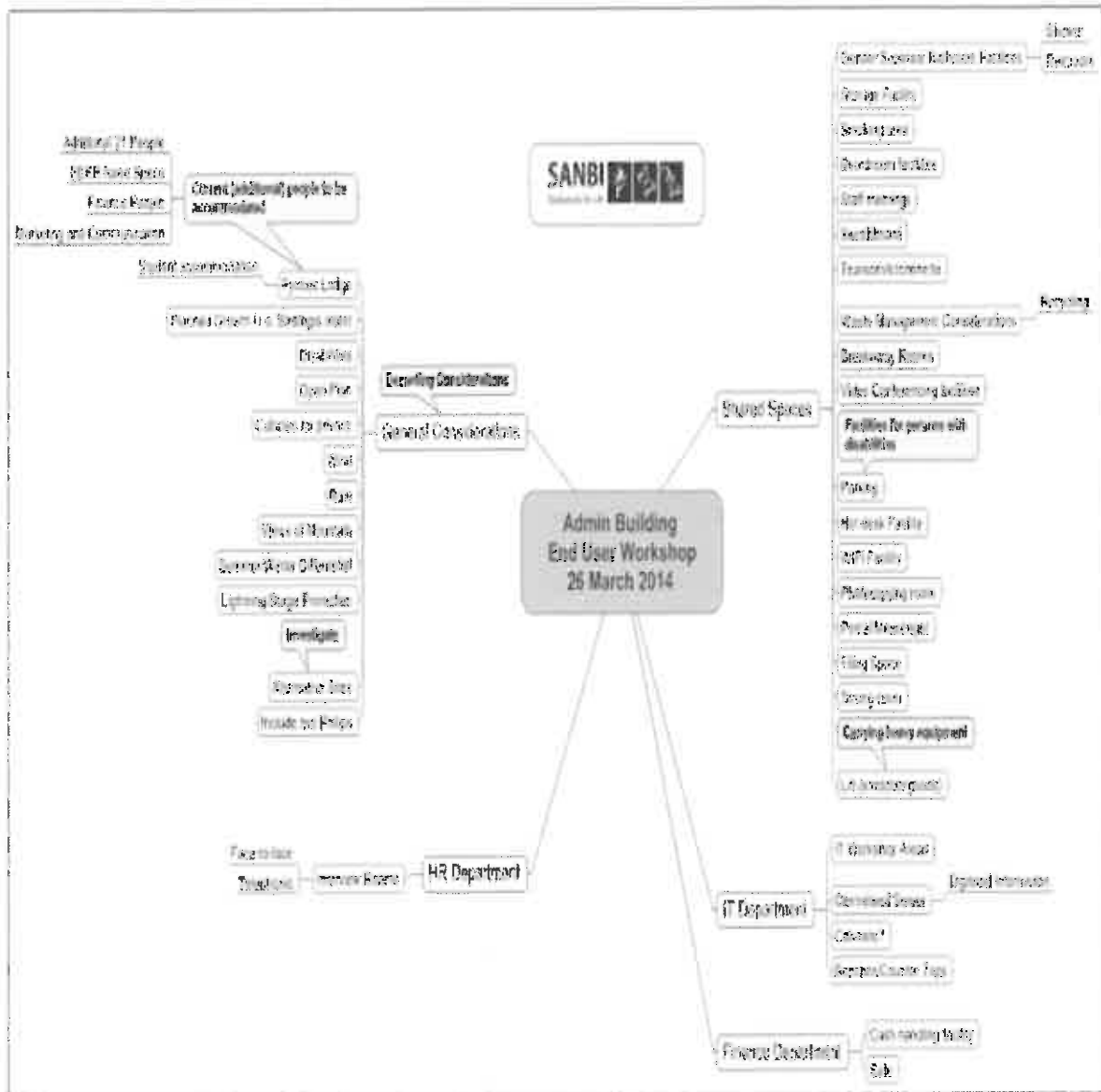


5.3 Mind map: by Rory Baker



## 5.4 Outcomes & Final Accommodation Schedule

### Human Resources Division

No. Item	Assigned m <sup>2</sup>	General comment
<b>HR Division</b>		
1 Deputy Director	20	Kaashiefa Bassier
2 Deputy Director of Training	20	Training Unit (Rene du Toit)
3 HR/Dedicated Printer Stations	6	One bulk Printer/6 Desktop Printers
4 Archive/Store Room/Stationery Room	12	Stationery + Equipment
5 1 meeting/Seminar Room ( 5 people)	12	Small Meeting / Discussion Rooms
6 Open plan Office (8 staff members)	51	Open plan office space
7 Ablutions	10	Male/Female
8 Drinking Fountain	-	Spring Water to be supplied by Kirstenbosch National Botanical Garden
<b>Sub Total (excluding parking)</b>	<b>131</b>	
<b>131 m<sup>2</sup> x 1.2 m<sup>2</sup> (Structure &amp; Circulation)</b>	<b>157.20</b>	
<b>Add 10 % Growth</b>	<b>15.72</b>	<b>Future projection</b>
<b>TOTAL</b>	<b>172.92</b>	

## Finance Division

No. Item	Assigned m <sup>2</sup>	General Comment
<b>Finance Division</b>		
1 Waiting Area	25	
2 Director of Finance	25	A. Smith (Office / Private)
3 Personal Assistant	12	Goelood
4 Deputy Director (Income)	20	Office / Private
5 Deputy Director (Finance)	20	Office / Private
6 Deputy Director ( Payroll)	20	Office / Private
7 Deputy Director (Assets)	20	Office / Private
8 Deputy Director ( Projects)	20	Office / Private
9 Offices ASD (Salaries)	15	Office Screened / Private
10 Offices ASD (Creditors)	15	Office Private
12 Printing Photocopy Area	10	Printing Station / Closest Staff does most of the Printing
13 3 Seminar Room @ 16 m <sup>2</sup>	48	For Breakaway Meetings
15 1 Filing Room ( Finance)	16	Records
16 1 Filing Room ( Payroll)	10	Records
17 9 General Staff @ 7 m <sup>2</sup> in Open Plan	63	Open Plan Offices / Located close to natural ventilation
18 Temporary 3 year Projects / Staff	30	3 Staff Member on contract
19 1 Cleaning ( payroll) Staff	10	
20 Ablutions	15	Male & Female
21 Drinking Fountain		Spring Water to be supplied by Kirstenbosch Botanical
<b>Sub Total (excluding parking)</b>	<b>394</b>	
<b>394 m<sup>2</sup> x 1.2 m<sup>2</sup> (Structure &amp; Circulation)</b>	<b>472</b>	
<b>Add 10 % Growth</b>	<b>48</b>	<b>Future projection</b>
<b>TOTAL</b>	<b>520</b>	

## Information & Technology Directorate

No. Item	Assigned m <sup>2</sup>	General Comment
<b>IT Directorate</b>		
1 Director	25	Private Office
2 Deputy Director	20	Private Office
3 Office (open plan)	65	Staff located near natural light & ventilation
4 Office (Consultants)	15	Visiting / Outside Assistance
5 Helpdesk	30	Space for 3 Staff Members (Call Centre)
6 Workshop	50	Repairs
7 Store Room	10	General
8 Printing Facility	10	For 2 Copiers
9 Special Storage Facility (Steel Secure boxes)	38	New Computers / Distribution
10 Ablutions	15	Male & Female
11 Server Room	63	
12 Office (Web Designer)	12	
13 Drinking Fountain	-	Spring Water to be supplied by Kirstenbosch National Botanical Garden
<b>Sub Total (excluding parking)</b>	<b>353</b>	
<b>353 m<sup>2</sup> x 1.2 m<sup>2</sup> (Structure &amp; Circulation)</b>	<b>423</b>	
<b>Add 10% Growth</b>	<b>42</b>	<b>Future projection</b>
<b>TOTAL</b>	<b>465</b>	

## Shared / Communal Facilities

No.	Item	Assigned m <sup>2</sup>	General Comment
<b>Shared / Communal Facility</b>			
1	Main Reception / Waiting Area	35	Central Reception with Switchboard
2	Information Desk	15	General Information & Reception
3	Entrance Foyer	50	Pre - Assembly Space
4	Canteen (65 people) / Recreation )	130	Staff / Guest
5	Kitchen	30	Staff & General use
6	Refuse / Recycling Facility	15	Central Facility
7	Store Rooms	15	
8	Rest Room:	18	Staff / Guest
9	Seminar Rooms	70	Can be subdivided with partition to create two spaces
10	Strong Room	10	3 Cubicles
11	Pause Area	12	
12	Records Store	40	
13	Stretcher Lift	6	
14	Video Conferencing Room	50	Also use for Training / Presentations
<b>Sub Total (excluding parking)</b>		<b>496</b>	
<b>496 m<sup>2</sup> x 1.2 m<sup>2</sup> (Structure &amp; Circulation)</b>		<b>595.20</b>	
<b>Add 10% Growth</b>		<b>59</b>	
<b>TOTAL</b>		<b>654</b>	

## Early Detection and Rapid Response (EDRR) Unit

No.	Item	Assigned m <sup>2</sup>	General Comment
<b>EDDR Unit</b>			
1	Director (Program Leader)	25	
2	Assistant (Support Staff)	12	
3	Leader: Financial Management (Support Staff)	12	
4	Financial Clerk (Support Staff)	10	
5	Financial Assistant (Support Staff)	10	
6	Administrator (Support Staff)	10	
7	Assistant Administrator	10	
8	Leader: Policy & Communication (Deputy Director)	20	
9	Manager: Communications (Assistant Director)	15	
10	Assistant: Communications (Support Staff)	10	
11	Leader: Risk Assessment (Deputy Director)	20	
12	Manager: Risk Assessment	28	
13	Leader: Data Management (Deputy Director)	20	
14	Manager: Data Management (Support Staff)	28	
15	Leader: Coastal Provinces	20	
16	Regional Coordinators (Assistant Directors)	30	
17	Species Coordinators (Assistant Directors)	45	
18	Contract Managers (Managers)	24	
19	Contract Assistants (Support Staff)	20	
20	Deputy Coordinators (Support Staff)	35	
21	Meeting Room	70	
22	Ablutions (G1 Category)	25	Male – 1 urinal + 1 wc + 2 whb / Female 2 wc + 2 wnb
<b>Sub Total (excluding parking)</b>		<b>499</b>	
<b>499 m<sup>2</sup> x 1.2 m<sup>2</sup> (Structure &amp; Circulation)</b>		<b>598</b>	
<b>Add 10% Growth</b>		<b>60</b>	<b>Future projection</b>
<b>TOTAL</b>		<b>658</b>	

## Summary of All Departments

No.	Item	Assigned m <sup>2</sup>	General Comment
<b>Summary</b>			
	HR Division Total Area	172.92	(excluding parking)
	Finance Division Total Area	520	(excluding parking)
	IT Directorate Total Area	465	(excluding parking)
	Shared Facilities	654	
	EDDR Unit	658	(excluding parking)
	<b>TOTAL (excluding parking)</b>	<b>2469.92</b>	<b>(excluding parking)</b>
	Footprint of existing Administration Building (Site Option 2)	850	
	Bulk Factor	2.2	

## Summary of All Divisions/Directorates 10% Growth Expectation

No.	Item	10% Growth m <sup>2</sup>	General Comment
<b>Summary</b>			
	HR Division Total Area	16	(excluding parking)
	Finance Division Total Area	48	(excluding parking)
	IT Directorate Total Area	42	(excluding parking)
	Shared Facilities	59	
	EDDR Unit	60	(excluding parking)
	<b>TOTAL Growth</b>	<b>225</b>	<b>(excluding parking)</b>

**No specific space provisioning has been allocated to the Marketing & Communications Directorate. However, should this Directorate require space in the building, it can be accommodated by total growth allowance.**

**A provision for 50 cars has been allowed for in the parking area**

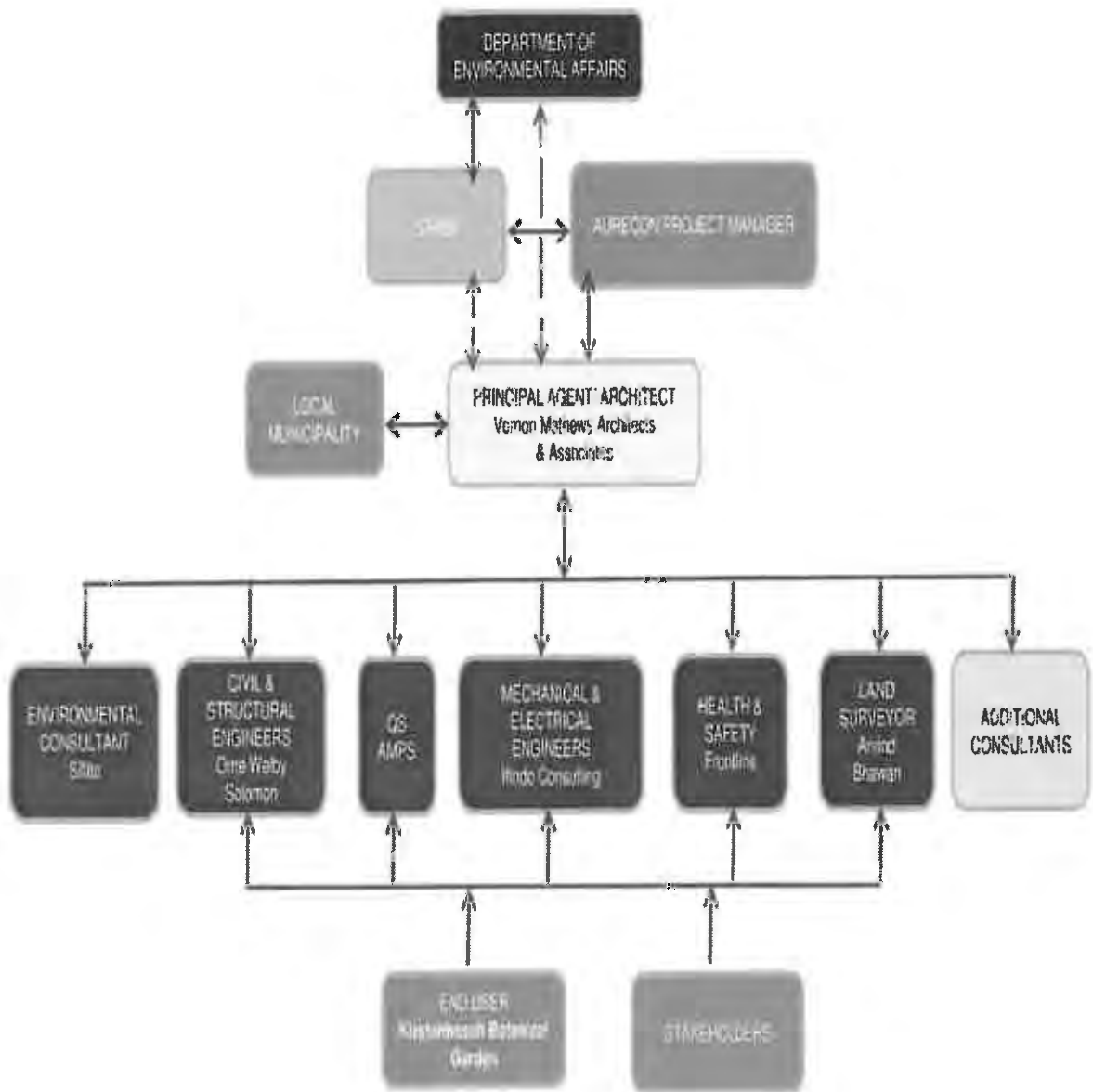
## 5.5 Designation of Building in terms of SANS 10400 Edition 3:

### Plan Approval Process

	<b>Project Manager</b>	Aurecon (Amjad Hendricks)	
	<b>Consultants</b>		
1	Principal Agent	VMA	
2	Architect	VMA	
3	Quantity Surveyor	AMPS	
4	Structural Engineer	OWS	
5	Civil Engineer	OWS	
6	Electrical Engineer	IFINDO CONSULTING ELECTRICAL & MECHANICAL ENGINEERS	
7	Mechanical Engineer	IFINDO CONSULTING ELECTRICAL & MECHANICAL ENGINEERS	
8	Environmental Consultant	Sillito environmental consulting	
9	Land Surveyor	Arvind N Bhawan Professional Land Surveyor	
10	Health & Safety	Frontline	
	<b>Additional Consultants</b>		
11	Geotechnical Engineer	T.B.C	
12	Sustainable Consultants	T.B.C	
13	Lighting Consultants	T.B.C	
14	Landscaping	T.B.C	
15	Interior Designer	T.B.C	
16	Fire Engineer	T.B.C	



**5.6 Organogram – Lines of reporting**



### 5.7 Contractual Matters

1. Professionals will be guided by their different codes of practice & conduct as prescribed by the professional bodies, as well as the government act and SANBI DEA Standards & Policy.
2. Procurement procedure & processes to be in line with PFMA and the affirmative action policy guidelines.
3. The Form of contract during the construction phase of the project will be the JBCC Principle Building Contract with Quantities Version 4.1
4. Indemnity Insurance / Consultants.
5. All Guarantees, all risk insurance & public liability insurance to be in place at the commencement of construction.
6. World Heritage Site Development Guidelines to be incorporated & adhered to.
7. Additional Scope of Work and items to be included as an addendum to signed contract.



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Angelo Manzoni

VMA Architects

Date: 14 July 2014



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Christopher Willis

SANBI

Date: 23 July 2014





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**NICK HELME BOTANICAL SURVEYS**

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Ph: 021 780 1420 cell: 082 82 38350 email: botaneek@iafrica.com

Pri.Sci.Nat # 400045/08

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**BOTANICAL ASSESSMENT OF PROPOSED  
DEVELOPMENT AREA AT KIRSTENBOSCH  
NATIONAL BOTANICAL GARDEN.**

Compiled for: Sillito Environmental Consultants, Tokai

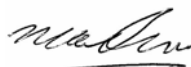
Client: South African National Biodiversity Institute

5 June 2014

## DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence and include an abbreviated Curriculum Vitae.

I, N.A. Helme, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own.



NA Helme

### ABRIDGED CV:

Contact details as per letterhead.

Surname : HELME

First names : NICHOLAS ALEXANDER

Date of birth : 29 January 1969

University of Cape Town, South Africa. BSc (Honours) – Botany (Ecology & Systematics), 1990.

Since 1997 I have been based in Cape Town, and have been working as a specialist botanical consultant, specialising in the diverse flora of the south-western Cape.

Since the end of 2001 I have been the Sole Proprietor of Nick Helme Botanical Surveys, and have undertaken over 1300 site assessments in this period.

**Peninsula and Cape Flats** botanical surveys include: Mitchells Plain & Brentwood Park scans (TEP 2014); Wolwerivier scan, Vissershok (TEP 2014); CoCT BioSolids Beneficiation IA, Vissershok (RMS; 2013); De Grendel 24G study (De Grendel; 2013); Koeberg Visitors Centre constraints study (Stauch Vorster; 2013); Protea Ridge IA, Kommetjie (Doug Jeffery; 2013); Delft Sand Mine (EnviroSci Africa; 2012); Atlantic Beach study (Kantey & Templer; 2012); Ocean View Erf 5144 updated baseline (GNEC; 2011); Ocean View infill housing BA (I. Terblanche & Associates; 2010), Oakhurst farm, Hout Bay (SEC 2010); Protea Ridge Corridor study (Doug Jeffery; 2009); Oudekraal botanical constraints study (Doug Jeffery 2009); Mitchells Plain hospital site (Doug Jeffery; 2006, 2008); Eerste River Erf 5540 (CCA 2008);

Eerste River Erf 5541 (EnviroDinamik 2008); Kommetjie Riverside IA (Doug Jeffery 2008); Strandfontein Road widening (CoCT 2008); Pelikan Park IA (CoCT 2008); Blue Downs Erf 1897 (Environmental Partnership 2008); Driftsands NR Sensitivity Study (CapeNature 2006); Assessment of Driftsands South (Environmental Partnership 2006); Woodgreen housing Mitchell's Plain (CCA; 2006); Assessment of new Eskom Briers Substation and new 66kV overhead powerline (Eskom 2006); Muizenberg erf 108161 (CndeV; 2005); Muizenberg erf 159848 (Headland; 2005); Muizenberg erf 159850 (Headland; 2005); Kommetjie Riverside Ext 2. (Headland; 2005); Ocean View Mountain View extension IA (Ecosense; 2005); Imhoffs farm (Headland; 2005); Rocklands, Simonstown (CCA; 2005); Erf 35069 and Ptn. Erf 3418, Kuils River (SEC; 2005); Erf 550 & 552, Phillippi (Amathemba Environmental; 2005); proposed Grand Prix site next to CT International, Belhar (EnviroDinamik; 2005; Environmental Partnership 2007); Dreamworld film studio survey and Impact Assessment (Environmental Partnership; 2004 & 2005); Kompanjiesuin survey and Impact Assessment (Ecosense; 2004); Scarborough Erf 766 IA (ERM; 2004), Erf 11825, Fish Hoek (private client, 2004); R300 Cape Flats Ring Road surveys (Ecosense and Ecosense/Chand jv; 2003-2007); survey of remaining areas of natural vegetation in the eastern portion of the Cape Flats (Botanical Society of SA; 1999 - 2000).

#### **CONDITIONS RELATING TO THIS REPORT:**

The methodology, findings, results, conclusions and recommendations in this report are based on the author's best scientific and professional knowledge, and on referenced material and available knowledge. Nick Helme Botanical Surveys and its staff reserve the right to modify aspects of the report, including the recommendations and conclusions, if and when additional relevant information becomes available.

This report may not be altered or added to without the prior written consent of the author, and this also applies to electronic copies of this report, which are supplied for purposes of inclusion in other reports, including in the report of EAPs. Any recommendations, statements or conclusions drawn from or based on this report must cite this report, and should not be taken out of context, and may not change, alter or distort the intended meaning of the original in any way. If these extracts or summaries form part of a main report relating to this study or investigation this report must be included in its entirety as an appendix or separate section to the main report.

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## 1. INTRODUCTION

This botanical assessment was commissioned in order to help inform the planning and environmental authorisation process being followed for a proposed development in the vicinity of the laboratory and administration offices (head office) of Kirstenbosch National Botanical Gardens, Newlands (see Figure 1).



**Figure 1:** Map (provided) showing the study area (red outline).

## 2. TERMS OF REFERENCE

The terms of reference for this study were as follows:

- Undertake a site visit in order to assess the vegetation in the study area.
- Compile a report which identifies any plant Species of Conservation Concern, and any threatened ecosystems present.
- Map the extent and location of areas of botanical significance that should be taken into account by the proposed development.
- Provide an overview of the botanical conservation significance of the vegetation in the study area, making reference to the available conservation planning products.
- Compile a report, including identification of key development constraints and opportunities.
- Identify and assess the likely botanical impacts associated with the proposed development.
- Make recommendations to avoid or minimise the likely botanical impacts.



### **3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY**

The site was visited on 26 May 2014. This is early in the optimal winter - spring flowering season in this primarily winter rainfall region, and consequently I was not able to either record or identify a few of the species that were either confirmed or likely to be present, notably some of the herbs and bulbs. Some of these potential species could be Species of Conservation Concern (SCC), although the likelihood of there being viable populations of undetected SCC in the study area is deemed to be low, as few such SCC are herbs or bulbs in this particular area. Particular attention was paid to the presence and abundance of SCC, and no attempt was made to identify or enumerate the many species (many not native to the Kirstenbosch area) that have been planted within the formal gardens in the study area. I was able to identify most perennial species on site, with the exception of various extra-limital (non native) species that have been planted in the area, and the overall confidence level in the accuracy of the botanical findings is high. The author has undertaken extensive work within the region, which facilitates the making of local and regional comparisons and inferences of habitat quality and conservation value.

The study area is assumed to be as indicated in Figure 1. The study area was walked, and plant species were noted in the field, and various references noted in the text were consulted and referred to. Conclusions were drawn based on this documentation and professional experience in the area. No attempt was made to describe, map or assess the wetland environments on site, as it was understood that a separate freshwater assessment had been commissioned.

The botanical conservation value of a site is a product of plant species diversity, plant community composition, rarity of habitat, degree of habitat degradation, rarity of species, ecological viability and connectivity, vulnerability to impacts, and reversibility of threats.

It is understood that the proposed development is as follows:

#### **Area 1**

- The existing prefabricated building will be removed.
- The site will be converted in to a small parking area.
- The proposed parking area is within 32m of the Liesbeek River.
- Some of the existing garden located directly in front of the prefabricated building will have to be removed to accommodate the parking area. The

architects have stated that they want to retain as much of this existing garden section as possible.

## **Area 2**

- The existing administration building (marked “Kirstenbosch Head Office” on the attached site plans) will be demolished.
- A new administration building will be constructed in its place.
- The administration building will be within the existing development footprint and will not encroach on the existing vegetation currently surrounding the existing building.
- The administration building will have an additional storey to accommodate more people.

## **Fynbos Lodge**

- The yellow building titled “lab” on the attached site plans is the Fynbos Lodge
- The asbestos roof will be removed.
- There will be small interior renovations to the building- painting, replacing of counter tops, etc.
- No structural changes will occur to the building.

## **4. REGIONAL CONTEXT OF THE VEGETATION**

The study area is considered to be part of the Southwest Fynbos bioregion (Mucina & Rutherford 2006), and is part of the Fynbos biome, located within what is now known as the Core Region of the Greater Cape Floristic Region (GCFR; Manning & Goldblatt 2012). The GCFR is one of only six Floristic Regions in the world, and is the only one largely confined to a single country (the Succulent Karoo component extends into southern Namibia). It is also by far the smallest floristic region, occupying only 0.2% of the world’s land surface, and supporting about 11500 plant species, over half of all the plant species in South Africa (on 12% of the land area). At least 70% of all the species in the Cape region do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). Many of the lowland habitats are under pressure from agriculture, urbanisation and alien plants, and thus many of the range restricted species are also under severe threat of extinction, as habitat is reduced to extremely small fragments. Data from the nationwide plant Red Listing project indicate that 67% of the threatened plant species in the country occur only in the southwestern Cape, and these total over 1800 species (Raimondo *et al* 2009)! It should thus be clear that the southwestern Cape is a major national and global conservation priority, and is quite unlike anywhere else in the country in terms of the number of threatened plant species.

The Southwestern bioregion is characterised by relatively high winter rainfall and rich to poor lowland soils, with intensive agriculture and large urban areas. Due to this combination of factors the loss of natural vegetation in this bioregion has been severe (>80% of original extent lost within the lowland regions), and the bioregion has the highest number of threatened plant species of any bioregion in the country (Raimondo *et al* 2009).

The City of Cape Town regularly updates and revises its Biodiversity Network as sites are lost and new information becomes available (Holmes *et al* 2008), and the latest map (dated 2013) indicates that the entire study area lies within a designated Protected Area, namely the Table Mountain National Park. I am not sure how accurate this classification really is, but shall assume that it is accurate. No copy of the Biodiversity Network map is provided given that the entire area falls within the Protected Area.

## 5. THE VEGETATION ON SITE

According to the SA Vegetation Map (Mucina & Rutherford 2006) the original natural vegetation throughout the study area is Peninsula Granite Fynbos, with Southern Afrotemperate Forest patches higher up the mountain, about 600m to the west.

**Peninsula Granite Fynbos** has been classified as Critically Endangered on a national basis (DEA 2011). This unit has lost about 55% of its total original extent, and some 38% is formally conserved (entirely within the TMNP), well over the national target of 30% (Rouget *et al* 2004). These statistics do however, significantly overestimate the remaining area, as many patches have converted to Southern Afrotemperate Forest and forest precursor in the persistent absence of fire, as on this site.

**Southern Afrotemperate Forest** is technically not present on site, though in reality there are elements present. This unit is regarded as Least Threatened on a national basis (DEA 2011), with about 97% of its original total extent still remaining, some 59% formally protected, and a national conservation target of 34% (Rouget *et al* 2004).



**Plate 1:** View of the road to the main offices, looking northeast from close to the southern edge of the study area. The green roof of the laboratory area is just visible on the right hand side.



**Plate 2:** View of forest precursor vegetation south of the admin building, with the spiny shrub *Gymnosporia buxifolia* (pendoring) prominent.

The vegetation on site is a mix of locally indigenous, natural vegetation, and a smorgasbord of planted species, many of which are extralimital and not locally indigenous. There are even very large specimens of what are presumably stone pines (*Pinus pinea*; trunks and lower branches prominent in Plate 1) along the road, and these trees are of course exotic, although only mildly invasive. There are in fact many alien invasive species present, including *Acacia elata*, *Hypochoeris radicata*

(dandelion), *Commelina* sp., *Pennisetum clandestinum* (kikuyu grass), *Plantago lanceolata* (ribwort), *Vinca major* (periwinkle) and *Hedera* sp. (ivy).

Planted, non-locally indigenous species include *Ficus* sp., *Strelitzia* sp., *Searsia lancea* (karee), *Cussonia* sp. (cabbage tree), *Plectranthus* spp., *Dietes* sp., *Aloe arborescens*, *Asparagus* spp., *Crassula* sp., *Rhoicissus digitata* (wild grape), *Portulacaria afra* (spekboom), *Hypoestes aristata* (ribbon flower), *Barleria* sp., *Tecomaria* sp., *Quercus robur* (oak), *Eragrostis curvula*, *Senecio triqueter*, *Pelargonium* sp., *Psychotria* sp. and *Coleonema pulchellum*.

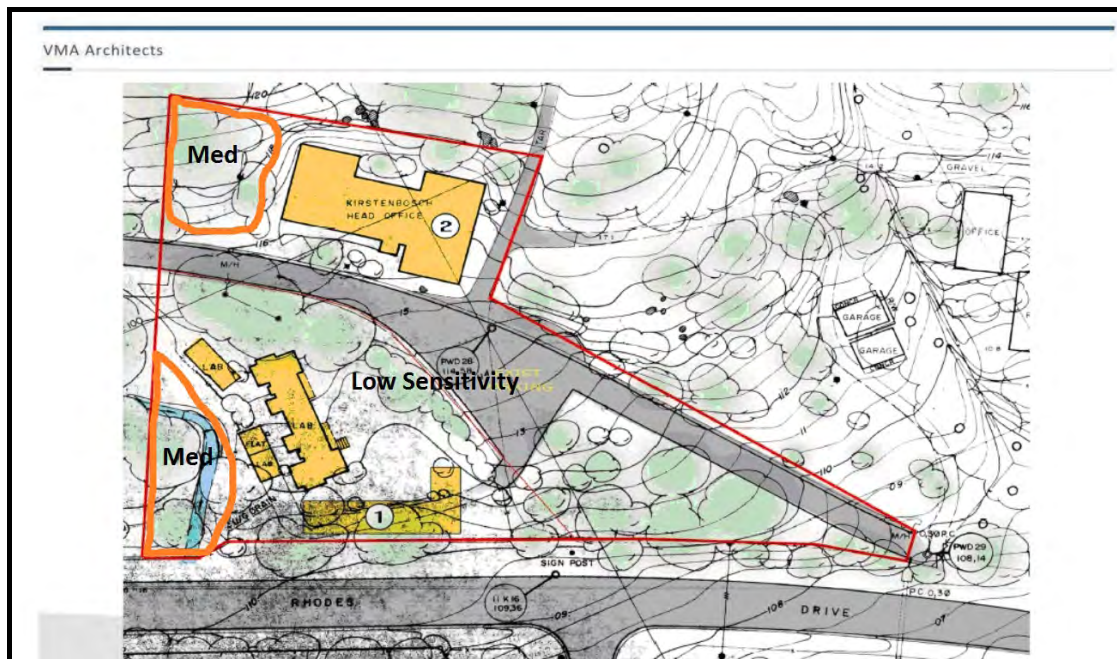
Locally indigenous species noted include *Celtis africana* (white stinkwood), *Kiggelaria africana* (wild peach), *Brabejum stellatifolium* (wild almond), *Oxalis pes-caprae*, *Searsia lucida* (blink taaibos), *S. tomentosa*, *Virgilia oroboides* (keurboom), *Myrsine africana*, *Chasmanthe aethiopica* (cobraflower), *Stenotaphrum secundatum* (buffalo grass), *Cassine peragua* (saffronwood), *Euryops pectinatus*, *Salvia africana-caerulea*, *Cotyledon orbiculata*, *Diospyros whyteana* (bladder nut), *Olea europaea* ssp. *africana* (wild olive), *Polygala myrtifolia*, *Clutia pulchella*, *Gymnosporia buxifolia* (pendoring), *Podalyria calyptrata* (keurtjie), *Apodytes dimidiata* (white pear), *Asparagus scandens*, *Canthium inerme*, *Knowltonia vesicatoria*, *Passerina corymbosa* (gonna) and *Aristea major*. These are all widespread and common species.

No plant Species of Conservation Concern were recorded, and none are likely to occur in viable or significant populations in the study area.

## 6. BOTANICAL CONSERVATION VALUE

The areas that are currently developed (roads, parking areas, buildings, pathways) and that are currently planted gardens or lawns are all of Low botanical conservation value. These areas are shown in Figure 2 and make up about 80% of the study area. No areas are deemed to be of High botanical sensitivity, as none of the species are Species of Conservation Concern, and the plant communities are well represented in the area.

Two patches of Medium botanical sensitivity were mapped on site (Figure 2). These together cover about 20% of the site and support the least modified natural vegetation on site, and the patch closest to Rhodes Drive is bisected by the Liesbeek River, but is more disturbed than the patch next to the head office.



**Figure 2:** Botanical sensitivity drawn onto the layout map. All areas are of Low sensitivity, other than the two patches of Medium sensitivity.

## 7. IMPACT ASSESSMENT

### 7.1 Identification of Likely Impacts

Based on the information provided it appears that all development will take place within the area of Low botanical sensitivity (Figure 2). Any negative botanical impacts are likely to occur only at the Construction Phase, with no significant negative impacts at the Operational Phase. Some minor positive impacts may occur at the operational phase, in the form of rehabilitation.

Construction Phase impacts are likely to be mainly the disturbance of the soil and loss and damage to the vegetation bordering on the development areas, including some of the current gardens and lawns.

Operational Phase impacts may include planting of suitable locally indigenous species, and rehabilitation of disturbed areas.

### 7.2 Construction Phase Impacts

The extent of likely disturbance or loss of natural or partly natural vegetation (the latter including gardens) is likely to amount to less than 0.2ha. About 75% of the construction will take place in areas that are currently built or hardened, or is lawn.

The remainder will probably take place in areas that are currently gardened or only partly natural. No plant Species of Conservation Concern are likely to be impacted by the proposed development.

On balance the overall construction phase botanical impacts are thus likely to be Low negative before mitigation, and Neutral after mitigation.

<u>Alternative</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of occurrence</u>	<u>Degree of confidence</u>	<u>Significance before mitigation</u>	<u>Significance after mitigation</u>
Proposed development	Site	Temporary to Permanent	Low	Definite	High	Low	Neutral
No Go	None	None	None	NA	High	Neutral	Neutral

**Table 1:** Construction Phase Impact table for the proposed project.

### 7.3 Operational Phase Impacts

Operational Phase impacts may include some minor alien plant invasion. Soil disturbance is a well known facilitator of alien plant invasion, but this can be effectively mitigated, which will reduce the impact to negligible.

The previously mentioned rehabilitation of disturbed areas and planting with suitable locally indigenous species is a form of mitigation, but it could also be viewed as a positive operational phase impact.

On balance the overall operational phase botanical impacts are likely to be Very Low negative before mitigation, and Low positive after mitigation.

<u>Alternative</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of occurrence</u>	<u>Degree of confidence</u>	<u>Significance before mitigation</u>	<u>Significance after mitigation</u>
Proposed Development	Site	Mostly Medium term (1 - 5yrs)	Very Low	Moderate to High	Moderate - High	Very Low negative	Low positive
No Go	None	None	None	NA	High	Neutral	Neutral

**Table 2:** Operational Phase Impact table for the proposed project.

#### **7.4 The No Go alternative**

The No Go alternative is usually considered to be the continuation of the status quo. There would thus not be any construction phase impacts, and the only relevant impacts would be very low level alien invasive plant invasion, currently having negligible botanical impact in the remaining natural vegetation in the study area. Overall botanical impact of the No Go is thus deemed to be Neutral.

### **8. MITIGATION RECOMMENDATIONS**

The following mitigation is considered to be feasible, reasonable and essential, and is factored in to the assessment:

- All alien invasive vegetation (excluding the only mildly invasive stone pines *Pinus pinea*, which are a feature of the area) within the study area should be felled and/or removed during the construction phase, and the area should be monitored for alien invasive vegetation for one year after construction.
- Suitable locally indigenous plant species should be planted in all areas requiring rehabilitation after construction is over.
- The Medium sensitivity areas indicated in Figure should not be disturbed during construction.

### **9. CONCLUSIONS AND RECOMMENDATIONS**

- About 75% of the study area is of Low botanical sensitivity, with no plant Species of Conservation Concern observed or likely, and consisting mostly of developed or hardened areas, or planted gardens. Two patches of Medium sensitivity have been identified, which are likely to be outside the proposed development footprint.
- The proposed project is not likely to have more than a Low negative botanical impact overall (before mitigation) and a Neutral impact after mitigation, and the site does not present any notable constraints to the proposed development.
- The tall stone pines (*Pinus pinea*, shown in Plate 1) on site can be retained (if desired) as they are not particularly invasive and are a major feature of the area.



## 10. REFERENCES

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- Holmes, P., J. Wood and C. Dorse. 2008. Updated (2013) and groundtruthed CoCT Biodiversity Network on GIS (cd), together with City of Cape Town – Biodiversity Report. Environmental Management Branch, City of Cape Town. Available from: [www.iclei.org/lab](http://www.iclei.org/lab)
- Manning, J. and P. Goldblatt. 2012. Plants of the Greater Cape Floristic Region 1: The Core Cape flora. *Strelitzia* 29. South African National Biodiversity Institute, Pretoria.
- Mucina, L. and M. Rutherford. Eds. 2006. Vegetation map of South Africa, Lesotho, and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- Raimondo, D., Von Staden, L., Foden, W., Victor, J.E., Helme, N.A., Turner, R.C., Kamundi, D.A., and Manyama, P.A. (eds.) 2009. Red List of South African Plants 2009. *Strelitzia* 25. South African National Biodiversity Institute, Pretoria.
- Rouget, M., Reyers, B., Jonas, Z., Desmet, P., Driver, A., Maze, K., Egoh, B. & Cowling, R.M. 2004. *South African National Spatial Biodiversity Assessment 2004: Technical Report. Volume 1: Terrestrial Component*. Pretoria: South African National Biodiversity Institute.



# NOTIFICATION OF INTENT TO DEVELOP

Completion of this form is required by Heritage Western Cape for the initiation of all impact assessment processes under Section 38(1) & (8) of the National Heritage Resources Act.

Whilst it is not a requirement, it may expedite processes and in particular avoid calls for additional information if certain of the information required in this form is provided by a heritage specialist/s with the necessary qualifications, skills and experience.

**A. BASIC DETAILS**

**PROPERTY DETAILS:**

Name of property: Kirstenbosch National Botanical Gardens	
Street address or location (eg: off R44): Off M63, Rhodes Drive	
Erf or farm number/s: Remainder of Farm 857	Coordinates: 33° 59' 12"S 18° 26' 09"E (A logical centre point. Format based on WGS84.)
Town or District: Cape Town	Responsible Municipality: City of Cape Town
Extent of property: 149.8941 ha	Current use: administrative area for the National Botanical Garden
Predominant land use/s of surrounding properties: Residential to the east, Table Mountain National Park to the west	

**REGISTERED OWNER OF PROPERTY:**

Name		
Address		
Telephone	Cell	E-mail
<p>By the submission of this form and all material submitted in support of this notification (ie: 'the material'), all applicant parties acknowledge that they are aware that the material and/or parts thereof will be put to the following uses and consent to such use being made: filing as a public record; presentations to committees, etc; inclusion in databases; inclusion on and downloading from websites; distribution to committee members and other stakeholders and any other use required in terms of powers, functions, duties and responsibilities allocated to Heritage Western Cape under the terms of the National Heritage Resources Act. Should restrictions on such use apply or if it is not possible to copy or lift information from any part of the digital version of the material, the material will be returned unprocessed.</p>		
<p>I confirm that I enclose with this form four hardcopies of all material submitted together with a CD ROM containing digital versions of all of the same.</p>		

Signature of owner or authorised agent  
(Agents must attach copy of power of attorney to this form.)

Date / / 20

DEVELOPMENT DETAILS:

Please indicate below which of the following Sections of the National Heritage Resources Act, or other legislation has triggered the need for notification of intent to develop.	
<input type="checkbox"/> S38(1)(a) Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.	S38(1)(c) Any development or activity that will change the character of a site -  <input checked="" type="checkbox"/> (i) exceeding 5 000m <sup>2</sup> in extent;  <input type="checkbox"/> (ii) involving three or more existing erven or subdivisions thereof;  <input type="checkbox"/> (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years.
<input type="checkbox"/> S38(1)(b) Construction of a bridge or similar structure exceeding 50m in length.	
<input type="checkbox"/> S38(1)(d) Rezoning of a site exceeding 10 000m <sup>2</sup> in extent.	
<input type="checkbox"/> Other triggers, eg: in terms of other legislation, (ie: National Environment Management Act, etc.) Please set out details:	If you have checked any of the three boxes above, describe how the proposed development will change the character of the site: Two single storey buildings will be demolished. One will be replaced by a double storey structure on the same (or almost identical) footprint, the other will be replaced by a car park. Minor renovation and alteration of an adjacent structure (referred to as Fynbos Lodge; greater than 60 years old) will also take place.
If an impact assessment process has also been / will be initiated in terms of other legislation please provide the following information:  Authority / government department (ie: consenting authority) to which information has been /will be submitted for final decision:  Present phase at which the process with that authority stands:	
Provide a <u>full</u> description of the nature and extent of the proposed development or activity including its potential impacts (eg: changes in land use, envisaged timeframes, provision of additional bulk services, excavations, landscaping, total floor area, height of development, etc. etc.): Area 1 <ul style="list-style-type: none"> <li>The existing prefabricated building will be removed.</li> <li>The site will be converted into a small parking area.</li> <li>The proposed parking area is within 32m of the Liesbeek River.</li> <li>Some of the existing garden located directly in front of the prefabricated building will have to be removed to accommodate the parking area. The architects have stated that they want to retain as much of this existing garden section as possible.</li> </ul> Area 2 <ul style="list-style-type: none"> <li>The existing administration building (marked “Kirstenbosch Head Office” on the attached site plans) will be demolished. This building is c. 30 years old.</li> <li>A new administration building will be constructed in its place.</li> </ul>	

- The administration building will be within the existing development footprint and will not encroach on the existing vegetation currently surrounding the existing building. No new bulk services will be required as the site is already serviced.
- The administration building will have an additional storey to accommodate more people into the building.

Fynbos Lodge

- The building titled “lab” on the attached site plan is the Fynbos Lodge
- The current roof will be removed and replaced with something that will have a similar appearance, probably a Nu-Tec product (fibre cement).
- There will be small interior renovations to the building- painting, replacing of counter tops etc.
- No structural changes will occur to the building.

**B. HERITAGE RESOURCES AND IMPACTS THEREUPON**

Section 3 of the National Heritage Resources Act sets out the following categories of heritage resource as forming part of the national estate. Please indicate the known presence of any of these by checking the box alongside and then providing a description of each occurrence, including nature, location, size, type

Failure to provide sufficient detail or to anticipate the likely presence of heritage resources on the site may lead to a request for more detailed specialist information.

(The assistance of relevant heritage professionals is particularly relevant in completing this section.)

Provide a short history of the site and its environs (Include sources where available): On 27 October 1657 land including Kirstenbosch was granted to Leendert Cornelissen. He was to protect the forest and see that the Colony had a secure supply of wood. Van Riebeeck planted the Wild Almond Hedge, part of which survives on the southern edge of the Gardens, as a defensive mechanism against the locals. The name Kirstenbosch appears to have originated around the time that the VOC possessions at the Cape were handed over to British rule. The property changed hands many times during the 1800s and a farm house was built. The land was farmed in the 19<sup>th</sup> century and then purchased by Cecil John Rhodes in 1895. The well-known camphor tree avenue was planted by Rhodes (Rhodes Drive used to run through the avenue) but the farm soon fell into disrepair. On Rhodes' death he bequeathed the farm to the Government who developed the forestry. In 1913 the Government set the estate aside for development of a Botanical Garden. Harold Pearson was instrumental in getting it off the ground but he died in 1916 and is buried in the Garden. Development of the Garden continued over the years. (Source <http://www.sanbi.org/gardens/kirstenbosch/history-kirstenbosch-nbg>)

Please indicate which heritage resources exist on the site and in its environs, describe them and indicate the nature of any impact upon them:

<input checked="" type="checkbox"/>	<p><b>Places, buildings, structures and equipment of cultural significance</b></p> <p>Description of resource: There is a structure of greater than 60 years located immediately adjacent to the prefabricated structure.</p> <p>Description of impact on heritage resource: This older structure will be rennovated/alterd as part of the project but a built environment application will be made at the time.</p>
<input type="checkbox"/>	<p><b>Places to which oral traditions are attached or which are associated with living heritage</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>

<input type="checkbox"/>	<p><b>Historical settlements and townscapes</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input checked="" type="checkbox"/>	<p><b>Landscapes and natural features of cultural significance</b></p> <p>Description of resource: The Kirstenbosch National Botanical Garden is part of the Cape Floral Region World Heritage Site. In addition, many of the main features of the garden (rockeries, paths, pools, etc) were constructed more than 60 years ago making the whole landscape of heritage significance.</p> <p>Description of impact on heritage resource: There will be no impact on the Garden landscape since the work to be carried out is solely within the administrative area of the property which is well screened from the Garden and surrounds by trees.</p>
<input type="checkbox"/>	<p><b>Geological resources of scientific or cultural importance</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input type="checkbox"/>	<p><b>Archaeological resources</b> (Including archaeological sites and material, rock art, battlefields &amp; wrecks):</p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input type="checkbox"/>	<p><b>Palaeontological resources</b> (ie: fossils):</p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input checked="" type="checkbox"/>	<p><b>Graves and burial grounds</b> (eg: ancestral graves, graves of victims of conflict, historical graves &amp; cemeteries):</p> <p>Description of Resource: The grave of Harold Pearson lies on the property but it is far from the proposed interventions. Likewise, a historical graveyard lies adjacent to the small church to the east of Rhodes Drive and will not be impacted in any way.</p> <p>Description of Impact on Heritage Resource: No impacts.</p>
<input type="checkbox"/>	<p><b>Other human remains:</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input type="checkbox"/>	<p><b>Sites of significance relating to the history of slavery in South Africa:</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>
<input type="checkbox"/>	<p><b>Other heritage resources:</b></p> <p>Description of resource:</p> <p>Description of impact on heritage resource:</p>

Describe elements in the environs of the site that could be deemed to be heritage resources: as above

Description of impacts on heritage resources in the environs of the site: as above

Summary of anticipated impacts on heritage resources: The only heritage resource that will be impacted is a structure greater than 60 years of age. A built environment application will be made for the purposes of alterations to that structure.

ILLUSTRATIVE MATERIAL (This form will not be processed unless the following are included):

Attach to this form a minimum A4 sized locality plan showing the boundaries of the area affected by the proposed development, its environs, property boundaries and a scale. The plan must be of a scale and size that is appropriate to creating a clear understanding of the development.

Attach also other relevant graphic material such as maps, site plans, satellite photographs and photographs of the site and the heritage resources on it and in its environs. These are essential to the processing of this notification.

Please provide all graphic material on paper of appropriate size and on CD ROM in JPEG format. It is essential that graphic material be annotated via titles on the photographs, map names and numbers, names of files and/or provision of a numbered list describing what is visible in each image.

### C. RECOMMENDATION

In your opinion do you believe that a heritage impact assessment is required?  Yes  No

Recommendation made by:

Name Jayson Orton

Capacity Heritage Practitioner

**PLEASE NOTE:** No Heritage Impact Assessment should be submitted with this form or conducted until Heritage Western Cape has expressed its opinion on the need for such and the nature thereof.

### D. INFORMATION TO BE PROVIDED AND STUDIES TO BE CONDUCTED AS PART OF THE HERITAGE IMPACT ASSESSMENT (HIA)

If it is recommended that an HIA is required please complete this section of the form.

#### DETAILS OF HERITAGE PRACTITIONERS AND SPECIALISTS INTENDING TO CONDUCT THE HIA:

1.	Name of individual:	Name of Practice:	Area of specialisation:
	Qualifications:		
	Experience:		
	Standing in heritage resource management:		
	E-mail Address:	Telephone:	Cell:
2.	Name of individual:	Name of Practice:	Area of specialisation:
	Qualifications:		
	Experience:		
	Standing in heritage resource management:		
	E-mail Address:	Telephone:	Cell:

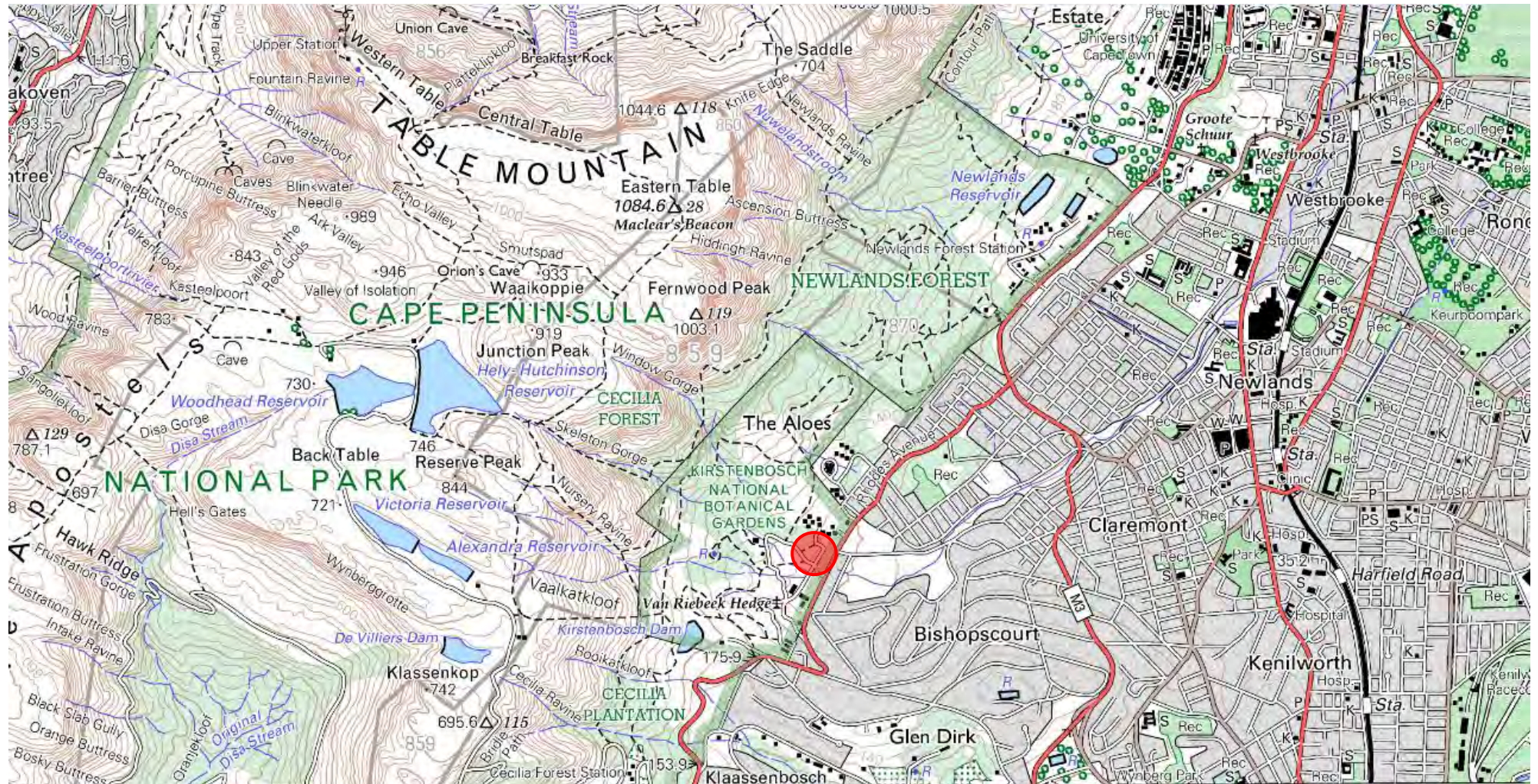
3.	Name of individual:	Name of Practice:	Area of specialisation:
	Qualifications:		
	Experience:		
	Standing in heritage resource management:		
	E-mail Address:	Telephone:	Cell:
4.	Name of individual:	Name of Practice:	Area of specialisation:
	Qualifications:		
	Experience:		
	Standing in heritage resource management:		
	E-mail Address:	Telephone:	Cell:
5.	Name of individual:	Name of Practice:	Area of specialisation:
	Qualifications:		
	Experience:		
	Standing in heritage resource management:		
	E-mail Address:	Telephone:	Cell:
If this submission is made in terms of Section 38(8) of the National Heritage Resources Act indicate below the particulars of the principle environmental consultant on the project.			
Name of individual:			
Name of Practice:			
Area of specialisation:			
E-mail Address:			
Telephone:			
Cell:			
Postal Address:			

**DETAILS OF STUDIES TO BE CONDUCTED IN THE INTENDED HIA**

In addition to the requirements set out in Section 38(3) of the NHRA, indicate envisaged studies:	
<input type="checkbox"/>	Heritage resource-related guidelines and policies.
<input type="checkbox"/>	Local authority planning and other laws and policies.
<input type="checkbox"/>	Details of parties, communities, etc. to be consulted.
<input type="checkbox"/>	Specialist studies, eg: archaeology, palaeontology, architecture, townscape, visual impact, etc. Provide details:
<input type="checkbox"/>	Other. Provide details:
PLEASE NOTE: Any further studies which Heritage Western Cape may resolve should be submitted must be in the form of a single, consolidated report with a single set of recommendations. Specialist studies must be incorporated in full, either as chapters of the report, or as annexures thereto.	

# NID SUPPORTING MATERIAL

## SITE LOCATION

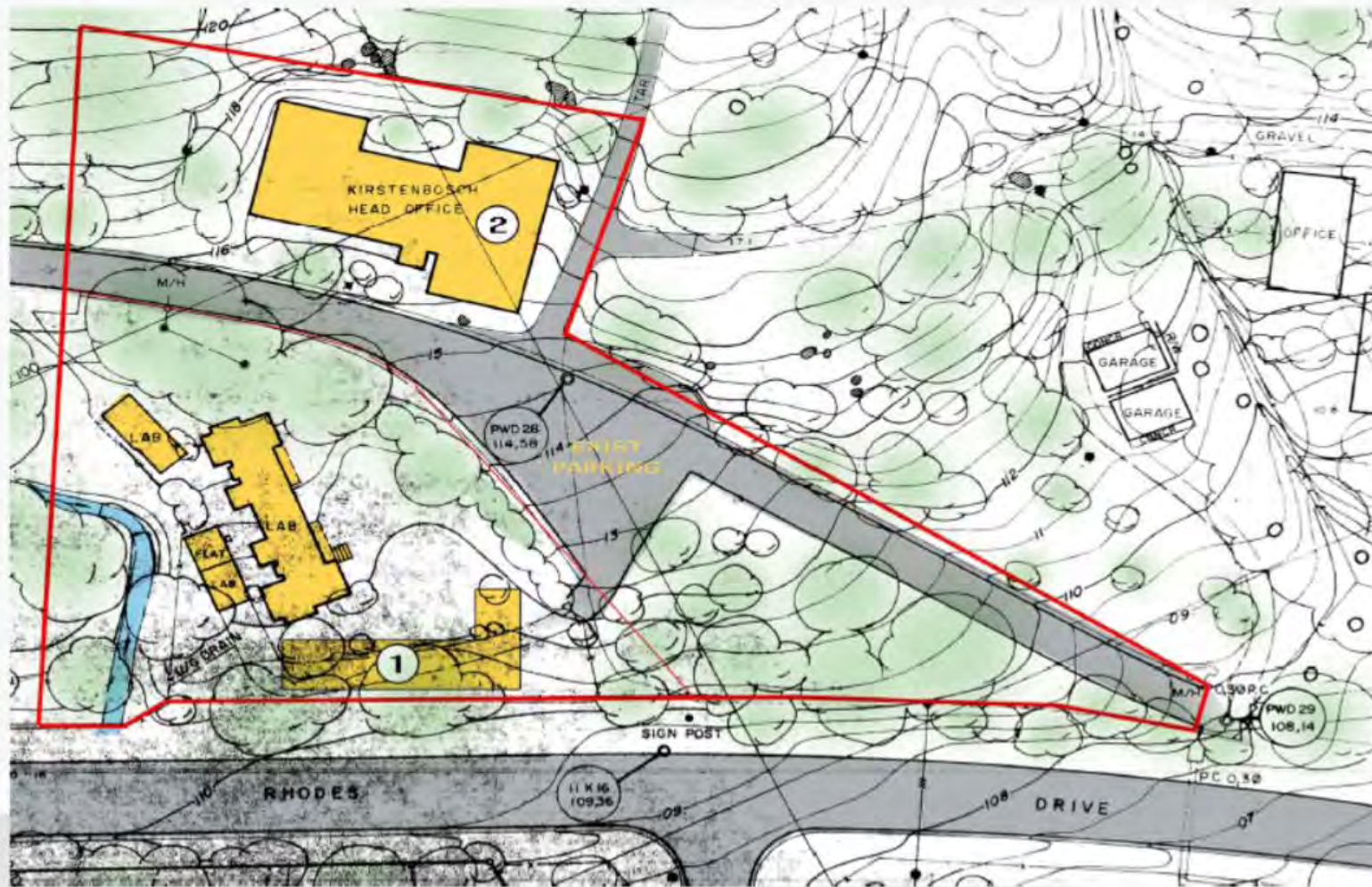


Extract from 3318CD showing the site (red circle).



## SITE PLAN

VMA Architects



Building marked (1) is to be demolished and replaced with a car park. Building marked (2) is to be replaced by a double storey building.

SITE AERIAL VIEW



Rhodes Drive runs from top right to bottom centre and the main entrance to Kirstenbosch off Rhodes Drive is just out of picture to the south.

PHOTOGRAPHS



Existing structure greater than 60 years of age (Fynbos Lodge) to be renovated / altered.



Prefabricated structures to be demolished.



Existing modern landscaping in the centre of the site to the north of Fynbos Lodge.



The southern end of the prefabricated structure and the relationship between the site and Rhodes Drive – Rhodes rive can just be seen through the vegetation and fence on the right hand side of the photograph. The corner of Fynbos Lodge can be seen on the left in the background (with stone rustication) and another modern outbuilding (to be retained) is on the left in the foreground.



Comparative modern (left) and 1944 (right) aerial views showing the site. The Fynbos Lodge is circled and the old alignment of Rhodes Drive is marked in yellow.



iLifa leMveli leNtshona Koloni  
Erfenis Wes-Kaap  
Heritage Western Cape

PAID

2717

HWC Receipt ..... 19 ..... 1.09.2014

*For office use only*

<i>Initial the box if checked</i>				
	1	2	3	4
<b>APPLICANT INFORMATION:</b>				
Contact Person: Jason Dixon				
Contact Number: 083 272 3225				
<b>SITE INFORMATION:</b>				
Site address: Kirstenbosch National Botanical Gardens				
Erf: Remainder of farm 857				
Case no: 1409/706				
Received by: Kuyb				
<b>NOTE:</b>				
• No telephone calls or other queries will be accepted or responded to until 10 working days have elapsed since delivery.				
Application				
<b>Proof of payment</b>	<input checked="" type="checkbox"/>			
<b>Correct reference number</b>	<input checked="" type="checkbox"/>			
<b>Required forms / document submitted</b>	<input checked="" type="checkbox"/>			
<b>Correct amount paid</b>	<input checked="" type="checkbox"/>			
<b>Application complete</b>				
<b>Total amount paid</b>	R 300			

# VISUAL STATEMENT

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Draft Report v1.2

*SANBI New Buildings at the  
Kirstenbosch National Botanical Gardens  
Cape Town*

10 February 2015



Prepared for:  
Sillito Environmental Consulting  
Suite 105, Block B2, Tokai Village Centre,  
Vans Road, Tokai, Cape Town, 7966

Prepared by:  
Megan Anderson Landscape Architect  
Stone Cottage · Palmiet Farm · Elgin  
021 859 4510 · 083 651 6419

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