

AN INITIAL HERITAGE IMPACT ASSESSMENT OF CULEMBORG, CAPE TOWN

Prepared for

Crowther Campbell & Associates cc

June 1998



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EXECUTIVE SUMMARY

An initial heritage assessment of the Culemborg area, on reclaimed land in Cape Town, has revealed that there are a variety of heritage resources that may potentially be impacted by development activities.

HERITAGE RESOURCES AT CULEMBORG

Pre-colonial material

Shell middens and open scatters left by San and Khoi Khoi aboriginal people may have already been destroyed by previous impacts. There is a chance that *in-situ* material could have survived provided that it is deeply buried and located on those parts of the development area that made up the shoreline. Probability of impacts is *low*.

In terms of SAHRA act destruction of these sites is permitted by permit only, on condition of appropriate mitigation.

Unmarked graves

Two mass graves of unknown persons were located in the vicinity of Fort Knokke, while a Military Cemetery is known to have existed in the area. Indications are that the Military Cemetery may have been exhumed for railway construction. The possibility of impacts occurring is *low*. There is however a *high* chance that unmarked graves of shipwreck victims, precolonial people and smallpox victims may be impacted on the old Woodstock Beach.

In terms of SAHRA act, graves and human bone over 60 years old are strenuous protected. SAHRA expects that a period of 60 days is given to advertisement of intent to exhume, with all reasonable effort being made to contact relatives of the deceased. One this has been done SAHRA, may issue and exhumation permit (to archaeologists only) to remove graves. Accidental discovery of human bone can imply delays to construction activities.

Military fortifications, military hospital

During the 18th and early 19th centuries Cape Town was heavily fortified with an extensive "Sea Line" of gun batteries extending from the Castle of the Cape of Good Hope to Fort Knokke. Behind these lines were a military hospital and various powder magazines. There is a *medium-high* chance that development activities will impact the remains of the fortifications, which were situated along Woodstock Beach. There is a *low* chance that foundations of the military hospital will be impacted.

In terms of the SAHRA act, these remains constitute an archaeological site. Such material may only be excavated by an archaeologist and destroyed under auspices of a SAHRA permit.

Shipwrecks

Some 88 known wreckings took place along Woodstock beach during the 17th, 18th, 19th centuries. The remains of these were covered with soils derived from the land reclamation operation during the construction of Duncan Dock in the 1940's. As a result of these events the area is considered to be extremely important by maritime archaeologists. There is a very

high chance that excavations in the Culemborg area will impact remains of shipwrecks if they exceed 3m in depth. There is a low chance that shipwrecks will be impacted, if excavations are less than 2m deep.

The SAHRA act protects all shipwrecks and their cargoes and contents within South African territorial waters or on land that are older than 60 years. These may not be disturbed unless by a SAHRA issued permit.

Built environment

No buildings of conservation value were identified.

Built structures and their contents over 60 years old are also protected, however no structures have been identified that fall within this protection.

MITIGATION

It is proposed that a first phase of test excavations should take place before development activities begin, to establish the location and presence of the various military structures or other finds on the old Woodstock shoreline. If it is found that important features will be impacted by development activities, a further phase of salvage excavations will be necessary before development begins.

Test excavations will be required in areas where foundations are to extend deeper than 2m in areas reclaimed from the sea. Bulk earthmoving operations on the site will need to be monitored by an archaeologist. An archaeological team will need to be on standby to "rescue" any material that may be exposed. A contingency budget must be set aside to cover these eventualities.

Costs will depend on duration and extent of development activities, however, monitoring will be charged on a daily rate. It is suggested that R200,000.00 be set aside to manage heritage impacts with respect to military structures, graves and monitoring of excavations to a depth of 1.5m. If excavations exceed 1.5m in depth, higher costs are likely to be incurred to cover test excavations and impacts on maritime material.

Beyond mitigation of impacts to archaeological material, Culemborg also represents an unparalleled opportunity to develop the extraordinary historic potential of this area into museums and theme areas that will add value to the proposed development.

Table 1: Heritage resources in the Culemborg Area – impacts and mitigation

Feature	Extent	Duration	Intensity	Probability	Significance	Status	Confidence	Legislation	Mitigation
Pre-colonial sites	Local	Permanent	High	Low	Medium-high	Negative	High	National Monuments Act	Monitor, excavate and record as required.
Un-marked graves	Local	Permanent	High	High	Low-high	Negative	High	National Monuments Act Human Tissues Act Exhumation Ordinance	Monitor, apply legal process, exhume.
Military cemetery	Local	Permanent	?low	?low	?Low	Negative	High	National Monuments Act Human Tissues Act Exhumation Ordinance	Monitor, apply legal process, exhume.
Fort Knokke	Local	Permanent	High	High - low (depending on siting of activities)	High	Negative	High	National Monuments Act	Test excavation, excavate and record as required.
Sea Lines	Local	Permanent	High	High	Medium-high	Negative	Medium	National Monuments Act	Test excavation, excavate and record as required.
Military Hospital	Local	Permanent	Low	Low	Low	Negative	Medium	National Monuments Act	Not required
Ship wrecks	Local	Permanent	High	High	Low (>1.5m depth) High (< 2.0m depth)	Negative	High	National Monuments Act	Monitor, excavate, record, remove as required.
Built environment	Local	Permanent	High	High	Low	Neutral	High	No applicable heritage legislation.	No mitigation required.

1. INTRODUCTION

The Archaeology Contracts Office (ACO) of the University of Cape Town was commissioned by Crowther Campbell & Associates cc to conduct an initial heritage impact assessment on a portion of land in Cape Town known as “Culemborg”. Today the area consists of a large marshalling yard and goods handling station on land owned by Transnet (Figure 1). Railway related activities on the site have largely ceased and vacated buildings and facilities have been leased out to various businesses. Much of Culemborg lies on land reclaimed from Table Bay in the 20th century as a result of harbour development. Prior to this time the area consisted of the shallow waters of Table Bay, and the adjacent Woodstock Beach. It is possible that the area may shortly undergo major redevelopment that has the potential to negatively impact buried historical sites that exist in the area. The ACO was requested to identify any areas of potential sensitivity so that suitable mitigatory measures can be put into place before construction activities begin.

1.1 Terms of Reference

The ACO was requested by the client to undertake the following:

- Locate and examine known sources of information with respect to the location of heritage resources in the Culemborg area;
- Utilise and examine primary sources of information where available. Consult with archaeologists at UCT, the Maritime Museum and the National Monuments Council (NMC). Discussions with the NMC should, in addition relate to permit requirements, (time cost etc);
- Visit the site in order to assess the built environment;
- Prepare a map showing possible areas of sensitivity;
- Prepare and submit a report, which includes an evaluation (assessment of identified impacts) in terms of criteria as set out by the client.

1.2 Method

This is a “desk top” study based on examination of archival material such as historic maps and aerial photographs and historic photographs of the Woodstock beach area. A site inspection was carried out to check for surface evidence of archaeological material. Dissertations by colleagues, consultation with maritime archaeologists based at the National Monuments Council and within the Department of Archaeology at the University of Cape Town, have also played a significant role in guiding this project.

An important product of this study is an overlay map based on a 1:3000 aerial photograph of the Culemborg area. Information from historic maps has been re-scaled and overlaid on the Culemborg area as a basic tool for the identification of areas of historic significance. The location of Fort Knokke has been re-established with relative confidence. In other areas we have had to rely on maps dating as early as 1795, which have proved to be inaccurate. The

location of the “Sea Line” fortifications is based on such a map and is therefore not precise. Maritime archaeologists consulted for this project requested that co-ordinates given for the locations of historic shipwrecks are disregarded, as they are inevitably inaccurate and therefore misleading. The predicted location of archaeological material on the Culemborg site is shown on Figure 2.

The mitigatory measures suggested in the following pages are based on the premise that archaeological material that will not be physically impacted by earthmoving activities need not be mitigated but may remain *in-situ* as a buried resource for future generations.

1.3 Historical background

The most recent phase of prehistoric occupation of the Cape Peninsula is known as the Late Stone Age. This period has been subject to detailed study by archaeologists. Late Stone Age people were present between twenty thousand years ago up to the arrival of European colonists at the Cape. Late Stone Age people were the ancestors of the San (Bushmen) and Khoi (Hottentots) who were present throughout the South Western Cape and Northern Cape during the historic period. Throughout most of the Holocene (last 10,000 years) the Peninsula was inhabited by San hunter gatherers who resided in small groups which were highly mobile. They hunted with bows and arrows, snared small animals and gathered shellfish. They used digging sticks to find a variety of vegetable foods. The San had complex belief system, aspects of which are represented in many of the rock painting sites of the south west Cape. It is now broadly accepted by archaeologists that shortly after 2000 years ago, a new economic system was introduced to Southern Africa. Certain groups of people (the Khoi Khoi) adopted transhumant pastoralism (in this case with herds of fat-tailed sheep and later cattle) instead of hunting and gathering which was universally practiced in South Africa before this time. At the same time the art of making clay pottery was introduced. The origin of early stock keeping and pottery in Africa is still unclear.

Prior to and during the early colonial period at the Cape, the Dutch colonists and visitors described numerous encounters with aboriginal people. Especially relevant are accounts in the diary of the first Governor of the Cape, Jan van Riebeeck, who attests to the almost continuous presence of aboriginal Khoi Khoi people in Table Valley. It is known that a number of groups of people, under their various “Kapteins,” frequented the Peninsula on their seasonal rounds. The “Strandlopers” or “Peninsulars” under Kaptein Herry (*Atshumao*) were resident virtually all year round. In seasons of good summer rain, large groups of Khoi Khoi from the Vredenberg Peninsula (the “Saldanhars”) converged in the Tygerberg hills and around the fringes of Table Bay to graze their cattle on seasonal grasses. At first, using Herry as middleman, the Dutch established good trade relations with the powerful Saldanhars. During the early years of the colony Khoi Khoi groups paid frequent visits to the early European settlement and camped around Table Bay. However, after disputes arose, Van Riebeeck erected defensive measures along the Liesbeeck River, at Kirstenbosch and the mouth of the Salt River to control the movement of aboriginal people into Table Valley.

Woodstock Beach to the east of the Castle lay outside the bounds of the town for most of the 18th century and remained marginally utilised for most of the 19th century. For most of the 18th and 19th centuries the Salt and Black rivers converged to form an extensive estuary which flowed into the sea at two localities in Table Bay, one into where Duncan Dock is today, and the other at the entrance to the Milnerton Lagoon. The land in between was effectively cut off from the mainland and was called Paarden Eiland. According to historic records there were times when fairly large vessels could be sailed into the mouth of the Salt

River where they were careened for cleaning and repairs. Both the colonists and the local Khoi Khoi visited the mouth of the river on frequent fishing expeditions while the estuary itself was a source of thatch grass and reeds for Cape Town's early houses. Table Bay was the Cape's primary anchorage providing safe haven for shipping during the south easterly gales of the summer months. Winter, however, was another matter with violent north westerly gales causing ships to drag anchors and run aground on Woodstock and Milnerton beaches. The entire easterly side of the bay became a veritable ship's graveyard while the bodies of victims were often buried in the dunes close to the beach.

From a strategic point of view Woodstock beach was the unguarded flank of Cape Town. Van Riebeeck recognised this and erected two small fortifications, built in 1652 and 1654 near the mouth of the Salt River. During the 18th century, Political events in Europe demanded that adequate defenses be established to secure Cape Town in the event of the real possibility of invasion. In 1744 a large battery (Imhoff Battery) was built directly in front of the Castle. This was augmented by the construction of Fort Knokke close to the Salt River mouth. Fort Knokke was linked to the Castle with an extensive defensive line (the Sea Line) consisting of a heavy sea wall defended at intervals by five batteries, each equipped with between 6-16 cannons. In 1782 the defenses were further strengthened with the construction of the French Lines. This consisted of wall extending from Fort Knokke almost as far as Zonnebloem in Woodstock. Like the Sea Lines, this was defended by several batteries. By the time of the first British occupation in 1795, Cape Town was a heavily fortified city. These defenses were never put to use as Cape Town surrendered to British forces after an initial engagement at Muizenberg.

During the 19th century, development of the suburbs of Woodstock and Salt River accelerated. After 1830, District Six developed, populated by freed slaves, immigrants and fishermen. Woodstock beach served as a recreational facility and a launching area for fishing boats and by 1890, had become a fashionable bathing area. Also present on Woodstock beach was the military hospital, a large Georgian building erected in 1845 on the site of the old "Lines Hospital" which dated back to the 18th century. A large military cemetery was located between the Hospital and Fort Knokke. In 1862 a rail link was established between Cape Town and Wynberg. This heralded a period of increased development with Salt River becoming the junction for the Wynberg and Wellington routes. Increased commercial activity eventually resulted in the acquisition of more land for railway development, partially achieved through land reclamation from Table Bay and draining of the Salt River swamps.

2. EVALUATION OF IMPACTS ON HERITAGE RESOURCES AT CULEMBORG

2.1 Precolonial material

Stone Age archaeological sites have been discovered deeply buried under buildings in central Cape Town. For example, found under the Golden Acre site (Avery pers. comm), a 1000 year old Khoi Khoi burial site in Greenpoint (Apollonio, Halkett, Hart, Malan and Morris in prep.) and a 3000 year old Late Stone Age site under the Castle of the Cape of Good Hope (Halkett pers. comm). Furthermore, numerous burials and a number of middens have been found in dunes of Milnerton Beach (Avery 1995). Most of these exposures have taken place as a result of construction activities.

The documentary records indicate that aboriginal people were present in the Table Bay area during the historic period so it is reasonable to assume that this pattern of occupation

extended back well into prehistoric times. Both the Khoi Khoi and San relied greatly on marine resources such as shellfish, fish, seabirds and marine mammals as food sources. The sheltered coast of the bay as well as Woodstock beach with its offshore reefs would have attracted prehistoric occupation leaving shell middens and artefact scatters in the dunes. However, this area has been subject to earthmoving activities since the mid-18th century with massive land reclamation taking place in the early 20th century. Most prehistoric archaeological sites would not have survived this process unless they were fairly deeply buried. It is unlikely that any precolonial material will be impacted by development of the Culemborg site, especially if operations are restricted to areas that have been reclaimed. However, previous experiences of archaeologists within the City Bowl indicate that we should not discount the possibility, especially in areas where development activities will encroach upon what was the old shoreline.

2.1.1 Evaluation of impacts on precolonial material

Extent: Geographical extent of impacts is limited to those portions of Culemborg below ground level not impacted by previous development activities.

Duration: Impacts by earthmoving and excavation on buried archaeological material are permanent. Archaeological material, once destroyed, does not regenerate and can never be replaced.

Intensity: The intensity of impacts of heavy earthmoving machinery on *in-situ* archaeological material is high, while intensity of impact on material in secondary context is low.

Probability of impact: As it is expected that most precolonial archaeological material will already have been destroyed by previous development activities. The expected negative impact is low.

Significance: In the unlikely event of *in-situ* middens or archaeological sites being exposed during construction, the significance of the impact will be *medium-high* depending on the preservation of the material.

Status of Impact: Negative.

Degree of Confidence in predictions: High.

Legislation: Precolonial Archaeological sites are protected by the National Monuments Act of 1969 as amended. The relevant portion of the act is reproduced below.

Section 12(2A) *No person shall destroy, damage, excavate, alter, remove from its original site or export from the republic-*

e) the anthropological or archaeological contents of graves, caves and rockshelters, middens, shell mounds or other sites used by such people;

....except under the authority of and in accordance with a permit issued under this section.

2.1.2 Mitigation of impacts on precolonial material

The goals of mitigatory procedures are threefold. The primary task is the salvage of information that will further knowledge of pre-history in South Africa. This is achieved through the study of material remains from known contexts. A second purpose is to salvage material objects that may be of public or scientific interest, or may be used to enhance the public experience of any development on the site. The third objective is to fulfill the requirements of existing legislation, which is designed to protect the national heritage.

a) An archaeologist should be appointed to monitor all bulk earthmoving operations on the site. In the event of undisturbed middens being located, the archaeologist will need to draw on a contingency budget to sample the material and curate it to satisfy NMC permit requirements.

b) It would be desirable that the developers consider the option of establishing an on-site museum or displays where archaeological material (if found) can be exhibited in a meaningful way. This will enrich the development and enhance the experience of visitors and patrons.

2.2 Unmarked graves

Numerous unmarked graves of both aboriginal people and shipwreck victims have been recovered by archaeologists in the area between Milnerton Beach and the container terminal. During the 17th and 18th centuries bodies of wreck victims were not buried in marked cemeteries but on the beaches and dunes close to wreck sites. This was especially so if the victims were slaves or foreigners of unknown religion. Three devastating smallpox epidemics during the 18th century caused such high mortality in Cape Town that land for the interment of corpses was at a premium. Many were buried in unmarked graves in or around the city. Recent excavations in Green Point by Morris, Hart and Halkett (pers comm) produced the remains of 100 or more such people buried in simple coffins in an unmarked cemetery.

Excavations in the vicinity of the site of Fort Knokke in the 1950s revealed the presence of two mass graves containing the remains of 31 people. One of the graves, contained 19 people, who according to Singer (1953) appear to have been haphazardly dumped, was presumed to contain the remains of shipwreck victims - possibly slaves. A further 7 individuals were found in coffins placed in neat rows. Apparently, more coffins were seen in excavations on this site but these were not removed because of time constraints. The skeletal material from the Fort Knokke burials was recently analysed by Cox (1995). Analysis of the bones using stable carbon isotopes and anatomical features revealed that one of the burial sites contained the remains of a number of persons who's diet had changed in the months before their lives ended. Furthermore, a number of individuals showed evidence of tooth mutilation practiced by certain groups of people in Mozambique and Central Africa. Archival research has shown that these were captured slaves who drowned when the ship *Pacquet Real* sank off Fort Knokke in 1818. The ship was *en route* from Mozambique to Brazil. The other grave contained Europeans whose origins have not been established. According to Cox (1995), Singer has been unable to provide adequate locational information that would allow us to pinpoint the precise position of these burials, apart from the fact that they were approximately 50-100 meters away from the original position of Fort Knokke, but not part of the Woodstock Military Cemetery.

Very little information is available about the large Military Cemetery, which lay on a portion of land between Fort Knokke and the military hospital. Experience in other parts of Cape Town has shown that although a number of formal cemeteries in Cape Town were officially

exhumed at the turn of the century, this process was often incomplete. In some instances exhumation involved the relocation of headstones and emptying of easily accessible burial vaults only. The Military Cemetery is visible on a 1926 aerial photograph and had not been developed at this time. Beater (pers comm) has indicated that some exhumations did take place at the Military Cemetery in Woodstock in the 1960s to make way for new railway lines. At present it is unclear how much of the cemetery was exhumed. What is known is that the exhumations that did take place, were conducted by workmen with no knowledge of human anatomy, and are therefore likely to be incomplete. Trial excavations conducted in previously "exhumed" cemeteries have produced randomly scattered body parts and in some instances, complete individuals.

There is a high possibility that excavations on the previous shoreline will impact human remains. These include unmarked and unknown graves of shipwreck victims, precolonial burials and formal graves of soldiers and sailors. With respect to land levels behind the previous shoreline, the existing land surface is likely to be at a similar elevation. Small dunes, which would have existed, have been removed.

2.2.1 Evaluation of impacts on unmarked graves and cemeteries

Extent: Geographical extent of impacts is limited to those portions of Culemborg that were previously known cemeteries or land set back from the beach.

Duration: Impacts by earthmoving and excavation on buried skeletal material are permanent.

Intensity: Intensity of impacts by earthmoving will be *high*.

Probability of impact: Depending on the extent of earthmoving, and in terms of the fact that burials are known to have existed on the site, the probability of impacts is high in the case of unmarked graves. The Military Cemetery may not be impacted, as it appears to lie under the active suburban railway system.

Significance: Impacts without mitigation will encroach on a number of laws covering the treatment of human remains. Historic and prehistoric burials that are well preserved and *in-situ* are of high scientific and medical importance. Scattered remains that are often found in poorly exhumed cemeteries are of low significance, but nevertheless protected by the Exhumation Ordinance and the Human Tissues Act (see below).

Status of Impact: Negative.

Degree of Confidence in predictions: High.

Legislation: Legislation protecting human remains is currently complicated, consisting of three separate laws. The new draft Heritage Resources Bill, which is due to be presented to Parliament in the near future provides more complete protection and clearer guidelines. The existing legislation is presented below.

i) The National Monuments Act (Act No 28 of 1969 as amended). Section 12(2a)(e) protects historic grave markers/stones over 50 years old. Section 12(2a)(f) protects the human remains of people who lived in or visited the Republic before 1652AD. Section 3A(2) protects war graves (remains of victims of conflict).

ii)The Human Tissues Act: (Act No 65 of 1983) protects and governs the handling and storage of human tissue.

iii)The Exhumations Ordinance: (Ordinance no 12 of 1980) protects all graves and human remains, the handling and exhumation thereof and indicates the procedures that need to be followed in the event of exhumation. This is superseded by the National Monuments Act where the remains of precolonial people are concerned.

2.2.2 Mitigation of Impacts on cemeteries

The goal of mitigation will be to conduct exhumations in a controlled and responsible fashion in terms of the requirements of the existing legislation. Human remains of scientific importance will be housed in a licensed institute, while other material will be stored or reburied.

a) The original boundary of the Military Cemetery should be established if this area is to be developed. Test excavations to establish whether the cemetery has been exhumed will have to be conducted. If it is found that human skeletal material is present, the necessary legal procedure must be put into place and the cemetery properly exhumed.

b) An archaeologist and a standby team should be appointed to the development project throughout the duration of all bulk earthmoving activities. The presiding archaeologist (or his/her representative) will monitor all excavations for unmarked graves. The archaeologists will need to have authority to divert/halt machinery while skeletal material is removed/recorded or photographed until this process is completed satisfactorily. This may incur delays or rescheduling of earthmoving activities - all factors that will have to be budgeted for by the developers.

c) A contingency budget will have to be set aside to cover the costs of exhumation of unmarked graves.

2.3 Military Fortifications, Military Hospital

In the 17th century van Riebeeck constructed two redoubts on either side of the mouth of the Salt River to guard the eastern flank of the fledgling colony. Attwell (1993) is of the opinion that one of these was built on the site of the later Fort Knokke. By the mid-19th century virtually the entire Woodstock beachfront had been fortified. This included the Imhoff battery in front of the Castle, which was connected to fort Knokke by the Sea Line. The Sea Line was a wide rock and earth filled wall with a parapet. Interspersed along the Sea line were the Elizabeth, Helena, Charlotte, Tulbagh, and Riebeeck batteries. Fort Knokke was a star shaped structure of stone and mortar and earth walls. It was armed with 16 cannon and surrounded by a moat. The British who took it over in 1795 considered it to be of inadequate design, modernised it and constructed a further series of fortifications (Craig's Battery and Tower) to the east to strengthen the coastal defenses. Powder magazines and a military hospital slightly inshore supported these coastal defenses. It is possible that the Sea Line was converted at the beginning of the 20th century to act as a retaining wall for the scenic Marine Drive around the shore of Table Bay.

Today, very little remains of the coastal defense system other than the Castle. Fort Knokke was demolished after 1926, land reclamation resulted in destruction or obscuring of the Sea Line, and the Imhoff Battery was demolished to make way for Strand Street and railway

lines. A small portion of walling exists close to the Woodstock bus station, while the remains of a French redoubt (with cannon) are present in Trafalgar Park, Woodstock.

In all likelihood Fort Knokke and the Sea Lines were not demolished to below ground level which means that there is a good chance that the moat and foundations of the structure still exist. Parts of the Sea Line may have not been demolished (they were partially visible in 1926) but rather obscured by dredgings from Table Bay that were used to raise ground levels on the old Woodstock Beach. It is therefore quite likely that remains of these structures may be found within 1m depth of the existing ground surface. It is quite possible that excavations in the area will reveal portions of the wall or its foundations and even cannons and shot which on becoming redundant, may have been discarded nearby on account of their weight.

2.3.1 Evaluation of impacts on military structures

Extent: Geographical extent of impacts is limited to those portions of Culemborg inland of Woodstock Beach and Table Bay.

Duration: Impacts by earthmoving and excavation on buried military archaeological material are permanent. Archaeological material, once destroyed does not regenerate and cannot ever be replaced.

Intensity: Intensity of impacts will vary according to location and depths of excavations on the site. The intensity of impacts of heavy earthmoving machinery on *in-situ* features such as walls and foundations is high.

Probability of impact: If large scale excavations to bedrock level take place on those areas of the site which were not reclaimed from the sea, the probability of impacts on Fort Knokke and remains of the Sea Line is high. Probability of impacts on the site of the military hospital is low as this is estimated to lie under the active suburban railway system.

Significance: Impacts without mitigation will be negative and high. Correct mitigation procedures in terms of both methodology and legislative requirements will achieve positive impacts of medium-high significance, especially if excavated features can be included within the development as foci of interest.

Status of Impact: Negative.

Degree of Confidence in predictions: High.

Legislation Historical archaeological sites are protected by the National Monuments Act (Act 28 of 1969 as amended). The relevant portion of the Act is reproduced below.

Section 12(2A) *No person shall destroy, damage, excavate, alter, remove from its original site or export from the republic-*

f) any historical site, archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.

An historical site is defined in the Act, as any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 50 years.

2.3.2 Mitigation of impacts on military heritage

The goals of mitigatory procedures are threefold. The primary task is the salvage of information that will better further knowledge of military history at the Cape. This is achieved through the study of material remains from known contexts. A second purpose is to salvage material objects or expose portions of the old batteries and fortifications that may be of public or scientific interest, or may be used to enhance the public experience of any development on the site. The third objective is to fulfill the requirements of existing legislation, which is designed to protect the national heritage.

a) An examination of historic maps and photographs has revealed that Fort Knokke, stood partially within the development area. Indications are that the Sea Lines ran through the development area. If construction activities are to take place in the areas shown on Figure 2, a phase of test excavations should be conducted well before development activities begin. This is to establish if foundations of these structures exist, and this being the case, establish their potential to be incorporated with the development as features of interest. A report should be produced detailing the findings and indicating directions for future work.

b) Depending on the findings of test excavations, an archaeologist and a standby team should be appointed to the development project throughout the duration of all bulk earthmoving activities. The presiding archaeologist (or his/her representative) will monitor all excavations for archaeological material. The archaeologists will need to have authority to divert/halt machinery while archaeological material is removed/recorded or photographed until this process is completed satisfactorily. This may result in delays or rescheduling of earthmoving activities - all factors that will have to be budgeted for by the developers.

c) A large contingency budget will have to be set aside to cover the costs of the archaeological excavation, removal and curation of any finds which may come to light during the development process. The treatment of archaeological material has to satisfy the conditions of any excavation permits granted by the National Monuments Council or its future equivalent.

d). It would be desirable that the developers consider the option of establishing an on site museum or displays if parts of the fort or Sea Lines are found. It would be desirable to incorporate exposed features such as stone ramparts, military hardware as features within the proposed development.

2.4 Shipwrecks

Remains of shipwrecks and/or maritime hardware have been found in virtually every deep excavation on the foreshore of Cape Town. Such material includes timbers, anchors, ceramic fragments, and in some instances, portions of ships. The Culemborg area, which is situated on the easterly side of Table Bay is considered to be extremely sensitive by maritime archaeologists in South Africa. To date some 88 vessels are known to have been wrecked on Woodstock beach between the Castle and the mouth of the Salt River during the 17th, 18th and 19th centuries. Scepter reef, off Fort Knokke, is known to have been responsible for damaging a number of vessels, in some instances with serious loss of life. Vessels which were blown into shallow waters by violent north westerly winds were generally stripped of all salvageable items with the result that probably little more than timbers and keel

remained. However, ships that floundered in deeper water out of easy reach of people on the shore often went down with cargoes and fittings.

By the end of 1948 a massive land reclamation project was completed which involved converting a portion of Table Bay into Duncan Dock. The process involved the construction of temporary embankments followed by extensive dredging of a large basin. The material dredged out of Table Bay was piled between the temporary embankment and the Woodstock beach inundating the ocean bottom and creating an extensive tract of reclaimed land. The process is known to have destroyed numerous maritime archaeological sites in the deeper waters of Table Bay depositing artefacts and timbers in the fill that made up the reclaimed land. Conversely shipwrecks and archaeological material including some of the military facilities were covered with silt, creating what amounts to an ideal preservation environment.

The greater portion of the Culemborg site consists of land reclaimed from the shallow waters of Table Bay. Charts indicating water depth in the Culemborg area in the early 19th century shows the maximum depth to have been about 20 foot. Figure 3 shows the extent of reclaimed land with sea bed depth in feet (mid-19th century) superimposed. An aerial photograph taken in 1926 clearly shows features of the seabed such as Scepter Reef and various sewage outlets indicating the water depths were originally quite shallow throughout most of the Culemborg area. We estimate that maximum water depth in the area would have been in the region of 7-12m deep but shallower around Scepter Reef (Scepter Reef is estimated to lie under the Table Bay Boulevard extending inland towards Culemborg). The chances of encountering shipwreck material in both shallow and deep excavations in this area are extremely high.

2.4.1 Evaluation of impacts of development activities on maritime heritage

Extent: Geographical extent of impacts is limited to those portions of Culemborg reclaimed from Table Bay. However the broader cultural-historical implications of impacts on such shipwrecks can be of national and international extent in terms of the potential loss of information.

Duration: Impacts by earthmoving and excavation on buried maritime archaeological material are permanent. Archaeological material, once destroyed does not regenerate and cannot ever be replaced.

Intensity: Intensity of impacts will vary according to location and depths of excavations on the site. Excavations, which do not exceed 1.5m in depth, are expected to have a low negative impact. The intensity of impacts of heavy earthmoving machinery on *in-situ* archaeological material such as deeply buried wrecks (more than 3m deep) is high, while intensity of impact on material in secondary context is low.

Probability of impact: If deep excavations to bedrock level take place on the site, the probability of impacts occurring is high. Excavations not exceeding 1.5m will have a low probability of impacting shipwreck material.

Significance: Impacts without mitigation on shipwreck material located along the immediate Woodstock beach area are medium-low and negative as much of the material will be in a secondary or disturbed context. Likewise, impacts caused by excavations less than 1.5m deep will be of low significance. Correct mitigation procedures in terms of both methodology and legislative requirements will achieve positive impacts of medium significance.

Deep excavation without mitigation in areas that were in deeper water, will result in high negative impacts. These wrecks are more likely to be intact and undisturbed by salvage work. Positive impacts of medium - high significance may be achieved with suitable mitigation in terms of existing legislation.

Status of Impact: Negative.

Degree of Confidence in predictions: High.

Legislation: Shipwrecks are protected by the National Monuments Act (Act 28 of 1969) as amended. The relevant portion of the act is replicated below.

Section 12(2B) *No person shall destroy, damage, excavate, alter, remove from its original site or export from the republic-*

d) any wreck or portion of a wreck, or any object derived from a wreck, known or generally accepted to have been in South African territorial waters longer than 50 years; except under the authority of and in accordance with a permit issued under this section.

2.4.2 Mitigation of Impacts on maritime heritage

The goals of mitigatory procedures are threefold. The primary task is the salvage of information that will improve knowledge of maritime history at the Cape. This is achieved through the study of material remains from known contexts. A second purpose is to salvage material objects that may be of public or scientific interest, or may be used to enhance the public experience of any development on the site. The third objective is to fulfill the requirements of existing legislation, which is designed to protect the national heritage.

a) It is estimated that the depth of Woodstock beach shoreline is between 2-3m below present surface. The original sea bed depth would have been about 3-12m within the Culemborg area. Shipwreck material can be expected to occur throughout these depths, which are somewhat deeper than the projected building foundation depths of 1.5m. It is suggested that an archaeologist and a standby team should be appointed to the development project throughout the duration of all bulk earthmoving activities and excavation of foundations. The presiding archaeologist (or his/her representative) will monitor all excavations for archaeological material. The archaeologists will need to have authority to divert/halt machinery while archaeological material is removed/recorded or photographed until this process is completed satisfactorily. This may result in short delays or rescheduling of earthmoving activities.

b) Phase 1 test excavations will need to be conducted in areas where building foundations will exceed a depth of 2m. The purpose of this will be to identify areas of sensitivity and then make recommendations for a second phase of salvage archaeology or suggest changes to the layout of the development to avoid impacting archaeological material. This phase of work will need to take place before construction work begins.

2.5 The Built Environment

A site inspection at Culemborg has revealed that there are no buildings, which exceed 50 years of age, that are automatically protected by the National Monuments Act of 1969 (as amended). No structures of industrial significance or architectural merit were noted within the development area. No impacts are expected.

3. PERMITS

3.1 Permit requirements of the National Monuments Council

Section 12(4) of the National Monuments Act states: *“On application by any person in the manner prescribed by regulation under this Act, the council may at its discretion, but subject to the directions of the minister, issue such a person free of charge a permit to destroy, damage, excavate, alter, remove from its original site or export from the Republic any monument or any object referred to in subsection (2) or (2A), specified in the permit.”*

The National Monuments Council will issue a permit to destroy archaeological material provided that the applicant, in this case the developer, has taken suitable action to mitigate the destruction of such material. In this instance this will involve the appointment of archaeologists who in turn will apply to the NMC for excavation permits to conduct their excavations. Mitigation of archaeological material usually takes the form of controlled excavation, sampling and recording as well as curation and conservation of artefacts by suitably qualified archaeologists.

The NMC will award archaeologists permits for excavation at short notice. However, the awarding of permits to developers to destroy archaeological material is dependent on whether the NMC is satisfied that archaeological salvage/mitigation has been carried out correctly. The decision to issue a permit is made at committee level after the archaeologist has issued a report on the mitigation process. The regional plans committee of the NMC sits every 2 weeks and permits, if plans are passed, are issued by the NMC at no charge.

To facilitate the process of permit application it is best that the NMC be kept fully informed. It is also advantageous to commission archaeologists as early as possible in the project to begin test excavations (if these are needed) so that their findings can inform the development process.

NMC Permits will not be required for demolition of existing buildings as none of these exceed 50 years of age.

3.2 Hiring archaeologists

The Cultural Resources Management (CRM) Section of the Southern African Association of Archaeologists has been recently established to regulate standards and ethics of archaeologists doing consulting work in southern Africa. The organisation has names and contact details of member archaeologists and their accredited fields of expertise. There is no legal obligation to hire only archaeologists who are members of the association. Members of this body, however, have agreed to operate in terms of certain principals and standards which can be of benefit to the client should he/she require the association's review facility.

The National Monuments Council is also in a position to provide information about available contracting/consulting archaeologists and their fields of expertise.

4. BUDGET

4.1 Shipwrecks

It is estimated that systematic excavation of a single medium-sized cargo-laden shipwreck will require a period of 4 months of work for a team of 20 people. They will need plant and pumping equipment for the duration of the excavation phase. A vessel can produce many tons of artefactual material, all of which will have to undergo a conservation process to ensure its survival once it is exposed to air. This process will take about 3 years and requires overseeing by a specialist conservator. A facility will have to be made available for this period of time and for the long term storage of the material, ideally an on-site museum. The cost implications are obviously considerable. A maritime project of similar scale in the USA has cost in the region of \$5,000,000 to date, however it is expected that costs in South Africa will be less. It is therefore best if foundation excavations are kept to the estimated depth of 1.5m as this will potentially avoid considerable expense. Detailed budgets will have to be calculated once the extent and depths of development activities is made known.

4.2 Military features

Excavation of military facilities will be substantially less expensive due to the lower number of artefacts and lower conservation and curation costs attached to stone walled features. Costs in this instance are not expected to exceed R150,000.00. This however depends on the level of impact and the requirements of the client. Ultimate costs will depend on the findings of the initial Phase 1 test excavations.

4.3 Unmarked graves and monitoring

Unmarked graves will have to be exhumed on an *ad hoc* basis and therefore charged on an hourly or daily rate. Monitoring of bulk earthmoving operations will be done by an archaeologist charging an hourly or daily rate.

5. CONCLUSION

This study, which is solely based on documentary evidence, indicates that the Culemborg site is one of high archaeological potential. It is particularly sensitive in terms of its maritime heritage, which includes a multitude of shipwrecks buried under land reclaimed from Table Bay. Contained within the fills dredged from Table Bay are likely to be a variety of artefacts of interest. Also present are unmarked graves, military structures and hardware. Although development activities have the potential to destroy much of this material, thoughtful mitigation and planning can have positive results by exposing material to the public in the form of displays, documents and theme areas.

The potential archaeological wealth of the site should not be seen as an impediment to development activities but rather as a opportunity to enhance the development and give it a character that places it within the historic context of the city. Other recent developments in the City Bowl (such as Heritage Square and the Victoria and Alfred Waterfront) which have relied on extensive incorporation of historic fabric have proved to be extremely popular.

6. SOURCES

6.1 Aerial Photographs

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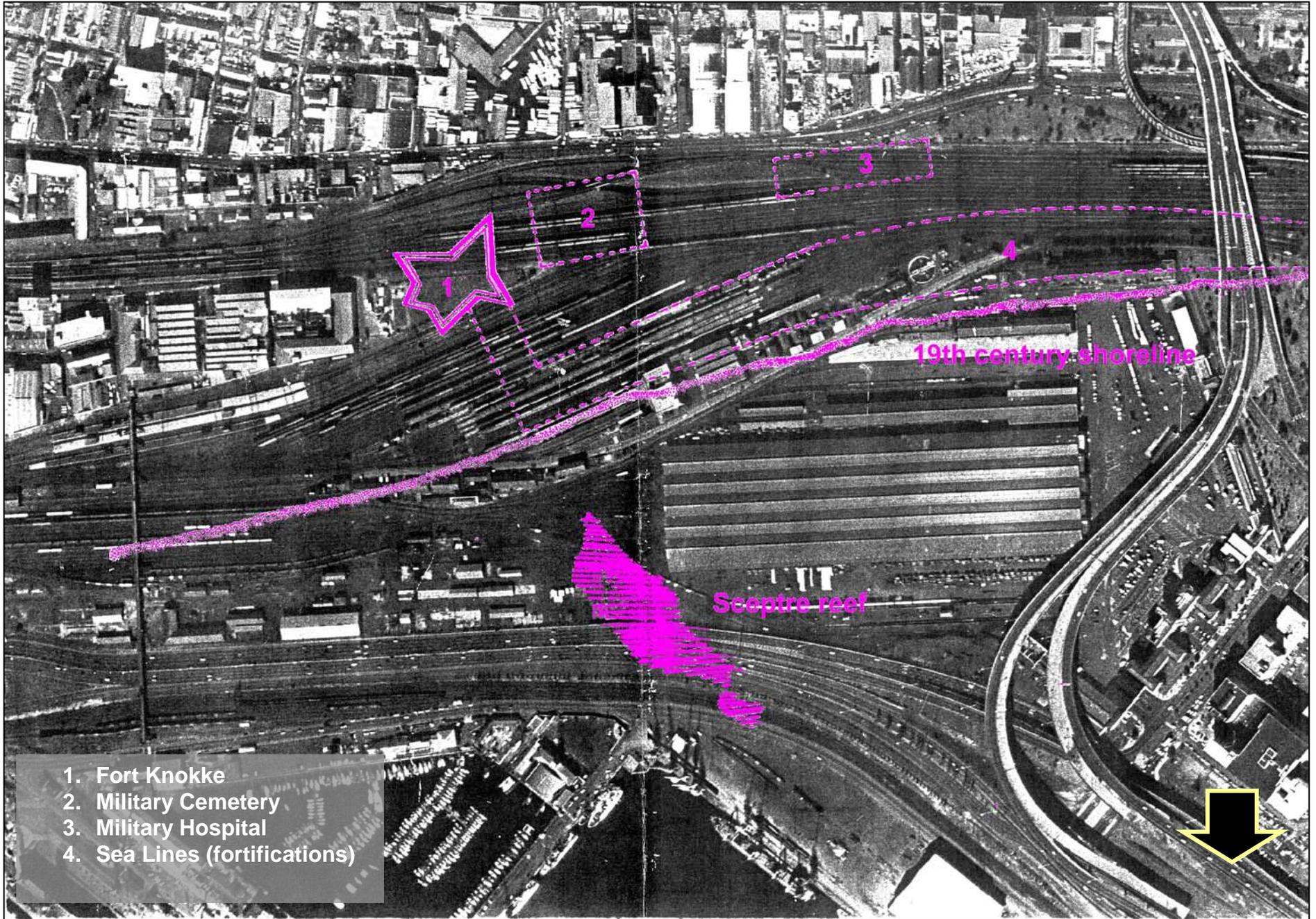
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7. PROFESSIONAL TEAM

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We would like to thank John Gribble (National Monuments Council), Bruno Werz (Maritime archaeologist UCT) and James Jobling (Texas A&M Nautical Archaeology Programme) for their comments and advice.



- 1. Fort Knokke
- 2. Military Cemetery
- 3. Military Hospital
- 4. Sea Lines (fortifications)