 5 4 7 1 RE/13529 RE/135

Tree Survey: Reference Plan



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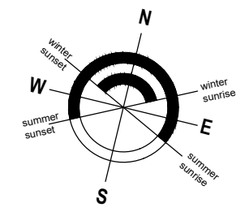

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FOR APPROVAL	XXXX-XX-XX	0

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P.O. Box 2416 Somerset West, 7129
rene@viridian.co.za www.viridian.co.za

CLIENT:
City of Cape Town

PROJECT TITLE:
STIKLAND SOUTH SITE, RE ERF 6300

DRAWING DESCRIPTION:
Tree Survey Plan: Area A

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SIGNATURE:
RBrett
Rene Maria Brett SACLAP 20122

STATUS:
FOR APPROVAL

NOTES:

- Trees must be retained
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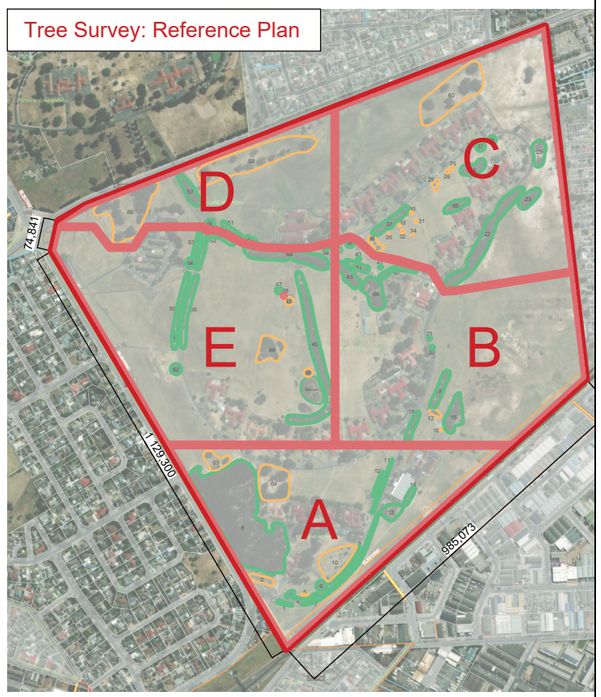
- Trees to be removed

Tree Survey: Reference Plan



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CLIENT:
City of Cape Town

PROJECT TITLE:
STIKLAND SOUTH SITE, RE ERF 6300

DRAWING DESCRIPTION:
Tree Survey Plan: Area B

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RBrett
Rene Maria Brett SACLAP 20122

STATUS:
FOR APPROVAL

NOTES:

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- Trees to be removed

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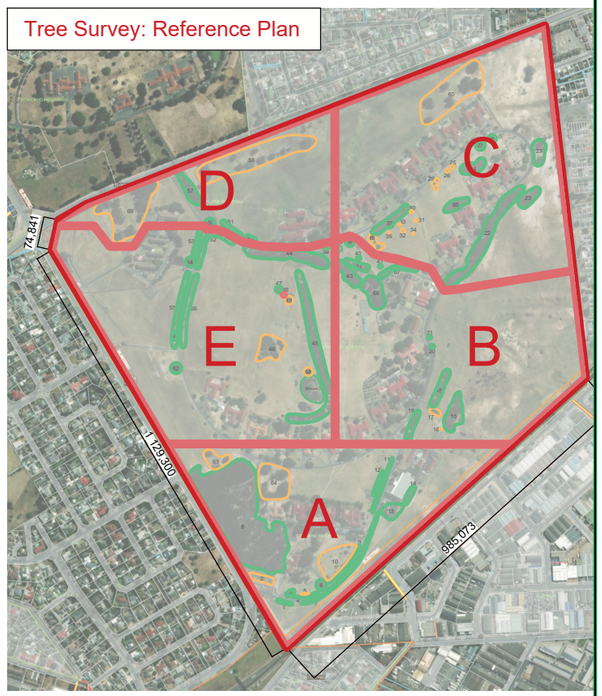
Tree Survey: Reference Plan



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N
winter sunset
winter sunrise
W
E
summer sunset
summer sunrise
S

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CLIENT:
City of Cape Town

PROJECT TITLE:
STIKLAND SOUTH SITE, RE ERF 6300

DRAWING DESCRIPTION:
Tree Survey Plan: Area C

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RBrett
Rene Maria Brett SACLAP 20122

STATUS:
FOR APPROVAL

Tree Survey: Reference Plan

NOTES:

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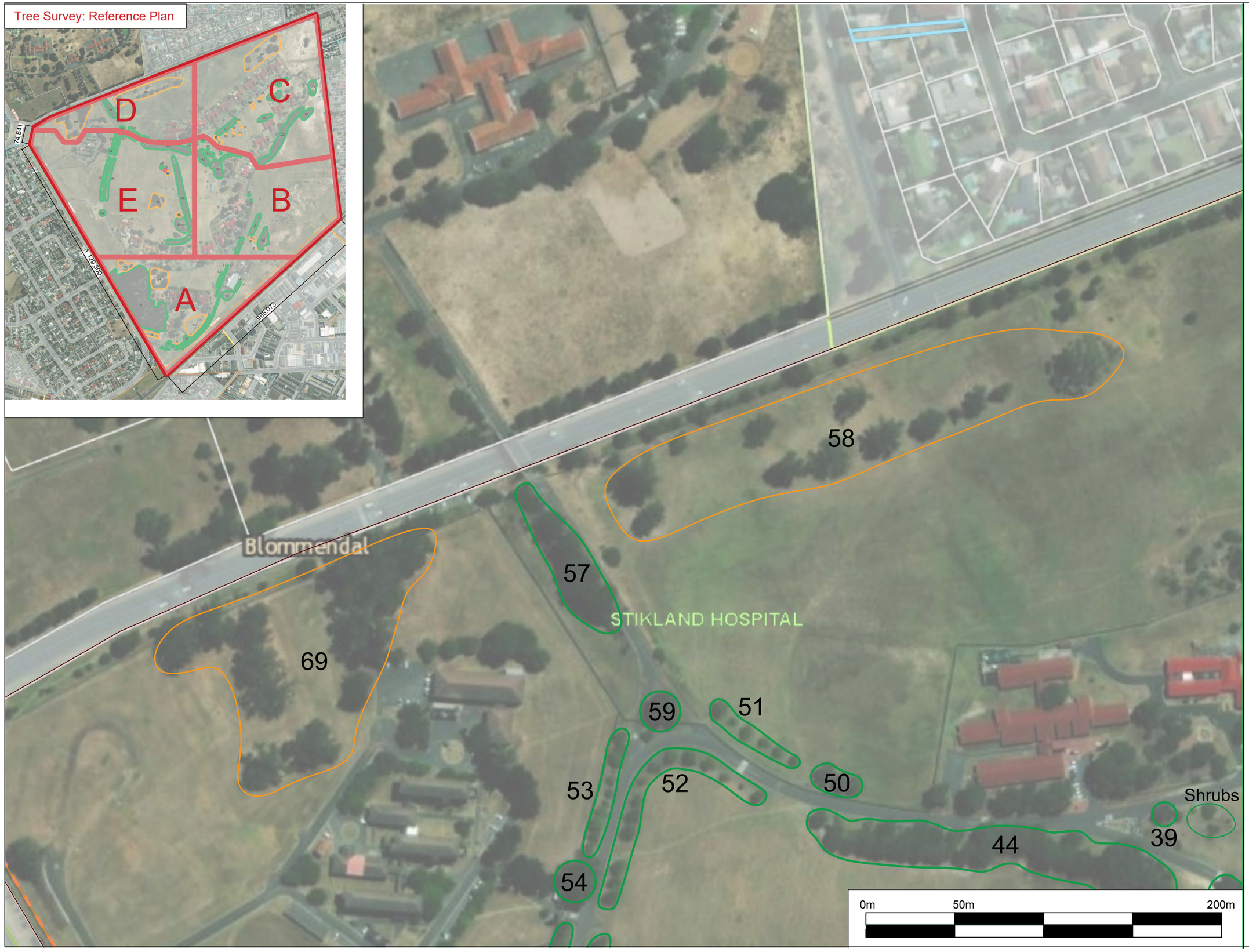

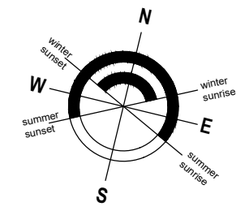

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CLIENT:
City of Cape Town

PROJECT TITLE:
STIKLAND SOUTH SITE, RE ERF 6300

DRAWING DESCRIPTION:
Tree Survey Plan: Area D

DRAWING NUMBER:

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SIGNATURE:
RBrett
Rene Maria Brett SACLAP 20122

STATUS:
FOR APPROVAL

NOTES:

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- Recommended trees to be retained
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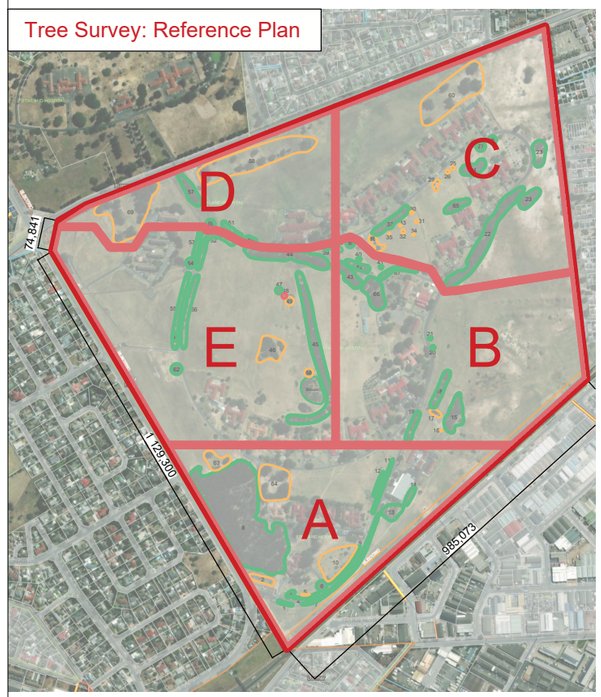
53 52 50 Shru 39 44 54 47 48 49 55 56 61 46 45 STIKLA 62 68 Shrubs

Tree Survey: Reference Plan



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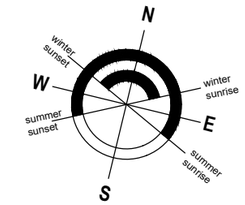

REVISION NOTES:	DATE:	REV:
FOR APPROVAL	XXXX-XX-XX	0

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CLIENT:
City of Cape Town

PROJECT TITLE:
STIKLAND SOUTH SITE, RE ERF 6300

DRAWING DESCRIPTION:
Tree Survey Plan: Area E

DRAWING NUMBER:

PROJECT CODE:	DRAWING CODE:	LAYOUT NO.:	REVISION:
21545_S	TSP	005	0

DRAWN:	CHECKED:	DATE:	SCALE:
RdV	RB	2023-06-29	1:2000 @ A3 1:4000 @ A4

SIGNATURE:
RBrett
Rene Maria Brett SACLAP 20122

STATUS:
FOR APPROVAL

ANNEXURE B

Tree Staking Details

1.1 Parking Area Section

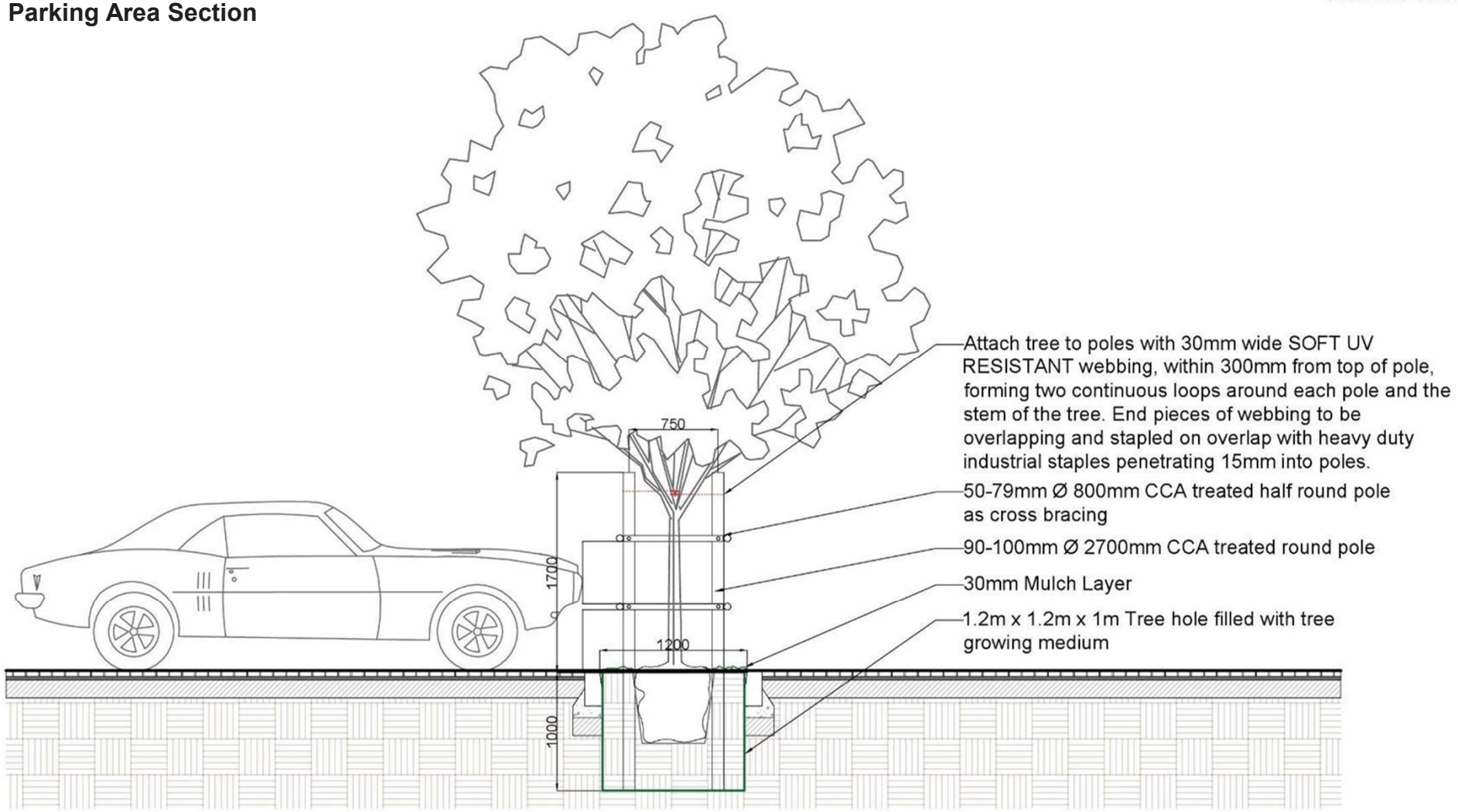

Figure 1.1a Parking Area Tree Detail Section (Viridian Consulting, 2024)

1.1 Parking Area Plan

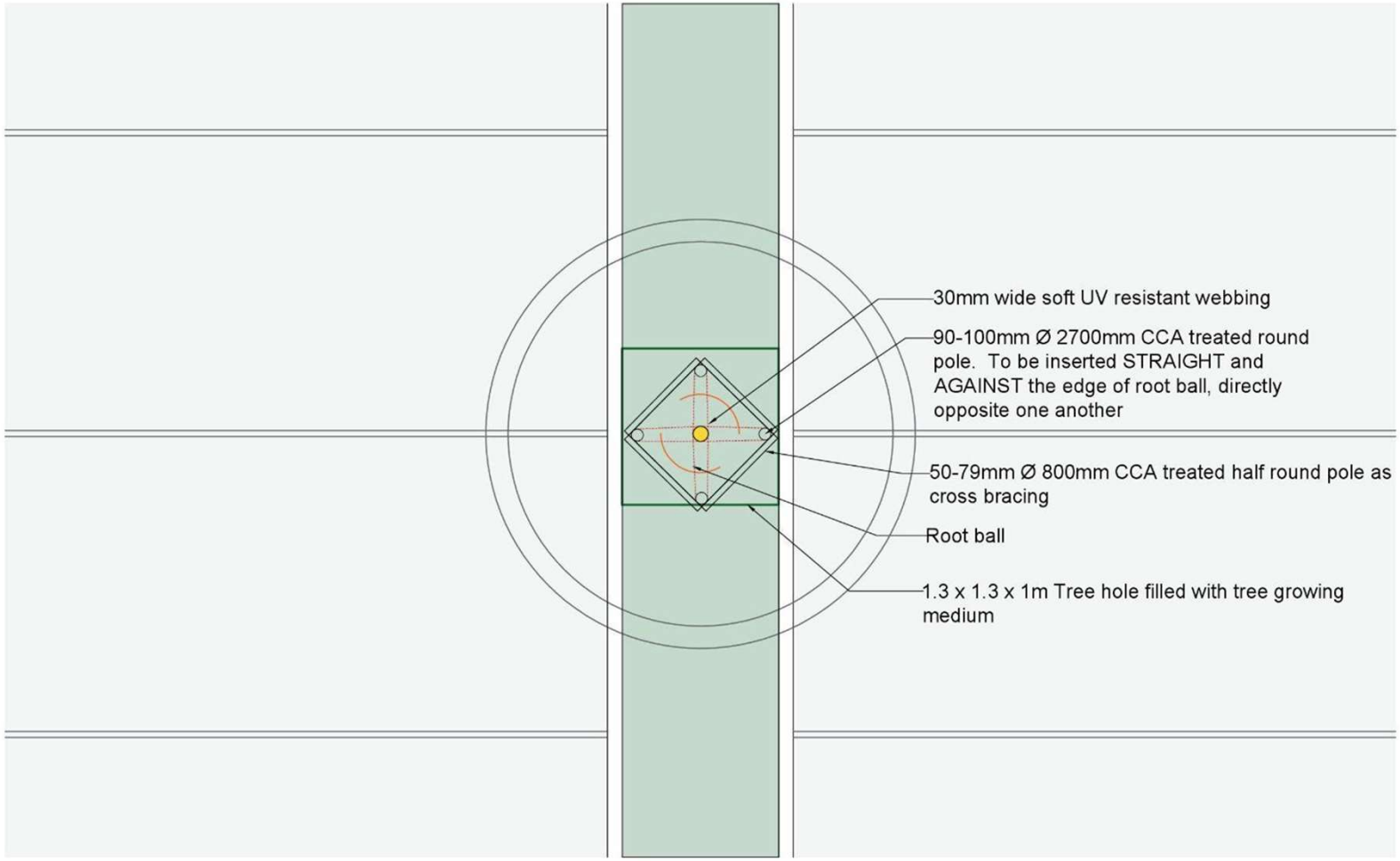

Figure 1.1b Parking Area Tree Detail Plan (Viridian Consulting, 2024)

1.2 Softscape Section

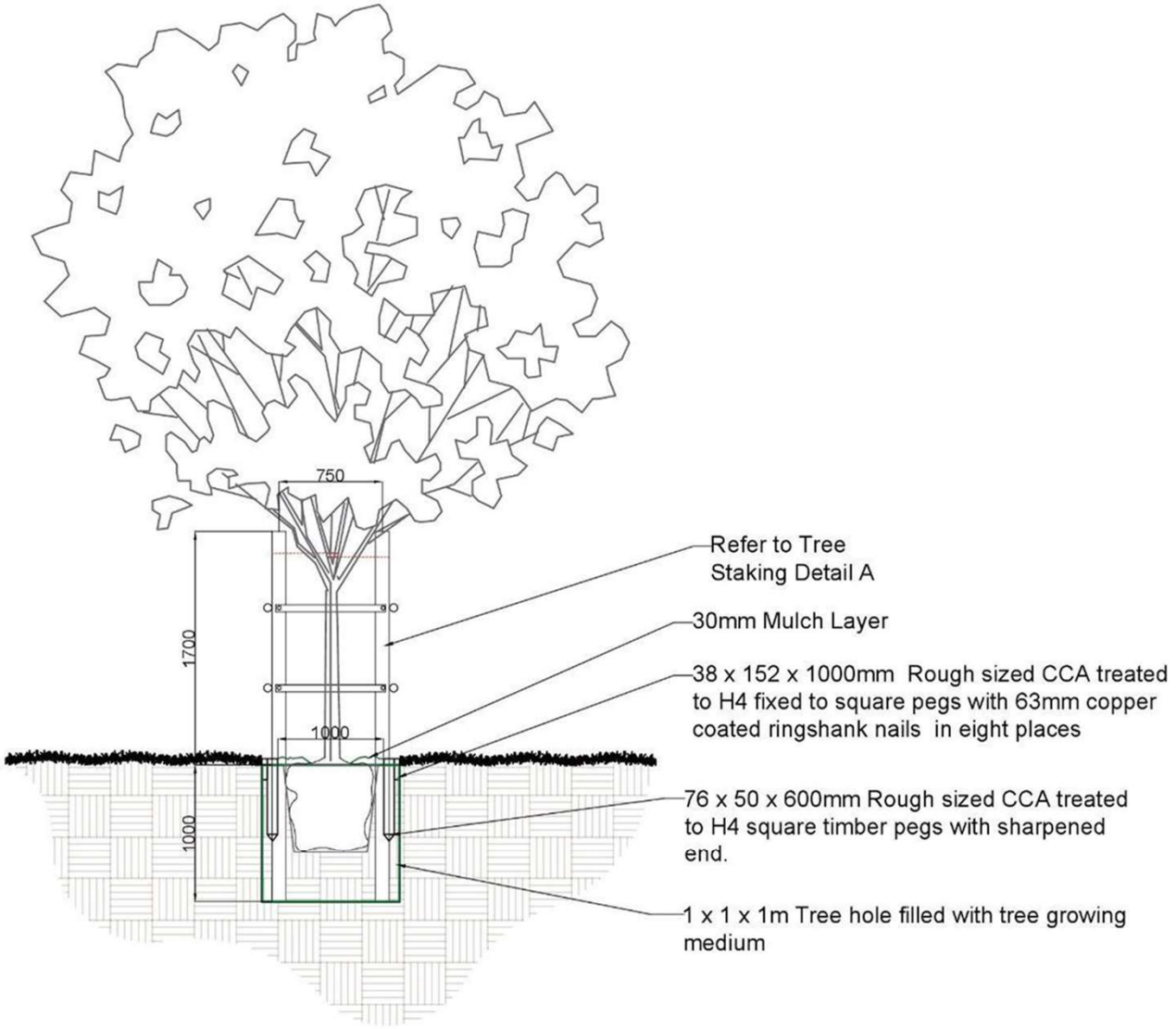

Figure 1.2a Softscape Tree Detail Section (Viridian Consulting, 2024)

1.2 Softscape Plan

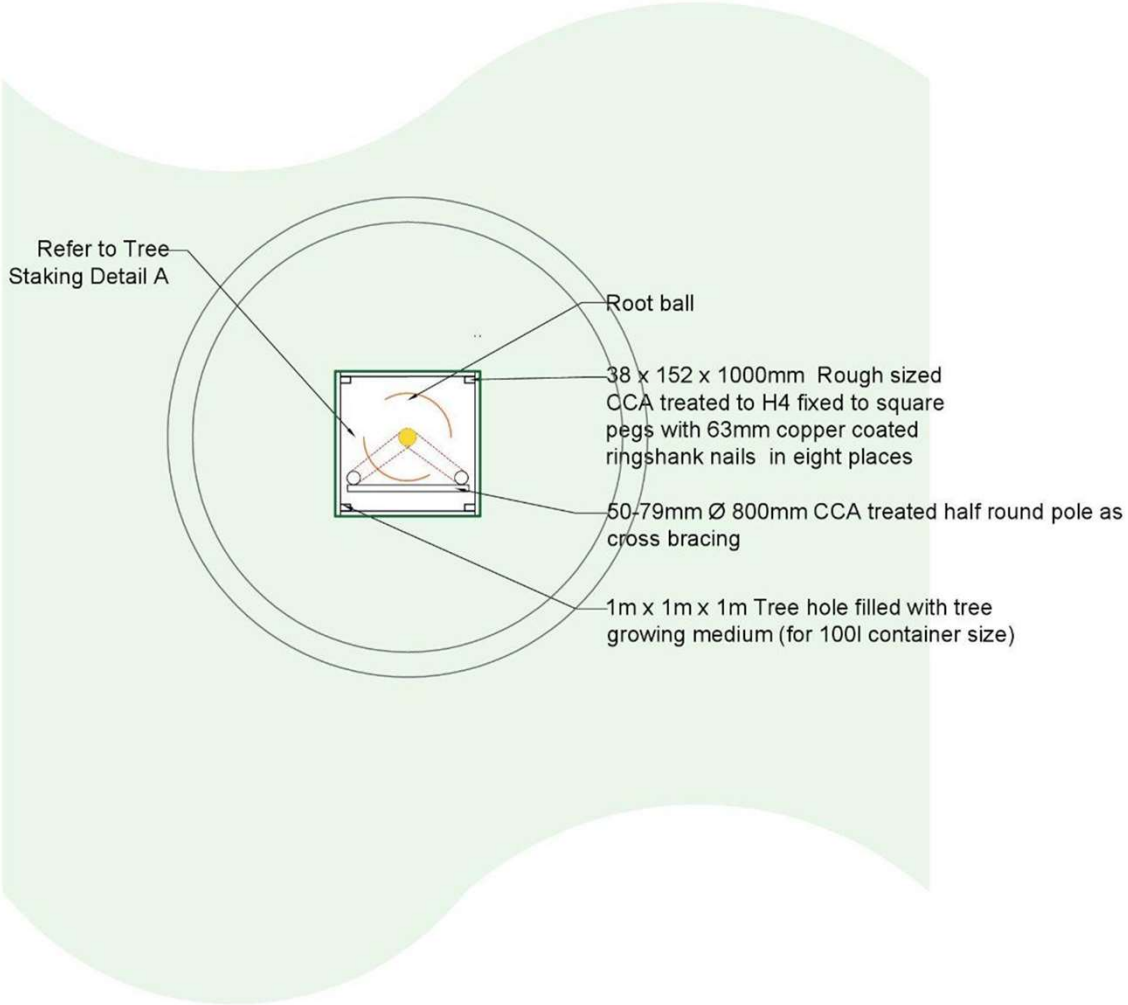

Figure 1.2b Softscape Tree Detail Plan (Viridian Consulting, 2024)

1.3 Hardscape Section

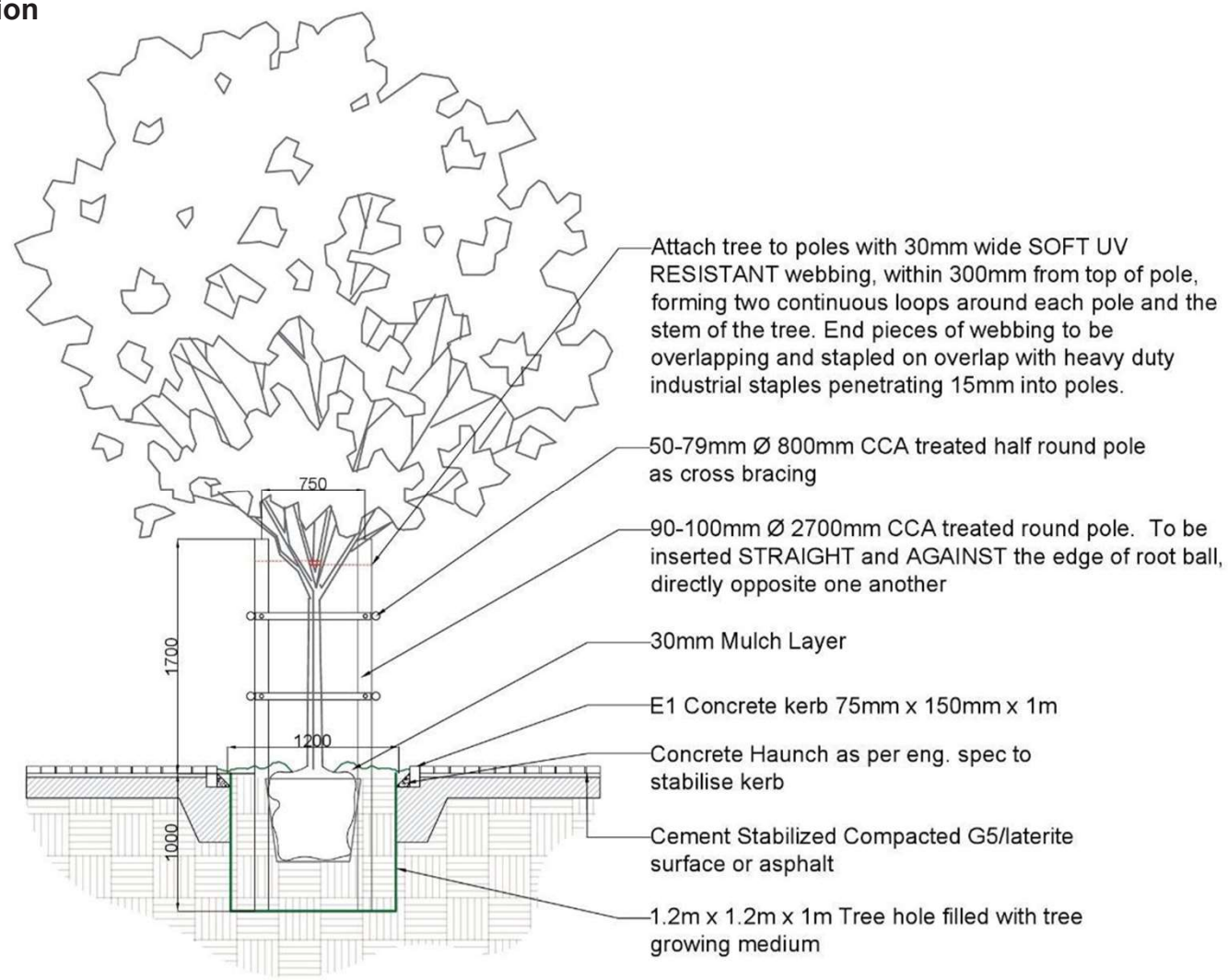

Figure 1.3a Hardscape Tree Detail Section (Viridian Consulting, 2024)

1.3 Hardscape Plan

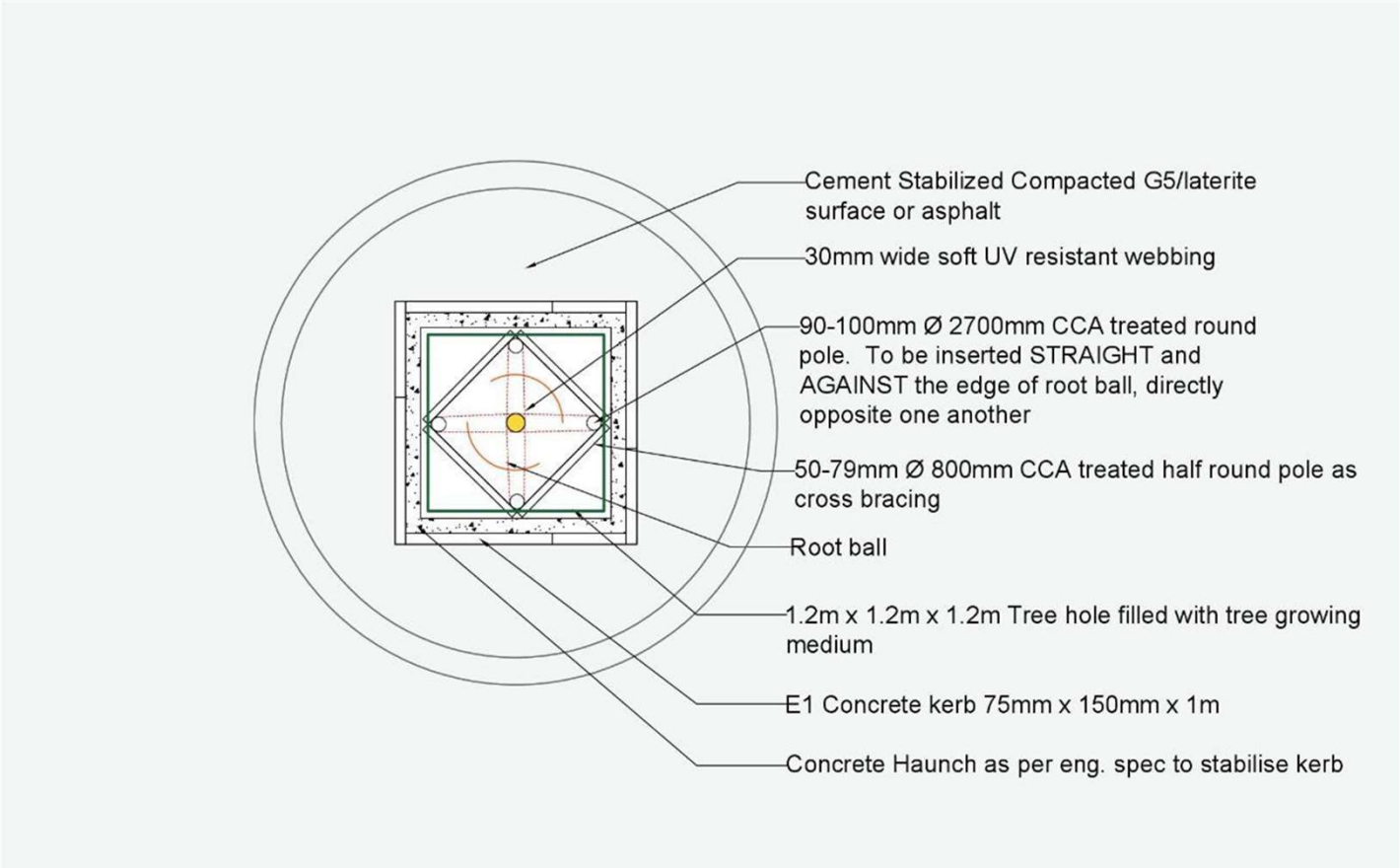

Figure 1.3b Hardscape Tree Detail Plan (Viridian Consulting, 2024)

ANNEXURE C

EUCALYPTUS FOREST TREE ASSESSMENT

ANNEXURE C

EUCALYPTUS FOREST TREE ASSESSMENT

25 November 2024

TO WHOM IT MAY CONCERN

RE: TREE ASSESSMENT FOR EUCALYPTUS FOREST STIKLAND SOUTH NOVEMBER 2024

Viridian Consulting Landscape Architects were requested to assess the existing Eucalyptus forest located on Stikland South, east of De La Haye road in terms of the possible development opportunities and constraints should development occur within this forest area. Viridian Consulting Landscape Architects conducted a site visit on Wednesday 13 November 2024 to inspect the forest and condition of the trees. René Maria Brett, Landscape Architect and Daan Loock, Consulting Arborist conducted the site visit mid-morning in light wind conditions.

1. Summary of Findings

- The Eucalyptus forest is generally in good health and portions are in excellent health.
- A portion (indicated as A on the diagram overlay of the aerial photo below Figure 1) of the forest was clearly a managed woodlot but it is evident that no recent harvesting of timber has taken place or active management of the wood lot.
- Many trees were removed along De La Haye road at some point probably due to Eskom servitude. Stumps are still visible in the ground.
- Tree spacings (and trunk and branch structures) on the eastern and southern portion are more natural and a ground cover layer is present (indicated as B on the diagram overlay of the aerial photo below, Figure 1) Refer to Figures
- Where a clearing was made in the middle of the forest other trees have blown over / been uprooted, indicating the sensitivity of this forest to partial clearing and exposure to higher wind speeds for trees that have matured within the protection of the forest surroundings. Refer to Figure 2.
- The forest creates a very significant windbreak within this exposed landscape and other trees located downwind of the forest (to east and north east) have developed in reduced wind speeds. Removal of this forest in part or in whole will have a very significant and likely detrimental impact on the health and longevity of those trees. (indicated as C on the diagram overlay of the aerial photo below, Figure 1). Leaf density at lower elevations is significantly higher than on branches exposed to higher wind speeds at higher elevations on the trees.
- Trees within the densely spaced wood lot portion of the forest show unnatural lean that require ongoing monitoring and management programme.
- Please refer to the Figure 11 below for recommendations on trees to be retained and required management and development setbacks.

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Viridian Consulting (Pty) Ltd 2006/026753/07 Director: Rene Maria Brett: BL Arch MCPUD (SACLAP20122)

- A more detailed Tree Management Plan will be required as part of the planning approval process for implementation.

- A qualified and experienced Arborist must be involved in the implementation/execution of the Tree Management Plan.

2. Guidelines for integration of existing trees into new developments: Tree Management Specifications

2.1 Tree Protection Specifications

These measures are required for trees that will remain. They must be protected from any construction disturbance by demarcating no-go areas and fencing them off from construction activity.

2.1.1 Fencing:

Highly visible barricades/hoarding (diamond mesh or square weld mesh fence) must be erected around every tree required to be protected. Fencing must extend to the edge of the tree protection zone (TPZ) identified for each tree.

- Fencing must run no closer than the dripline plus 1m of each individual tree. The dripline is the area directly below the endpoints of the branches/crown of the tree. Preferably the fencing should be positioned along the edge of the construction zone to provide maximum protection.
- The ideal size and height of the fencing varies depending on the size, species and construction activity at any given point, but should not be less than 1,8m in height.

- The final position of the fence lines must be confirmed by the contracted specialist arborist on site, in the presence of the Main contractor.

- Furthermore, signs must be put up to inform the purpose of the fencing.

- Fence inspection to be carried out once a week during construction.

2.1.2 Tree canopies:

Fenced off tree areas must be avoided at all times by any construction plant or vehicles, including pedestrian traffic. No materials storage or resting places for staff to take place within fenced-off areas to prevent damage to limbs (broken or torn branches as well as compaction of the root zone and root damage).

2.1.3 Tree Protection Zone (TPZ):

Fenced-off tree areas do not necessarily define the exact extent of the root systems. Approximately 90-95 percent of the tree's root system is at the top 90-100 cm of the soil and generally, the balance falls within the top 30-50 cm of soil. Therefore, it is instructed to strictly only use hand excavation methods, as safe and sensitive measures, for construction excavation along the extent of the fence line.

2.2 Tree Pruning Specifications

These measures are required for trees that have their main trunk outside the extent of construction disturbance but will have their root zone and canopy protruding into the extent of construction disturbance and require pruning of limbs and roots and protection during construction.

2.2.1 Pruning of above-ground limbs and branches

All tree pruning equipment must be sharpened and cleaned to ensure clean cuts. The correct pruning equipment must be used to ensure clean cuts without tearing. No sterilization of equipment will be required between trees.

The use of tree sealant is to be avoided.

All cuts are to be vertical or angled to ensure no accumulation of moisture or organic matter that may hinder the recovery of the wound.
All pruning to be executed by a trained arborist.
All material that has been pruned must be carted to an approved location indicated by the main contractor to be chipped and reused. All chipped material will be used for mulch in the rehabilitation.

2.2.2 Pruning of below-ground roots exposed during construction activity

All excavation of soil for construction in the proximity of the identified trees must take place by hand in order to expose roots that have to be cut to allow for layer works and road construction, installation of underground services or building foundations. Should excavation plant be used the operator must do so under the direct guidance of the arborist.

Roots that are exposed must be cut with a saw or suitable cutting tool to avoid any tearing or damage that may take place beyond the limit of excavation. All root pruning must be executed by a trained arborist under the supervision of a qualified and experienced specialist arborist.

2.3 Mulch

All new and existing trees must be supplied with an 80mm layer of sufficiently decomposed mulch consisting of wood and bark chips. This mulch layer is an essential layer of protection against drying out of the root zone during and post-construction. Site development significantly alters the natural flow of groundwater and tends to dry out the soil.

2.4. Maintenance and aftercare

All maintenance and aftercare instructions provided by the arborist and supplier are to be implemented by the responsible parties. This must be agreed upon as part of this Tree Management Plan and all parties identified and recorded. The timeframes and terms of aftercare must be documented and made available to all compliance staff for the duration of the contract and the agreed aftercare period.

Parties responsible for irrigation must supply a watering schedule under the advisement of the arborist and this must be monitored along with the environmental control programme for the project. The replacement trees will require care beyond the duration of the construction contract and the responsible role players must be identified and maintenance responsibilities must be continued for the 12-month period identified.

3. References

Personal communication: Daan Loock. ISA certified arborist. November, 2024.

Urban, James. 2008. Up by Roots. Healthy Soils and Trees in the Built Environment. International Society of Aboriculture.

City of Cape Town. Tree Management Policy (Policy number 34933). Approved by Council: 25 March 2015 C31/03/15.

4. Conclusion

We trust that the above and attached provide sufficient information to inform and support the land use planning and environmental and heritage studies.

Please do not hesitate to contact the writer should you have any queries or require additional information.

Yours faithfully

René Maria Brett Pr LArch SACLAP 20122
Director: Viridian Consulting (Pty) Ltd

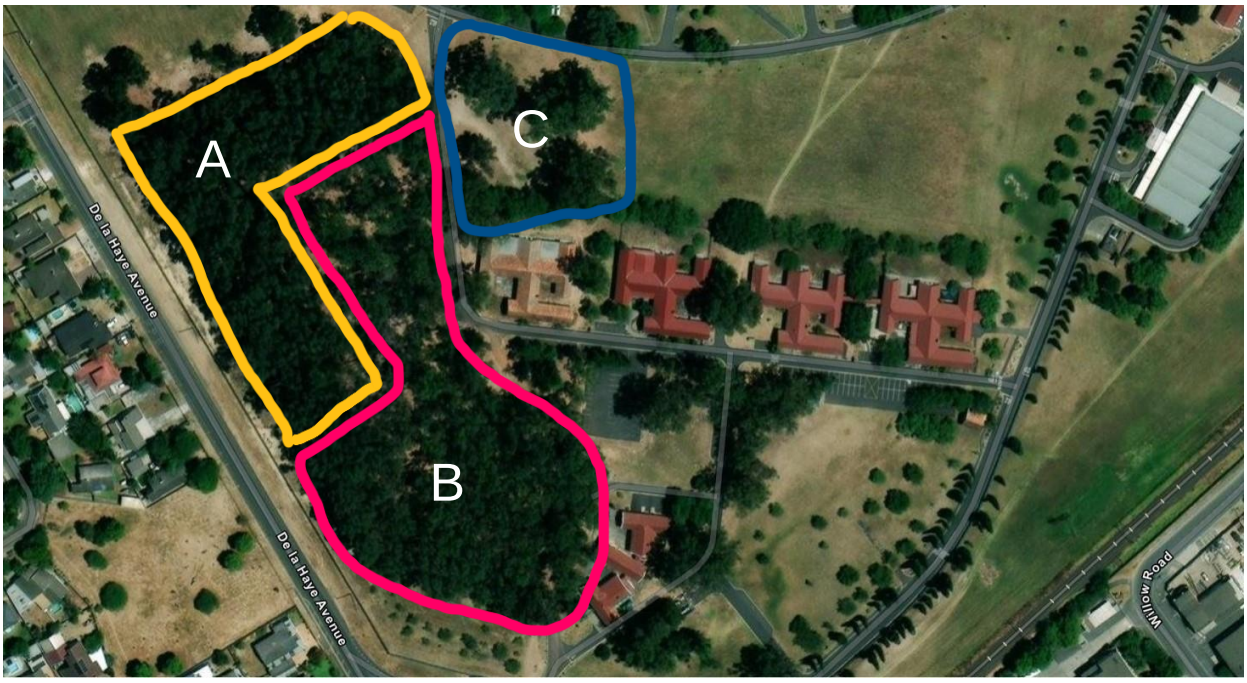

Figure 1: Reference diagram identifying areas within the Eucalyptus Forest

A: Densely spaced (historically) managed woodlot contains Eucalyptus

B: *Eucalyptus gomphocephala* forest (wider, more natural spacing of trees with ground cover layer)

C: Free-standing individual Eucalyptus specimens of very significant age and stature

Figure 2: A clearing in the forest where further trees are blowing over and being uprooted. The clearing increases the wind velocity within the forest and this leaves trees on the edge of the clearing vulnerable to blowing over.

Figure 3: Eastern edge of the forest with significant free-standing specimens on the leeward side of the forest that will be impacted by increased wind velocities if the forest is removed.

Figure 4: Northern edge of forest showing dense spacing of planted woodlot.

Figure 5: Northern edge of forest (densely planted woodlot section. Trees show significant lean due to dense spacing. It will require a minimum development/management setback of 15m from the canopy dripine.

Figure 6: Southern portion of the forest with a more natural spacing of *Eucalyptus gomphocephala* / hybrids.

Figure 7: Another view of the southern portion of the forest showing wider spacing and groundcover layer.

Figure 8: Mature specimens in the southern portion of the forest.

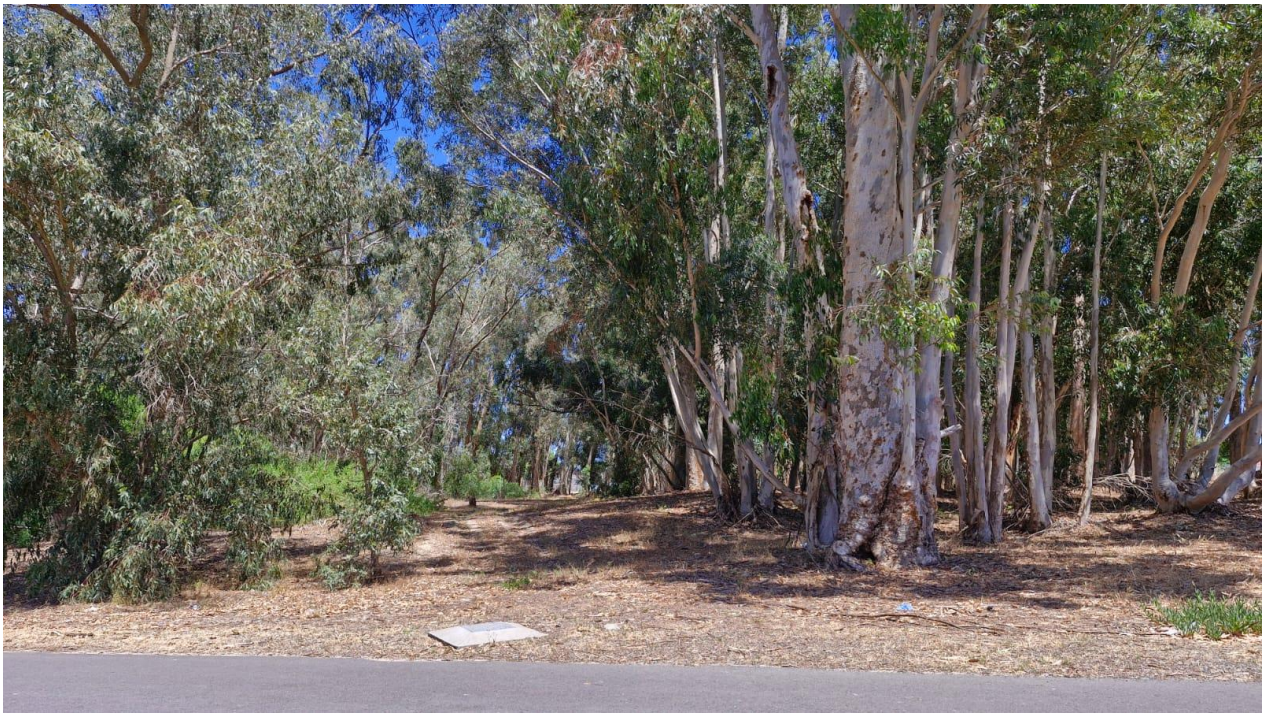

Figure 9: View into the management track on the southern side of the dense northern woodlot that would form part of the management and development setback (minimum 15m from the canopy dripline).

Figure 10: Free-standing Eucalyptus specimen located leeward of the forest. Original trunk formation. No coppiced regrowth. Magnificent specimen. Strongly recommended to be retained within the development footprint with development setbacks. Must be retained in combination with the woodlot portion of the forest for continued wind protection. Minimum development setback = canopy dripline plus 10m.

Figure 11: Recommended dimensions for the Eucalyptus forest and trees to be retained and development and management setback lines

a = 45m
b = 20m
c = 45m
d = 60m
e = 70m
f = 15m
g = Canopy dripline
h = 10m