INPUT FOR SCOPING ENVIROMENTAL IMPACT ASSESSMENT (Heritage)

PROPOSED FIRGROVE TO MITCHELLS PLAIN 400KV DOUBLE CIRCUIT TRANSMISSION LINE
PROPOSED PHILLIP1 TO MITCHELLS PLAIN 400KV SINGLE CIRCUIT TRANSMISSION LINE

Prepared as part of an EIA process for:

BKS Pty Ltd

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Expertise and Declaration of Independence

This report was prepared by Tim Hart of ACO (the Archaeology Contracts Office of the University of Cape Town), who has a BA (Hons) (Archaeology) UCT and a MA (Archaeology) UCT.

Tim has considerable experience in undertaking Heritage Impact Assessments (including archaeology). Tim has worked in the field of heritage since 1987 and has completed along with his colleagues at ACO more than 1 000 heritage studies.

This specialist report was compiled on behalf of BKS (Pty) Ltd for their use in preparing Environmental Impact Assessments for the proposed projects. We do hereby declare that we are financially and otherwise independent of the applicant and BKS (Pty) Ltd.

Tim Hart

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1 Introduction

The Archaeology Contracts Office was appointed by BKS Pty Ltd to provide input on heritage impacts for environmental impact assessments (scoping level) for the proposed construction of 400 kV transmission lines and substations between:

- Mitchells Plain - Firgrove substations (400 kV double circuit)
- Mitchells Plain – Phillipi substations (400 KV single circuit)

The landscape of the area is the Cape Flats with some involvement of the edge of the Stellenbosch – Somerset West winelands.

1.1 Methodological issues

The assessment of transmission lines in terms of heritage is methodologically unlike other impact assessments that involve assessing physical landscape disturbance. Since typically transmission lines evoke the greatest change to a landscape above the ground surface, the emphasis is to assess impacts to heritage that is visually sensitive. By this we mean places or structures that are publicly celebrated as heritage or have the potential to be publicly celebrated as such. Historic farms, iconic landscapes and views, places of conflict or celebration are therefore important.

The following guiding principles are used;

In open landscape during daylight hours transmission lines (400 kV) on self-supporting towers are visible (but not necessarily intrusive) from a distance of up to 5 km.

CNdV and DEAP (2006) in their development of guidelines for the establishment of wind energy facilities in the Western Cape have suggested that a buffer zone of 1 km be established around significant heritage sites to minimize the change to “sense of place” (this is sometimes difficult to achieve in parts of the Western Cape such as the winelands where celebrated heritage places are common on the landscape). The point at which a transmission line may be perceived as intrusive or offensive, is a subjective judgment, however in our experience lines within 1 km of a reference point are noticeable but not necessarily intrusive. After 450 m the lines become increasingly intrusive and become visually dominating after 100 m (depending on topography).

The presence of pre-existing transmission lines in an area serves as a mitigatory factor (rather than a cumulative negative impact) in terms of establishing new transmission lines in the same

area. In other words electrical infrastructure clutter is best confined to existing areas or corridors of vertical visual disturbance, rather than introducing new vertical visual disturbance to undisturbed landscape.

While archaeological and palaeontological sites share the potential to be publicly celebrated heritage places, they are less visible than structures in a landscape and are therefore less celebrated as tangible heritage with visual sensitivity. Since the impact on the land surface caused by transmission lines is very small, and reasonably adjustable at the level of final route selection, this study has focused on those aspects of heritage that are less easy to negotiate in terms of the proposed activity, namely heritage sites that are visually sensitive.

The direct impact on archaeological and palaeontological sites cannot be addressed at the EIA phase as the points of landscape disturbance are not known at this time. Direct assessment of these impacts can only be determined at the line design and walk-down phase of the proposed activity. Mitigation can normally be achieved by micro-adjustment of tower positions and exclusion of sensitive areas.

The information contained below is based on a two day site visit with the project team, and compilation of information available on the areas involved, which is fortunately comprehensive.

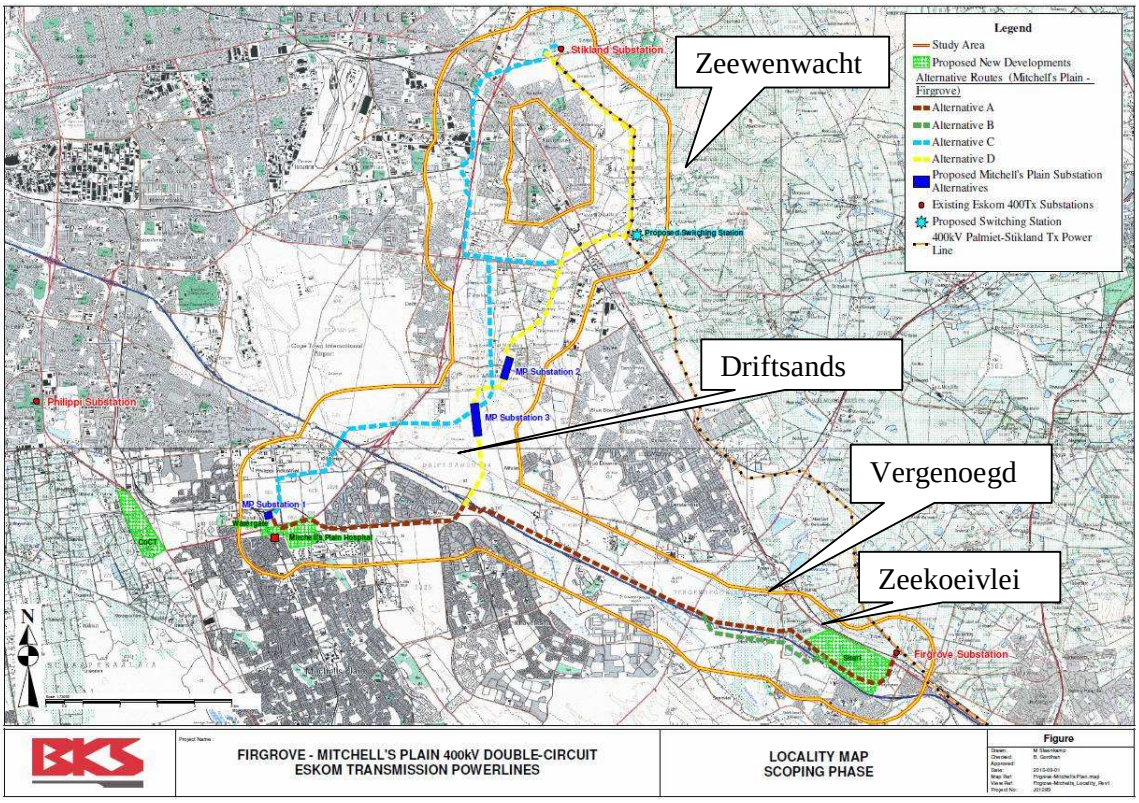
1.2 Possible impacts of the activity

The transmission lines will consist of overhead cables suspended from towers placed 400-500 m apart (or as needed). Each steel tower will need to be mounted on concrete footings set into the ground surface. Hence each point of land surface disturbance is confined to the few square meters of the towers bases. The actual servitude will require a service road (normally an unpaved track) while the corridor will have to be cleared of tree cover and structures. During construction the landscape will be subject to a period of temporary disturbance when construction equipment is brought onto site for building of the towers and lifting of the cables.

Heritage sites can be negatively affected through disturbance of the land surface, destruction of significant structures and places as well as any action that will alter the feel and appearance of an historic place or building. Hence, transmission lines are likely to result in moderate impacts to the land surface during the construction phase but permanent changes in terms of visual impacts and changes to the feel of a landscape.

2 Firgrove to Mitchells Plain

The study area (figure 1) is mainly related to the existing electrical and transport corridor formed by the N1. Four alternatives have been identified. (A-D).


Zeewenwacht
Driftsands
Vergenoegd
Zeekoeivlei
Stikland Substation
Philippi Substation
MP Substation 1
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LOCALITY MAP
SCOPING PHASE
Figure

Figure 1.

2.1 Heritage indicators

2.2 Drift Sands Nature Reserve

Alternatives A, C and D passes close and within the Driftsands Nature Reserve along with substations 2 and 3. Comment of the background of the area is offered as a backdrop to establishing possible heritage impacts.

Numerous historic records attest to the bleakness of the Cape Flats – miles of undulating sandy dunes interspersed with wetlands. The physical characteristics of this area made the Cape Peninsula an isolated enclave separated from the hinterland of the country by a landscape that was very difficult to cross on foot, horseback or by wagon. Numerous archaeological and cultural heritage impact assessments have now been completed for development and sand mining operations on the Cape Flats. The findings of these studies indicate that even in pre-colonial times the area was sparsely inhabited.

During the 17th and 18th centuries the Cape Flats was largely avoided by the colonists. Until the early 20th century what is now known as Voortrekker Road served as the historic route by which one could cross the Cape Flats as it followed a shallow spine of high hard ground between Cape Town and Belville.

During the 19th century most of the arable agricultural land that fringed the peninsula was cultivated and becoming increasingly urbanised. Due to the ever increasing demand for agricultural land, areas of the Cape Flats were used for grazing which further de-stabilised the dune systems. By 1870 the colonial government had loaned or sold portions of the Cape Flats for farming purposes. However, in every instance the land reverted back to the crown as successions of would-be farmers failed to achieve a viable result (Bloomer 1959). John X Merriman, the then minister of Crown Land, believed that the Cape Flats could be stabilised by introducing vegetation that could be used for growing windbreaks, and various Australian species were introduced with great effect. In 1877 a number of families of poor German immigrants were deposited on the Cape Flats equipped with tents, two weeks rations and instructed to start farming. Initially they endured severe hardship but by 1883 (Cape of Good Hope General Directory) many of these families had enjoyed some measure of success by creating fields between Port Jackson and willow windbreaks. Descendents of these German settlers continue to farm in the Phillippi vegetable growing areas of the Cape Flats to this day.

The historic record attests to the difficulty of managing land on the Cape Flats. In the late 19th century the government declared certain areas “forest reserves”. The motivation for these declarations was to exclude livestock that were overgrazing dune vegetation exacerbating sand

mobility that threatened the newly formed farming areas (Cape Archives 1/468). By the beginning of the 20th century agriculture had become established around the fringes of the Cape Flats, however, the bulk of the area was largely undeveloped. Stabilising of the Cape Flats was a local issue for many years to the extent that in the late 19th century a series of temporary railways were built out onto the flats towards what is now the Airport Industria area. The cities domestic waste was transported by train and dumped in the dune slacks (or inter-dune area) as a means of stabilising the shifting sands (Lastovica 1974)

The earliest accurate map depicting the Cape Flats is an 1890 map of the South Western Districts. Despite the fact that this map is highly detailed, the Driftsands nature reserve area is indicated as being "drift sands" (see Appendix A for historic maps). The Kuils River appears to have followed an irregular course, however, this is to be expected in a landscape characterised by seasonal flooding. In 1941 the Driftsands area was bounded by the Bellville Forest Reserve to the east and the Eerste River Forest Reserve to the West and the Strandfontein Forest Reserve to the south (1941 Chief Director Surveys and Mapping). The Kuils River flowed through the area in a course again different to that of today entering a large inland delta known as the "Buffelsvlei" to the south. According to the first title deed diagrams of the area (S.G. No 205/1948) the Kuils River never exited to the sea at this time but sank away into the sands of the Cape Flats, perhaps breaking through to the Eerste River in times of flood. By 1958-1959 (1959 Chief Director Surveys and Mapping) Driftsands had hardly changed, however, the Buffelsvlei to the south was beginning to be transformed with the establishment of the Eerste River Aerodrome and a work colony. By 1979 the beginnings of the Mfuleni Township had been established, however, the Driftsands area was relatively unchanged. Aerial photographs taken in 1988 show that it was at this time that the first major transformation took place within what is now the reserve itself – a large sand mine had been opened in the central area and the Medical Research Facility was in place. In the ensuing years the retention dam was built and the sand mine has reverted to a small lake and wetland inhabited by birds and amphibians. The massive transformations that saw informal settlements encroach on Driftsands occurred after 1994, while the Buffelsvlei delta has been impacted by the development of Khayalitsha. The Kuils River has become permanent tributary of the Eerste River. The environmental history of the site points to a dynamic landscape of dunes and wetlands, the Kuils River meandering through following a course that best suited the prevailing volume of water according to seasons and the movements of mobile dunes.

Apart from the 20th century dam, the Medical Research Facility and deductions for housing purposes (Namely Sikhumbule), the Driftsands Nature Reserve has never been subject to any formal development nor been owned by any private person or organisation. The history of deeds transfer indicates that it was initially owned by the Union of South Africa (first deed 1942) and the "Division of the Cape". In recent years portions have been subtracted for the use of the hospital facility (1972) while the whole remaining portion was transferred to the Municipality of Cape Town in 1985 (Deeds Transfers SG Folio 544/1-5). It is currently owned by the Provincial Government.

The dense sub-urban development that characterises “The Flats” today largely took place after 1960, when as a result of South Africa’s apartheid policies whereby persons of colour were forcibly re-settled in a series of new townships. A massive influx of people to urban areas after 1994 resulted in the rise of informal settlements to the extent that today there is very little left of the original Cape Flats landscape. Driftsands Nature Reserve is the last enclave, which although transformed in places, imparts a sense of the ancient dune landscape.

Indications are that the Driftsands Nature Reserve was never formally settled (apart from Sikhumbule). – its existence is an accident of history in that it was a piece of land that no-body wanted or valued. In terms of current values, its significance as a natural heritage place is exceptional.

Likely impacts

Impacts to physical heritage material and structures at Driftsands is unlikely as surveys of the area have revealed very little. The essence of the impact that could result is visual in character that the encroachment of electrical infrastructure is an erosion of potential sense of wilderness (if this can ever be re-established). It must be considered that although the reserve is run-down and scruffy, partially invaded by informal settlements. It is the subject of a study by the City of Cape Town to upgrade it and further its conservation as a unique remnant.

2.2.1 Vergenoegd Wine Estate

This farm was granted in 1772, and is considered to be an important heritage site of provincial significance (Fransen 2006). It consists of a yard and complex of vernacular buildings of high architectural importance on the edge of the winelands. Recently restored it is a celebrated heritage site and a popular wine route stop-off point.

Likely Impacts
Alternative A runs about 700 m from the historic precinct which means that the lines will be visible (landscape is flat) and possibly moderately intrusive, especially from the entry point of the estate. Alternative B lies on the south side of the N2 and will not be visible. It is therefore preferred.

2.2.2 Zeekoeivlei historic site

Originally known as Vogelsang, the land was granted in 1702 to Sarah Tas, the sister of Adam Tas (the famous *freeburgher* who was instrumental in bringing the corrupt governor Willem Adriaan Van der Stel, to justice). At the time Sara Tas was unmarried – a fact which has caused some speculation as it was very unusual for an unmarried woman to be granted land. The farm was owned by for many years by persons who were the elite of the 18th century

colony. In 1720 the land was owned by Johannes Swellengrebel (father of Governor Hendrik Swellengrebel) who also owned Zandvliet in Macassar. Later on the farm was owned by Hendrik Cloete who later sold it and several other farms in the district before taking up ownership of Groot Constantia on the Peninsula. By 1800 Vogelsang had taken on the name of the Vlei on the property – Zeekoeivlei, the name which it has retained to this day. In 1818 the farm once again was owned by the Cloete family when Pieter Lourens Cloete (fith son) acquired the farm. Sometime later in the 19th century the farm came into the possession of Mr C Allderman who's descendants owned the property until the present day.

It is highly likely that the land was initially used for cattle farming, how ever we can surmise that Hendrik Cloete may well have started vine cultivation on the land as this was a particular interest of his. Vine cultivation was practiced by the Allderman family until 1985, after which they reverted to dairy farming.

The main homestead (Zeekoeivlei) and associated outbuildings form a significant complex of historic structures, which together with the yard and garden and access routes form a highly conservation worthy cultural environment.

The approach to this complex is via a causeway through the surrounding wetlands. The homestead which has its own separate gateway is hidden behind tress and a well established hedge. The access road continues around the rear of the outbuildings into the lands. The main homestead and outbuildings from a tightly associated cluster of structures contained within beautifully maintained surroundings, wetlands and dams.

The homestead is a large house laid out in a typical "T" shape characteristic of vernacular dwellings of the 18th – early 19th century. It has a thatched roof with a full length – width *solder,* and half hipped (*wolfneus)* end-gables, but no front gable. There is a front *stoep.* The joinery (fenestration, internal shutters, doors) is Georgian and early Victorian (early-mid 19th century) and generally in very good condition. The internal layout of the building is atypical of what would be expected in "T" shaped houses in that extensive use has been made of corridors throughout (a British borrowing).allowing separate access to individual rooms. The front portion of the "T" appears to have had a more typical symmetrical layout with rooms on either side of the front entrance way. The rooms and corridors are lofty and spacious, the original imported pine (probably North European) ceiling boards and grooved beams exist throughout.

Two later Victorian additions were made to the building while 20th century alterations have been restricted to moving some internals walls and doorways. A garage or *waenhuis* built from stone attached to the end of the "T" is probably a pre-Victorian feature.

The building is well cared for, and surrounded by a beautifully maintained and tranquil garden set among wetlands, ponds and established trees and hedges.

The homestead has not been logged in the SAHRA National database, which means that it is unlikely to have been formally described or published in any of the key volumes on architectural heritage. Fransen and Cooke mention the Zeekoeivlei briefly in their book mentioning the combination of early Victorian and vernacular elements. Mary Cooke is of the opinion that the homestead was built in 1849 – a date consistent with the style of joinery and finishes abundant in the house today.[1] The "T" shaped layout of the building is either a borrowing from earlier vernacular floor plan styles, or indicates that the house may have been built substantially earlier but was extensively rebuilt in the early-mid 19th century.

Significance

The homestead is a really interesting and comparatively rare example of a transitional style of architecture that reflects both vernacular architectural values and the influence of British architectural styles that were increasingly adopted by residents of the Cape after the British take-over in 1806. The house incorporates in-tact vernacular, Georgian and Victorian elements that reflect its development over time. These factors combined with the fact that the building is in such good condition make it highly conservation-worthy.

Plate 1 Main Homestead.

Likely impacts:

Both Alternatives (A and B) will pass 250 m east of the buildings as they enter in towards the Firgrove substation. A visual impact is expected. No alignment options exist here.

2.3 Zeewenwacht wine estate

Alternative D passes along the urban edge of the Cape Winelands in the area of Zewenwacht Wine Estate, Zewenwacht is famous for its historic homestead, its gardens and views towards Table Mountain. Its is a declared heritage site and a part of the Cape Winelands Cultural Landscape.

Likely Impacts:

A cautionary is issued with respect to alternative D which may impact the aesthetics of this important heritage site. (Note that aesthetics as an element of culture, are protected under NHRA) Positioning of the transmission lines outside the urban edge in this area will result in negative impacts to the landscape aesthetics. If the existing power line corridor (which is just within the existing urban edge) can be used, this would be more satisfactory. Likewise, the construction of the substation depending on how its is screened is lik

[1] Mrs Joan Allderman, Pers. Comm.

3 Phillipi – Mitchells Plain

The study area (Figure 2) does not contain many identified heritage sites as the proposed corridor passes through a number of recent industrial and residential areas. . Of some significance is the Phillipi farmlands cultural landscape – an area with historic routes that has the appearance of gradually loosing its traditional farming origins as the surrounding suburbia encroaches. Small industries, dwellings and sheds abound. The area has a neglected quality but is actually very important in terms of the production of common vegetables.

Historically the area was a mosaic of windswept dunes and wetlands and considered marginal for any form of human habitation. In the 1860's, a group of German settlers brought to the country by John X Merriman were literally compelled to commence agriculture in the area. With the assistance of imported plant species (Willow and Port Jackson), the dunes were stabilsed and the small settlement of Philippi was established (Blumer 1959), Hart and Halkett, (1997). The tradition of vegetable farming by the tenacious German settlers continued through until the present day.

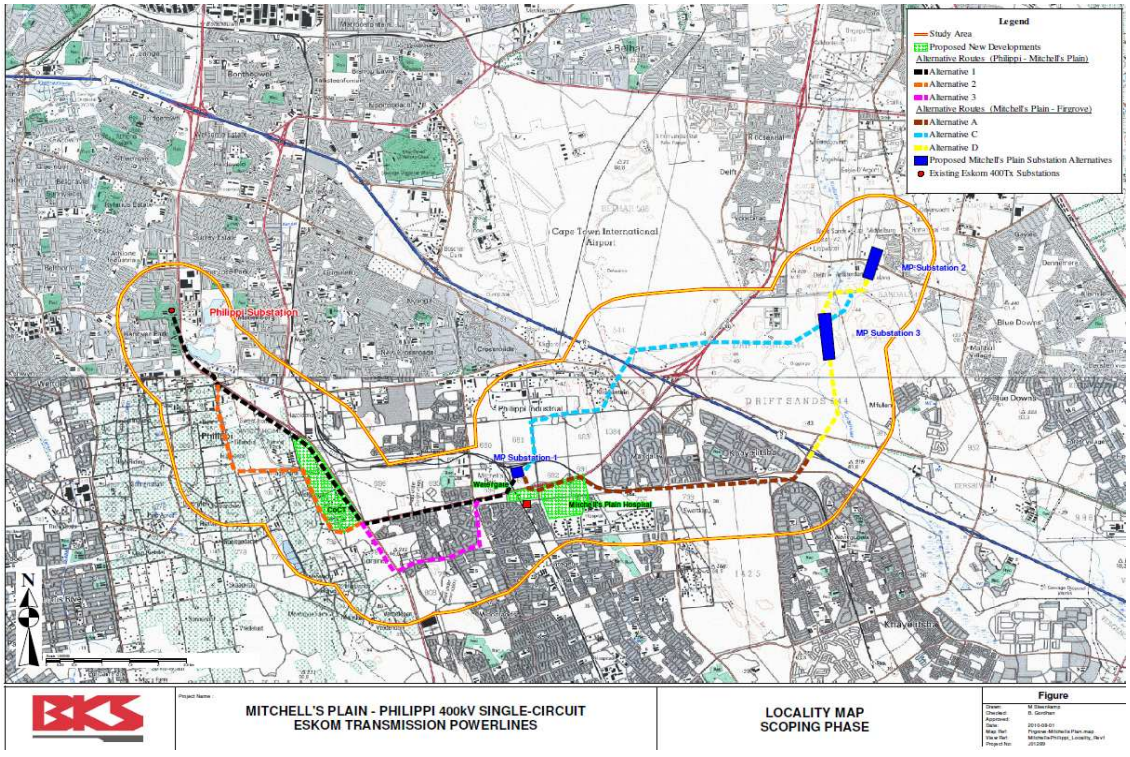

Figure 2

Likely Impacts:

Phillipi: Apart from Drftsands Nature Reserve area (discussed previously), none of the Alernatives are likely to have a significant visual impact on the remnant cultural landscape due to the fact that there is already a high degree of vertical disturbance throughout the area. Alternative 1 is situated adjacent to the road and skirts the edge of this agricultural landscape therefore it is preferred over the other Alternatives.

4 Summary of findings

The proposed Firgrove -Mitchells Plain line has the potential to impact four heritage sites depending on options utilised – Zeekoeivlei historic farm, Vergenoegd Wine Estate and Driftsands Nature Reserve and the landscape of Zeewenwacht Wine Estate. The nature of the likely impact is changes to the visual quality of the places.

Selection of Alternative B will largely eliminate impacts to Driftsands and Vergenoegd (visually sensitive), however impacts (visual) to Zeekoeivlei cannot be avoided given the location of the proposed substation.

The Mitchells Plain to Phillipi line is unlikely to cause significance impacts to the Phillipi Farms area in terms of visual heritage, however Alternative 1 can be considered safer in that it lies on the edge of the agricultural area.

Archaeological and palaeontological impacts are not a major concern in either study area as few are known to exist on the Cape Fats, and secondly they are not visually sensitive. Most can be avoided through micro-siting of towers during the walk-down phases.

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