



NICK HELME BOTANICAL SURVEYS

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Pri.Sci.Nat # 400045/08

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Chand Environmental
Plumstead
ATT: Maura Talbot

Dear Maura

Updated Specialist botanical comment on proposed developments and amendment of Draft Development Framework, CT Film Studios, Faure.

This updated report includes changes to my report dated 15 April 2016, as requested. As per your request this letter provides comment on the following proposals:

- 1) The feasibility and botanical impact of an access road cutting through the top left (NW) corner of the recognised Renosterveld conservation area in the NE part of the site (see Figure 1a);
- 2) The feasibility and botanical impact of reclaiming some of the less sensitive area around the very sensitive Renosterveld area for light industrial use, but then adding a strip of land along the canal that was planned as a road reserve as an offset and making it part of the conservation area.
- 3) A new road through the eastern section, as per Figure 1c (this request added April 2016).

I was also asked to identify a preferred development alternative in this area – either the existing framework, or the proposed framework.

Limitations, Assumptions and Methodology

The site was revisited on 24 November 2015, shortly after receiving final approval to go ahead with the work, although the quote was provided on 26 August 2015. The survey was thus undertaken well outside the peak spring flowering season, which was unfortunate. The optimal time to undertake botanical site surveys in the Western Cape is August and September, as this is when most of the bulbs

and annuals flower, and are thus most evident and identifiable. Outside this period the likelihood of missing significant numbers of these species rises dramatically, thus reducing the accuracy and comprehensiveness of any botanical survey. Nevertheless, given my experience in the region I was able to adequately survey the area, and I have a high degree of confidence in the findings.

A copy of the approved Development Framework is shown in Figure 1b. The draft layout as commented on is presented in Figure 1a. The proposed road and circle in the northwestern corner of the Renosterveld area would impact on about 0.35ha (as measured on Google Earth Pro). The extent of the Renosterveld area is shown as being 15.11ha in Figure 1a, and is the same for Figure 1b.

Most of the area between the canal, the northern fence, and the entrance circle was walked. All evident and identifiable plants were noted, and various points were fixed using a handheld gps unit. This information was used to compile a botanical sensitivity map of this area, presented as Figure 2.

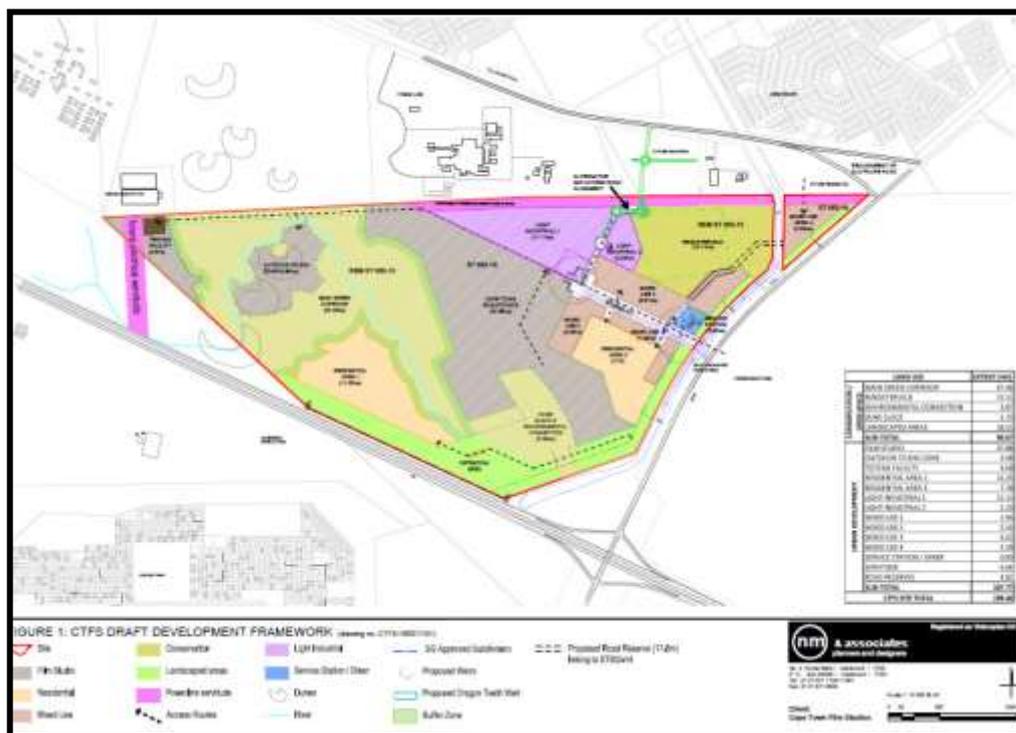


Figure 1a: Copy of latest CTFS Draft Development Framework, with the proposed roads and circle crossing parts of the Renosterveld conservation area shown.

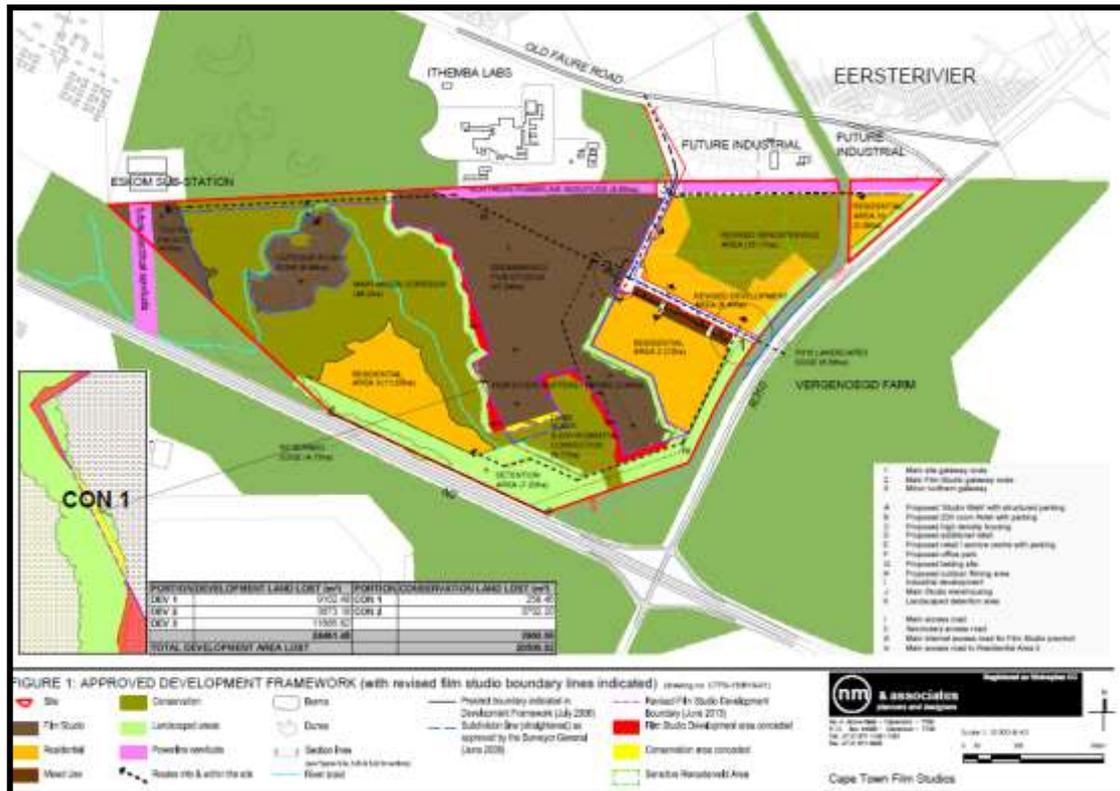


Figure 1b: Copy of the approved Development Framework.

In April 2016 I was asked to comment on the proposed road as shown in Figure 1c. This area was thus not specifically surveyed by me in November 2015, although I did walk in that general area as well. The term "study area" in this report does not refer to this road area, but rather to the NW part of the Renosterveld conservation area.

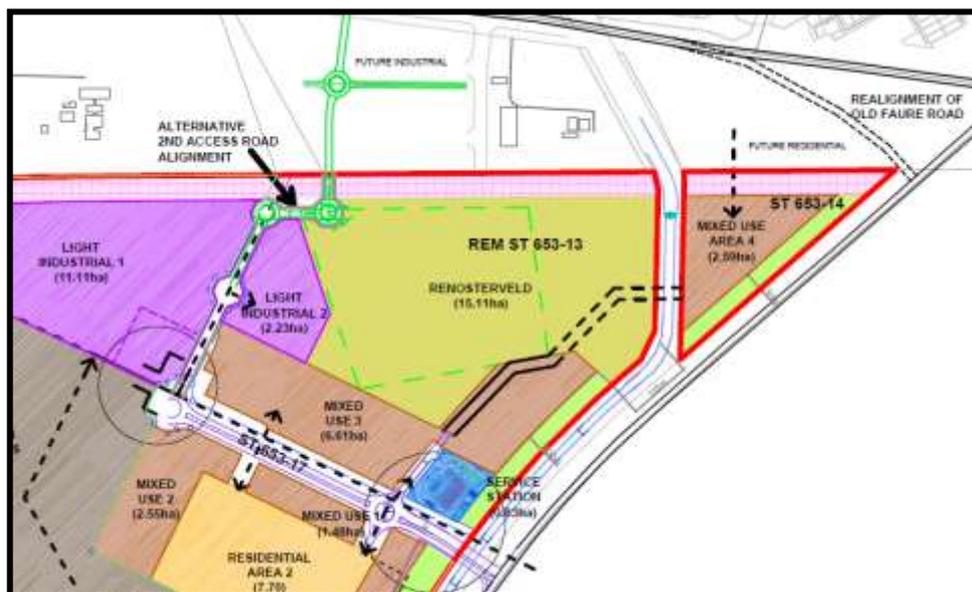


Figure 1c: Map detail showing proposed road (dashed black line) through the eastern Renosterveld area, across the canal, connecting to Mixed Use Area 4.

Overview of the vegetation

The underlying vegetation type in the study area is Swartland Shale Renosterveld, which is classified as Critically Endangered on a national basis (DEA 2011). Most of the vegetation in the study area is heavily degraded, and the total indigenous species diversity is significantly lower than would be expected in an undisturbed example of this habitat. The primary source of habitat degradation has been a long history of alien plant invasion, possibly following on from extensive agricultural disturbance more than 25 years ago. Most of the woody alien invasive plants have been removed over the last year, although there is evidence of significant regrowth in places, both from seedlings and resprouts (see Plate 1). Indigenous plant cover is generally less than 20%, with most of the current cover made up by annual alien grasses. If properly managed over time the indigenous plant cover can be expected to increase, and this could be helped by implementation of a well designed rehabilitation program, including selective reintroduction of appropriate locally indigenous Renosterveld species.



Plate 1: View, looking east, of the central section of the Renosterveld conservation area.

Prominent indigenous species in the conservation area include *Restio vimineus*, *Restio rigoratus*, *Babiana angustifolia*, *Muraltia macropetala*, *Micranthus junceus*, *Tribolium uniolae*, *Cyanella hyacinthoides*, *Erepsia anceps*, *Erepsia bracteata*, *Roepera sessilifolia*, *Restio duthieae*, *Relhania fruticosa*, *Asparagus capensis*, *Aspalathus spinescens*, *Ficinia indica*, *Gnidia laxa*, *Orphium frutescens*, *Elegia filacea*, *Berkheya armata*, *Elytropappus rhinocerotis*, *Stoebe plumosa*, *Disa bracteata*, and *Cynodon dactylon*. Prominent indigenous species in the wetter areas include *Juncus acutus*, *Eleocharis limosa*, *Centella villosa*, *Falkia repens* and *Grammatotheca bergiana*.



Plate 2: View of the area likely to be impacted by the proposed road through the top corner (NW) of the Renosterveld area, looking northwest.

At least five **plant Species of Conservation Concern** were noted in the area, and there is a high likelihood that others may occur, or be present (but were not recorded due to the timing of the site visit).

Restio rigoratus is Red Listed as Endangered (Helme et al 2014), and is fairly common in the study area. The species is restricted to seasonally wet clay soils in the southwestern regions. The site population is regarded as regionally significant.



Plate 3: A flowering female plant of the Endangered *Restio rigoratus*.

Babiana angustifolia is Red Listed as Near Threatened (Raimondo & Helme 2006). The species is common on site, and constitutes a regionally significant population, which is likely to grow.



Plate 4: The Near Threatened bulb *Babiana angustifolia* in flower in spring.

Muraltia macropetala is Red Listed as Vulnerable (Helme & Raimondo 2007). The species is not common on site, and the population is of minor regional significance.



Plate 5: The Vulnerable shrub *Muraltia macropetala* in flower.

Restio duthieae is Red Listed as Vulnerable (Raimondo & Turner 2007). The species is fairly common on site, and constitutes a moderately significant population, but appears to be declining on site due to the sudden removal of its shade (in the form of alien *Acacia*), and the consequently hotter, more exposed habitat.



Plate 6: A flowering male plant of the Vulnerable *Restio duthieae*.

Relhania fruticosa is Red Listed as Vulnerable (Helme & von Staden 2014). The species is fairly common on site, and constitutes a moderately significant population, which is likely to grow now that most aliens have been removed.



Plate 7: *Relhania fruticosa* in flower.

At least 80% of the study area subpopulations of the five plant Species of Conservation Concern occur within the area mapped as being of High botanical sensitivity.

Botanical Sensitivity

Figure 2 shows the botanical sensitivity of the study area. It should be noted that it is very often difficult putting lines of this nature on a map, as it invariably involves an element of subjectivity and interpretation, and in some places the line may be regarded as more accurate than in other areas, due, for example, to the fact the botanical markers used to inform sensitivity (*e.g.* rare species) are more evident in some places than in others.

At least 80% of the study area subpopulations of the five plant Species of Conservation Concern occur within the area mapped as being of High botanical sensitivity.

The unshaded areas in Figure 2 are of Low botanical sensitivity, and typically have lower plant diversity, and few plant Species of Conservation Concern. It should also be noted that much of the southern part of the study area is seasonal wetland vegetation and is of Medium – High botanical sensitivity (see Figure 2) and should thus have an High ecological sensitivity value, even though its botanical component is not worthy of being rated High sensitivity.

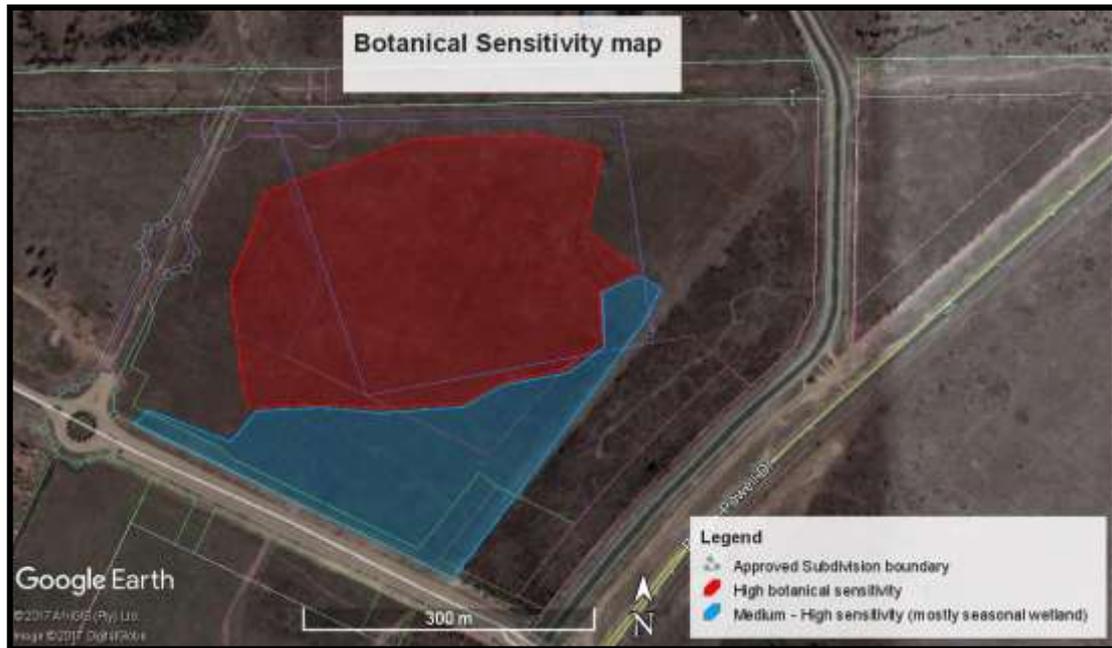


Figure 2: Botanical sensitivity map for this area. Unshaded areas within the study area (between Eskom servitude, canal and access road circle) are of Low botanical sensitivity. Thin polygon lines conform to boundaries of areas as shown in Figure 1a.

Assessment of proposed layout

As can be seen from Figure 2 the proposed road and circle in the northwestern sector will impact only on areas of Low 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 4 (see Figure 1c) 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.

Both layouts will impact negatively on the seasonal wetland areas which are of Medium – High botanical sensitivity. The latest proposal in Figure 1a would result in the loss of about 80% of the seasonal wetland vegetation (Medium – High

sensitivity) shown in Figure 2, and this is not ideal from an ecological perspective. The botanical significance of the loss of these areas would be Medium to High negative, and the proposed mitigation includes reintroduction of selected, appropriate plant Species of Conservation Concern, as outlined in the following section.

The light industrial area in both layouts will result in loss of a portion of the High sensitivity vegetation (shown in Figure 2), and this will be slightly higher (approximately 25% greater) for the proposed draft development framework when compared with the approved development framework. The botanical impact in the proposed framework will thus be Medium negative in this area versus Low – Medium negative for the approved framework.

Recommendations & Conclusions

- The proposed road and traffic circle 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 4 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 - High botanical sensitivity), but it is evident that the latter is not feasible from a planning perspective
- Neither the approved nor the proposed development framework is ideal from a botanical perspective, and neither is strongly preferred from a botanical perspective.
- 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 bullets, 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 (see below), provided it is supervised and planned in consultation with an experienced botanist familiar with the study area and relevant vegetation type.

- Within one year of project approval the botanist should be contracted to supervise and undertake the reintroduction of selected, locally indigenous plant Species of Conservation Concern, including but not limited to *Lachenalia corymbosa*, *Lachenalia arbutnotiae*, *Arctotheca forbesiana*, *Pauridia alba*, *Leucadendron lanigerum var lanigerum*, *Ruchia geminiflora*, *Cliffortia hirta*, *Leucadendron levisanus*, *Leucadendron linifolium*, *Echiostachys incanus*, *Elegia verreauxii*, *marasmodes polycephala*, *Isoetes capensis* and *Diosma dichotoma*. The reintroduction of the selected specimens should be completed within two years of any project approval.
- All costs of the required site rehabilitation must be borne by the applicant.

Yours sincerely



Nick Helme

REFERENCES

DEA. 2011. Threatened Terrestrial Ecosystems in South Africa. *Government Gazette* Vol. 1002: No. 34809. National Printer, Pretoria.

Grobler, D. and C. Boucher. 2014. Rehabilitation plan for the removal of invasive alien vegetation in the Swartland Renosterveld on the property of Cape Town Film Studios. Unpublished report for CTFS. Blue Science, Stellenbosch.

Helme, N.A. & Raimondo, D. 2007. *Muraltia macropetala* Harv. National Assessment: Red List of South African Plants version 2015.1. Accessed on 2015/11/25

Helme, N.A. & von Staden, L. 2013. *Relhania fruticosa* (L.) K.Bremer. National Assessment: Red List of South African Plants version 2015.1. Accessed on 2015/11/25

Helme, N.A., von Staden, L. & Linder, H.P. 2014. *Restio rigoratus* (Mast.) H.P.Linder & C.R.Hardy. National Assessment: Red List of South African Plants version 2015.1. Accessed on 2015/11/25

Raimondo, D. & Helme, N.A. 2006. *Babiana angustifolia* Sweet. National Assessment: Red List of South African Plants version 2015.1. Accessed on 2015/11/25

Raimondo, D. & Turner, R.C. 2007. *Restio duthieae* Pillans. National Assessment: Red List of South African Plants version 2015.1. Accessed on 2015/11/25