WCFP Landscape Design Statement

Prepared by OvP Associates

Landscape Architects

141 Hatfield Street, Cape Town 8001

Tel: 021.462.1262

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PURPOSE

The landscape design statement is a component of the report serving to accompany the SDP for the proposed Interpretive Centre (IC) at the West Coast Fossil Park.

1. SUMMARY

The fossil park landscape has been dramatically changed by man, with remnants of less disturbed areas located on the outskirts of the property, thus not forming part of the immediate visual experience. Whilst excellent revegetation work has been accomplished, the site is not in a pristine condition and any change to accommodate future amenities can be considered as an opportunity to improve the landscape through built form, land form and vegetation.

Botanical Assessment Summary

(refer to Nick Helme botanical assessment 12 Oct 2012)

"Lowland Fynbos is under pressure from agriculture, urbanisation and alien plants , and many of the range restricted species are also under severe threat of extinction, as habitat is reduced to extremely small fragments"

The site is part of Saldanha Peninsula bioregion: due to high agricultural potential the loss of natural vegetation is more than 75% with 70 threatened species listed.

The mining activity of the late 20th century changed both the topography and the natural vegetation on the greater part of the site. Wetlands established at the low points of the site as small seasonal pans with secondary wetland vegetation along the drainage line feeding the pan.

The pre-disturbance vegetation type is Saldanha Flats Strandveld. Twelve years of vegetative rehabilitation brought the species diversity of the site to 20-30% of pre-disturbance diversity and might naturally increase to 50%. Quarrying changed the soil structure and chemistry which inhibit the establishment of the more diverse plant species.

*"Alien invasive vegetation management is strongly suggested, as biocontrol has not yet brought all the invasive Acacia on site under control..."*The woody invasives in the park is Acacia Cyclops (Rooikrans) and Acacia saligna (Port Jackson).

No plant species of conservation concern were recorded from within the study area.
Different than normal Fynbos and Renosterveld ecosystem dynamics, fire is not a main ecological driver in Strandveld. The main current plant community determinants in this area are probably soil depth, soil type and soil moisture.
The areas of high ecological value and sensitivity are the wetlands and the eastern portion of the site behind the proposed IC where sand is visibly browner.
The proposed development will have a very minor botanical impact at either local or regional scale

2. LANDSCAPE VISION

It is in the landscape that the essence of the Fossil Park is revealed. The role and vision of the landscaping is therefore to unlock the potential for learning and, in association with the built form, create an identity and sense of place that will ensure the longevity and sustainability of the park.

Education:

There is great educational value in seeing the fossils in their natural setting throughout the fossil bowl. Undisturbed fossils give form to the natural processes and sense of adventure for the visitor. The previous mining operations here, was significant in that it exposed the fossils and can be a means to making visitors aware of the extent of open cast mining and its subsequent effect on the environment.

Identity:

The identity flows from the natural and cultural heritage elements as well as the future role that the park will play. This identity needs to be complimented by all the architectural and landscape elements in their placement and material choices.

The park has been dislodged from its regional continuity by large scale topographical changes, eradication of the indigenous vegetation and blanket introduction of alien vegetation. The reintroduction of indigenous vegetation will in part contribute to reinstating the park's natural identity and use the opportunity to achieve regional conservation targets.

The man-made topography reflects the mining past and should therefore be used to the full advantage, not treating it is sacred and untouchable, but by viewing the overburden as a potential element for creating identity.

Placemaking:

Placemaking not only refers to the making of comfortable and beautiful places, but also to creating strong ordering mechanisms, identity, and legibility.

The randomness of most elements (fossil distribution, overburden, roads) begs the need for legibility through strong structuring elements. The main structuring elements currently on the site is the topography and to a lesser degree the tree lanes and roads. The focal point for the site is the dig site and the fossil bowl.

The existing special places in the fossil bowl needs to be highlighted and incorporated in any system of movement or framed views. Because of the size of the site, it is recommended that in future a series of pathways and smaller landscape interventions be installed that will guide the visitor through the site and provide occasional interest and relief so that the entire fossil bowl will be explored.

The inspiration for developing special places, as in the creation of the identity, lies in both recognising the heritage elements and creating new people-orientated places.

The areas of interest in terms of the site experience give guidance to the architectural interventions. The highlight of the site experience lies in the contact with exposed fossils and the chance of discovering fossil deposits anywhere in the ground. The fact that the area used to be a tropical estuary is a very compelling story that should be pervasive in the narrative of the site. And then, the sheer force that created the fossil bowl, the legacy of the mining activity, is a source of amazement.

3. REVEALING LAYERS OF HISTORY AND HERITAGE

Regional context :
Set within the flat and undulating landscape of the Saldanha Peninsula bioregion, the West Coast Fossil Park today bears little resemblance to its land form and vegetation character. At first the diverse plant cover was replaced by mono-agricultural practices. Mining activity followed, re-forming the landform profile to strong geometric earth mounds up to 40 metres above and valleys 10 to 20 metres below the original plain. Mining roads, structures, remnant agricultural fields, windbreak tree-lines and re-vegetation activities further add to the present appearance of the park.

Taking due recognition of panoramic and local landscape characteristics, the site development process intends to adjust and enhance the land to maximise the visitors interpretive experience.

Agricultural narrative:
Although the entire site has been grazed at some point, the portion of the site most heavily affected by agricultural activity, in particular the planting of wheat, is the area between the mining village and the R45. Agriculture is not only a site indicator but a regional identifier and through bringing the agricultural identity back into the landscape, will tie the park into the regional setting. Extending the present olive grove to a viable orchard will add to the agricultural context.

Mining narrative:
Similarly to agriculture, highlighting the past mining action is to acknowledge our more recent cultural footprints. This significance extends into the post mining era; that of education and restoration.

The mining activities led to the discovery of the fossils. The buildings, landforms and roads reveal something of the industrial processes, but seldom create positive places or opportunities for learning. The railway line is a functional element in the landscape that has potential for future design exploration.

Topography and Overburden
In addition to Anyskop, the overburden and sides of the slimes dam has value where it provides a good vantage point for views, for wind protection, for creating contained and intimate spaces and where it has been rehabilitated and biodiversity has increased.
A significant feature in the landscape is the Great Wall, the vertical face of which contains the type section from the Varswater formation and topped with large Eucalyptus trees. Similarly, the lowest points on the site, the water bodies in the fossil bowl, are also positive places with a high significance in terms of geological exposure and supporting developing diverse ecosystems.

Trees
The introduction of alien trees, Acacia and Eucalyptus species, have had an extremely negative effect on the environment in that they prevented the natural succession and re-vegetation of the site by indigenous species. In all cases (apart from the steep wetland banks at the bird hide) Acacia trees have largely been cleared and should continue to be eradicated as part of the maintenance plan.

Eucalyptus trees were mainly planted for wind shelter, shade and construction timber. In some places Eucalyptus trees form a strong visual element in the landscape. There are three places on the site where their presence has value; at the spear head triangle leading to Green Village, on top of the Great Wall and along the railway line. With these plantings our recommendations will be to add additional trees to compliment the intentional tree lines of the past in the same specie and maintain them according to the maintenance plan so that they do not interfere with revegetation initiatives. Around Green Village the Eucalyptus trees exist as part of a woodlot and should be maintained in that manner. In all other places on the site their distribution and placement are sporadic and without a strong intention. Here the trees should be removed where they continue to be a threat.

4. DESCRIPTION OF LANDSCAPE INTERVENTION

Refer to OvP's plan: WCFP: Landscape Site Development plan No 307-04 of 2013-03-11

a. The existing park entrance position remains, with interventions of soft and hard landscaping. A new gateway and gate house is proposed. The entrance road up to the turn off for the proposed IC to be resurfaced. A lane of evergreen *Ficus nataliensis* on the north side of the road will screen the overhead wires and the view of the sub-station. Low plant re-vegetation on the south side will allow close-up views of the overburden embankment.

b. Past the sub-station the road connection to the existing admin and visitor's centre will be changed to reduce confusion with visitors and in order for the turn to the IC will be dominant and clear.

c. An extension of the current arboretum on the North West side of the IC entrance road is proposed to provide visual interest. The trees used for the extension will be *Ficus nataliensis, Acacia karoo* and *Acacia sieberiana* and other appropriate species still to be identified.

d. The existing olive grove will also be extended southwestwardly in rows as a memory of past agricultural production on the site.

e. Arrival and Parking Plaza
The following are proposed
    - 6-8 bus and taxi drop –off and parking spaces
    - 6-8 staff parking bays
    - +42 car spaces for visitors

    Trees as well as planter beds will be used to soften and integrate the edges of the parking lot into the greater landscape and provide shade and wind protection. The existing two buildings are to be renovated to provide for storage, maintenance needs and staff lockers.

f. **The pedestrian connection to the IC**:
The walkway leads from the two plaza 'arms' surfaced with an exposed aggregate in-situ concrete. The drop-off / pick-up edge will include a wind-protected pedestrian zone furnished with shade structures, seating, and lighting and information signage. This path will be cut into the overburden to create a sense of 'valley' and an opportunity on the embankments for display. Trees line both sides of the walkway as windbreaks and shade. Close to the building complex the walkway splits with one piece ending in a plaza in front of the education centre and the other continuing on the admin building and ticket sales.

The pathway intersect with the IC village 'Street' to form a plaza offering views onto the Dig, Great Wall, and Valley and Wetlands. To the north the street leads to the education hub and pick-up zone for the physically challenged. To the south the streets leads to the ticket office and IC village.

5. Landscape Elements

The landscape elements can play an important role in revealing the site and adding to a unified identity as well as integrating the building into the natural landscape. The use of natural materials is encouraged, fitting with the building finishes and the sense of place of the wider landscape. The chosen material should stand up to the harsh climate and add to the philosophy of creating a sustainable built environment.

a. Paving

- Entrance road and parking area in general:
  Asphalt with possibly a high content of light coloured aggregate to visually soften the 'tar' appearance.

- Arrival plaza and path to the IC:
  Exposed sandstone aggregate combined with limestone pigmentation to form an in-situ concrete surface with appropriate cut-line patterns.

- Parking area:
  - Laterite / calcrete / cement surface with granite edging and markers.

- Circulation links between the IC to The Dig area:
  - The service/disabled path:
    Semi-dressed Langebaan Granite edging and a laterite / calcrete stabilised surface.
  - The upper path: (as service path above)
  - The lower path: To minimize damage to 'undiscovered' fossils, a timber board walk is proposed. Pre-cast concrete cube footings will reduce the extent of excavations normally associated with foundations.

b. Planting

In keeping with principle of sustainability and encouraging the ecosystem biodiversity of the site, the plant choices will be locally indigenous and water-wise. The exception to this will be the use of trees that is not indigenous to the site since large trees do not occur in the Strandvelt vegetation type. Trees are necessary to create natural

shade and wind shelter, vertical visual elements and to lend a human scale to the flat open landscape.
The approach to soft landscaping is to use three types of arrangements

i) constructed landscape around the buildings and parking area with mass plantings of selective species
ii) the constructed landscape for educational purposes
iii) natural and rehabilitated landscape away from buildings and blending into existing landscape.

Trees that can adapt to local conditions, does not strain the water resources and the surrounding vegetation as well as provide shade and structure are recommended. For this purpose *Acacias xanthophloea (Koorsboom) and b. Acacia sieberiana (Paperbark Thorn); c. Ficus nataliensis (Fig) and d. Olea europaea subs Africana* are suitable.

- **General landscaping around the buildings and walkways:**

All landscaping around the building and walkway structures will have a design structure. These areas will also be highly controlled in terms of alien vegetation eradication and management. Minimal planting will be done on the fossil bed floor to minimize interference with the fossils.

- **Recreating a Landscape at the Interpretive Centre:**

The protected space between the IC Village and the overburden hill, lends an opportunity for recreating a sense of the planting that existed on the site during the time the fossils were deposited. The planting 6 million years ago was a subtropical canopy with summer rainfall Fynbos and then grasslands as you move further away from the river (Roberts et al 2011), wetland and estuary vegetation. The retraction of the ocean levels and northern movement of the Berg River course, as well as the decrease and seasonality of the rainfall brought forth an adaptation of the vegetation to a semi-arid winter rainfall Fynbos visible today. This adaptation can be expressed in the planting by use of controlled irrigation in areas where planting species representing a time in history require more water. The visitor will be able to view this vegetative timeline and experience it up close when moving through and alongside the planting.

- **Natural and Wetland areas :**

In contrast to the structured landscape, the larger park re-vegetation will continue to be implemented with high priority to controlled alien eradication and succession management. Minimal and highly controlled planting will be done in the identified fossil bed floor and minimizing interference with the fossils.

The wetlands are considered to be of high ecological sensitivity and therefore the interventions at the wetlands will be minor, focusing on alien control and a few amenities, such as a bird hide, to enhance the visitor's experience of the wetlands.
Water plays a vital role within landscape in creating habitats, visual amenities and irrigation for vegetation establishment. Whilst there are some existing water bodies within the site, the high salt content make them unusable for irrigation and the creation of more pristine wetland habitats.
The seasonal characteristics of water bodies, use of boreholes and potential use of the natural water 'hole' nearest the dig all need to be investigated.