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## NICK HELME BOTANICAL SURVEYS

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Pri.Sci.Nat # 400045/08

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Chand Environmental Consultants

ATT: Marielle Penwarden

Dear Marielle

### **Update to Specialist Botanical Assessment – CTFS**

This report was requested subsequent to my most recent iteration of the botanical assessment of the Cape Town Film Studio development plans, dated 21 June 2016. The Terms of Reference for the current report were to:

- Update my 2016 report with the latest Development Framework (DF) amendment plans, noting that the secondary access road has been realigned to a previous version (the road would no longer be a buffer between the developed area and the sensitive Renosterveld area to be conserved, but that the circle is in the same place) and that some of the dunes in the outdoor studio zone would be levelled, while the remaining area would be incorporated as conservation area); and
- Undertake a baseline/ ground-truthing of the outdoor studio zone and commenting on whether any bulbs or other taxa need search and rescue (and if so to where).

### **Updated plans for Renosterveld area**

The updated plan, as shown in Figure 1, will have the same impact on the Renosterveld conservation area as previously assessed alternatives in this area.

As can be seen from Figure 2 the proposed road and circle in the northwestern sector will impact only on Low or Medium botanical sensitivity, and no populations of plant Species of Conservation Concern are likely to be negatively impacted. The development in this area is thus likely to have a Low negative botanical impact, even without mitigation, and is supported.

The newly proposed road in the east, linking to Mixed Use Area 3 (see Figure 1) will not impact on any significant areas of High sensitivity vegetation, and no significant populations of plant Species of Conservation Concern are likely to be negatively impacted. The road will obviously compromise the somewhat notional ecological corridor between the Renosterveld conservation area and the very high conservation value Renosterveld on Vergenoegd farm to the east of Baden Powell Drive, but the significance of this is likely to be low, as there is already a wide canal and a major road separating the two Renosterveld areas. The development in this area is thus likely to have a Low negative botanical impact, even without mitigation, and is supported.

The proposed Mixed Use 2 and Service Station areas are more problematic, notably in terms of their impact on the seasonal wetland areas (which are of Medium botanical sensitivity). The latest proposal in Figure 1 would result in the loss of about 80% of the seasonal wetland, and this cannot be supported from a botanical or ecological perspective. The botanical significance of the loss of these areas would be Medium to High negative, and the proposed mitigation is a change to the layout, as proposed in Figure 3, and outlined in the following section.

### **Recommendations & Conclusions for Northeastern (Renosterveld) sector**

- The proposed road and traffic circle layout in the northwestern corner of the study area is acceptable from a botanical perspective.
- The proposed road through the eastern side of the study area to Mixed Use Precinct 3 is acceptable from a botanical perspective, and would impact mainly on an area of low botanical sensitivity and would not significantly further compromise the already rather notional ecological corridor to Vergenoegd Farm.
- It is strongly recommended that the Renosterveld conservation area should include all of the mapped High sensitivity area and the bulk (at least 80%) of the seasonal wetland areas (Medium botanical sensitivity). This will require realignment of both the authorised development layout, and the proposed Draft Development Framework.
- Suggested development areas are shown in yellow in Figure 3 and are about 9.1ha in extent. Development in these areas would minimise the ecological impacts, whilst maintaining approximately the same total development area.
- The proposed conservation area is about 14.8ha in extent, with an additional ecological corridor (connecting to the canal and Vergenoegd farm) of about 1.7ha, making a total of about 16.5ha, which is close to the

conservation area totals in both Development Frameworks (15.1ha in existing and 16.1 in new).

- Neither the approved nor the proposed development framework is ideal from a botanical perspective, and neither is strongly preferred. The preferred development layout in this area is shown in Figure 3.
- Assuming that either one of the development frameworks is adopted it is essential that appropriate mitigation be undertaken to rehabilitate the remaining conservation areas. The mitigation should include the rehabilitation outlined in the following bullet, as well as a carefully prepared drainage and stormwater plan to ensure that the Renosterveld conservation areas are not flooded by stormwater and runoff backing up on the upslope sides of the new developments. The stormwater and drainage plan must ensure that the existing soil moisture regime in the conservation area is not be altered by the development.
- Ongoing rehabilitation of the Renosterveld conservation area will be required in order to keep it ecologically valuable and viable. An invasive alien vegetation management plan has been prepared by Grobler & Boucher (2014), which should be referred to. Reintroduction of suitable, locally indigenous plant species is not extensively discussed in the management plan, but reference is made to this idea, which is here supported, provided it is supervised and planned in consultation with an experienced botanist familiar with the study area and relevant vegetation type.

### **Outdoor studio area**

This area was visited on foot on 19 July 2018. The vegetation in this area has been negatively impacted over the last ten years by the fact that it is unfenced, and livestock from the adjacent iThemba informal agricultural area thus intensively grazes and tramples this area. This combined with the long history of dense alien invasive vegetation (mainly *Acacia saligna* and *A. cyclops*) has degraded the habitat on site and has significantly reduced indigenous plant diversity.

Three primary habitats occur within the area – seasonal wetlands, permanent wetlands, and well drained sands. The permanent wetlands are characterised by *Typha capensis* (bulrush), whilst the seasonal wetlands have a number of micro-habitats on sandy clay soils (see Plate 1). These plant communities have suffered in the drought and indeed many of the perennial species in these habitats now

seem to be dead, such as *Sarcocornia natalensis* and *Salicornia meyeriana*. Additional species include *Cotula* sp., *Limonium scabrum* and *Juncus* sp.

The dune areas, on well drained sands, have been heavily impacted by previously dense stands of alien invasive vegetation like rooikans and Port Jackson, but these two woody species have been harvested for firewood, and alien density is thus much lower now than ten years ago. However, very little indigenous vegetation has re-established, due mainly to heavy grazing by roaming livestock, and the few shrubby species include *Searsia leavigata*, *S. lucida*, *Euclea racemosa* and *Pterocelastrus tricuspidatus*, but indigenous perennials like this cover only about 5% of the area. Two species of indigenous bulb are however much more common, and these are *Haemanthus coccineus* (paintbrush; Plate 3) and *Zantedeschia aethiopica* (arum lily) – both of which are toxic to livestock. It is estimated that about 2000 plants of the former are still present on these dunes, and about 1000 plants of the latter.

#### **Recommendations for outdoor studio area**

If the dunes are to be fully or partly flattened it is strongly recommended that all bulbs on site (notably *Haemanthus coccineus* (paintbrush) and *Zantedeschia aethiopica* (arum lily)) should be rescued and translocated prior to earthmoving. However, there is no suitable receiving habitat of this type on site where they will be safe in perpetuity, and thus it is suggested that they be translocated to Driftsands Nature Reserve (managed by CapeNature), which supports similar habitat (Cape Flats Dune Strandveld) that is in need of rehabilitation. This translocation should be undertaken just after the leaves start to shrivel in early summer (probably October), as the plants are going dormant for the dry season, but when they are still visible above ground. Translocation should happen immediately, avoiding the need for lengthy storage in a nursery.

There is effectively no mitigation that can be undertaken for the wetland vegetation, other than removal of all woody alien vegetation on site, which should thus be done. Permanent removal of all livestock from the study area would also have a positive effect on the natural vegetation, and this will presumably happen as soon as the area is fenced off, which will presumably need to happen once it is an outdoor studio area.

Yours sincerely



Nick Helme

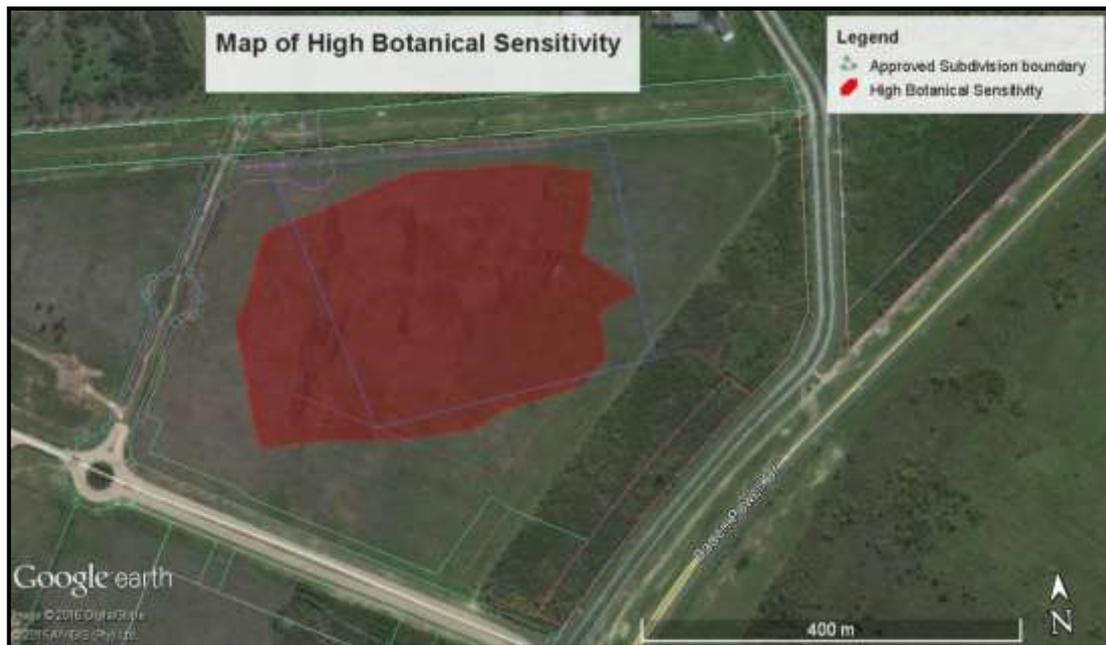


**Plate 1:** View of seasonal wetland (foreground) in the outdoor studio area, with permanent wetland in the background.

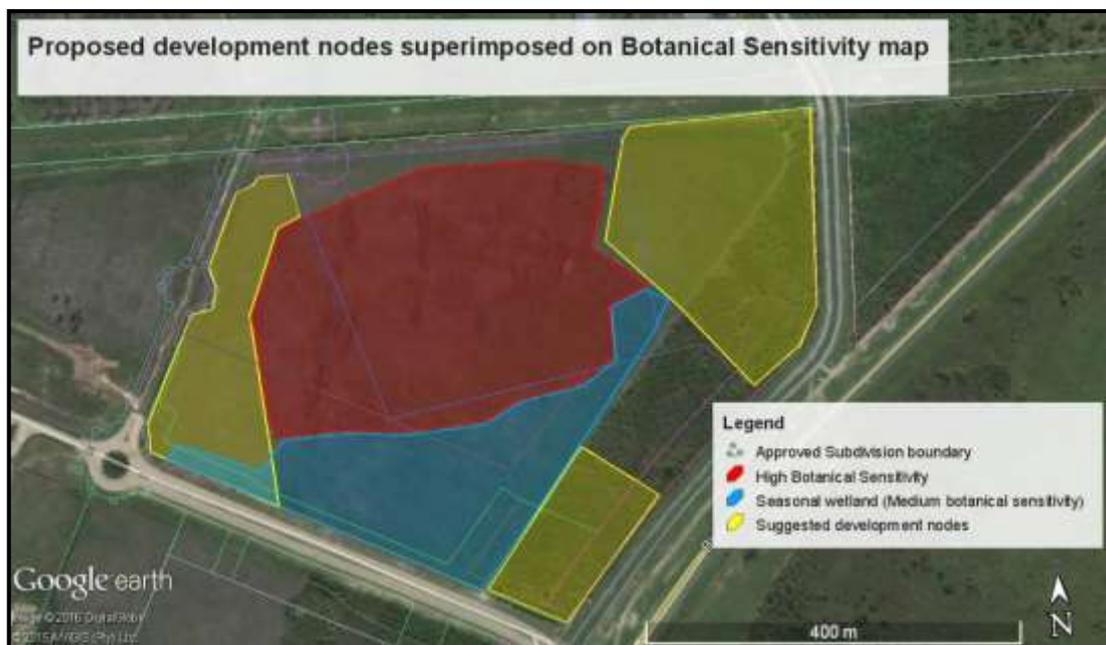


**Plate 2:** View of dune area in the outdoor studio area, showing almost total lack of indigenous shrubs.





**Figure 2:** Map showing the area of High botanical sensitivity in the northeastern part of the CTFS study area. Unshaded areas within the study area (between Eskom servitude, canal and access road circle) are of Low or Medium botanical sensitivity. Thin polygon lines conform to boundaries of areas as shown in Figure 1 (map from Helme 2016).



**Figure 3:** Map of development areas proposed in this study (in yellow) superimposed on the botanical sensitivity map. The total extent of the development areas shown here is 9.1ha. The undeveloped area along the canal is 150m wide, and is an ecological corridor connecting to the important Vergenoegd farm Renosterveld patches east of Baden Powell Drive.