

Heritage Impact Assessment (scoping level) of the proposed Penhill
Greenfields Development Project, being portions of Welmoed Estate,
Eerste River, Western Cape Province.

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act (No. 25 of 1999) as part of an EIA)

Prepared for

Aurecon Pty Ltd



ACO Associates cc
Archaeology and Heritage Specialists

Prepared by
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CONTENTS OF THE SPECIALIST REPORT – CHECKLIST FOR APPENDICES 2 (Scoping) and 6 (Specialist Reports) of GNR 982

Regulation GNR 982 of 2014, Appendix 6	Section of Report
(a) details of the specialist who prepared the report; and the expertise of that specialist to compile a specialist report including a <i>curriculum vitae</i> ;	Preamble
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Preamble
(c) an indication of the scope of, and the purpose for which, the report was prepared;	1.1
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	n/a
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process;	3
(f) the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure;	6
(g) an identification of any areas to be avoided, including buffers;	n/a
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	n/a
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	3.1
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment;	8
(k) any mitigation measures for inclusion in the EMPr;	9
(l) any conditions for inclusion in the environmental authorisation;	9
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	9
(n) a reasoned opinion— i. as to whether the proposed activity or portions thereof should be authorised; and ii. if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr or Environmental Authorization, and where applicable, the closure plan;	9
(o) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	n/a
(p) any other information requested by the competent authority	n/a

Regulation GNR 982 of 2014, Appendix 2 – Scoping Process	Section of Report
Description of any policies or legislation or guidelines relevant to your field that the applicant will need to comply with.	4
Comment on need/desirability of the proposal in terms of your field and in terms of the proposal's location.	5
Description of methodology used in determining significance.	5
Assessment of alternatives including the environmental attributes associated with each alternative.	8, 8.1
For each alternative, determine the-- (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and (ii) degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources, and (cc) can be avoided, managed or mitigated;	8

Determine positive and negative impacts that each alternative will have on the environment.	8
Identify suitable measures to avoid, manage or mitigate identified impacts.	8
Identify residual risks that need to be managed and monitored.	n/a
A concluding statement indicating a preferred alternative and preferred location in terms of your field.	9
State if further study is required and include description of this methodology.	9

EXECUTIVE SUMMARY

The Western Cape Government Department of Human Settlements (DHS) and the City of Cape Town (CoCT) are jointly planning a catalytic human settlements programme termed the Southern Corridor Integrated Human Settlements Programme. The programme will upgrade 27 informal settlements in the proximity of the N2 and benefit over 50,000 households. The Penhill Greenfields Development Project forms part of this Programme and is the subject of this Application. The proposed Penhill Project is a residential development which includes +/- 8,000 housing opportunities and other related mixed use opportunities. ACO Associates cc was appointed by Aurecon (Pty) Ltd to conduct a Heritage Impact Assessment (HIA) as part of an Environmental Impact Assessment (EIA) process for the proposed activity. The following pages provide scoping level input for the EIA process.

The study has revealed that the site which lies within the urban edge on the boundary of the Cape Flats once formed part of the farm "Welmoed", which was broken up in the early 20th century into agricultural lots, which were in private ownership for a while but reverted back to the Regional Service Council after the 1930's. The Welmoed farm complex was demolished to make way for the R102 Van Riebeeck Drive dual carriageway. The site, which contains very few heritage resources, is now formally and informally farmed and is home to many families living in informal structures, most of them practising small-scale agriculture. In heritage terms the site is not sensitive.

Heritage Recommendations

Archaeology and built environment.

- No further field assessment is required for archaeology on the development site.
- A walk down of the proposed access road and water mains servitude is required.
- The single small wood and iron structure on the site that has heritage significance must be properly recorded and graded (with permission from the landowner).

Palaeontology.

- No further field assessment is required aside from monitoring during bulk excavation works.

Landscape and setting.

- The assessment of the landscape as a heritage resource will require the integration of findings of the visual impact assessment as well as consideration of the methods of landscape characterisation and grading to produce an integrated statement of impact for purposes of the EIA.
- The impact of the development proposal on historic farms in the surrounding Bottelary Hills needs to be assessed as diminishment of the landscape value in which they are situated could affect their sustainability.

Alternatives

Two alternative layouts were presented for assessment. Both are similar in terms of content but vary in layout. Alternative A is preferred over Alternative B as it provides a larger agricultural (soft) buffer with respect to farmlands to the east.

Conclusion

Limited further field assessment will be required for the EIA phase (as indicated above). At scoping level there are no indications as to why the proposed activity should not be supported.



A typical view down one of the informal roads at Penhill Farms.

Details of the specialist

This study has been undertaken by Tim Hart BA Hons, MA (ASAPA, APHP) of ACO Associates CC, archaeologists and heritage consultants.

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CURRICULUM VITAE

Name: Timothy James Graham Hart
Profession: Archaeologist
Date of Birth: 29/07/60
Parent Firm: ACO Associates
Position in Firm: Director
Years with Firm: 9
Years experience: 30 years
Nationality: South African
HDI Status: n/a

Education: Matriculated Rondebosch Boys High, awarded degrees BA (UCT) BA Hons (UCT) MA (UCT).

Professional Qualifications: Principal Investigator ASAPA, member of Association of Heritage Professionals (APHP)

Languages: Fully literate in English, good writing skills. Conversation in Afrikaans, mediocre writing skills, good reading skills. Some knowledge of Latin.

PROPOSED POSITION ON TEAM: Overall project co-director, task leader on field projects.

KEY QUALIFICATIONS

- Bachelor of Arts in Archaeology and Psychology
- BA Honours in archaeology
- MA in Archaeology
- Recipient of Frank Schweitzer Memorial Prize (UCT) for student excellence
- Professional member (no 50) Association of Southern African Professional Archaeologists (ASAPA)
- Principal Investigator, cultural resources management section (ASAPA)
- Professional member in specialist and generalist categories Association of Heritage Professionals (APHP)
- Committee Member Heritage Western Cape, Committee Member SAHRA
- Awarded Department of Arts and Culture and Sport award for best heritage study in 2014

Relevant recent Project Experience with respect to large projects:

- Specialist consultant – Eskom’s Kudu Integration project (identifying transmission line routes across Namaqualand)
- Specialist consultant – Eskom’s Atlantis Open Cycle Gas Turbine project, upgrade and power lines
- Specialist consultant – Eskom’s Mossel Bay Open Cycle Gas Turbine project, substations and power lines
- Specialist consultant – Eskom’s proposed Omega sub-station
- Specialist consultant – Eskom’s Nuclear 1 programme
- Specialist consultant – Eskom’s PBMR programme
- Specialist consultant – Department of Water Affairs raising of Clanwilliam Dam project
- Specialist consultant to De Beers Namaqualand Mines (multiple projects since 1995)
- Specialist consultant – Saldanha Ore Handling Facility phase 2 upgrade
- Three years of involvement in Late Stone Age projects in the Central Great Karoo
- Wind Energy systems: Koekenaap, Hopefield, Darling, Vredendal, Bedford, Sutherland, Caledon
- Bantamsklip Nuclear 1 TX lines
- Koeberg Nuclear 1 TX lines
- Karoo uranium prospecting - various sites

- HIA Houses of Parliament
- Proposed Ibhubesi gas project, West Coast of South Africa.

Experience

After graduating from UCT with my honours degree I joined the Southern Methodist University (SMU Dallas Texas, USA) team undertaking Stone Age research in the Great Karoo. After working in the field for a year I registered for a Masters degree in pre-colonial archaeology at UCT with support from SMU. On completion of this degree in 1987 I commenced working for the ACO when it was based at UCT. This was the first unit of its kind in RSA.

In 1991 I took over management of the unit with David Halkett. We nursed the office through new legislation and were involved in setting up the professional association and assisting SAHRA with compiling regulations. The office developed a reputation for excellence in field skills with the result that ACO was contracted to provide field services for a number of research organisations, both local and international. Since 1987 in professional practise I have been involved in a wide range of heritage related projects ranging from excavation of fossil and Stone Age sites to the conservation of historic buildings, places and industrial structures. To date ACO Associates cc (of which I am co-director) has completed more than 1500 projects throughout the country ranging from minor assessments to participating as a specialist in a number of substantial EIA's as well as international research projects. Some of these projects are of more than 4 years duration

Together with my colleague Dave Halkett I have been involved in heritage policy development, development of the CRM profession, the establishment of 2 professional bodies and development of professional practice standards. Notable projects I have been involved with are the development of a heritage management plan and ongoing annual mitigation for the De Beers Namaqualand Mines Division, heritage management for Namakwa Sands and other west coast and Northern Cape mining firms. Locally, I was responsible for the discovery of the "Battery Chavonnes" at the V&A Waterfront (now a conserved as a museum), the discovery of a massive paupers burial ground in Green Point (now with museum and memorial), the fossil deposit which is now the subject of a public display at the West Coast Fossil Park National Heritage Site as well as participating in the development of the Robben Island Museum World Heritage Site. I have teaching experience within a university setting and have given many public lectures on archaeology and general heritage related matters. I am presently running a NLF funded project to research the historic burial grounds of Green Point.

Academic Publications

Hart, T.J.G. 1987. Porterville survey. In Parkington, J. & Hall, M.J. eds. Papers in the Prehistory of the Western Cape, South Africa. Oxford: BAR International Series 332.

Sampson, C.G., Hart, T.J.G., Wallsmith, D.L. & Blagg, J.D. 1988. The Ceramic sequence in the upper Sea Cow Valley: Problems and implications. South African Archaeological Bulletin 149: 3-16.

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Hart, T. & Halkett, D. 1994. Reports compiled by the Archaeology Contracts Office, University of Cape Town.

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Hine, P., Sealy, J., Halkett, D. & Hart, T. 2010. Antiquity of stone walled fish traps on the Cape Coast of South Africa. *The South African Archaeological Bulletin*. Vol. 65, No. 191 (JUNE 2010), pp. 35-44.

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Smith, A., Halkett, D., Hart, T. & Mütti, B. 2001. Spatial patterning, cultural identity and site integrity on open sites: evidence from Bloeddrift 23, a pre-colonial herder camp in the Richtersveld, Northern Cape Province, South Africa. *South African Archaeological Bulletin* 56 (173&174): 23-33.

Halkett, D., Hart, T., Yates, R., Volman, T.P., Parkington, J.E., Klein, R.J., Cruz-Urbe, K. & Avery, G. 2003. First excavation of intact Middle Stone Age layers at Ysterfontein, Western Cape province, South Africa: implications for Middle Stone Age ecology. *Journal of Archaeological Science*.

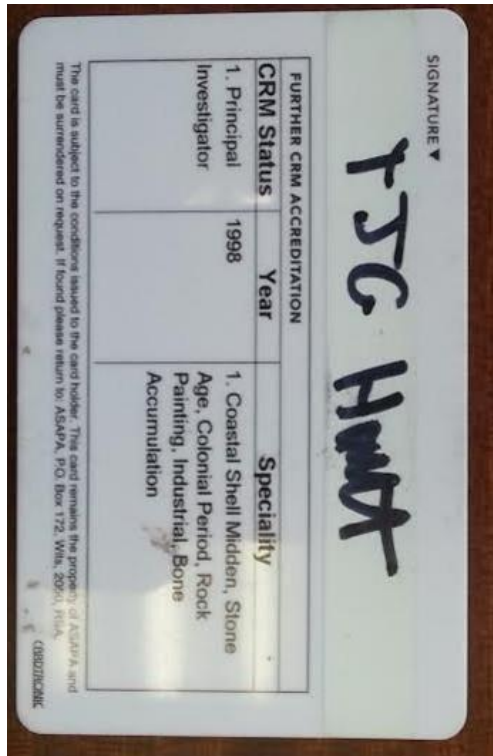
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Parkington, J.E., Poggenpoel, C., Halkett, D. & Hart, T. 2004. Initial observations from the Middle Stone Age coastal settlement in the Western Cape. In Conard, N. Ed. *Settlement dynamics of the Middle Paleolithic and Middle Stone Age*. Tübingen: Kerns Verlag.

Orton, J., Hart, T. & Halkett, D. 2005. Shell middens in Namaqualand: two later Stone Age sites at Rooiwalbaai, Northern Cape Province, South Africa. *South African Archaeological Bulletin*. Volume 60 No 181.

Dewar, G., Halkett, D., Hart, T., Orton, J. & J. Sealy 2006. Implications of a mass kill site of springbok (*Antidorcas marsupialis*) in South Africa: hunting practices, gender relations, and sharing in the Later Stone Age. *Journal of Archaeological Science* 33 (9), 1266-127.

Finnegan, E., Hart, T. and Halkett, D. 2011. The informal burial ground at Prestwich Street, Cape Town: Cultural and chronological indicators for the informal Cape underclass. *The South African Archaeological Bulletin* Vol. 66, No. 194 (DECEMBER 2011), pp. 136-148.



Declaration of independence

PROJECT: Pen Hill Farms

I, **Tim Hart**, as the appointed independent specialist hereby declare that I acted as the independent specialist in this application; and that I

- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have any vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference must be attached.

Signature of the specialist:



Name of company:
ACO Associates cc

Date: 12 December 2017

GLOSSARY

Archaeology: *Remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.*

Calcrete: *A soft sandy calcium carbonate rock related to limestone which often forms in arid areas.*

Cultural landscape: *The combined works of people and natural processes as manifested in the form of a landscape*

Early Stone Age: *The archaeology of the Stone Age between 700 000 and 2500 000 years ago.*

Fossil: *Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.*

Heritage: *That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999.*

Holocene: *The most recent geological time period which commenced 10 000 years ago.*

Late Stone Age: *The archaeology of the last 20 000 years associated with fully modern people.*

Middle Stone Age: *The archaeology of the Stone Age between 20-300 000 years ago associated with early modern humans.*

Midden: *A pile of debris, normally shellfish and bone that have accumulated as a result of human activity.*

National Estate: *The collective heritage assets of the Nation*

Palaeontology: *Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.*

Pan: *A shallow depression in the landscape that accumulates water from time to time.*

Palaeosole: *An ancient land surface.*

Pleistocene: *A geological time period (of 3 million – 20 000 years ago).*

Pliocene: *A geological time period (of 5 million – 3 million years ago).*

Miocene: *A geological time period (of 23 million - 5 million years ago).*

SAHRA: *South African Heritage Resources Agency – the compliance authority which protects national heritage.*

Structure (historic): *Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.*

Acronyms

DEAT	Department of Environmental Affairs and Tourism
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
WEF	Wind Energy Facility
PV	Photo-voltaic (solar) array

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1 INTRODUCTION

The Western Cape Government Department of Human Settlements (DHS) and the City of Cape Town (CoCT) are jointly planning a catalytic human settlements programme termed the Southern Corridor Integrated Human Settlements Programme. The programme will upgrade 27 informal settlements in the proximity of the N2 highway and benefit over 50,000 households. According to the DHS, the programme is a cluster of discrete projects to upgrade informal settlements and to establish greenfield human settlements. The Penhill Greenfields Development Project forms part of this programme and is the subject of this Application. The proposed Penhill Greenfields Development Project is a residential development which includes +/- 8,000 housing opportunities and other related mixed uses. The project also makes provision for commercial and industrial components as well as for agricultural land. ACO Associates cc was appointed by Aurecon (Pty) Ltd to conduct a Heritage Impact Assessment (HIA) as part of an Environmental Impact Assessment (EIA) process for the proposed activity. The following pages provide scoping level input for the EIA process.

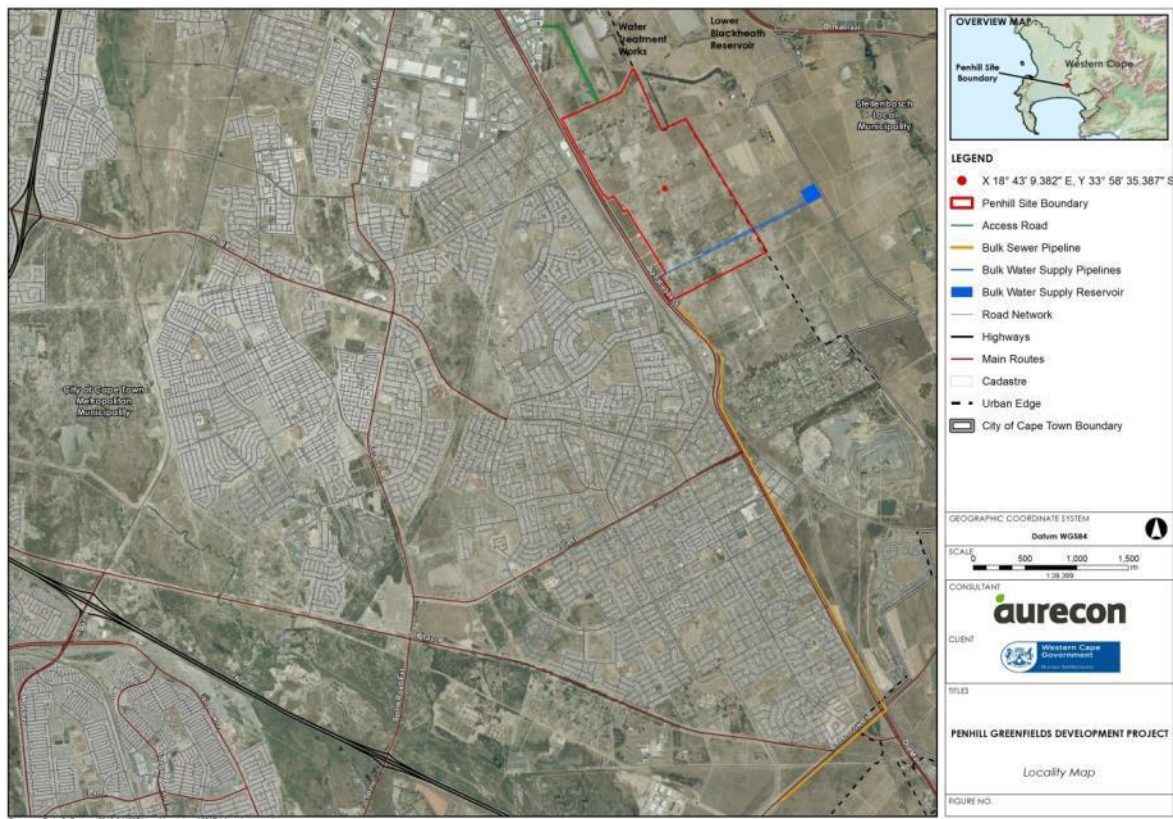


Figure 1 Location and attributes of the proposed Penhill project.

1.1 Development Proposal

The proposed Penhill Greenfield Development Project is to be a residential development which includes +/- 8,000 housing opportunities and other related mixed uses. The project also makes provision for commercial and industrial components as well as for agricultural land. The project site is located on the eastern boundary of the City of Cape Town metropolitan area within the urban edge, east of the urban nodes of Blackheath and Eerste River (Figure 1). The Stellenbosch agricultural areas lie to the east of the site. The proposed site is bordered by and accessible from Van Riebeeck Road to the west. The site is owned by the DHS and is currently undeveloped and used for informal farming activities. The site comprises of 192 hectares (ha) and is located on 10 farm portions listed below:

Name of landowner	Erf number	21 digit SG code	Name of farm	Farm size (ha)*
Provincial Government Western Cape, Department of Human Settlements	R/E 3/410	C067000000004100003	Jacobsdal	25.2
Provincial Government Western Cape, Department of Human Settlements	R/E 8/410	C067000000004100008	Jacobsdal	16
Provincial Government Western Cape, Department of Human Settlements	R/E 5/468	C067000000004680005	Welmoed Estate	42.9
Provincial Government Western Cape, Department of Human Settlements	R/E 25/468	C0670000000046800025	Welmoed Estate	14.3
Provincial Government Western Cape, Department of Human Settlements	R/E 26/468	C0670000000046800026	Welmoed Estate	21.6
Provincial Government Western Cape, Department of Human Settlements	R/E 31/468	C0670000000046800031	Welmoed Estate	12.1
Provincial Government Western Cape, Department of Human Settlements	32/468	C0670000000046800032	Welmoed Estate	24.6
Provincial Government Western Cape, Department of Human Settlements	35/468	C0670000000046800035	Welmoed Estate	23
Provincial Government Western Cape, Department of Human Settlements	R/E 36/468	C0670000000046800036	Welmoed Estate	0.3
Provincial Government Western Cape, Department of Human Settlements	R/E 42/468	C0670000000046800042	Welmoed Estate	12.1

Table 1: Details of land parcels that make up the project area.

The existing zoning of the site is Agricultural I, characterised by small scale farming including dwellings and fields. There are gravel roads that transverse the site, which are used to access the plots and the existing infrastructure. *Eucalyptus* trees line some of the internal roads on the site, and are located in avenues adjacent to the site. Multiple servitudes can be observed on site, the most significant being the 400kV transmission line. There are also servitudes for 11kV, 66kV and 132kV overhead lines and two water supply pipelines. A series of five storm water detention ponds are very prominent features adjacent to but outside the site (Figure 1), between the site and Van Riebeeck Road. To the north of the site is the Blackheath water treatment works with associated sludge drying beds, with the Welmoed Cemetery to the south, and a railway line to the west on the opposite side of Van Riebeeck Road. The Stellenbosch winelands border the eastern side.

The proposed development project is envisaged to consist of a mix of housing provisions for approximately 37,000 people in the form of 14,000 total units. The mixed use development is based on the principle of incremental housing upgrades. Housing provision comprises mostly of subsidised housing, providing a range of unit types and affordable categories including houses for the gap market. The project proposes high density and incremental housing types. The following residential components have been proposed;

- Integrated Residential Development Programme (IRDP) houses: IRDP provides for the acquisition of land and housing, servicing a variety of land uses including residential and commercial stands for both low and medium income groups. For this Project, approximately 30% of land provision will be allocated to IRDP residential units and a further $\pm 12\%$ of land provision will be serviced sites for beneficiaries that do not qualify for subsidised housing. This programme also provides for the creation of non-residential stands such as schools and clinics. Plans for projects undertaken within the scope of the IRDP must be based on approved housing chapters of Municipal Integrated Development plans and priorities, and be developed as part of an approved Integrated Development Plan (IDP).
- Finance Linked Individual Subsidy Programme (FLISP) houses: the Finance Linked Individual Subsidy Programme (FLISP) was developed by the DHS in order to enable sustainable and affordable first time homeownership opportunities to South African citizens as well as legal permanent residents earning between R3,501 and R15,000 per month (known as the affordable or gap market) . Beneficiaries of these housing schemes generally find it hard to qualify for housing finance as their income is regarded as low, but too high to qualify for a Government “free basic house” subsidy scheme. For this Project $\pm 4\%$ of land provision will be allocated to FLISP houses.

- Market houses: commercial residential market units available for members of the public to purchase through the commercial property market will be included in the Project, however only 2% of land is allocated in this regard.
- Social housing units (flats) and for rental: this includes a rental or co-operative housing option which requires institutionalised management. This will be provided by accredited social housing institutions usually for accredited social housing projects designed in a restructuring zone. Social housing aims to provide good quality rental accommodation for the upper end of the low-income market (R1500 – R7 500 monthly income), with the primary objective of urban restructuring and creating sustainable human settlements at higher densities. Although this Project is currently not within a restructuring zone, ±10% of land has been allocated for possible future social rental units or other high density opportunities.
- Backyard rental units: these units are informal units constructed on a property to provide additional rental income for the residents of the main dwelling or to accommodate extra family members. The City of Cape Town policy requires that provision is made for these units through an access servitude and associated services. It is an assumption of the Project that backyard units will be constructed incrementally by the main dwelling beneficiary and therefore provision has been made in terms of service provision. Backyard dwellings would account for the maximum residential component and 42% of land will be accessible in this regard.
- Associated with the development proposal is the need to increase the available space for development and maximise the configuration of the layout. The development proposal includes for the re-alignment of a section of the 66kV overhead powerline on the site. The western portion of the 66 kV line will be relocated from its current alignment, so that it runs parallel and adjacent to the 132 kV and the 400 kV lines further north on the site. This will involve the decommissioning of approximately 1.3 km of overhead line, and construction of a new section of 1.5 km of the line to adjoin the path of the other two lines. This new section is partly on site (1.2 km) and offsite (300 m). The width of the new servitude required off and on the site is 11 m either side of the centreline (22 m in total) according to Eskom standards. Also as part of the development a Main intake substation would be required on the site, as well as approximately three distribution substations, supplied from the main intake substation, as well as several mini substations. It is the intention that the Department of Human Settlements is the applicant for these works and following construction they would become the property of Eskom, and would continue being maintained throughout their operational life by Eskom.

1.2 Services and roads

Services required involve a bulk water supply with a proposed reservoir to the east of the site in agricultural land and a sewerage main which will be placed in the road reserve along Van Riebeeck Road (R102). There will also be among other access points, a northern access road which will link to Jerepiko Road to the north of the site.

1.3 Sewerage

The proposed sewer corridor allows for a pipeline on either side of Van Riebeeck Road, as well as the median, all still within the road reserve. The trench width will be 7m with an additional 7m of width for working area, therefore overall footprint up to 15m. It also includes a potential pump station in the road reserve at the eastern corner of Van Riebeeck Road and Forest Drive. The footprint will be approximately 100 sqm.

There is also consideration of a sewerage batch plant requiring a 2 hectare area that will be built on the south western corner of the site which will serve until the Zandvliet Waste Water Treatment facility is upgraded.

1.4 Alternatives

There are two alternative development proposals (Figure 2). Both involve setting aside some 40 hectares for continued agricultural activities, whereby the difference lies predominantly in the configuration of the agricultural component.

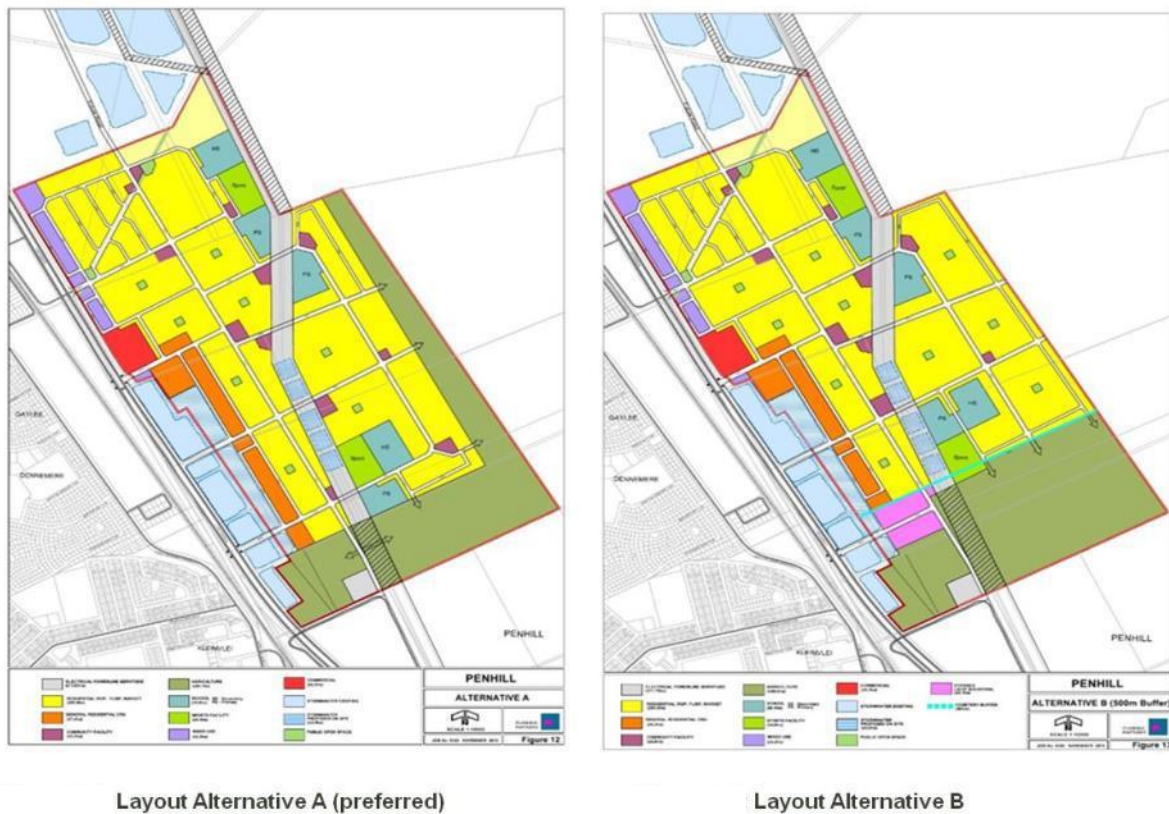


Figure 2: The proposed development alternatives A and B (after project description provided by Aurecon (Pty) Ltd)

2 THE HERITAGE TEAM

The ACO Associates cc team has been working together on heritage related projects for almost 30 years and has considerable experience in working on renewable energy projects.

The project is led by Tim Hart (MA) Member ASAPA, APHP.

3 METHODOLOGY

This study has been commissioned as the heritage component of an EIA. It assesses the identified range of impacts in terms of accumulated knowledge of the area. The source of information that is used for this process is based on publications related to heritage work undertaken in the study area and other unpublished reports on the history of the region. Extensive use has been made of the 1:3000 and 1:5000 topographic maps of the area (Surveyor General) making use of all those published in the 20th and 21st centuries so as to compile overlays to locate the likely sites of old farm complexes.

Definitions of heritage and criteria for assessment of heritage are indicated in the National Heritage Resources Act 25 of 1999 (NHRA) while the Provincial Guidelines (2005) for assessing heritage in the Western Cape applies. Both the NHRA and Provincial Guidelines require that cultural landscapes and areas of particular aesthetic and/or cultural heritage significance are included in the assessment.

The project area has been subjected to a first pass physical assessment by Tim Hart as part of a team site visit. This involved a mixture of walking and driving the site (1 March 2017) and recording anything that was of heritage significance. Any material noted was identified, photographed and plotted using a hand held GPS unit. The assessment of the alternatives utilised the methodology provided by Aurecon Pty Ltd.

An independent visual assessment (by Stephen Stead of Visual Resource management Africa) will form part of the EIA specialist studies which are directly linked and will be required by Heritage Western Cape. Observations at scoping level are included in this report.

3.1 Limitations

Limitations to the study relate to the fact that the site is difficult to survey because it is divided into numerous small plots containing dwellings and livestock, and quite heavily fenced. The surface of the landscape is also quite significantly transformed. Open areas that can be easily accessed are related to the major servitudes that run across the site.

3.2 Assessing heritage in the context of a housing development/large development

3.2.1 Landscape and setting

Landscapes are heritage resources of national or regional or local importance in terms of rarity and typicality.

The UNESCO Operational Guidelines for the World Heritage Convention (1995) identified three main types of cultural landscapes derived from the following characteristics:

The clearly defined landscape designed and created intentionally. This embraces garden and parkland landscapes constructed for aesthetic reasons.

The organically evolved landscape. This results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. They fall into two sub-categories:

- A relict (or fossil) landscape is one in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form.
- A continuing landscape is one which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time.
- An associative cultural landscape, included by virtue of the powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence which may be insignificant or even absent (Extract from paragraph 39 of the Landscape Operational Guidelines for the Implementation of the World Heritage Convention).

Also criteria that have been considered (Baumann et al. 2005) in the Western Cape in terms of making an assessment of cultural landscape are:

3.2.2 Design quality

The landscape should represent a particular artistic or creative achievement or represent a particular approach to landscape design in the case of gardens, parks and person-created places.

3.2.3 Scenic quality

The landscape should be of high scenic quality, with pleasing, dramatic or vivid patterns and combinations of landscape features, and important aesthetic or intangible qualities (vividness, intactness, unity).

3.2.4 Unspoilt character/authenticity/integrity

The landscape should be unspoilt, without visually intrusive urban, agricultural or industrial development or infrastructure. It should thus reveal a degree of integrity and intactness.

3.2.5 Sense of place

The landscape should have a distinctive and representative character, including topographic and visual unity and harmony.

3.2.6 Harmony with nature

The landscape should demonstrate a good example of the harmonious interaction between people and nature, based on sustainable land use practices.

3.2.7 Cultural tradition

The landscape should bear testimony to a cultural tradition which might have disappeared or which illustrates a significant stage in history or which is a good example of traditional human settlement or land use which is representative of a culture/s.

3.2.8 Living traditions

The landscape should be directly and tangibly associated with events or living traditions with ideas or with beliefs, with artistic and literary works of high significance.

The study area lies within a rural context. In terms of the UNESCO guidelines it is a natural evolving landscape. In terms of the assessment checklist published by Baumann et al. (2005) the landscape is largely intact as a natural landscape, intrusions within the last 60 years are moderate, therefore it may be considered reasonably authentic.

4 REGULATORY AND LEGISLATIVE OVERVIEW

The basis for all heritage impact assessment is the National Heritage Resources Act (NHRA) (Act 25 of 1999), which prescribes the manner in which heritage is assessed and managed. The National Heritage Resources Act has defined certain kinds of heritage as being worthy of protection, by either specific or general protection mechanisms. In South Africa, the law is directed towards the protection of human-made heritage, although places and objects of scientific importance are covered. The National Heritage Resources Act also protects intangible heritage such as traditional activities, oral histories and places where significant events happened. Generally protected heritage which must be considered in any heritage assessment includes:

- Cultural landscapes (described below),
- Buildings and structures (greater than 60 years of age),
- Archaeological sites (greater than 100 years of age),
- Palaeontological sites and specimens,
- Shipwrecks and aircraft wrecks, and
- Graves and grave yards.

Section 38 of the NHRA requires that Heritage Impact Assessments (HIAs) are required for certain kinds of development such as rezoning of land greater than 10 000 sq m in extent or exceeding 3 or more sub-divisions, or for any activity that will alter the character or landscape of a site greater than 5000 sq m.

4.1 Cultural Landscapes

Section 3(3) of the NHRA defines the cultural significance of a place or objects with regard to the following criteria:

- (a) its importance in the community or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;

- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa.

4.2 Scenic Routes

While not specifically mentioned in the NHRA, Act No 25 of 1999, Scenic Routes are recognised by DEA&DP as a category of heritage resources. In the DEA&DP Guidelines for involving heritage specialists in the EIA process, Baumann & Winter (2005) comment that the visual intrusion of development on a scenic route should be considered a heritage issue. This is also given recognition in the Notice of Intent to Develop (NID) application which is used by Heritage Western Cape.

4.3 Heritage Grading

Heritage resources are graded following the system established by Baumann and Winter (2005) in the guidelines for involving heritage practitioners in EIA's (Table 1).

Table 2: Grading of heritage resources (Source: Winter & Baumann 2005: Box 5).

Grade	Level of significance	Description
1	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
2	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential Grade 2 heritage resources.
3A	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3A heritage resources.
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources.

5 NEED AND DESIRABILITY OF THE PROJECT

As in almost every major city in South Africa, there is a severe backlog in formal serviced housing in Cape Town. This project is one of some 27 proposed similar projects planned by the Department of Human Settlement of the Western Cape Government and the City of Cape Town that are dedicated to the relief of housing shortage.

6 THE LOCAL HERITAGE CONTEXT

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 developments 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 area was largely avoided by the colonists with the granting of farm land being confined to the arable lands on the hill slopes around Stellenbosch, and along the Eerste River. 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 Bellville. The first railway line to Stellenbosch followed a similar and almost parallel route.

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. Descendants of these German settlers continue to farm in the Philippi 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”. Of note was the Eerste River Forest Reserve. The motivation for these declarations was to exclude livestock that were overgrazing dune vegetation and so 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 city’s 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).

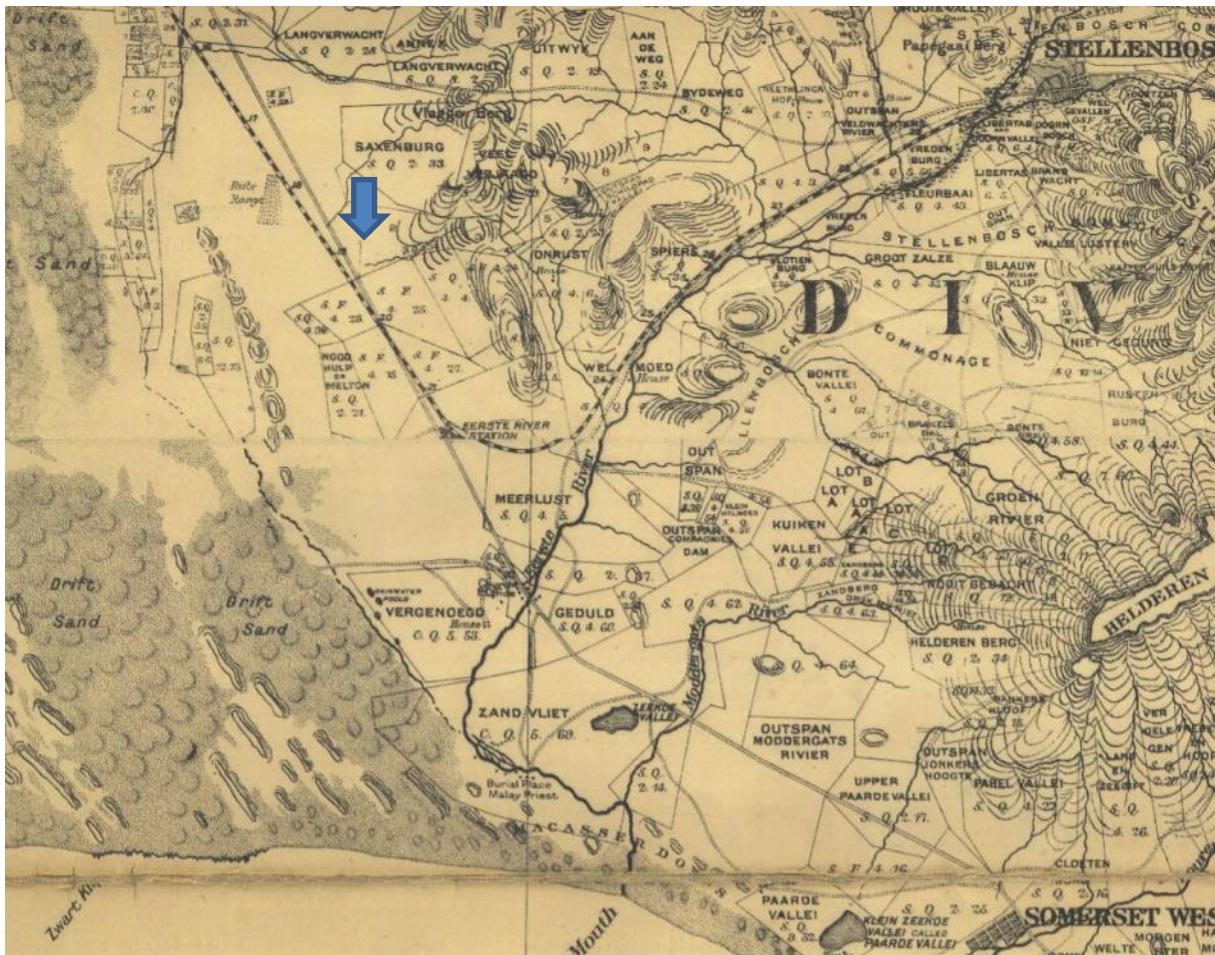


Figure 3 This compilation map of the end of the 19th century depicts the Eerste River area in detail. Present is the beginnings of the road, and the Cape Town - Stellenbosch railway (SG 01-13 Southern Districts Cape Town - Malmesbury). The project area is marked with a blue arrow.

The earliest accurate map depicting the Cape Flats is an 1880-90 map (Figure 3) of the South Western Districts. 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 drift sand of the Cape Flats was bounded by the Bellville Forest Reserve, the Eerste River Forest Reserve (West) and the Strandfontein Forest Reserve to the south (1941 Chief Director Surveys and Mapping). The Kuils River which was the main river system that drained the flats, 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 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) the flats had changed little. The massive transformation of the Cape Flats took place mostly after the 1970s. 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.

The Kuils River has become permanent tributary of the Eerste River and a small section of the Buffelsvlei has survived in Faure between Vergenoegd and the sewerage works. 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.

6.1 Known heritage of the project area

Indications are that the project area, prior to the advent of the 20th century the project area was grazing land (see Figure 3). A rifle range had been established nearby, but the major heritage feature of the area was what is now Van Riebeeck Road (modernised into a dual carriageway) which was then the major road over the flats to Somerset West, and the railway line to Stellenbosch which followed the same narrow spine of hard ground (built circa 1868). The earliest land grant in the area was Welmoed (1699) along the Eerste River and Vergenoegd and Zandvliet at roughly the same time. All of these farms depended on the Eerste River and utilised the last patches of conceivably arable land on the edge of the Cape Flats. Welmoed, which started as a small farm close to Eerste River is a long way from the Welmoed Estate of today (see Figure 4) and may not be related. Eerste River Station is one of the oldest railway stations in the country and was a key component of the Cape Government Railways Cape Town to Stellenbosch rail route – the earliest commuter line in RSA which was built circa 1868. The station became a landmark of note, and a place maker that was the start of the settlement of the edges of the Cape Flats.

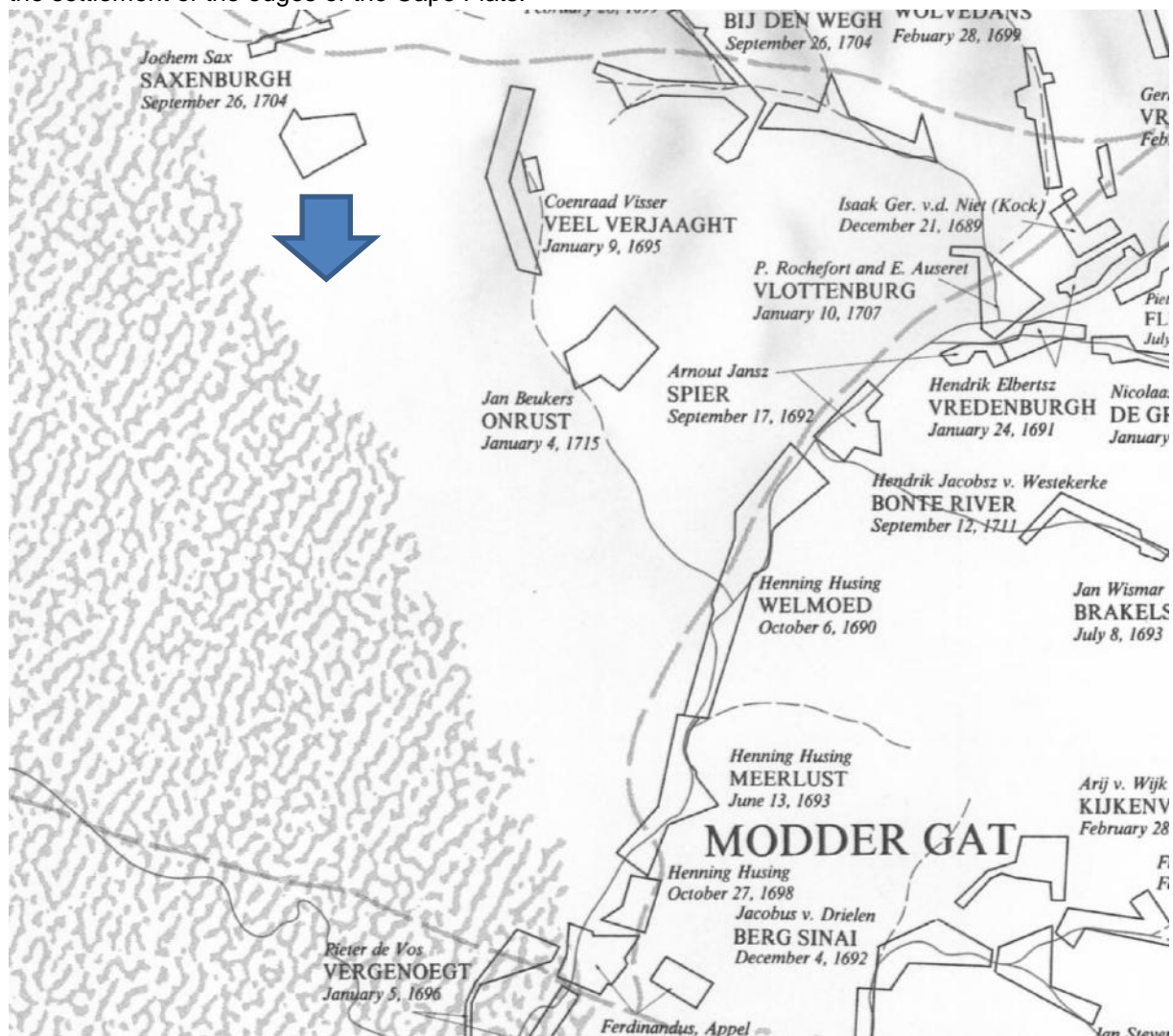


Figure 4 An excerpt from the Guelke (1987) compilation map showing early land grants in the Eerste River area (After Guelke, L. University of Waterloo, Dept of Geography Occasional series.)

The next phase of development in area relates to Penhill Estate. Penhill Estate is an anachronism in the 20th century history on the Flats. E.P.J. Penny subdivided this area into plots in 1932 and in the ensuing years these were sold off for private development. Hence most of the houses on the site date to the 1940s-1960s. The proximity of the site to Eerste River Station made for easy travel to both Stellenbosch and Cape Town. Penhill continues to exist as a somewhat charming but oddly placed middle class suburb favoured by residents who keep animals, horses and enjoy small scale farming. It consists of mid-late 20th century houses with well-established gardens and trees.

The portion of land known as Welmoed Estate originally involved a sizeable piece of land (Figure 5) that incorporated a large chunk of the Cape Flats (the Eerste River Forest Reserve), much of which is now Eerste River and surrounds. There were associated farm buildings and a farm yard called Welmoed, however these lay some distance to the east close to the Eerste River. The project area, which always appears to have been marginal land was subdivided from the greater Welmoed into allotments by its then owner R.L. Kramer in 1920 and sold off. From the 1930's onwards these land portions were in turn transferred to the Regional Services Council. Today the existing allotments loosely follow the form of Kramer's 1920 sub-divisions. Today there are some 200 families on the land, some formal tenants, others who are living informally. There are areas of open space but much of the site is divided into small kraals and allotments, buildings are informal and largely recent. A site inspection revealed no archaeological material to date, which is in keeping with previous experiences of the Cape Flats.

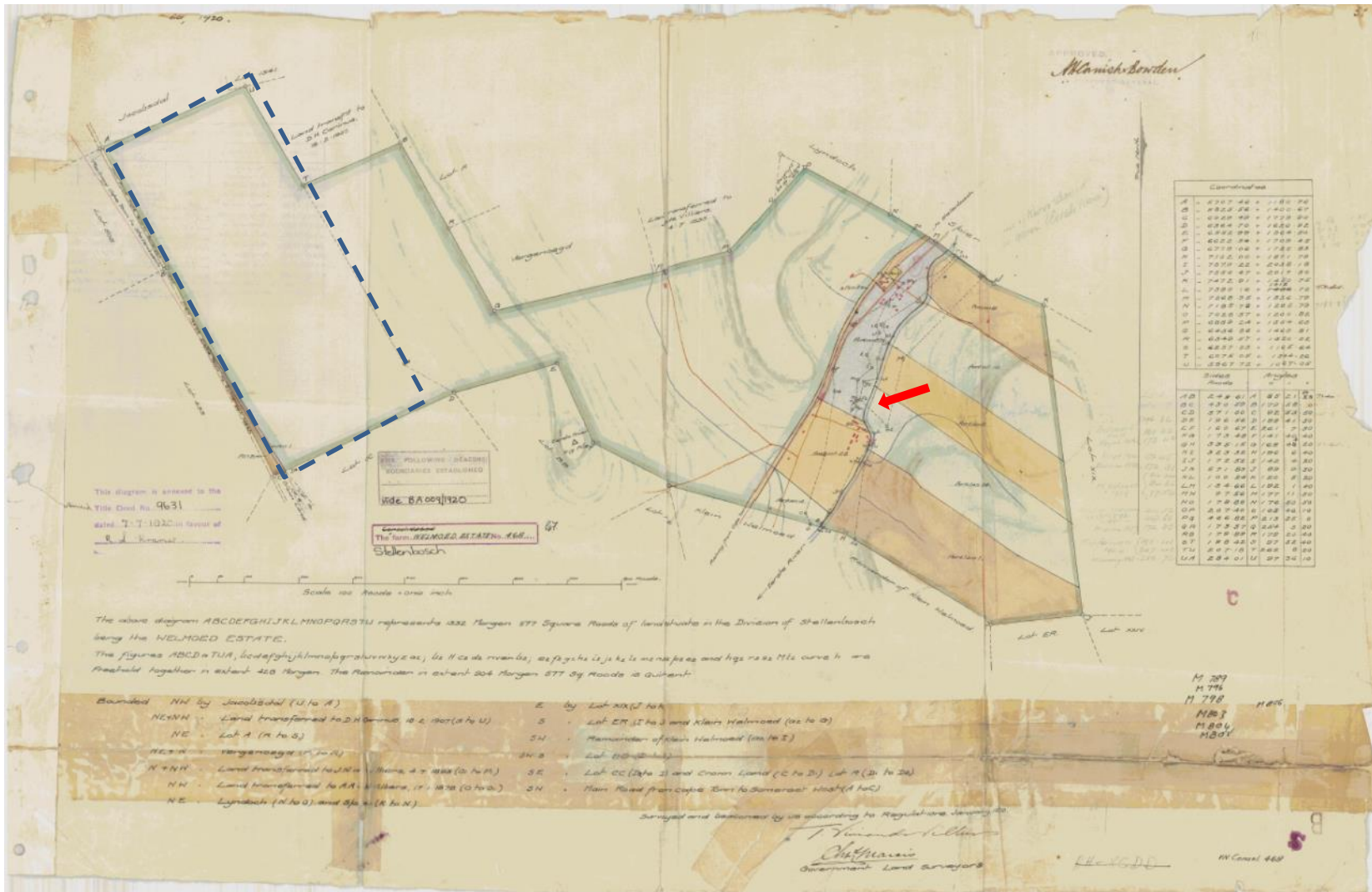


Figure 5 By the time this Survey Diagram (SG diagram 11103697) had been drawn up in the 1920's large amounts of Welmoed Estate had been subdivided off to neighbouring farms. The location of the project area is marked with a blue polygon while the position of the Welmoed farm buildings is marked with a red arrow.

6.2 Impacts on heritage resources at Penhill Farms

Palaeontology: The Cape Flats geology is conducive for the preservation of fossil bone accumulations due to the calcium carbonate rich sands that characterise the area. Calcretes and calcareous sands provide a basic chemical environment which preserves animal bone and shell remains extremely well. These sediments have produced both fossil and archaeological material of great age and international importance in several localities in the Western Cape. On the Cape Flats finds have been made at Swartklip on the False Bay coast and at the sand mines close to Macassar. Unfortunately there is no way of predicting where deposits of fossil material may occur as they are normally associated with widely dispersed events in the past such as hyena lair accumulations or archaeological occupations. Experience has taught that the incidence of occurrences is not particularly common occurring sporadically at unpredictable locations within the Cape Flats geology.

There is a low possibility that palaeontological resources may be impacted by excavations for bulk sewerage, reservoir and water supply.

Archaeology: No archaeological material was identified in those areas searched within the study area. This finding is consistent with the findings of other studies that have taken place on the Cape Flats dune areas. The reasons why there are so few archaeological sites on the Cape Flats is unclear. One may hypothesise that it was a resource depleted environment, very exposed and lacking the materials for building windbreaks or making artefacts. Game which would have frequented the water bodies in the dune slacks, were probably hunted from time to time from encampments on the fringes of the flats.

Indications are that the historical archaeology (if any) associated with Welmoed is outside the project area (in the region of where Welmoed Cellars are today) (Figure 5). Indications are that the project area never contained any historic farm dwellings. The small collection of early 20th century buildings known as Melton Rose was situated roughly where the Welmoed Cemetery is today. No overt surface indicators have survived. Historical archaeology is not expected.

The impacts on both colonial and pre-colonial archaeology are likely to be low.

Graves: No graves were located within the study area during the site visit, however there is always a low possibility that there are unmarked illegal, historic or prehistoric graves could occur, especially with respect to large excavations such as the proposed bulk sewer. The impact is expected to be of low significance, however there is an outside chance that unmarked graves could be encountered.

Setting and landscape: It is as a cultural landscape that the Cape Flats are important. In the past the rather formidable quality of them rendered Cape Town and the Peninsula an island that was only accessible via the Bellville–Stellenbosch causeway and gave it a particular character, and influenced the way the metropolitan area has developed since the earliest days of the colony. In a recent report by Vida Memoria, reference has been made to the role of the Cape Flats as almost a place of banishment in historical times building up to an extreme during the apartheid era when entire communities were forcefully displaced from urban Cape Town and surrounds in terms of the Group Areas Act. Today the demographics of the Cape Flats continue to reflect divisions along these lines (Vida Memoria 2014).

The project area itself has an awkward context. Its western side borders the Cape Winelands arable areas while on the south, the open space around Welmoed Cemetery and Penhill. The site boundary is in effect the boundary between desirable farm land and the less arable sands of the Cape Flats. While it does not contribute qualitatively to the character of the winelands, it remains a largely green space that serves as a buffer/interface between the suburbia of Eerste River and Blackheath. The proposal will see diminishment of this green zone, however the development proposal recognises this and includes an agricultural border within the favoured development alternative. Overall, the contribution it makes to the winelands cultural landscape is of moderate significance.

Suggested grade: 3C.

The impact of the proposal and landscape will be of medium significance however implementation of Alternative A or B with the retention of strategic tree lines will reduce the impact to one of low significance.

Places of traditional activity:

No part of the site is used for initiation ceremonies. No impacts are expected.

Built environment

Within the project area there is very little built environment of heritage significance as the majority of structures tend to be *ad hoc* and recent. A single wood and iron house was identified at the northern end of the property (Figure 7) which may merit a heritage grade subject to detailed inspection. Initial indications are that the structure is neglected and in poor order.

The significance of the impact will be low.



Figure 6 The only grade-able heritage structure in the project area. A small wood and iron house which is used as a church

7 ACCUMULATIVE IMPACTS

The site lies within the urban edge of the Cape Town metropolitan area and has already been determined through local structure planning to be a site suitable for infill development. As previously stated, the site does not contribute significantly to the local agricultural landscape other than serving as a buffer zone. The preferred alternative A will go some way to conserving and agricultural buffer zone.

8 ASSESSMENT OF ALTERNATIVES

Table 3: Impacts of the development alternatives

LAYOUT ALTERNATIVE	Alternative A (preferred)	Alternative B
Short description	An 'L shaped' agricultural area which will provide a more suitable interface with the agricultural areas upslope to the east of the site.	Based on a consolidated agricultural area as one block on the east of the site, to allow for a 500m buffer with the Welmoed Cemetery.
Description of alternative specific attributes (environmental / social)	Alternative A offers agricultural buffer zones along the southern and eastern edges of the project area. This serves as a buffer from the cemetery but also provides an interface (soft buffer) with farm land.	Alternative B offers a wide agricultural buffer to the south separating the development from Welmoed Cemetery and Penhill Estate further on. In this instance the wide buffer (500 m) satisfies the needs of the National Health Act.

List of negative impacts	Loss of green space along Van Riebeeck Drive. Visual impacts experienced from farmlands to the east. Visual impacts and loss of green space from suburbs to the west. Destruction of one possible heritage structure.	Loss of green space along Van Riebeeck Drive. High visual impacts experienced from farmlands to the east. Visual impacts and loss of green space from suburbs to the west. Destruction of one possible heritage structure.
List of positive impacts	Less impact to aesthetics of agricultural areas to the east.	n/a
List of potential mitigations	Alternative A is preferred in heritage terms. Small wood and iron cottage to be recorded before demolition. Well established tree avenues to be retained.	Alternative B also acceptable in heritage terms. Small wood and iron cottage to be recorded before demolition. Well established tree avenues to be retained.
Assessment		
Nature	Negative	Negative
Duration	Long term	Long term
Extent	Small	Small
Magnitude	Low	Low
Probability	Medium	Medium
Confidence	Medium	Medium
Reversibility	Irreversible	Irreversible
Resource irreplaceability	Low	Medium
Mitigatability	Low	Medium
Significance	Very low	Low
Conclusion		
Ranked preference (from 1-2)	1	2
Motivation for preferred alternative	An enhanced buffer zone offered by Alternative A between the proposed development and farm lands to the east is desirable.	

Table 4: Impacts of the proposed access road.

ACCESS ROAD	Only alternative	
Short description	Northern link road ± 1.1km in length with a 25m servitude, and connect with Jeripiko Road to the north.	
Description of alternative specific attributes (environmental / social)	The proposed alignment passes through agricultural land within the urban edge. It has no specific identified heritage qualities.	
List of negative impacts	n/a	
List of positive impacts	n/a	
List of potential mitigations	To be identified.	
Assessment		
Nature		Negative
Duration		Long term
Extent		Small
Magnitude		Low
Probability		Low
Confidence		Medium
Reversibility		Irreversible
Resource irreplaceability		Low
Mitigatability		Medium
Significance	Low	Low
Conclusion		
Ranked preference	n/a	
Motivation for preferred alternative	n/a	

Table 5: Impacts of bulk water supply

BULK WATER SUPPLY	Only alternative	
Short description	Reservoir up-slope of the site including ±1km bulk pipeline and associated access road, with a 10m servitude.	
Description of alternative specific attributes (environmental / social)	Reservoir and servitude situated in agricultural land of limited archaeological significance. Landscape impacts are likely to be limited to construction period only - pipeline will be buried.	
List of negative impacts	Small temporary impact to landscape during construction. Some possible displacement of archaeological material.	
List of positive impacts	n/a	
List of potential mitigations	Mitigation unlikely to be required.	
Assessment		
Nature		Negative
Duration		Short term
Extent		Small
Magnitude		Low
Probability		Low
Confidence		Medium
Reversibility		Reversible
Resource irreplaceability		Low
Mitigatability		Medium
Significance	Low	Low
Conclusion		
Ranked preference	n/a	
Motivation for preferred alternative	n/a	

Table 6: Impacts of proposed bulk sewer

BULK SEWER	Only alternative	
Short description	A ±6km bulk sewage pipeline and a pump station will be required which is proposed within a corridor formed by the Van Riebeeck Road and Baden Powell Road reserves. Both sides of the roads are included within the corridor with the final pipeline servitude being 15 m wide. This is to accommodate a 7m wide trench and working area. Also includes the proposed temporary treatment plant on SW corner of the site.	
Description of alternative specific attributes (environmental / social)	Sewer line and proposed pump station is on land that has been transformed by previous road works. Likelihood of impacting heritage material is low.	
List of negative impacts	Low possibility of impacting fossil material and site of Welmoed farm buildings (identified as being under dual carriageway). Low chance of impacting human remains. Same applies to temporary sewerage treatment plant.	
List of positive impacts	n/a	
List of potential mitigations	Archaeologist to maintain a watching brief during construction and archaeologist/palaeontologist to undertake sample collection and recording where needed. Finds of human remains to be reported to archaeologist immediately.	
Assessment		
Nature		Negative
Duration		Long term
Extent		Small
Magnitude		Low
Probability		Low
Confidence		Medium
Reversibility		Irreversible

Resource irreplaceability		Medium
Mitigatability		Medium
Significance	Medium	Low
Conclusion		
Ranked preference	n/a	
Motivation for preferred alternative	n/a	

Table 7. Proposed 66 kV line re-alignment.

RE-alignment of 66 kV power line.	Only alternative	
Short description	The western portion of the 66 kV line will be relocated from its current alignment, so that it runs parallel and adjacent to the 132 kV and the 400 kV lines further north on the site. This will involve the decommissioning of approximately 1.3 km of overhead line, and construction of a new section of 1.5 km of the line to adjoin the path of the other two lines. This new section is partly on site (1.2 km) and offsite (300 m). The width of the new servitude required off and on the site is 11m either side of the centreline (22m in total).	
Description of alternative specific attributes (environmental / social)	Powerline has a small foot print and will not alter site quality. Proposal will see consolidation of electrical infrastructure into a single corridor.	
List of negative impacts	n/a	
List of positive impacts	Consolidation of infrastructure into a single area of disturbance.	
List of potential mitigations	n/a.	
Assessment		
Nature	Neutral-positive	
Duration	Long term	
Extent	Small	
Magnitude	Low	
Probability	Low	
Confidence	Medium	
Reversibility	Reversible	
Resource irreplaceability	Low	
Mitigatability	n/a	
Significance	Medium	Low
Conclusion		
Ranked preference	n/a	
Motivation for preferred alternative	n/a	

8.1 Selection of Alternatives

Both layout alternatives provided have merit. Alternative A is supported in that it provides for a desirable agricultural buffer zone between the residential development and the existing farmlands south and east thus softening the urban edge. Alternative B offers the required buffer space of 500m from a cemetery and cushions agricultural and old developed areas.

9 CONCLUSION

At scoping stage there are no indications that there are any red flag issues attached to the proposed Penhill Greenfields Development Project. Indications are that almost all impacts in heritage terms will be of low significance, and implementation of mitigation measures will be successful. In heritage terms there are no compelling reasons at scoping phase not to support the proposed activities.

9.1 Key issues and Plan of Study for EIA Phase

9.1.1 Archaeology and built environment.

- No further field assessment is required for archaeology on the development site.
- A walk down of the proposed access road and water mains servitude is required.
- The single small wood and iron structure on the site that has heritage significance must be properly recorded and graded (with permission from the landowner).

9.1.2 Palaeontology.

No further field assessment is required

9.1.3 Landscape and setting.

- The assessment of the landscape as a heritage resource will require the integration of findings of the visual impact assessment as well as consideration of the methods of landscape characterisation and grading to produce an integrated statement of impact for purposes of the EIA.
- The impact of the development proposal on historic farms in the surrounding Bottelary Hills needs to be assessed as diminishment of the landscape value in which they are situated could affect their sustainability.

9.1.4 Public Participation

The heritage authority requires that the comments of interested and affected parties be assessed in the heritage component of the EIA. At the EIA stage of the project those comments that are available must be included and integrated into the report.

9.1.5 Impact Assessment

The Aurecon standard methodology for assessment of environmental impacts will be applied to the preferred alternative.

10 REFERENCE LIST

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