PHASE 1 ARCHAEOLOGICAL ASSESSMENT OF ROBBEN ISLAND WORLD HERITAGE SITE.

Prepared for

The Survey Partnership

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1. Introduction

The ACO (Archaeology Contracts Office) was commissioned to undertake a Phase 1 archaeological assessment of Robben Island and deliver the findings in such a way that they can be included into the Robben Island Conservation Plan. The main component of this study has been data collection through physical survey of the island. The ACO was requested not to undertake archival research as this component of the study was to be done by staff of the Robben Island Museum. The terms of reference for the study were as follows:

- The ACO should, as far as is possible narrow down the target area in which the original Dutch East India Company (DEIC) prison was located.
- The ACO should, as far as is possible attempt to locate, and map DEIC gardens on the northwest and eastern side of the island.
- Particular attention will be paid to the Leper Colony period on the island in terms of identifying dumps relating to the demolition phase, foundations and other sensitive areas.
- As far as is possible, we will locate and described quarries (lime and shale).
- Identify marked graves, graveyards
- Terraces relating to the Leper Colony farming operation will be identified and mapped.
- Physical aspects of all WW 2 features will be identified and mapped. Details of artefacts, camouflage and condition will be recorded. Underground features will be explored and photographed.
- Known information about shipwrecks will be included in the survey.
- A special characteristic of the survey will be a focus on "fragile archaeology". This relates
 to features such as gardens, kerbstones, chicken coups, old transport systems, metal
 artefacts and windpumps. In other words, any item that contributes to the character of the
 island but may be overlooked in conventional assessment methods.

2. Method

The aim of the assessment has been to compile a register of sites, places, and information that will be compatible with inclusion into the conservation plan. This document accompanies the register with recommendations with respect to management of the resources.

The field method used was standard archaeological procedure - physical searching of the island with a team of three archaeologists with proven field abilities. The island was divided into manageable areas that could be searched within a day. The team commuted to the island during the months of September and October 2000, during which time the island was searched and surface indications of archaeological material recorded.

The locations of features (not already located on maps of the island) were recorded using a *Garmin GPS 3 Plus* global positioning system with an accuracy of 6-12m. GPS positions on

sites that were obscured by trees and bushes were taken from the closest clear positions from which the site could be seen. The site observations are currently being included into the register of sites together with digital photographs and co-ordinates.

The site register, although comprehensive is not a complete record of archaeological material because more finds will come to light in future years, and better understanding of the age and identity features will be achieved. This site register will have to be updated from time to time to reflect new knowledge.

The broad findings of the assessment along with comments on significance and policy of the various categories of archaeological sites follow.

3. Findings

Throughout the historical period, the island has been a place where people have laboured, suffered, died and are buried by the thousands. Today Robben Island is used for peaceful purposes, but on account of its extraordinary historical legacy, is a world heritage site - a commemoration and acknowledgement of this past on behalf of, and for humankind.

Robben Island's notorious history is mainly a factor of its physical isolation - an ideal place to banish people who resisted the status quo, or were undesirable on account of their physical health and metal status. People in power reinforced this isolation by ensuring that the island was self-sufficient and that contact with the mainland was at a minimum. This aspiration for self-sufficiency has generated a dense archaeology that is related to food production, security, maintenance of isolation and the necessary support structures.

The archaeology of Robben Island, is as one would expect of a prison island, is humble and physically un-profound, yet despite this, it represents in various forms almost every kind of activity that has taken place there.

- The quarries where prisoners worked are present.
- The fields and gardens where they worked are present.
- The foundations of the leper wards remain.
- The graves of those who died on the island remain.
- Until recently the calcrete roads constructed by prison labour remained in tact.
- Also represented is the brief WW2 period where the island was not used as a place of repression but an instrument in the defence of freedom.

We believe that this archaeology represents the physical remains of the essence of what Robben Island was/is all about.

4. Pre-colonial material

Two pre-colonial archaeological sites have been found. Both of these are very ephemeral stone artefact scatters consisting of quartz irregular cores and flakes. No associated bone or other items were found. Both sites are close to each other and situated in the central island area west of the Maximum Security Prison. Since so few artefacts are present, and none are formal tools, it is extremely difficult to date these sites on their stylistic characteristics. It is possible that Autshumato and his followers on the island did resort to use of stone artefact technology (with which they would have been familiar). It would also be expected that that the group would have accumulated an extensive midden of shellfish and bone along with artefactual debris close to their encampment.

4.1 Chronology

- Because no finds of this nature are associated with two Stone Age sites, we hypothesise that the stone artefacts date to the end of the last ice age (terminal Pleistocene) when sea levels were substantially lower and Robben Island formed a low hill on the coastal mainland.
- Before 20 000 years before present the coastline of the sub-continent would have been several kilometres west of Robben Island close to the edge of the continental shelf. After 20 00 years ago the world climate began to warm resulting in gradually rising sea levels which reached a maximum height of about 2 metres higher than present during the Mid-Holocene about 4000 years ago. This means that the age of the pre-colonial sites could be 10 000 years or older.

4.2 Context

 The two sites that have been found are known as surface scatters - ie they are not buried. There are good theoretical reasons to assume that other pre-colonial material exists on the island. This may be buried under layers of windblown sands, or within the calcretes on the island.

4.3 Linkages

 Robben island has formed part of the mainland on a number of occasions in the past, namely during the sequence of interglacial periods that have characterised the earths existence. Hence, the precolonial material on the island is just a small extension of the mainland prehistory.

4.4 Significance

- Pre-colonial sites on the mainland are relatively common with literally millions of sites and scatters of stone artefacts existing on the sub-continent.
- The two Robben Island occurrences are ephemeral and not of a quality that have the potential to provide worthwhile information for research purposes.

- Despite this they are significant by virtue of their context. They are the only sites of their kind that have been identified in the island, and furthermore demonstrate the fact that the island was at some stage in the past, host to prehistoric people by virtue of a land bridge to the main land.
- The fact that the two sites exist, contribute to our understanding of the island and its palaeo-environmental history.

4.5 Policy

- The presence of these sites is a strong indicator that there are more on the island. The depositional environment that has created by alien plants will have result in some sites being obscured by windblown sands and humus. RIM needs to be open to the possibility that more sites could be found anywhere on the island, especially in below surface contexts. For this reason the database needs to remain open for addition of further information.
- The two sites are not being impacted at the moment. Furthermore, it is unlikely that minor movement of the artefacts caused by movement of people and animals will detract from their significance as a broad indicator of the islands past environmental circumstances. They are vulnerable to souvenir collection (which would have the greatest impact on significance) but fortunately the material is such that only someone who has a fairly advanced knowledge of the subject can identify it. We would suggest that a policy of non-intervention would be most appropriate until such time that redevelopment of the area is required (which is unlikely).

5. AREA 9 - THE VOC OUTPOST

The bay, which was the island's only sheltered bay, was the location of an extensive VOC outpost, which researchers have estimated lay just back from the shoreline immediately south of Murray Harbour. Details of this complex are shown on a map of 1785¹ as well as on Robert Jacob Gordon's² painting of the settlement. Riley has projected the possible location of the core of the VOC settlement by overlaying the *erf* alignment granted to Murray over the central east side of the island. She predicted that the DEIC settlement lay just to the south west of the high security prison. At present this area is heavily vegetated with aliens while the most easterly parts appear to have been used as a picnic/recreation area by correctional services staff.

An initial site inspection by the ACO in 1998 showed very little evidence of any artefactual material that could unequivocally related to the DEIC settlement. The excavation of services trenches and clearing of alien vegetation in the predicted DEIC settlement area has produced more information. This consists of fragments of oriental ceramics and Dutch pipe stems in the surface deposits under the alien vegetation - the only identifiable 18th century accumulation of artefacts found on the island to date. The location of the finds is precisely on the predicted site identified by Riley in * providing a good reason to believe that the area has further archaeological potential. Although there are fragments of shale that appear to have been quarried lying around the area, no evidence of wall alignments were seen in any of the services trenches. Several alignments of quarried stone and scattered boulders in areas heavily overgrown with alien vegetation immediately south of the harbour may be remnants of structures from the VOC period. The submarine monitoring post south of the harbour is built on a mound, which predates WW2. Within this mound is evidence of earlier stone wall footings which probably relate to a structure known as the white house indicated on the map of 1897. Not much is known about the buildings or origin, nevertheless the existing foundations are of a style that is consistent with DEIC buildings.

5.1 Chronology

- Pre 1652. In terms of settlement on Robben Island, Murray's Bay has played a key role. Historical records indicate that a "cave" which existed in the area, was used for shelter by passing sailors and early settlers.
- It is also quite likely that in the 17th century, Autshumato (Herry), leader of the "Cape Men" and his group of followers also focussed their activities on the sheltered Murray's Bay coastline where they could collect mussels and limpets.
- Murray's bay was the focus of the DEIC outpost, an extensive complex of vernacular buildings, out buildings and prison best depicted on the Gordon Panaorama.
- The whaler, Murray and his family who started a whaling operation at the end of the 18th century used the cave for temporary lodgings³. It would appear that they based their operations in what remained of the old VOC outpost.

¹ Caart van 't Robben Eiland. CA M1/902

² Rijksarchief, Den Haag, Nederland TOPO 120

³ Deacon, H. 1996. The Island. Cape Town: Howard Phillip

 Post 1830. Most physical remains of the VOC outpost appear to have disappeared, or been robbed of their stones and materials. During WW2, construction activities related to building of the harbour may have been responsible for obliterating the last surface traces.

5.2 Context

 The information that is currently available has resulted in the identification of the probable location of the VOC settlement. The small amount of archaeological evidence that is available suggests that any remains are probably in a sub-surface context immediately south east of the Maximum Security Prison.

5.3 Linkages

- Originally VOC period occupation on the east side of the island was extensive, however very few traces of this have been identified to date. Other associated sites are the remains of the cultivated gardens on the north west side of the island.
- VOC outposts were established at regular intervals along the Cape Coast. Local
 outposts are those at existed at Somerset West, Muizenberg, Simonstown, Kalkbay
 and the Chavonnes Battery on the west side of Cape Town.
- Like the Robben Island outpost, the Chavonnes Battery served as a defensive position and a prison.

5.4 Significance

 Both the archival and archaeological evidence are in agreement with respect to the location of the DEIC settlement. Although the archaeology of the site is not well understood, the actual "place" is significant - the site of the first permanent occupation and prison on Robben Island.

5.5 Policy

Unfortunately the area in the vicinity of Murray's Bay has been subject to extensive impacts in the past. The first of these was the construction of the 18" tramway, which follows the existing asphalt main road. This required construction of an embankment, which would have destroyed or covered foundations of previous structures. The second major event that took place was the construction of Murray's Bay harbour in 1940. This involved a cut and fill operation as well as major land reclamation which would have had negatively impacted archaeological material. The construction of a WW2 facility and building of submarine detection cables has also resulted in impacts to earlier material. It is also possible that construction of the existing prison would have affected some aspects of the archaeology of the VOC period. Although we have located artefactual material of the appropriate age in what appears to be the correct location, we have little understanding of the degree of disturbance and the post depositional processes that have taken place. This will have to be verified with a programme of archaeological trial excavations.

- Since establishment of the RIM, impacts to the area caused by human agents are minimal. However, dense stands of alien vegetation are resulting in disturbance to both surface and subsurface archaeological material through root penetration. It is unlikely that any further understanding of the site is attainable without a programme of trial excavations. This will verify whether structural remains are present and whether roots of alien vegetation impact them.
- A broad pattern of archaeological test excavations will be necessary to establish the extent and condition of any sub-surface archaeological material. If it becomes apparent that wall foundations are present, it will be necessary to control the growth of vegetation so that damage to wall footings can be minimised. Areas that could be targeted are the terraces immediately south of the harbour pillbox, the foundations at the submarine monitoring post, the area between the alien vegetation growth/road and the southeast corner of the high security prison.
- Depending on the condition of any sub-surface material, RIM may wish to develop a
 part of the site as a static display and at the same time create a research opportunity
 for archaeologists interested in early settlement on the island. Both excavation and
 development of the site will require fairly extensive clearing of alien vegetation an
 activity that could clash with the interests of penguin conservation.

6. AREA 6 - CULTIVATED LANDSCAPE

6.1 VOC gardens

A noted officer in the DEIC, Robert Jacob Gordon, visited the island at the end of the 18th century, commented on the excellent quality of vegetables grown by the islanders⁴. A map of the island dating to 1785⁵ shows that features, possibly enclosed fields or gardens existed close to the northwest shore. Bearing in mind inaccuracies in the early map, the area was searched in 1998 with the result that a number of interesting features were located. These consist of a complex of tumbled down stone alignments, most of which are heavily overgrown and partially buried. The structures, which are visible on the 1985 aerial photograph of the island⁶, take the form of a number of square enclosures, possibly representing the remains of small walled gardens established by officials of the VOC. During the course of the 2000 survey, the area was re-examined in detail and a greater understanding of the site achieved. Furthermore, similar sites have been found north and south of the rifle range berm, as well as on the southwest and southern regions of the island.

The complex of low walled gardens on the northwest sector inland of the stone quarry is the most extensive, consisting of some 10 or more individual fields. The walls of these fields are low and tumbled but are well preserved in places where dense alien vegetation has protected them. The walls are typically 40-60cm high. Unlike other walls on the island, they are made from dry-packed calcrete or beach cobbles and contain very little broken or quarried stone. This indicates that they were built before the large stone quarries in the area were in operation. The probable purpose of the walls was to delineate individual fields (or responsibility of individuals to fields) as well as protect the plants from burrowing penguins.

6.2 19th century agriculture

During the height of the leper colony period, the island was self-supporting in terms of production of vegetables and to a degree, meat. Pigs were farmed and vegetable gardens and fields were established⁷. A pigsty of a construction style consistent with the leper period still exists among more modern structures at the prison farm. A site inspection revealed evidence of extensive terrace agriculture in the area to the east of the prison farm as well as close to the quarry on the northwestern side of the island. The terraces consist of low stone or rubble retaining walls that are completely overgrown with thick grass and bushes. They terraces have been built onto a gentle slope; retained where necessary with calcrete rubble, cement sandbags and brick. In places they have been recessed into the calcrete slope. Such terraces imply gravity feed irrigation for cultivation of crops.

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⁴ Raper, PE and Boucher, M. eds. 1988. Robert Jacob Gordon - Cape Travels, 1777-1786. Horton: Brenthurst Press.

⁵ Rijksarchief, Den Haag, Nederland TOPO 120

⁶ Chief director, surveys and mapping, Mowbray.

⁷ Riley, P. 1993. Conservation study of Robben Island. Unpublished report. National Monuments Council.

6.3 Chronology

- Post 1652. Start of vegetable gardening on the island, exact date unknown.
- 1785. Fields and gardens established on east and northwest sides of the island.
- 1861 1931 Island establishment is largely self-supporting through farming.

6.4 Context

6.4.1 VOC gardens

- The specific location of the gardens may be a result of the gentle topography, a good depth of soil free from calcrete and a good water supply as is evident from two springs in the area. The Gordon Panorama indicates that the eastern shore of the island was also highly favoured for agriculture, but the multiple layering of development on east side (leper wards and WW2 facilities) seems to have resulted in the complete destruction of the earlier material.
- The gardens represent what may be the earliest tangible colonial period layer of use on the island.

6.4.2 19th century agriculture

- The specific location of the gardens likely to be related to the location of reservoirs that could supply water by gravity feed.
- The terraces lie within the context of the 19th early 20th century leper colony, prison, asylum, and development of the village.

6.5 Linkages

6.5.1 VOC gardens

Associations on Robben Island are with scattered gardens on the south and east side of the island, the road that links the stone quarry with the Maximum Security Prison and the nearby site of the VOC outpost at Murray's Bay.

6.6 Significance

6.6.1 VOC gardens

The layout of the fields matches so closely those depicted on early maps of the island.
 We are very confident that these date to the 18th century or earlier. This being the case, the features comprise the earliest surviving DEIC agricultural complex in the country, if not within the historic areas of DEIC hegemony.

 It is reasonable to assume that these fields were built and worked by prisoners and exiles. This means that the sites may represents the earliest identified archaeology of imprisonment on the island.

6.6.2 19th century gardens

• The 19th century gardens are a powerful reminder of the one factor that empowers the significance of the island and that is its isolation, both in terms of its physical geography and enforced remoteness. The sustainability of the enforced remoteness of the leper colony, asylum and prison was very closely related to the Islands ability to produce its own meat, vegetables and fresh water, elements of which remain visible in the archaeology of gardens of this period.

6.7 Policy

6.7.1 VOC Gardens

There are two priorities that require consideration. The first of these is to ensure the continuous conservation of the sites. The second is to maintain and enhance the significance of these sites by making them known to the public under suitably controlled conditions.

- In the past the garden walls in the northwest have experienced some impacts by both
 the perimeter road and the road leading across the island from Murray's Bay. Wall
 alignments are visible in both of these roads and may be impacted should road resurfacing take place. In the event of any such developments taking place a heritage
 impact assessment (HIA) along with mitigation measures will have to be compiled and
 implemented.
- The agricultural sites provide an excellent opportunity for further research in the form of detailed mapping and exposure of some of the structures as very few sites such as these have been formally described. Exposure of the sites can be achieved by reducing the height of vegetation and sand build up against the bottom of the walls, as well as removing some of the collapsed stone that is obscuring the form of the walls.
- Reconstruction of any of the walling is not recommended, as it will compromise the
 originality of the site. This can only be justified if it has the potential to enhance the
 significance of the site and act as an explanatory device. We believe that both these
 goals can be achieved through clearing, careful archaeological exposure and control
 of vegetation.
- Presentation of the site to the public should be considered, as this will go some way to enhance the visitor experience and bring across the message that prison labour was used to make the island self-supporting since the VOC occupation. The greatest difficulty will be to ensure that souvenir collectors do not gradually disassemble the fragile walls. A possible solution to this problem would be select a representative garden, clear it and reveal the structure then include it as part of a specialised theme tour or walk under the control of a staff member or security. In this way only a limited area of the gardens are exposed to potential impacts. The full extent of the surviving

gardens could be presented though photographic display on anodised aluminium signage.

6.7.2 19th century agriculture

- The terraces are inundated with vegetation growth in places. This needs to monitored from time to time to ensure that root movement does not cause any deterioration of the terraces.
- There is enough of the terraces visible for tourism purposes without extensive clearing
 of vegetation or excavation, should RIM ever wish to exploit the site for these
 purposes. Both the VOC and 19th century sites could form part of a walking tour
 utilising a carefully laid out route.

7. AREA 8 - ARCHAEOLOGY OF THE LEPER COLONY

The period between 1861 and 1931 was one of relatively intense development of Robben Island. At that time the Island was host to a lunatic asylum, a convict station and a large leper hospital as well as housing for staff and other support facilities. We have identified an extensive archaeology of this period relating to the below ground surface remains of the leper wards, the farm terraces, graveyards, and the water supply of the time. The settlement pattern of the leper colony is the dominant archaeological landscape of the eastern half of the island, incorporating and obscuring the earlier DEIC settlement pattern. The final destruction of the leper wards by demolition and fire has relegated the leper colony to below ground status as an archaeological site. The broad elements of this archaeological landscape are discussed below.

7.1 The male Leper Wards

In 1846 the first lepers were moved from Hemel en Aarde (near Hermanus) to Robben Island. At first they were housed in make-shift and existing buildings until the female leper block was built to the north of Murray Harbour in 1887. A new male wing was built in 1891 occupying an extensive tract of land between the village and the leper cemetery south of Murray Bay⁸. The lepers were housed in a complex of bungalows equipped with bathrooms, recreation halls and a church (the Church of the Good Shepherd built in 1895). In 1930 the lepers were moved from the island and the buildings of the leper colony (apart from the church) were burned and demolished⁹.

An examination of the male leper wards has revealed ample evidence of wall foundations, and cement floors. Towards the southern end of the complex is evidence of cobbled yards. covered walkways and drainage gutters. It would appear that a variety of materials were used in the buildings ranging from wood and corrugated iron to stone and brick. There is now good evidence that the archaeology of the male leper wards is extensive under shallow soils and alien plants.

7.2 The female leper wards

The female leper colony was situated well away from the male leper colony to the north of Murray's Bay. Male and female lepers were strictly segregated. A photograph showing the female leper colony (circa 1890-1900) indicates that it consisted of series of stone bungalows surrounded by a high wooden stockade 10. The buildings were razed to the ground in the 1930's after lepers were moved to hospitals on the mainland.

The first attempt to locate the leper colony in 1998 was unsuccessful due difficulties in interpreting the early maps of the island. Intense fieldwork in 2000 has resulted in the identification of the female leper colony, which is situated in a dense thicket of alien vegetation to the south of the rubbish dump. There are extensive remnants of floors and fragmented wall alignments, as well as a central roadway (perhaps containing a tramline), once neatly defined by kerbs of rough stone. Artefactual material is visible under the thick bushes - galvanised buckets, enamel pots and chamber pots and fragments of corrugated iron. The buildings give the impression of having been collapsed through implosion -

⁸ Map of Robben Island, 1897 1:600. Historical Archaeology Research Group

⁹ Deacon, H. 1996. The Island. Cape Town: Howard Phillip

indicated by large intact chunks of stone and cement wall that have tumbled off their foundations.

7.3 Children's Leper Ward

We believe that we have located the remains of the children's leper ward in thick bush behind the maximum-security prison. The site takes the form of several cement floor foundations that have been laid over an older smaller stone building, the identity of which is unknown. In the thicket down slope of the ruin is a staircase of the type that would have led up to a veranda or *stoep*, very similar to those that exist at the guest house garden. This would have been the approach to the bungalow that housed the children's wards. The visible evidence indicates that like the other leper wards, the children's ward was purposefully demolished.

7.4 Reservoirs and sewerage

A further notable component of the archaeology of the leper wards is the complex water reticulation and drainage system, which has a distinct archaeological signature. The water supply was circulated by a system of interlinked wind pumps, which drew water from various well points and transferred it to several stone reservoirs on the highest point of the island. The largest of these is a spectacular feature of considerable volume, built form stone and mortar and sunk a considerable depth into the ground surface. Water from the reservoirs was dispersed to various parts of the wards and town with the pumps assisted by gravity feed.

The plan of the island of 1897¹¹ clearly shows the sewerage outfall pipes of the male leper colony. It would appear that at this time that sewerage was discarded into the Blaauberg Channel without any form of treatment. Remains of the pipe alignments are still visible today and thus represent the last standing structures relating to the male leper colony. Remaining material consists of two alignments of concrete supports for cast iron pipes. The pipes have long since disappeared and the metal fasteners on the supports are highly corroded.

7.5 Chronology

- 1843: John Montagu suggested that the chronically sick lepers be moved to Robben Island.
- 1847: Old penal settlement buildings used as wards.
- 1861- 1867: "Improvements" made to structures and conditions on the island.
- 1887: Female lepers, who had been housed at Somerset Hospital were moved to a new set of wards on the North East side of the island.
- 1891: The new male leper wards are built.
- 1892: Leprosy suppression act results in admittance of many more Lepers. Dr Impey established plantations; gardens and the tramline are built.

¹¹ Map of Robben Island 1:600 1897. Historical Archaeology Research Group.

• 1930-1931 Lepers are moved off the island, and all buildings occupied by them are razed.

7.6 Context

The bulk of the remains of the leper colony make up what is now the largest component of the sub-surface archaeology of the island. This dominates the entire east side of the island, and the associated infrastructure that made up the village area.

7.7 Linkages

Physical linkages exist with the village area, the leper graveyard, Church of the Good Shepherd, the tramline system and old jetty as well as a stone quarry to the north. The whole complex is linked by a hidden system of water reticulation reservoirs and sewage disposal.

7.8 Significance

- The archaeology of the leper wards is a core component of the mid-19th to early 20th century essence of Robben Island and reaffirms the continuous theme of the island as a place of banishment.
- The fact that both the male and female wards are both archaeologically preserved enhances the general status of both sites by providing the potential opportunity to study the "archaeology of gender".
- The leper colony was a complete and self-sustaining community, the subsurface components of which are largely intact.

7.9 Policy

- Roots are gradually impacting both the sites of the male and female leper wards, yet
 the thick vegetation has presented easy access and illegal collection of artefacts. In
 other respects the sites are currently neutral.
- It is unfortunate that the suffering and difficulties experienced by lepers, prisoners, and political outcasts of the 19th century are only physically represented by a small amount of graves at the Leper graveyard more specifically graves of those who were buried with tombstones. The early 19th 20th centuries is a time period when the machinery of banishment was at a high point, supported by a plethora of residential and administrative buildings, an efficient water and drainage system, hospital wards, asylums, a carefully designed tram line, all of which were components of a system of which the sole purpose was to maintain people in a state of isolation effectively as possible. The significance of this period has become hidden due to physical disappearance of many of the structures and the passing of time. We believe that the archaeological exposure of portions of both the male and female wards would provide not only research opportunities but "bring to life" and enhance the significance of this aspect of the island's history. The development of a theme focusing on the 19th century could form the basis of one of many specialised tours that the island could offer.

8. AREA 7 - CEMETERIES

There are 4 known locations of cemeteries on the island, in addition possible ad hoc graves have been noted on many parts of the island and 4 human skeletons have been unearthed during the process of development of infrastructure. Besides the known graveyards, there is a high probability that unmarked graves exist all over the island with a high frequency of occurrence on the eastern side.

8.1 Leper cemetery

This cemetery has been impacted in the past by the activities of the Department of Correctional Services. There is a high likelihood that parts of the existing prison have been built over the northern portion of the cemetery. Skeletal material was no doubt exhumed when foundations and services were built in the area. Furthermore, large quantities of gravestones have been removed.

A small portion of the leper cemetery was maintained and fenced off by the prison authorities. This enclosure surrounds only those graves, which are easily identifiable and have formal headstones. In reality the leper cemetery contains thousands of graves of which the majority are unmarked. The sequence and patterns of burials are poorly understood. It is quite possible that the original VOC burial ground was the starting point of the leper cemetery, which grew very rapidly during the 19th and early 20th centuries.

A site inspection has shown that the cemetery is extensive, occupying a large portion of land between the existing logistics offices extending as far as the prison and possibly as far as the Kramat. The vast majority of graves are unmarked while many others are marked with simple shale headstones without any inscriptions. Apart from the small area set aside by Department of Correctional Services, most of the site is densely overgrown with alien vegetation. Despite this, it is still possible to distinguish formal paths and features that show that the cemetery was once well maintained and landscaped. The 1985 aerial photograph shows that a hedge (*Manitoca*) marked the outer boundary of the cemetery. Alien vegetation has since grown out of control spreading throughout the cemetery and its environs.

8.2 Staff cemetery

The staff cemetery at the south end of the village served during the 19th and early 20th centuries. Unlike the leper cemetery, it has a clear boundary in the form of a wall and entry is via turn styles. The graves are formal and marked with inscriptions. The genealogical society has recorded the inscriptions on the gravestones¹².

8.3 Kramat graves

Graves exist hidden among dense alien bushes in an area immediately north of the Kramat. The graves are extremely difficult to identify due to the dense ground cover. Some are marked with single shale headstones without inscriptions. To date we have counted about 18 gravestones, but suspect that this is the "tip of the ice berg". Work on other cemeteries on the mainland has shown that most graves from the early VOC period tend to be unmarked. There

¹² Riley, P. 1993. Conservation study of Robben Island. Unpublished report. National Monuments Council.

are potentially hundreds of graves in the area. The origin of this graveyard is unknown but it is possible that it is very early, and may predate the Kramat. It is possible that it may have been a general VOC burying area, where Moslems and people of other ethnic groups (prisoners) were buried together without ceremony. Hadje Mattarm was buried on the site in 1755 - his original grave appears to have been identified and commemorated over time (now the site of a Kramat), but at the time of his burial his tomb was probably very humble.

8.4 Unmarked graves

Early maps indicate a graveyard very close to the pistol range near the village. To date there is no evidence of this and it is assumed that it was bulldozed some time within the last 60 years. The whereabouts of the bodies are unknown; they may still be buried on the original site.

Two unmarked burials were found in sewage pipe trenches, on the east coast of the island. One of these had been marked with a wooden post or cross, the remains of which were a soil stain above the cranium of the individual. The Blaauberg Channel was the main anchorage off Robben Island, and an alternative anchorage to Table Bay during northwest winds. Persons who died on board ship would have been buried on Robben Island close to the landing areas. We would therefore predict a high incidence of graves adjacent to the eastern shoreline.

8.5 Chronology

- 17th century: Unmarked graves of sailors, prisoners and first outpost staff and prisoners.
- 1755: Earliest positively identified grave is now celebrated by a Kramat on the site.
 Nearby unmarked graves may date to this time.
- 1847: Possible start of leper graveyard, however many graves are unmarked. Most marked graves date to late 19th and early 20th centuries.
- 1850 1930: Period of usage of staff cemetery.

8.6 Context

- The cemeteries on the island reflect the population that were afforded the dignity of burial in a formal marked grave.
- The two main identified graveyards result from the period of time that the island was used as a leper colony.
- Since the formal graveyards appear to be related to a restricted time period, the early period of occupation must therefore be represented by informal, lost and unmarked graves (of which there must be a considerable quantity).

8.7 Linkages

- The staff graveyard is associated with the village area, where the staff of the island resided.
- The leper graveyard is separate, and strategically located in the portion of land between the male and female leper wards.
- It is of interest to note that the leper graveyard is within the general leper community but has been conveniently used as a device to separate the male and female sexes an ominous warning to those who dare stray across the boundary.

8.8 Significance

- People who lived, suffered and died on the island are buried in marked and unmarked graves. Robben Island, being a confined area of land on which we believe there to be many unmarked graves, is a low density cemetery. The fact that many of the people who made the island what it is today are still on the island, gives the cemeteries a special significance.
- The comparative information (obtained through non-invasive methods) that can be obtained from the style of the graves, their spatial patterning, age of death and sex patterning is particularly interesting in research terms.

8.9 Policy

- The South African Heritage Resources Agency as established by the South Africa Heritage Resources Act 25 of 1999 is the protector of all human remains and graves that are over 60 years of age as well as the remains of victims of conflict. The act provides guidelines on the process of exhumation, and accidental discovery of human remains. An essential component of the act is that it makes provision for 60 days of advertising and public participation before permits are granted to disturb human remains. Furthermore, it removes the responsibility of exhumation from undertakers and ensures that the work is done according to archaeological standards by archaeologists. The provisions of SAHR Act 25 of 1999 should form the basis RIM of policy in this regard.
- The RIM should expect to receive applications from physical anthropologists, local and international, who may wish to conduct research on human skeletal material from the leper cemetery. Identifiable leper cemeteries are rare by international standards and are valued as research resources by scientists who are interested in bone pathology, the effects of disease and the way in which socio-economic factors such as nutritional stress affected people. It is important that RIM consult widely to formulate a policy on how to deal with applications to exhume human remains. It is suggested that a workshop be held to develop a policy in this regard.
- A position, which we would recommend, is that researchers should exhaust all
 possible alternatives before asking RIM to consider agreeing to exhumation. The
 exhumation process is invasive, potentially offensive to some members of the public

and could impact on the general "dignity" of the island. While we don't advocate a *point blank* refusal policy, we believe that any exhumation that is considered must have a critical research element (ie - a convincing demonstration that no other alternative sources/methods are available), and enhance the significance of the site.

- Request by communities wishing to repatriate remains of next of kin, must also be considered and work-shopped by the island Heritage Department, SAHRA and an independent consultant.
- Recent excavations on the island have had the undesirable effect of disturbing unmarked burials. Subsurface invasion must be kept to a minimum throughout the island. Human remains discovered by accident should be examined by a physical anthropologist then re-interred in or as close as possible to the grave, which should be clearly marked and plotted accurately on a map of the island (or GIS data base).
- Alien vegetation growing within the leper cemetery has uprooted gravestones and will
 continue to impact until adequate management is in place. The effects of alien
 vegetation are going to require careful monitoring. Trunks and roots that threaten to
 uproot or disturb gravestones will have to be excised.
- The known cemeteries provide a non-invasive research opportunity for a postgraduate student. The spatial arrangement of the graves, a comparison of age, sex and death profiles combined with archival evidence will provide information about the population profile of the islands inhabitants.
- Selective thinning of vegetation within the leper cemetery and clearing of the formal paths could be a means of opening the cemetery for special tours.

9. AREA 11 - MINING

There are numerous quarries and excavations on the island. Some of these are well known through their association with apartheid period political prisoners while others date back to the early colonial period at the Cape. To date we have identified 4 different types of quarry on the island. These described below

9.1 Stone quarries

Findings of a study completed in 1992 revealed that the stone for the building of certain aspects of the castle was more likely to have come from Robben Island than the quarries near Cape Town. The reason for this that a very high quality metamorphosed shale is present on the island. This could be exploited at the Van Riebeeck quarry and the prison quarry on the north west side of the island. Other quarries on the island produced a lower grade of stone that was probably used for building the local infrastructure.

9.2 Calcrete mines

Calcrete was first quarried in the 17th century by the VOC. Since that time the mining and burning of calcrete has played an important role in the island's industry. Calcrete is a common raw material on Robben Island. It is a substance that was of high economic important as it was the basic ingredient of early cement (used throughout the Cape colony), and furthermore it has the ability to re-constitute itself into a compact surface - thus it is ideally suited for use as road sub-base. To date we have identified 3 large calcrete mines on the island, of which the most notorious is the prison lime quarry.

The prison lime quarry (calcrete mine) is not only one of the oldest person-made features on the island ¹⁴ but is of considerable importance with respect to the history of political prisoners on the island. During the apartheid period, calcrete was mined and crushed by prisoners for surfacing the island roads.

A physical inspection of the quarry has shown that it has been worked for many years. The calcretes of the upper part of the section have been subject to years of natural weathering while deeper portions of the site show evidence of more recent working. The origins of the man-made "tunnel" at the bottom of the quarry are unclear. The north east side of the quarry was used for dumping scrap by the prison authorities. Ex-political prisoners have erected a stone cairn on the quarry bottom close to the entrance.

9.3 Shell Mines

Linked with the calrete industry is the shell lime industry. We have noted that fossil shell deposits have identified and mined at two localities on the island, furthermore there are a multitude of "diggings" along the shelly beach area on the westerly side of the island. The shell was burned and crushed for use as shell mortar, or crushed into a fine white powder as lime wash. Lime kilns have are known to have existed on the island since the earliest days of its permanent occupation.

¹³ Hall, M.J., Miller, D. & Moore, J. 1993. Provenance studies for stone from the castle gateway, Cape Town. South African Journal of Science. 89: 110-112.

¹⁴ Riley, P. 1993. Conservation study of Robben Island. Unpublished report. National Monuments Council.

9.4 Trial excavations/prospecting pits

Small *ad hoc* excavations and borrow pits are numerous, and archaeologically not well understood. Most of these are hidden in vegetation and difficult to identify. Some are clearly attempts to locate the seams of metamorphosed shale, while others were placed to check the depths of the calcrete for quarrying purposes. There are also places where round cobbles stones have been dug out of the raised beaches for building and paving purposes.

9.5 Chronology

 C1670: Quarrying and calcrete mining probably started when the first permanent structures were built on the island and has continued intermittently until the late 20th century.

9.6 Context

 Mining on Robben Island has been one of its continuous and most notorious characteristics - an "activity layer", spanning a large time period that has resulted the accumulation of a multitude of archaeological signatures.

9.7 Linkages

- The supply of buildings material to sites on the mainland, the best known of which is the Castle of the Cape of Good Hope.
- The supply of calcrete, shell and stone for building structures on the island.
- The supply of calcrete sub-base for the maintenance of island roads.
- The 19th century tramline system that links the village, leper wards, jetty and Minto Hill with the stone quarry on the northern side of the Island.
- The use of labour from the various prisons on the island to work the guarries.

9.8 Significance

- Quarries on Robben Island have a special significance, as this it where prisoners since the earliest occupation laboured, often in chains and under inhuman conditions.
- The lime quarry is empowered with significance due to the fact that it was where
 political prisoners in the recent past laboured while imprisoned by the apartheid
 regime. Nelson Mandela, one of the worlds most well known figures, and many others
 crushed calcrete excavated from this site.

9.9 Policy

9.9.1 Lime quarry

Busses drive into the quarry so that visitors can view the site. Officially visitors are not permitted to leave the vehicles to ensure that "souvenirs" are not collected nor the site is damaged. Robben Island staff has informed us that the cairn of stones built by the prisoners is "getting smaller". Despite the efforts that have been put in place to safeguard the quarry, souvenir hunting continues. It has been claimed that bus exhausts are blackening the calcrete walls of the quarry. This however, is natural weathering of calcrete, which turns grey after long exposure to the elements.

- Since this site is among the most significant on the island, it is important that it is disturbed as little as possible. This means that on no account should calcrete mining resume.
- Visitors should be permitted to leave the busses under supervision provided that a
 rope cordoned viewing area or walking platform is established above the quarry. It is
 important that visitors do not alter the calcrete faces or collect material from the cairn.
- The issue of encroaching alien vegetation will need to be addressed. Where this is obscuring the quarry or damaging the sections it will have to be removed.
- The lime quarry contains one of the best geological sequences on the island. Specialists with genuine research interest should allowed into the quarry. Under these circumstances removal of small sediment samples should also be permitted, however the cumulative impact of such activities will need monitoring.

9.9.2 Stone quarry

There is a large open shale quarry on the south side of the island which is purported to be one the oldest on the island - possibly used by Commander Wagenaer in the 17th century as a source of stone for structures on the mainland¹⁵. The quarry shows signs of long-term use spanning several hundred years. Modern drill and blasting holes attests to recent working.

At present the quarry is no longer in use and partially flooded. It is home to small flocks of both wild and domestic ducks. The RIM allows tour busses through the quarry, which is an element of the historic/scenic drive around the island. Vehicular traffic to the quarry is via a diversion from the perimeter road. An inspection of the site has not revealed any artefactual material that relates to the earlier period of its use. There are, however, a number of features of interest that are being negatively impacted by vehicular traffic through the quarry.

 This is an historical site with some aspects of geological interest. The geological ripple marks (cross-bedding) are not unique, but are good examples of ancient cross

¹⁵ Hall, M.J., Miller, D. & Moore, J. 1993. Provenance studies for stone from the castle gateway, Cape Town. South African Journal of Science. 89: 110-112.

bedding that may interest specialist tourists. The geological feature is being eroded by the action of wheels of busses grinding on loose gravels, which lie on the surface.

 The bypass road into the quarry should be closed immediately to halt the impact of vehicles on both the graffiti (see below) and shale bedding planes. Access to the quarry should be for pedestrians only via an established route, which does not result in impacts.

9.9.3 Inscription site

A further feature of interest is a slab of smooth shale, which partially lies in the access road to the quarry. This is covered with 18th and 19th century inscriptions (1745 - 1818), some of which are very faint. There are likely to be more inscriptions on parts of the rock that are currently buried under shallow overburden. The exposed parts of this site are under immediate threat as it lies in a road leading into the quarry used by tourist busses. Vos first recorded the site in 1987. Illustrations in his report indicate that deterioration of the inscriptions has taken place over the last 10 years ¹⁶. Again, the recommendations of the 1998 baseline study were not headed and the increased heavy vehicle traffic has all but obliterated the surviving graffiti.

- The by-pass road into the quarry must be closed immediately to stop vehicles from driving over the site. Access to the quarry should be on foot from the perimeter road via an established route.
- Careful exposure of the full extent of the rock may produce further inscriptions. This
 would involve a small archaeological excavation to clear the surrounding soils and
 clear the rock surface.
- A small fence/rope cordon should be erected around the rock to prevent people from walking on the rock surface or adding their names to the inscriptions.

10. Area 3 - THE WW2 LANDSCAPE

Robben Island has a high concentration of WW2 sites and as such, is regionally unique¹⁷. The defensive structures of Robben Island consist of 2 main gun emplacements positioned on the south and north east sides of the island respectively. These are the Robben Island Battery consisting of three 9.2" inch naval guns (south) and the Cornelia Battery, which consisted of two 6" quick firing naval guns (since dismantled) to cover the northern entrance to the Blaauberg Channel. In addition to the main batteries, there are a number of forward observation posts, fire control towers, watchtowers, command posts, searchlights, stores and airstrip. A complex of regularly spaced machine guns posts ("pill boxes") protected the shoreline of the island and the airstrip. The south and west coast shorelines were also protected by a series of simple rifle trenches.

¹⁶ Vos H. 1987. Robben Eiland, ondersoek van mop. Unpublished report, Stellenbosch Museum.

¹⁷ Riley, P. 1993. Conservation study of Robben Island. Unpublished report. National Monuments Council.

Submarine detection cables protected the Blaauberg channel. In addition there are numerous foundations and remains of permanent and temporary structures (barracks and stores) throughout the island.

We have identified two main spatial components to the island defences, which are loosely defined by their independent electrical distribution systems. 18 Beyond these two tight spatial areas, the paraphernalia of the Second World War has utilised forms an entire landscape of its own on the island.

10.1 The Robben Island Battery precinct

The underground power station provided power to a number of linked structures. These were the 9.2" coastal defence guns (guns no 1 - 3), the associated battery observation post, (now used as a Portnet radar station), the wireless station, model range, underground plotting rooms, command post and peripheral facilities. The guns and structures have survived, however all the facilities have been subject to theft and vandalism (details contained in site register).

The two searchlight positions, barracks and bunkers on the south side of the island were supplied by their own powerhouse.

10.2 The Cornelia Battery Precinct

An engine room equipped with 4 diesel dynamos supplied power to the two quick-firing 6" naval guns, the command post, stores, battery observation post, and search light positions on the shoreline. It would appear that the same powerhouse supplied current to the degaussing range on the east coast of the island. 19

10.3 Chronology

- 1895: 9.2 inch type naval guns were designed for use as secondary armament on predreadnought battleships.20
- 1900: Weapons operational on various British warships.
- 1905: Mark X1 6 inch naval guns installed as secondary armament on British cruisers.
- 1920 40: Redundant warships scrapped and armament put into storage.
- 1939: Preparations are made to fortify Robben Island.
- 1939 40: Old armaments taken out of storage and installed as coastal defence artillery on the British Isles and various Commonwealth countries including South Africa.
- 1940 -1942: Installation of the guns of the Robben Island and Cornelia Batteries.

¹⁸ Cable route plan Robben Island Battery no CG/22Q (In Riley, P 1993. Robben Island Conservation Survey).

¹⁹ Cable Routes, Cornelia Battery Plan No 1665 (In Riley, P 1993. Robben Island Conservation Survey).

Data from "Naval Weapons of WWII" by John Campbell "World Naval Weapon Systems 1991/1992" by Norman Friedman.

- 1942: Construction of machine gun posts and rifle trenches, installation of ASV Mk 2 short range coastal defence radar on the island.²¹
- 1944: Operational personnel withdraw from the island.
- 1958: Coastal artillery was disbanded in South Africa. (Britain and Canada gave up their coast defence artillery in 1956, many of the guns were sold to Portugal and Turkey where some of them may still remain.)

10.4 Context

Robben Island has always played a role in the political history of the country in that it has reflected the changes that have taken place over time. In this instance it has epitomised the strategic role played by South Africa during WW2.

10.5 Linkages

- During WW2 physical linkages on the island were primarily between the artillery positions, radar position, battery observation posts, command posts and radio transmitters.
- Robben Island communicated with the Castle (Freddie) which co-ordinated other facilities and batteries at Blaauberg Hill, Simonstown, Signal Hill, Fort Winyard, Apostle Battery (Llunduno) and Gordon's Bay.²²
- Similar Coastal Defence systems existed in the UK, Australia, South East Asia.

10.6 Significance

 While it is acknowledged that the construction of the WW2 facilities on the island may have been responsible for serious alterations to the island landscape, this represents a significant historical layer in terms of representing the role the country played during WW2.

- The WW2 landscape makes up the visible remains of a complete defensive system, all the main elements of which are present and interpretable.
- Many of the surviving structures are unique within a South African context (although common in Europe), especially the machine gun posts and observation positions which are not common on the mainland.
- Many overseas visitors are un-aware that South Africans were involved in WW2 or those countries outside of Europe and the East had take defensive measures. The

²¹ Geoffrey Mangin (no date) Outposts that Scanned the Sea and Sky. SSS Radar Contacts, PO Box 44553 Claremont, 7736.

²² Geoffrey Mangin (no date) Outposts that Scanned the Sea and Sky. SSS Radar Contacts, PO Box 44553 Claremont, 7736.

presence of the WW2 features are a clear reminder that this period of great hardship was indeed a world - wide phenomenon.

10.7 Policy

Many of the WW2 sites have been, and continue to be impacted by a variety of factors; the most serious of which is corrosion of the steel components. Much of the metal work on structures immediate to the shoreline is already beyond rescue. Of particular concern are structures where the metal work is now exposed to the elements as a result of degradation of the paintwork. Without quick intervention many of the steel doors and windows will corrode to a point where their conservation will no longer be possible. Other previous impacts we have noted are theft and vandalism, flooding of underground buildings and improper use of structures.

- The WW2 sites will be of important to visitors with specialist interests. In both interests of conservation and tourism, it is suggested that examples of each kind of WW2 structure is conserved, cleaned, made safe and accessible, then incorporated into a WW2 route. This could include one of the two Cornelia batteries, one of the 9.2 inch cannons, its magazines, stores and hoists, several machine gun posts, a rifle post as well as a command and observation post.
- The mountings and shelters of the 9.2 inch guns are deteriorating rapidly. A web search of military museum fortifications has shown that it is not general policy to allow these assets to deteriorate. They will require de-rusting and regular painting in order to conserve them. The weapons, which predate WW1 are protected as "military objects" by the SAHR act of 1999 and may not be allowed to deteriorate.
- Displays, restoration of paint schemes, light fittings would help create some of the ambience of the period. In general there is enormous scope for a great deal of interpretation of the island defences - something that would be greatly appreciated by South Africans who seldom have access to sites of this period.
- Cannon shells of 9.2" calibre have been used throughout the island as landscape features and the bases to barriers around road islands. These are part of the historical landscape and should not be moved. Any shells that are not associated with landscape features should be positioned at the respective batteries after their locations have been recorded. It is also important to establish that the shells are checked for safety.
- An immediate concern is the collection of oral histories and historic material relating to the experiences of persons stationed on the island during the war years. It is imperative that as many veterans as possible who were stationed on the island are interviewed and videoed/recorded as soon as possible. The veterans are now elderly, which means that in a few years time oral histories from this period will be lost. Photographs and archival material needs to be collected to form the basis of a small archive of the WW2 period.

11. AREA 10 - Multiple activity area

The Western half of the island contains a wide range of sites including what we believe to be VOC gardens, lime kilns, shell mines, quarries and various WW2 facilities. The details of these are included in the site register. Some examples of the kinds of sites not yet discussed in this document are indicated below:

11.1 Indunas kraal

A large square arrangement of alien bushes at the southern end of the rifle range is referred to as "indunas kraal" on the 1989 survey of the island²³. The significance of the name of this feature is unclear. A portion of this enclosure has been opened to create of view of the rifle range targets from the last firing position, which is actually within the enclosure. There are 19th and early 20th century ceramics and glass in the shade and lee of the bushes indicating that this has been a camping and picnic area for many years.

11.2 Gardens close to rifle range

Several alignments of stonewalling situated on the close to the northern end of the rifle range, appears to predate the rifle range. Its identity is unknown but it is suggested that it may be the remains of large stone walled kraals or gardens dating to the 19th century or earlier.

11.3 Rifle range

Mention is made of the presence of a rifle range during the days of the leper colony. The aspects of the existing range may date back to the turn of the century, however the main period of its use was probably during WW2 and during the apartheid era. Numerous 7.62mm cartridges behind some of the earthworks attest to its recent use by the prison services. Bullets in the earth embankment are contemporary 7.62mm R1 rifle and 9mm pistol rounds. The embankment was probably extended by prison labour in the 1970's. Railway sleepers from the railway near the harbour (?) have been used to make *ad hoc* repairs to parts of the range.

11.4 Chronology

The chronology of the use of the area is not well understood, as the known history of the area is somewhat fragmented, only being evident through its archaeology and historic maps.

1670 - 1806 (?) Area used for grazing and small-scale vegetable gardening. Possible start to stone quarries and prospecting excavations. Shells may have been excavated on the coastal margins.

1806 -1900 Area used for grazing, quarrying, shell mining and shell lime burning.

1900 - 2000 Continuation of quarrying activities, construction of rifle range, WW2 machine gun posts and trenches, grazing of domestic and wild animals.

²³ Directorate, mapping and Surveys, Mowbray. 1989 Robben Island 1:1000.

11.5 Context

A grassy windswept landscape poorly suited to habitation, this area was excluded from the bulk of human settlement but did attract activity from time to time. This activity appears to have involved agriculture, prospecting, quarrying as well as gathering and burning of shells for lime.

11.6 Linkages

11.7 Significance

- An area of natural beauty, open vistas and coastal plains. Not yet fully invaded by alien species or heavily developed, it presents some spectacular glimpses of what the landscape of the island may have been like in the past.
- An area that contains many archaeological sites, ranging from old WW2 radio aerial bases to lime kilns, quarries, gardens and shipwrecks.
- A quiet natural area of the island with a timeless quality.

11.8 Policy

- Maintenance of the quality of this area will require minimum of intervention and restrictions on development.
- The areas adjacent to the perimeter road are very archaeologically sensitive which means that any planned re-surfacing of the road must require an impact assessment.
- Visitors should be restricted to trails.
- Archaeological exposure of one of the coastal limekilns along the perimeter road will illustrate this aspect of the islands history.

12. AREA 12 - SHIPWRECKS

Operation Sea Eagle²⁴ established that 22 ships were wrecked in waters round Robben Island from the 17th century until present. Of these, physical remains of 10 have been identified. Furthermore, there are wrecks of 4 vessels visible on the shoreline. Two of these, a salvage vessel and trawler were wrecked in 1998. While Cape Town remains a major port, ships will continue to be wrecked on Robben Island.

Werz and Deacon (1992) recommended measures to ensure that the underwater heritage of Robben Island is protected (the area extending out 1 nautical mile is included as part of the National Monument). A key recommendation of the report is that no commercial salvage be permitted on shipwrecks protected by the South African Heritage Resources Act within 1 nautical mile of Robben Island. The emphases being placed on use of the wrecks for educational and research purposes. An underwater shipwreck trail is also suggested. Despite the recommendations of Operation Sea Eagle, unlawful activities have taken place on Robben Island wrecks (Gribble pers comm). Shipwrecks are vulnerable to underwater construction work that alters the dynamics of the seabed, they are sought after by salvage divers who sell the cargoes on international markets and suffer cumulative impacts of souvenir collection by sport divers. In response to concern with the conservation of shipwrecks on the island, Gribble has drafted a set of recommendations to assist with the protection of shipwrecks, the salient aspects of which are reproduced below.²⁵

12.1 Chronology

Mid 17th century - present: 22 known shipwrecks in waters within 1 nautical mile of Robben Island.

12.2 Context

The plethora of shipwrecks sites around the island is closely related to Cape Town's history as an anchorage since the 1500's. Although sheltered during the summer south easterly winds, Table Bay was treacherous during the winter months with literally hundreds of ships being wrecked on Woodstock beach and the shores of Table Bay. The west shore and breakers to the south of the island were equally dangerous, and continue to be a hazard to shipping in the 21st century.

12.3 Linkages

Shipwrecks have local and global linkages. At least 10 nations are represented among the Robben Island shipwrecks, emphasising the role that Table Bay has played in international trade between Europe and Asia over the last 350 years. Shipwrecks are therefore an international resource, and represent the archaeology of world trade.

²⁴ Werz, B and Deacon, J 1992 Operation Sea Eagle. Final report on a survey of shipwrecks around Robben Island.

²⁵ Gribble, J. 1998. National Monuments Council for the Conservation and Management of the Robben Island Underwater Cultural Heritage. Unpublished NMC policy document.

12.4 Significance

- The maritime archaeology spans almost 5 centuries that saw the growth, flowering and decline of Europe's global colonial, cultural and economic activities, and which had a profound influence on the African sub-continent.
- Historical shipwrecks differ from terrestrial archaeological sites and assemblages because the catastrophic nature of their loss means that they contain tightly dated collections of archaeological material from specific time periods.
- Shipwrecks offer a wealth of historical detail about global economic activities, networks, vessel construction methods and development, life onboard ship, cargo composition and stowage and the material culture of different nationalities at different times in the past.

12.5 Policy

12.5.1 Research

- No wreck around Robben island will be salvaged or material removed for commercial gain.
- All material recovered from any wreck will become part of the national estate and be held under the guardianship of Robben Island Museum and it should be curated, housed and displayed at Robben Island or in consultation with Robben Island Museum. In the event that Robben Island Museum lacks this capacity, another suitable and recognised institution may carry out these functions.
- Applications from qualified archaeologists to work on shipwrecks will be considered by the South African Heritage Resources Agency.
- Archaeological work on shipwrecks may be undertaken in terms of a permit issued by SAHRA and according to the conditions of such a permit.
- Work must be carried out in accordance with the standards of archaeological practise and codes of conduct in the ICOMOS International Charter on the Protection and Management of Underwater Cultural Heritage.
- A priority should be the insitu conservation of the cultural heritage ie minimal intervention.
- Any project to be considered must have the necessary financial and institutional backing to ensure its successful completion, conservation, curation and display of the material recovered. SAHRA has the right to require that a financial deposit is lodged security to ensure that sites are rehabilitated and stabilised at the end of a project.

12.5.2 Tourism

- If managed sensibly, underwater cultural heritage has the potential to contribute positively to the visitor experience of the island, and its ultimate inclusion in the policies and strategies of the museum should be encouraged.
- Public access to information about shipwrecks is encouraged (within the context of adequate protection of the island wrecks). Options include traditional museum displays, a shipwreck route (with signage) around the island, underwater trails and dives on selected safe wrecks and the production of researched based literature.
- The organising of wreck dives for members of the public will have to be co-ordinated by a maritime archaeologist employed on the island, or an accredited organisation contracted to Robben Island (under specific conditions) for purposes of operating the dives. Such a person/organisation will need to ensure that prospective divers are educated in the correct behaviour, and ensure that the underwater sites are not degraded. Failure to comply should result in the revoking or review of the operators permit.

12.5.3 Site security

- Since shipwrecks are a source of souvenirs, and in some instances considerable
 financial gain, salvage operators who have little respect for the law or heritage
 conservation will target wrecks. Museum security must keep a lookout for vessels
 anchored within 1 nautical mile of the island. Any un-identified vessels should be
 investigated (if necessary with the assistance of the police), and the culprits arrested
 and charged.
- An arrangement (if possible) should be secured with Portnet Radar to alert RIM staff to unidentified vessels anchoring within the 1 nautical mile zone.

12.5.4 New and contemporary shipwrecks

- Salvage operations will have to take place on any ships that are wrecked in the future. Although shipwrecks are part of the historical trajectory of events of Robben Island, the island should not be permitted to become a "museum of shipwrecks". History has shown that when ships run have aground in Table Bay since the 16th century, all possible measures are taken to salvage them. Failing that, equipment and cargo is salvaged and the wreck is broken up or made safe. It is suggested that this standard policy is implemented on the island.
- The RIM should keep a "diary" of shipwrecks including video or photographic material and account of events for future historical reference.

13. CONCLUSION

By virtue of the islands past status as a place of confinement, political changes, events and attitudes of the mainland were powerfully manifested in its history. Ironically, some of the most important aspects of the history were also the agents of destruction of the early archaeological record. For example, much of the early colonial period material culture was lost as a result of the Second World War, which in turn left its own material legacy. Likewise, the notorious Robben Island Prison is built over the graveyard of other unwanted persons - lepers confined to the island during the 19th century.

Despite the destruction, this study has demonstrated that it is likely that a great deal of material culture reflecting the lives and values of ordinary people remain. These are the leper graveyards and wards, dumps of the 19th and twentieth century and remains of fields and quarries which all tell a story.

13.1 Impacts

The heritage of Robben Island is vulnerable as a result of impacts, which needs to be controlled in both the short and long term. Erosion of the heritage may, in turn impact negatively on the significance of the Island with consequent implications for tourism potential.

- An overall impact we have identified is deterioration of sites by natural forces and neglect. Corrosion is affecting many metal fixtures of Second World War structures while spreading vegetation is slowly destroying building foundations and graves.
- Impacts to the "sense of place" island have already begun these have been caused by the need to upgrade roads for buses, the inadequacy of the infrastructure to handle the requirement of staff and tourists.
- Accumulative impacts have resulted in disturbance of the fragile archaeology of the island, especially garden features, road verges and kerbs, disturbance of unmarked graves. This will increase with continuous ad hoc work on the island.
- Large amounts of vehicles, sub-contractors and staff are causing visual and noise pollution and impacting the ambience of the place.
- The impending hospitality industry has the potential to increase these impacts, change
 the perceived meaning of the island and trivialise the experience of any visitors who
 are drawn to the island by genuine historical curiosity and empathy.

13.2 General Policy to Archaeological Sites

The Maximum Security Prison is currently the main focus of tourism on the island. Not withstanding the significance of the prison in terms of the recent political history, it is only the end point in a heritage of enforced isolation that began in the 1670s. The bulk of this history is manifested in the below surface archaeology of the island, and is essentially invisible and therefore insignificant in terms of the island's currently perceived meaning. We believe that the revelation of this lost history will not detract from, but enhance the significance of the

Maximum Security Prison by illustrating its culminating role in the long political process that is manifested in the island's archaeology and built environment.

We have identified many sites that could be developed for tourism, educational and research purposes, or generally to enhance visitors experience of the island. At the same time we both acknowledge and warn that the process of development will impact the landscape and alter the ambience of the place. While we acknowledge that the opening of selected archaeological sites to public appreciation will play role in "changing the sense of place" on the island, we believe that this will add value and significance to the island as a whole, and bring to light the very serious historical role that the island has played in the various struggles that South Africans have faced. We have identified a sequence of interesting sites, that once opened could form the basis of an archaeological tour that would enhance the visitor experience of the island.

Potential sites that we have identified are:

- VOC outpost area
- VOC gardens
- Old prison station/lunatic asylum
- Childrens, Male and Female leper wards
- Quarries
- Clearing and conservation of selected WW2 facilities

The opening of these sites is a development activity, and as with any other planned activity on the island, should have its own statement of impact, and management plan in place before activities begin - the goal being to not only to conserve physical remains, but also the island's ambience.

APPENDIX 1 HERITAGE SITES

DESCRIPTION: A circular water trough built with 20th century bricks and cement. All plumbing has been

stripped.

CHRONOLOGY: Early-mid 20th century

CONTEXT: May relate to 1930's farming activities and stock keeping.

LINKAGE: Physical linkage with water reticulation system.

SIGNIFICANCE: Remnant of self-supporting leprosy settlement and convict station agriculture.

VULNERABILITY: Natural weathering.

FURTHER RESEARCH: n/a

JPEG:

WPT: 003

DESCRIPTION: Sundry artifacts including a base of an 18th century glass bottle. Also nearby are some lengths of steel cable, which extends along the airport road.

CHRONOLOGY: No definite context, however steel cable may relate to WW2 communications pylons. CONTEXT: Example of sundry debris that represent human activity on the island since the 18th century.

LINKAGE: Cable seems to run parallel to nearby airport road.

SIGNIFICANCE: Not established.

VULNERABILITY: Bottle may be illegally collected. FURTHER RESEARCH: Identification of bottle.

JPEG:

WPT: 004

DESCRIPTION: A depression in the soil, which may be the beginnings of a guarry or a prospecting pit.

CHRONOLOGY: Unknown

CONTEXT: One of several trial excavations identified on the island.

LINKAGE: May be connected by seam of sub-surface meta-shale to walled quarry.

SIGNIFICANCE: Part of the landscape of mining.

VULNERABILITY: Not currently impacted.

FURTHER RESEARCH: n/a

JPEG:

WPT: 005

DESCRIPTION: A pile of discarded Perlemoen (Abalone) shells, typical of the poachers middens found in secluded parts of the island.

CHRONOLOGY: May date to recent high security prison period - pre 1994.

CONTEXT: Apartheid high security prison period.

LINKAGE: No apparent physical links.

SIGNIFICANCE: Reflects the cavalier attitude of prison staff who ignored protective legislation with regard to marine resources.

VULNERABILITY: Not vulnerable at present.

FURTHER RESEARCH: n/a

DESCRIPTION: A large shallow disused lime quarry densely overgrown and hidden in thick vegetation. Many large chunks of broken calcrete lying around.

CHRONOLOGY: Possible 18-early 20th century use.

CONTEXT: One of a number of extensive calcrete quarries on the island used for mining material for road surface and lime mortar.

LINKAGE: No visible physical linkages due to dense vegetation obscuring paths and access roads.

SIGNIFICANCE: Significance is unclear as the quarry is difficult to date - dense vegetation indicates that it has been out of use for many years.

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: Archival research and map work may provide further information.

JPEG:

WPT: 007

DESCRIPTION: A collapsed maritime beacon that was mounted on a pine pole some 15m in length. It lies on the north end of the calcrete quarry. Steel support cables are evident.

CHRONOLOGY: Possible WW2 beacon to guide vessels into Murray harbour.

CONTEXT: Maritime navigation post WW2.

LINKAGE: No physical link, however is probably related to Murray harbour.

SIGNIFICANCE: Not established. VULNERABILITY: Natural weathering.

FURTHER RESEARCH: n/a

JPEG:

WPT: 008

DESCRIPTION: A concrete pump base set on a stone platform in heavily overgrown bush.

CHRONOLOGY: Late 19th - early 20th century. CONTEXT: Leprosy settlement water supply.

LINKAGE: Physical linkages are unseen buried water reticulation system. Likely that feature is associated with nearby stone reservoir.

SIGNIFICANCE: Aspect of leprosy settlement water supply.

VULNERABILITY: Natural weathering.

FURTHER RESEARCH: May be relevant to studies with respect to 19th century plumbing.

JPEG:

WPT: 009

DESCRIPTION: A large deep rectangular reservoir built from stone and cement with shell inclusions. Site is deeply hidden in dense vegetation. This substantial reservoir is semi-filled with rolls of rusting barbed wire and discarded building material.

CHRONOLOGY: Late 19th century main reservoir for supplying of water to aspects of leprosy settlement and convict station.

CONTEXT: Convict station and leprosy settlement.

LINKAGE: Physical linkages existed in the form of pipelines to island settlement and windpump system.

SIGNIFICANCE: A visually spectacular feature, well preserved aspect of the 19th century water supply on the island.

VULNERABILITY: Will continue to become overgrown and filled with plant debris.

FURTHER RESEARCH: Relevant to studies on early water supply. Site may contain artefactual material.

DESCRIPTION: A pile of ash and bottle fragments.

CHRONOLOGY: Mid 20th century.

CONTEXT: Years shortly postdating WW2.

LINKAGE: None visible.

SIGNIFICANCE: Archaeological signature of material culture of post WW2.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Research not advocated unless specific research questions need to be addressed.

JPEG:

WPT: 11

DESCRIPTION: Located in a clearing in dense vegetation. A WW2 period building made of concrete and brick. It has a flat roof, two doors and three internal rooms, one of which is a toilet. It has been badly vandalized and fittings have been removed. No original paintwork has survived.

CHRONOLOGY: WW2

CONTEXT: A WW2 facility associated with the Cornelia Battery.

LINKAGE: Physical links are difficult to see, however feature is on the Cornelia Battery powerhouse electrical arid.

SIGNIFICANCE: An aspect of WW2 landscape, more specifically associated with the Cornelia Battery.

VULNERABILITY: Impacts to the building have already been extreme and most of the damage has been done. Natural weathering will continue.

FURTHER RESEARCH: Oral histories, archival research.

JPEG:

WPT: 13

DESCRIPTION: A worked irregular quartz core, several quartz flakes and chunks in a clearing in the Manatoka trees. A Stone Age site of undefineable age but probably dates to pre 10 000 BP when Robben Island was linked to the mainland during the last glaciation.

CHRONOLOGY: Pre 10 000 BP. CONTEXT: Late or Middle Stone Age.

LINKAGE: Links with mainland during last glaciation.

SIGNIFICANCE: Insignificant in terms of specific archaeological content, however it is important as it demonstrates the islands early links with the mainland, and extends the known human history of the Island.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Lithic analysis (in situ).

JPEG:

WPT: 015

DESCRIPTION: WW2 Machine gun post. Shuttered concrete construction with 3 gun ports. There are concrete stairs leading into the side-rear of the structure. Under each port are swivel mounts for guns. Within the structure is graffiti reading "G907 H19524 LG 193804 1956 AH LOUW". The structure is hidden in thick bush on in the central area of the island - probably positioned to protect the airport.

CHRONOLOGY: WW2

CONTEXT: Surviving aspect of WW2 landscape.

LINKAGE: Probably strategically linked with airport.

SIGNIFICANCE: Well preserved feature of WW2 origin, typical of 3 port machine gun post.

VULNERABILITY: Subject to corrosion of steelwork, natural weathering.

FURTHER RESEARCH: Archival research and oral histories.

DESCRIPTION: WW2 Bunker. A semi circular buried bunker with 4 gun ports just showing above the surface. In front of the feature is a sunken circular emplacement (?) for search light or heavy machine gun, at the rear is a small buried room with a ventilation shaft in the roof. The semi-circular bunker has a corrugated iron and earth roof, while the walls are built of concrete bricks and cement filled sand bags. The interior appears to have has a wooden floor at some stage.

The site is currently surrounded by eucalyptus plantation and is not visible from any road or path.

CHRONOLOGY: WW2

CONTEXT: Part of WW2 landscape LINKAGE: Unknown

SIGNIFICANCE: A poorly understood feature, the defensive role of which is unclear. Further research is required to determine significance of feature.

VULNERABILITY: Deterioration of woodwork due to penguin guano, deterioration of brickwork and sand bags. FURTHER RESEARCH: A poorly understood site, no documentation located to date. Oral testimony required. JPEG:

WPT: 17

DESCRIPTION: A flat terrace in front of a WW2 building. The terrace, which is overgrown with weeds, has dry

stone wall sides. The fill consists of very shelly ground. CHRONOLOGY: Unknown

CONTEXT: May predate WW2 features

LINKAGE: Unknown SIGNIFICANCE: Unknown

VULNERABILITY: Not impacted at present. FURTHER RESEARCH: May not be fruitful.

JPEG:

WPT: 18

DESCRIPTION: A set of Cape Gauge railway points lying out of context.

CHRONOLOGY: WW2.

CONTEXT: Part of the railway that serviced the harbour - presence of points indicates that railway has at least

one spur line.

LINKAGE: No surviving physical linkages.

SIGNIFICANCE: WW2 period infrastructure artefact.

VULNERABILITY: Slow corrosion.

FURTHER RESEARCH: Very little is known about the WW2 railway system on the island. Plans need to be

located. JPEG:

WPT: 19

DESCRIPTION: A terrace of rough stone and some machine parts scattered around. There is a fragment of concrete with "R Raubenheimer 23 3 1944" inscribed on it.

CHRONOLOGY: WW2

CONTEXT: Possible WW2 degaussing range component.

LINKAGE: Not far from degaussing range buildings.

SIGNIFICANCE: Unknown.

VULNERABILITY: Corrosion, illegal removal.

FURTHER RESEARCH: n/a

DESCRIPTION: Approximate find site of two enamel chamber pots (1 broken, 1 complete) marked "Cape of Good Hope".

CHRONOLOGY: Early 20th century

CONTEXT: Institutional chamber pots of the leprosy settlement. Found in a buried context in a service

excavation.

LINKAGE: No physical linkages.

SIGNIFICANCE: Example of few surviving artifacts of the leprosy settlement era.

VULNERABILITY: n/a FURTHER RESEARCH: n/a

JPEG:

WPT: 20

DESCRIPTION: A large shallow stone quarry 2m deep and flooded with water forming a small wetland. Historic maps indicate that this was previously serviced by a donkey drawn tram track that led across the front of the island to the village.

CHRONOLOGY: 19th century

CONTEXT: Probably provided stone for building purposes - the village, the male and female leprosy settlement.

LINKAGE: Used to be linked to island infrastructure via a tram line.

SIGNIFICANCE: Part of the landscape of mining and quarrying, particularly associated with 19th century structures and probably worked by convict labour.

VULNERABILITY: Not impacted.

FURTHER RESEARCH: Map work and archival research.

JPEG:

WPT: 22-38

DESCRIPTION: A small portion of the leper cemetery was maintained and fenced off by the prison authorities. This enclosure surrounds only those graves, which are easily identifiable and have formal headstones. In reality, the leper cemetery contains thousands of graves, most of them are unmarked. The sequence and patterns of burials are poorly understood. It is quite possible that the original VOC burial ground was the starting point of the lepers' cemetery, which grew very rapidly during the 19th and early 20th centuries.

A site inspection has shown that the cemetery is extensive, occupying a large portion of land between the existing logistics offices extending as far as the prison and possibly as far as the Kramat. Waypoints 22 -38 represent the most outer identified graves of the leprosy settlement. Outlier graves have also been found in the vacant land to the south of the prison. The vast majority of graves are unmarked while many others are marked with simple shale headstones without any inscriptions. Apart from the small area set aside by Department of Correctional Services, most of the site is densely overgrown with alien vegetation. Despite this, it is still possible to distinguish formal paths and features that show that the cemetery was once well maintained and landscaped. The 1985 aerial photograph shows that a hedge (*Manitoca*) marked the outer boundary of the cemetery. Alien vegetation has since grown out of control spreading throughout the cemetery and its environs.

CHRONOLOGY: Late 19th-early 20th century.

CONTEXT: Burial ground that served that the leprosy settlement is extensive, however many graves have been "lost" or the headstones demolished by prison authorities.

LINKAGE: Within the burial ground, pathways hidden under thick vegetation, linked aspects of the site. Murray Bay road connected the burial ground with the church. The burial ground served as a barrier between the male and female leprosy settlements.

SIGNIFICANCE: A highly significant site where inhabitants of the island, who died isolated from their next of kin and homes on the mainland were laid to rest.

VULNERABILITY: Deterioration of grave markers, disturbance by vegetation, overgrown paths, un-marked burials disturbed by services excavations.

FURTHER RESEARCH: Exhumation for research purposes is not encouraged unless under exceptional circumstances. Grave marker sequence study could indicate how the burial area was used, and who was buried where according to race class or other factors.

DESCRIPTION: Grave marked "In memory of Martha Molebaloa. Born Mui of Baralong Chief of Thabanchu.

O.R.C. Died May 1905 age 33.

CHRONOLOGY: Early 20th century Leper grave. CONTEXT: An outlying grave in the Leper cemetery.

LINKAGE: Leper cemetery, Murray Bay Rd. SIGNIFICANCE: Grave of a significant person.

VULNERABILITY: Not impacted at present, may become overgrown. FURTHER RESEARCH: Establish identity and history of person.

JPEG:

WPT 39

DESCRIPTION: A collection of about 20 cement bases for corrugated iron or asbestos clad buildings. Adjacent is a WW2 toilet block with a separate toilet, urinal and bathroom. Inside paint consisted of pink (above) and blue (below) wall paint. There is a light fitting and remains of an electrical box inside. Right wing graffiti on interior walls.

CHRONOLOGY: WW2

CONTEXT: Context and purposes of structures as yet unknown

LINKAGE: Close to logistics

SIGNIFICANCE: Un explained aspect of WW2 landscape.

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: Archival and oral histories to establish identity of the structure.

JPEG:

WPT: 40

DESCRIPTION: Two concrete bases, foundations and building rubble.

CHRONOLOGY: Late 19th or early 20th century.

CONTEXT: Material remains of Male Leprosy Settlement.

LINKAGE: As yet unexplored.

SIGNIFICANCE: Physical remains of an important aspect of the island history.

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: An excellent prospect for archaeological excavation and public interpretation facility.

JPEG:

WPT: 41

DESCRIPTION: Four legged concrete support about 1.5 m high - bolts in the top for a pump or a tank.

CHRONOLOGY: Early 20th century

CONTEXT: Part of (?) water reticulation system of male leprosy settlement.

LINKAGE: No visible linkage. SIGNIFICANCE: Unknown.

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: n/a

WPT: 42-43

DESCRIPTION: Cement foundation, support and step covered in rubble and vegetation. Other cement floors are visible nearby. Also present is a long walkway (covered corridor), as well as cobbled landscape features.

CHRONOLOGY: Late 19th - early 20th century.

CONTEXT: Floors of leprosy wards, and walkways linking buildings that have survived after demolition of the above ground structures.

LINKAGE: Internal roads and access routes covered by vegetation and rubble. Walkway leads from close to what is now the vehicle maintenance area.

SIGNIFICANCE: The archaeological footprint of the male leprosy wards represents an important physical remnant of the period in the island's history.

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: An excellent prospect for archaeological excavation and public interpretation facility. JPEG:

WPT: 44

DESCRIPTION: WW2 concrete observation post referred to as the technical hut for the underwater cables set up during WW2. There are two downstairs rooms and an upstairs room with steel shutter observation ports over Blouberg Channel. The feature has had some recent reuse in that it has been fitted with fluorescent lamps and painted with white PVA. Doors and shutter are in relatively good order. No smoking signs indicate recent use of the structure floor storage of (?) flammable material.

CHRONOLOGY: WW2.

CONTEXT: Structure is built on a mound that contains ruins of a previous structure.

LINKAGE: Traces of what may once have been an access road are visible in thick bush below the Murray Bay road terrace

SIGNIFICANCE: An important building with a significant purpose during the WW2 era. It played an important role in submarine detection.

VULNERABILITY: No acute impacts, slow corrosion of metal components.

FURTHER RESEARCH: Oral testimony required establishing the technical role of the structure.

JPEG: wpt44

WPT: 45

DESCRIPTION: The technical hut south of the harbour is built on a mound, which predates WW2. Within this mound is evidence of earlier stone wall footings which probably relate to a structure known as the white house indicated on the map of 1897. Very little artefactual material was observed apart from 2 sherds of oriental porcelain.

CHRONOLOGY: Pre 1900

CONTEXT: Remants of stone walling buried in a mound - archaeological excavation required to resolve context.

LINKAGE: No physical linkages.

SIGNIFICANCE: Potentially significant in terms of age (depending on outcome of further investigation).

VULNERABILITY: No acute impacts.

FURTHER RESEARCH: An excellent prospect for archaeological excavation. Will require an initial pilot study,

and measures to conserve exposed structures. May be suitable material for interpretive display.

JPEG: wpt45





DESCRIPTION: Modern well at Sobukwe House. This well is plastered with modern materials and appears to be recent. Water from the well was probably used to irrigate what was once a carefully maintained garden round the house.

CHRONOLOGY: 20th century CONTEXT: Modern garden feature

LINKAGE: Sobukwe house SIGNIFICANCE: Not established. VULNERABILITY: No acute impacts.

FURTHER RESEARCH: n/a

JPEG:

WPT: 47

DESCRIPTION: Mandible and scapula of a southern right whale close to Sobukwe House and dog kennels. The mandible has slots cut its base indicating that it had served some specific function in the past. In places where wood was scarce, whale bones were used as spars, boundary markers and fence posts.

CHRONOLOGY: Possibly dates to early 19th century when a whaling station was established at Murray's Bay.

CONTEXT: May have been used as a boundary marker but now serves as a landscape curiosity.

LINKAGE: Dog kennels

SIGNIFICANCE: Physical reminder of the fact that Robben Island played a role in the whaling industry.

VULNERABILITY: Weathering of bone, slow degeneration due to rain and UV.

FURTHER RESEARCH: Determination of species, eventual conservation of the bone may be required.

JPEG:

WPT: 48

DESCRIPTION: A concrete containing three rooms in a linear configuration. The entrance to the bunker was sandbagged. The fabric of the bags has long since decomposed. The bunker has a hurried *ad hoc* quality. The roof consists of sheets of corrugated iron supported by lengths of railway line. The interior of the bunker has collapsed in places and is filled with rubble. The purpose of the bunker is unclear – it lacks machine gun ports, therefore may not have played a combat role. Possibly served as an air raid shelter.

CHRONOLOGY: WW2

CONTEXT: Landscape of combat

LINKAGE:

SIGNIFICANCE: Other than being part of WW2 landscape,

VULNERABILITY: Degeneration of corrugated iron, collapse of roof...

FURTHER RESEARCH: Oral research and archival history.

WPT: 49

DESCRIPTION: WW2 machine gun post built from sandbag-cast concrete. The entrance was through the rear. There are 5 gun ports positioned in such a way to defend the beach on the east side of the island, as well as cover Blauberg channel. The interior of the feature is filled with sand and the front exterior has been eroded wave action. Steel shutters and fixtures have corroded.

CHRONOLOGY: WW2 (1942) CONTEXT: Island defense system. LINKAGE: Blouberg channel, beach.

SIGNIFICANCE: An aspect of what appears to be an almost complete WW2 strategic defense system.

VULNERABILITY: Acute corrosion, storm erosion of concrete, inundation with windblown sand.

FURTHER RESEARCH: An excellent prospect for archaeological excavation and public interpretation facility.

DESCRIPTION: A section of path edging built from recycled stones, heavily overgrown. Trees with circular stone edging round the trunks.

CHRONOLOGY: (?) early 20th century. CONTEXT: Surface archaeology.

LINKAGE: Close to vehicle maintenance area.

SIGNIFICANCE: One of many similar landscape and garden feature that contribute to the islands sense of place, and represent the activities of previous management.

VULNERABILITY: Vulnerable to inundation of vegetation, ad hoc changes to gardens and road verges.

FURTHER RESEARCH: Gardens and landscape of the

island could be the subject of a specialist study.

JPEG: wpt50



WPT: 51

DESCRIPTION: A shallow cement pond of 1.5m, possibly used for watering animals.

CHRONOLOGY: (?) early 20th century CONTEXT: Surface archaeology

LINKAGE: None.

SIGNIFICANCE: Not established. VULNERABILITY: No acute impacts.

FURTHER RESEARCH: n/a

JPEG:

WPT: 52

DESCRIPTION: Piles of brick and rock and an old bath, fragments of corrugated iron, corroded metal object and an enamel saucepan.

CHRONOLOGY: (?) early 20th century.

CONTEXT: Surface archaeology – possibly remains of ad hoc dumping of refuse (WW2 or early leper colony)

LINKAGE: Unclear

SIGNIFICANCE: Not established VULNERABILITY: No acute impacts.

FURTHER RESEARCH: n/a

JPEG:

WPT: 53

DESCRIPTION: A mound of loose earth and calcrete above the lime quarry. Mound appears to once have been circular in shape but has been incised by the lime quarry.

CHRONOLOGY: May date to an early phase of the quarry or earlier - possibly a beacon or component of an old kiln.

CONTEXT: Unidentified activity.

LINKAGE: Lime quarry.

SIGNIFICANCE: Not established. VULNERABILITY: No acute impacts.

FURTHER RESEARCH: Archaeological exploration.

DESCRIPTION: An extensive quarry into the calcrete to the west of the prison lime quarry. The feature has a "slit-like" form, is about 2m deep and in the region of 80m in length. It is filled and overgrown with well established alien vegetation indicating that it is quite old and has been out of use for some time. Artefacts in the quarry include a beehive, an iron bar and a galvanised bucket. There are also remains of animals that have fallen into the quarry and have been unable to escape.

CHRONOLOGY: 18th –19th centuries CONTEXT: Landscape of early mining

LINKAGE: Located close to one of the highest points on the island, it may have supplied a lime kiln which was historically known to have existed in the area.

SIGNIFICANCE: One of several early quarries indicating the importance of the calcrete mining and mortar production on the island.

VULNERABILITY: Not currently threatened, but is overgrown with bush.

FURTHER RESEARCH: GIS mapping may produce patterning of quarries on the island.

JPEG:

WPT: 55

DESCRIPTION: A copper bangle, impressed with small diamond shaped decorations.

CHRONOLOGY: Contemporary. CONTEXT: Lost jewelry item.

LINKAGE: n/a

SIGNIFICANCE: Not established.

VULNERABILITY: May be picked up and removed in contravention of RIM policy.

FURTHER RESEARCH: n/a

JPEG:

WPT: 56

DESCRIPTION: WW2 Battery Observation Post. Situated on a high point on the central part of the island, this triple story structure commands a view over the entire landscape.

The ground floor consists of s single room, repainted white (not WW2 colours) a used for storage of old fire extinguishers, beehives, pumps and valves. Access to the first floor is via a vertical steel ladder set into concrete wall, through a square opening in the concrete floor. The first floor consists of three rooms, two on the east side and a single larger room on the west side equipped with steel shuttered observation ports. The top floor consists of a single room with observation ports (south, west and north). There are three concrete bases for housing instrumentation (?Rangefinders). A speaking tube still exists. This was used for communication with personnel on lower floors. Again, access to the top floor is via a steel ladder. The roof is accessible via a steel ladder through an opening from the top floor. There are the remains of a mounting on the concrete roof, its purpose is unknown – possibly for a searchlight or armament.

The structure has been subject to reuse since WW2. This is demonstrated by a recent grey concrete wash over the building and repainting of the interior. A sequence of paint layers is visible on the top floor: white wash over yellow green over typical WW2 grey enamel. The concrete roof of the building has a wavy edge (for breaking up profiles). The steel blast doors, blackout shutters are badly corroded, and in some instances unsafe in that they may drop off their hinges. All electrical fittings have been stripped.

CHRONOLOGY: WW2

CONTEXT: Position for observing shipping, coordinating coastal artillery fire and observing fall of shot.

LINKAGE: High point of island, close to prison lime quarry.

SIGNIFICANCE: A key facility in the coastal defense system used for spotting of shipping and training of long-range artillery.

VULNERABILITY: Site is primarily affected by corrosion of components and shutters, some of which are unsafe and not fixed very securely. Some damage through concrete spalling.

FURTHER RESEARCH: Archival research and oral histories may go some way to better illuminating the role of this facility.

DESCRIPTION: Some fragments of broken glass (weathered), shale fragments and a boulder.

CHRONOLOGY: Early 20th century CONTEXT: Ephemeral activity area

LINKAGE: n/a

SIGNIFICANCE: Not established. VUNERABILITY: Not threatened.

FURTHER RESEARCH: There is a vague chance that map work and archival evidence may help to explain

this site. JPEG:

WPT: 58

DESCRIPTION: Some whole limpet shell, 19th century glass, a strip of hand beaten copper, and slag from smelting and working of metal.

CHRONOLOGY: 19th century.

CONTEXT: Ephemeral surface archaeology of an activity area.

LINKAGE: n/a

SIGNIFICANCE: Not established. VULNERABILITY: Not threatened.

FURTHER RESEARCH: Map work and archival research.

JPEG:

WPT: 59-71

DESCRIPTION: A complex of terraced gardens and fields. These neatly laid out and carefully leveled fields have been built by cutting into the calcretes of the higher parts of the island, and building up lower areas with large amounts of fill supported by calcrete rubble embankments. In some areas shell grog cement sandbags have been used to build retaining walls. The fields have bee terraced on the slope to possibly to facilitate gravity feed irrigation. In thick bush on the highest terrace is a small corrugated iron hut – possibly a post for staff who tended the fields.

CHRONOLOGY: It is very likely that the fields relate to the period during the mid-19th to early 20th centuries when the island with its leprosy settlement, asylum and convict station attempted to be self-sufficient in terms of its food requirements.

CONTEXT: Situated in context of 19th century island agriculture, forced labour and ambition towards self-sufficiency.

LINKAGE: Located on high ground above the island farming area.

SIGNIFICANCE: There is a very good chance that these lands were established and looked after by convicts who had been sentenced to hard labour.

VULNERABILITY: Terrace walls are being negatively impacted by alien vegetation.

FURTHER RESEARCH: A detailed survey (using survey instrument) will be required to map the terraces accurately. Archival research may provide more information about what was grown and where.

JPEG:

WPT: 71 -72

DESCRIPTION: Pump house and large dam at the end of the agricultural terraces. Pump house is marked no 9. CHRONOLOGY: 20th century.

CONTEXT: Contemporary water supply.

LINKAGE: Located close to northwest extreme of golf course.

SIGNIFICANCE: Recent pumphouse - one of many boreholes to supply water to the island during the 20th century

VULNERABILITY: Much of the internal workings has been stripped, structure is not under any identifiable threat at this time.

FURTHER RESEARCH: Base line report by geohydrologist is relevant.

DESCRIPTION: Two stone and cement reservoirs filled with rubble and debris, one still has water in it. The



features are hidden in a thicket and dug into the ground surface.

CHRONOLOGY: Similar in style to Leper period reservoir, suspect 19th century.

CONTEXT: Relates to 19th century water supply.

LINKAGE: Links obscure, site hidden in thick bush. Possible hidden linkages in the forms of island water reticulation pipes.

SIGNIFICANCE: Component of general 19th century water supply.

VULNERABILITY: Slow impacts by root growth of alien vegetation.

FURTHER RESEARCH: Study of map overlays of 19th century water supply, excavation and clearing of a reservoir. JPEG: wpt73

WPT: 74

DESCRIPTION: A well built from shale and cement with a diameter of 2m. The inner rim of the well shows some evidence of galvanized iron shuttering.

CHRONOLOGY: 19th century.

CONTEXT: 19th century water supply.

LINKAGE: Close to crossroads of dirt tracks in bushes

behind high security prison.

SIGNIFICANCE: Component of 19th century water

supply.

VULNERABILITY: Site is not threatened.

FURTHER RESEARCH: Archival research and map work, also a candidate for archaeological excavation.

JPEG: wpt74.



WPT: 75

DESCRIPTION: A pit dug of about 2m deep – possibly an aborted attempt to dig a well or reservoir.

CHRONOLOGY: Unknown, (?) 19th century.

CONTEXT: One of many trial excavations on the island.

LINKAGE: Lies close to well and reservoir.

SIGNIFICANCE: Unknown

VULNERABILITY: May eventually become filled with humus from nearby bushes.

FURTHER RESEARCH: Unlikely that archival research will reveal any more. Limited archaeological potential.

JPEG: wpt75

DESCRIPTION: A flight of stairs in thick bushes - appears to have been of the sort that was designed to ascend a gardened incline onto a stoep. Just over the dirt track behind the stairs are foundations and slabs of broken cement floor. There is evidence of older stone walling underneath. showing that the building that stood here incorporated an older structure. A map of the leprosy settlements(CCP 1/2/1/92 (1895)) indicates this area to have been the site of the "childrens leper ward".

CHRONOLOGY: 1831-1861

CONTEXT: Buried site associated with female and male leprosy settlement context.

LINKAGE: Physical links are proximity to early reservoirs and well, also terraced gardens are just to the west.

SIGNIFICANCE: A poignant remnant of the fact that leprosy was not necessary an adult disease.

VULNERABILITY: Site is over grown with bush, the roots of which have a gradual cumulative impact.

FURTHER RESEARCH: Potential site for archaeological investigation, further map and archival work may be

fruitful.

JPEG: wpt76



DESCRIPTION: Animal feeding troughs – concrete with steel struts on either side of the bluegum plantation.

CHRONOLOGY: 20th century

CONTEXT: Associated with prison farm

LINKAGE: bluegum plantation.

SIGNIFICANCE: Small remnant of island livestock farming.

VULNERABILITY: Site not under threat.

JPEG: wpt77

WPT: 78

DESCRIPTION: Garden features -ie stone circles around tree bases, rockery and path verges.

CHRONOLOGY: This style of garden appears to have a long tradition on the island. Remains of such gardens have been found associated with WW2 facilities and the traditions appear to have been maintained into the 1960s.

CONTEXT: Represents labour activities by prisoners and military personnel.

LINKAGE: Garden features utilising the local rock are a common theme on the island and have been recorded near the Maximum Security Prison, the male Leper colony, and among disused WW2 facilities.

SIGNIFICANCE: Very much part of the island landscape, however features have been lost to uncontrolled vegetation growth and changes to roads.

VULNERABILITY: Badly threatened aspects of the island heritage, generally not maintained, overgrown and negatively impacted by the refurbishment of roads and infrastructure.

FURTHER RESEARCH: Oral testimony may provide information about who did the work. Gardening on island could be focus of a specialist study.

JPEG: *



DESCRIPTION: A cast concrete machine gun post with its 3 gun ports directed over the central golf course area of the island. There is a rear entrance hatch with a steel cover, interior is in good order.

CHRONOLOGY: circa 1942

CONTEXT: One of two machine gun posts located in the interior of the island – part of a second level of defense from the coast.

LINKAGE: Golf course, ridge between golf course and Robben Island Battery

SIGNIFICANCE: Part of an extensive archaeological signature of WW2 defense system on the island. VULNERABILITY: Corrosion of metal parts, slow spalling of concrete, other wise no acute impacts.

FURTHER RESEARCH: Oral histories, archival research on defensive strategy.

JPEG: wpt79

WPT: 80

DESCRIPTION: A locality immediately in front of the south east side of the maximum-security prison is the hypothesised site of the old VOC outpost. The presence of several Dutch clay pipe stems, several porcelain fragments, creamware and old bottle glass are archaeological indicators of extended occupation. There is also what appears to be a terrace extending eastwards from this point under the thick bush - a potential area for archaeological trial excavations.

CHRONOLOGY: 17th – 19th centuries.

CONTEXT: Surface finds may indicate further evidence of buried archaeological material.

LINKAGE: Murray Bay Road and Maximum Security Prison.

SIGNIFICANCE: Significance is difficult to establish without further archaeological exploration. There is good evidence to suggest that the place is significant is indications are that this is where the first permanent settlement was situated.

VULNERABILITY: The site has already suffered impacts due to recent redevelopment of Murray Bay Road and laying of sewage system. Future impacts on the site are due to dense vegetation and penguin burrows.

FURTHER RESEARCH: The exact extent of the site is unknown and this can only be established by an exploratory phase of archaeological excavation, followed by detailed follow up excavation if warranted. Detailed map work and archival research will need to play a role in guiding the process.

JPEG: wpt80a-b

WPT: 81

DESCRIPTION: A very large stone quarry protected from the sea by a dry stone and rubble berm. This site is infamous as prisoners were put to work here during the apartheid era moving rock and keeping the berm repaired. Concrete bases around the quarry suggest that machinery and pumps may have been installed here during its operation.

CHRONOLOGY: Quarry may have a very early beginning, as a very high grade of meta-shale is available here which was probably exploited during DEIC times. Quarry was still operational in the 1960's

CONTEXT: Quarry positioned awkwardly on the beach and subject to flooding - its contextual location simply due to the presence of high quality stone.

LINKAGE: Access to quarry via road from northwest corner of maximum-security prison, as well as via airport roads and perimeter road. Oral histories indicate that prisoners were walked to the quarry through a wire tunnel erected over the access road. No physical remains of this have been identified.

SIGNIFICANCE: A significant site in terms of the islands political history, a place of forced labour for political prisoners, criminals and possibly in earlier times, slaves and prisoners. A significant site in terms of the history of quarrying considering that stone form this site probably found its way back to Cape Town and even further a field.

VULNERABILITY: Slow erosion of the berm by storm wave action, no acute impacts noted.

FURTHER RESEARCH: Site is known through archival research, petrography analysis of stone may provide rock sourcing information in terms of tracking where quarried stone was used on the island and mainland.

JPEG: wpt81 a-g

DESCRIPTION: Situated in the stone quarry (wpt 81) are the remains of a foundation of a toilet facility.

CHRONOLOGY: 20th century

CONTEXT: Located in deep part of quarry emptying into water at bottom of quarry.

LINKAGE: Geographically associated with quarry.

SIGNIFICANCE: Unknown.

VULNERABILITY: No identified impacts.

FURTHER RESEARCH: n/a

JPEG:

WPT: 83

DESCRIPTION: Wreck of the salvage vessel, Sea Challenger. Vessel is now pushed up onto the rocky shoreline and accessible at low time. It has been stripped of all salvageable items and the hull is corroding rapidly

CHRONOLOGY: 1998.

CONTEXT: One of many ships wreck on the island since earliest colonization.

SIGNIFICANCE: Significant as it demonstrates the historical process of marine casualties.

VULNERABILITY: Will become broken up over time by corrosion and wave action.

FURTHER RESEARCH: n/a

JPEG: wpt83

WPT: 84

DESCRIPTION: A shallow quarry with two pieces of whalebone within standing vertically out of the ground. Nearby on the east side is a fragment of stone walling, very old and about 1m thick. Surrounding the site are thousands of fragments of shale suggesting that stone was being dressed on site.

CHRONOLOGY: Unclear, but potentially 17th-18th century.

CONTEXT: An early stone quarry positioned to mine the same vane of shale that is manifested on the shoreline at Wpt 83.

LINKAGE: No visible linkages, however may be connected with other quarries by sub-surface geological system.

SIGNIFICANCE: An early quarry, full significance of which is not known.

VULNERABILITY: No impacts identified.

FURTHER RESEARCH: Archaeological investigation may provide some evidence, unlikely that archival research will produce any further detailed information.

JPEG:

WPT: 85

DESCRIPTION: Two small upright stones, solidly buried, possibly a grave.

CHRONOLOGY: Unknown.

CONTEXT: May be associated with quarry.

LINKAGE: Unknown. SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Archival research unlikely to produce more results, archaeological excavation could confirm identity but this may not be appropriate.

DESCRIPTION: A small hollow quarry or prospecting excavation.

CHRONOLOGY: Unknown.

CONTEXT: May relate to early prospecting for suitable shale.

LINKAGE: Unknown. SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacted at present. FURTHER RESEARCH: Geological analysis.

JPEG FILE

WPT: 89 -90

DESCRIPTION: Two small walled fields of approximately 50x30m, similar to VOC fields identified on the north west side of the island. Nearby at wpt 90 is a small square foundation that may be the remains of a dwelling house.

CHRONOLOGY: 18th century

CONTEXT: A site in open land that is possibly part of the landscape of DEIC farming.

LINKAGE: May have been associated with early quarries, however no paths or roads link the site with any other features.

SIGNIFICANCE: An interesting site, possibly one on the oldest on the island with associated remains of a dwelling house.

VULNERABILITY: Subject to slow accumulative impacts by treading animals displacing stones, otherwise, no acute impacts noted.

FURTHER RESEARCH: Archival research and map work may produce further results; the site is an excellent candidate for archaeological excavation, detailed drawing and mapping.

JPEG: Wpt 89-90 a-g

WPT: 91

DESCRIPTION: A beached Taiwanese trawler stripped of all moveable items.

CHRONOLOGY: Vessel was wrecked in 1998. CONTEXT: Shoreline contemporary wreck.

LINKAGE: One of 3 shoreline wrecks on the island.

SIGNIFICANCE: Physical indicator of the status of the island as a shipping hazard since the first ships rounded the Cape.

VULNERABILITY: Subject to storm wave action and natural degeneration.

FURTHER RESEARCH: n/a

JPEG: wpt91

WPT: 92

DESCRIPTION: Two small dams with earth walls sunk below the ground surface. There is a possible grave immediately inland of the dams in a relatively central position.

CHRONOLOGY: 19th century (?).

CONTEXT: May be modification of a natural spring to create a water catchment area.

LINKAGE: Close to perimeter road.

SIGNIFICANCE: Unknown.

VULNERABILITY: No impacts at present, however the side could be impacted by envisaged resurfacing of nearby perimeter road.

FURTHER RESEARCH: Archival and map work.

JPEG: Wpt 92

DESCRIPTION: An unmarked burial. The cranium and mandible were exposed in a services excavation, which cut through the upper part of the torso. Further to this, several cervical vertebrae, the scapuli and humeri could be seen in an articulated state in the side of the trench. The individual had been buried lying on the stomach with left arm extended above the head and right arm along the side. The individual's teeth showed no evidence of caries, however both upper wisdom teeth were badly impacted and there is evidence of bone erosion due to infection. A single small brass button was found with the body. The outline of a decomposed wooden grave maker (possibly a simple wooden cross) had been positioned directly above the cranium. The cranium is on storage on Robben Island but will be returned to the grave.

CHRONOLOGY: 17th - 18th century (?).

CONTEXT: Burial of unknown individual who may have died on board ship and been buried close to the Blouberg Channel anchorage.

LINKAGE: Associated with Blouberg channel anchorage.

SIGNIFICANCE: The find demonstrates that human skeletal material in unmarked graves may occur anywhere on the island.

VULNERABILITY: Unmarked graves in general are extremely vulnerable to excavations for services, especially along the eastern shore of the island.

FURTHER RESEARCH: It is suggested that any unmarked grave that is impacted by service laying must be immediately reported to an archaeologists, and the remains subject to examination by a physical anthropologist before being reburied.

JPEG: wpt 93 a-h

WPT: 94

DESCRIPTION: Circular animal watering trough with island in the middle. Disused and stripped of plumbing.

CHRONOLOGY: Early 20th century

CONTEXT: Leprosy settlement and convict station stock farming. LINKAGE: Past plumbing linkages with island water reticulation. SIGNIFICANCE: Aspect of early 20th century farming landscape.

VULNERABILITY: Slow natural degeneration. FURTHER RESEARCH: Of low research potential.

WPT: 96 - 119 (Waypoints represent GPS fixes on or close to the corners of alignments).

DESCRIPTION: The above waypoints locate a collection of stone walls, suggested in this survey to represent the remains of vegetable gardens of the DEIC period. These consist of a complex of tumbled down stone alignments, most of which are heavily overgrown and partially buried. The structures, which are visible on the 1985 aerial photograph of the island²⁶, take the form of a number of square enclosures, possibly representing the remains of small walled gardens established by officials of the DEIC. Each rectangular feature or field is about 30x50m - the stone walls designed to possibly keep penguins and sheep (owned by the DEIC) away from the crop. No less than 10 walled enclosures were



identified, along with a many stone alignments that represent the remains of others that have been damaged or covered. Where wall alignments have been protected by thick bush, preservation is better. The alignments extend in a north westerly direction towards the perimeter road. An alignment is visible in the perimeter road

while another is visible between the perimeter road and the shore.

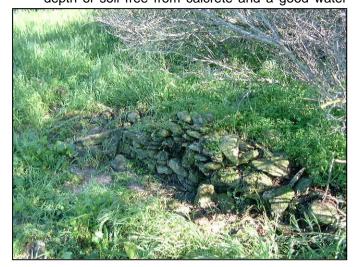


CHRONOLOGY: There is not enough archaeological information available to provide a chronological or relative date on any associated material. A noted officer in the VOC, Robert Jacob Gordon, visited the island at the end of the 18th century, commented on the excellent quality of vegetables grown by the islanders²⁷. A map of the island dating to 1785²⁸ shows that features, possibly enclosed fields or gardens existed close to the northwest shore. These are very likely to be the stone alignments found during this survey. This being the case it is not known when the gardens were first put to use, or when their use ended.

CONTEXT: The specific location of the gardens may be a result of the gentle topography, a good depth of soil free from calcrete and a good water

supply as is evident from two springs in the area. The Gordon Panorama indicates that the eastern shore of the island was also highly favoured for agriculture, but the multiple layering of development on east side (leper wards and WW2 facilities) seems to have resulted in the complete destruction of the earlier material.

SIGNIFICANCE: The layout of the fields matches closely those depicted on early map (1785) of the island. We are confident that these date to the 18th century or earlier. This being the case, the features comprise the earliest surviving DEIC agricultural complex in the country, if not within the historic areas of DEIC hegemony. It is reasonable to assume that these fields were built and worked by prisoners and exiles. This means that the sites may represents the earliest identified archaeology of



²⁶ Chief director, surveys and mapping, Mowbray.

²⁸ Rijksarchief, Den Haag, Nederland TOPO 120

²⁷ Raper, PE and Boucher, M. eds. 1988. Robert Jacob Gordon - Cape Travels, 1777-1786. Horton: Brenthurst











imprisonment on the island.

VULNERABILITY: Movement of animals, roots of alien

trees, and to some extent, vehicle movement is slowly impacting the walls. There is a wall alignment in the western perimeter road, which will be threatened by the proposed upgrading of the road.

FURTHER RESEARCH: An ideal research and interpretive opportunity. A detailed survey is required (potentially using digital photogrammetry). Furthermore, strategic archaeological exposure will indicate how well the walls are preserved below surface. There is also potential for palynological analysis of deposits within the enclosures.

JPEG: Walls 1-10

DESCRIPTION: A semi-demolished concrete structure with steel reinforcing

protruding.

CHRONOLOGY: Unknown - possibly WW2

CONTEXT: Located in broad geographical proximity to stone quarry - may

have supported machine (pump, winch, crusher).

LINKAGE: No direct current linkages.

SIGNIFICANCE: Unknown.

VULNERABILITY: Natural deterioration.

FURTHER RESEARCH: Oral history from WW2 veterans.

JPEG:wpt120



WPT: 121

DESCRIPTION: A small stone lined rectangular pit inland of the quarry. Surrounding it are many fragments of

stone indicating that it may have played a role in stone masonry activities.

CHRONOLOGY: Unknown - possibly 19th century.

CONTEXT: Possible connection with stone quarrying activities.

LINKAGE: Geographical linkage with stone quarry.

SIGNIFICANCE: Unclear.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: n/a

JPEG:

WPT: 122

DESCRIPTION: A lichen covered concrete slab

CHRONOLOGY: 20th century

CONTEXT: Unknown LINKAGE: Unknown SIGNIFICANCE: Unknown

VULNERABILITY: Natural weathering.

FURTHER RESEARCH: Likely to be difficult to research.

JPEG:

WPT: 124

DESCRIPTION: A shallow shale lined pit.

CHRONOLOGY: Unknown.
CONTEXT: Unknown.
LINKAGE: Unknown.
SIGNIFICANCE: Unknown.

VULNERABILITY: Natural weathering.

FURTHER RESEARCH: n/a

DESCRIPTION: A shallow shale lined pit.

CHRONOLOGY: Unknown. CONTEXT: Unknown. LINKAGE: Unknown. SIGNIFICANCE: Unknown.

VULNERABILITY: Natural weathering.

FURTHER RESEARCH: n/a

JPEG:

WPT: 126, 127, 128, 129,

DESCRIPTION: Walls of DEIC alignment complex extending into Eucalyptus plantation.

CHRONOLOGY: Fields present in 1785

CONTEXT: An outlier wall of the DEIC field complex.

LINKAGE: Northwest end of Duiker Road runs very close to alignments.

SIGNIFICANCE: Part of very early complex of DEIC gardens, regionally unique.

VULNERABILITY: Will eventually be impacted by spread of Eucalytus.

FURTHER RESEARCH: An ideal research and interpretive opportunity. A detailed survey is required (potentially using digital photogrammetry) to tie these in with others in the open land nearby. Furthermore, strategic archaeological exposure will indicate how well the walls are preserved below surface.

JPEG:

WPT: 128

DESCRIPTION: An animal drinking dam with inscription 8 Jan 1971 GNSS.

CHRONOLOGY: 1971.

CONTEXT: Prison agriculture.

LINKAGE: Unknown. SIGNIFICANCE: Unknown.

VULNERABILITY: Natural degeneration.

FURTHER RESEARCH: n/a

JPEG: Unknown.

WPT: 131 - 132

DESCRIPTION: A collection of stone alignments very similar in style to those assumed to be remnants of the DEIC gardens on the north west side of the island. These, associated with a clump of thick bush near the airport, may have been impacted by construction activities during WW2.

CHRONOLOGY: The site not evident on historic maps but are possibly contemporary with similar sites on the northwest side of the island. No visible associated archaeological material that would serve as a chronological marker. Hypothesise possible late 18th century date.

CONTEXT: A lost remnant of an early agricultural system obscured by grasses and bush.

LINKAGE: No original linkages visible - geographically associated with airport and may originally have been linked with stone wall complexes on the northwest side of the island.

SIGNIFICANCE: As with similar early wall alignment sites on the island, the walled gardens are unique regionally, and possibly internationally.

VULNERABILITY: Movement of animals, roots of alien trees are slowly impacting the walls.

FURTHER RESEARCH: An ideal research and interpretive opportunity. A detailed survey is required (potentially using digital photogrammetry). Furthermore, strategic archaeological exposure will indicate how well the walls are preserved below surface. There is also potential for palinological analysis of deposits within the enclosures.

DESCRIPTION: A long shallow excavation with a concrete

fence post in the middle.

CHRONOLOGY: 20th century - more specific information not available at this time.

CONTEXT: A person-made landscape feature of

undetermined purpose.

LINKAGE: Geographical association with airport

SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Oral history may provide some

information. JPEG: Wpt133.



WPT: 134

DESCRIPTION: A large shallow excavation into the calcretes and surface sand near the airport. This may be a borrow pit

for sub-base for the runway. CHRONOLOGY: ? WW2.

CONTEXT: Person made landscape feature. LINKAGE: Geographical association with airport.

SIGNIFICANCE: Unknown

VULNERABILITY: Not currently impacted. FURTHER RESEARCH: Oral history.

JPEG: wpt134.



DESCRIPTION: The berm of the rifle range. The north side of the berm is built of three tiers of shale, while the south side (shot absorbing) consisted of piled earth and calcrete chunks. Graffiti on the stone work reads "finis 1972". The berm top is covered with fragmented 9mm pistol rounds and 7.62 mm R1 rifle rounds. The rifle range was evidently heavily used during the apartheid era. Below the berm is a trench used by personnel to

operate the target hoisting apparatus. The framework of this mechanism still exists, albeit corroded beyond salvage. Extending southwards from the berm are shooting positions interspersed at approximately 100m intervals. Many of these are littered with R1 cartridge cases. A brick shed close to the berm may have been used as a target store. The south end is associated with a small building equipped with a kitchen, fresh water tank and braai area - testimony to the fact that target practice was combined with leisurely activities.

CHRONOLOGY: The rifle range may date a far back as WW2 although there is little evidence to confirm that the current site has enjoyed continuous use since that time. The existing range would in all likelihood utilised prison labour in its construction.

CONTEXT: The context of the rifle range in terms of its location on Robben Island contributes to its historic and symbolic significance.

LINKAGE: The perimeter road runs the length of the rifle range.

SIGNIFICANCE: A symbolically significant reminder that armed force underscored not only the maintenance of security on the Island, but the apartheid regime at large in South Africa.

VULNERABILITY: Rifle shells and bullets may be illegally collected and target mechanism is corroding. FURTHER RESEARCH: Oral history.

JPEG: Wpt 135 A,B,C







WPT: 136-137

DESCRIPTION: A dry stonewall alignment with a corner on the rifle range that pre-dates the rifle range. The wall alignment may be related to early walled gardens of the DEIC period.

CHRONOLOGY: Unclear - possibly DEIC period.

CONTEXT: One of several alignments in open areas on the west side of the island.

LINKAGE: Has a geographical, but not temporal association with the rifle range.

SIGNIFICANCE: Significant as part of an early and unique agricultural landscape.

VULNERABILITY: Not particularly threatened apart from slow plant root movement and trampling by animals.

FURTHER RESEARCH: Possible archaeological excavation and detailed mapping.

JPEG: Wpt 136



WPT: 138 -141

DESCRIPTION: A low dry stonewalled rectangular alignment on the rifle range. Approximate size is about 30x30m, very similar to the alignments found on the north west side of the island. We interpret this as being a field or vegetable garden.

CHRONOLOGY: There are no direct indications of the age of the feature, however, the style and size of the structure is similar to those that are believed to date to the 18th century on the northwest side of the island.

CONTEXT: Context is unclear, however be believe this to be an archaeological manifestation of the early farming landscape.

LINKAGE: Physical linkages are with the rifle range, although it not temporarily associated with the rifle range.

SIGNIFICANCE: A potentially significant site in that it may be part of the early farming landscape - relating to the DEIC period and early prison labour.

VULNERABILITY: Slow accumulative impacts by vegetation and animal trampling.

FURTHER RESEARCH: Detailed mapping and possible archaeological investigation.

JPEG: wpt138



WPT: 142

DESCRIPTION: Site for mounting an old electricity pole. Wire cable present.

CHRONOLOGY: Unknown - possibly WW2.

CONTEXT: Open site, possibly part of WW2 landscape.

LINKAGE: No visible linkages. SIGNIFICANCE: Unknown.

VULNERABILITY: Natural deterioration and weathering. FURTHER RESEARCH: Unlikely to produce results.



DESCRIPTION: Remains of sailing sloop "Chanson De La Mer". Wreck of a marine ply and glass reinforced plastic yacht driven high up above the high water mark. Stripped of all fittings.

CHRONOLOGY: 1980 - 1990(?).

CONTEXT: Recent shipwreck of sailing vessel on shore. Other sailing vessels wrecked on the island have

broken up and lie below the high tide mark. LINKAGE: Located very close to perimeter road

SIGNIFICANCE: Unknown

VULNERABILITY: Natural weathering and deterioration.

FURTHER RESEARCH: n/a

JPEG: Wpt 143.

WPT: 144

DESCRIPTION: A large rectangular kraal of Manatoka trees. Inside is a small berm relating to the rifle range. Artefacts scattered among the trees include those which are fairly modern as well as pre-1900 Willow Pattern and Flow blue ceramics indicating that the feature has existed for a long time and used as a wind break and shade by picnickers and campers. Wpts 144-147 indicate the perimeter of the feature.

CHRONOLOGY: The age of the feature is unknown, however it is indicate as being :Induna's Kraal on an early 20th century

map of the island.

CONTEXT: A poorly understood site situated away from other facilities on the island on the windswept west side.

LINKAGE: Phyisical links are with the rifle range, rifle range hut and perimeter road.

SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacts identified. FURTHER RESEARCH: Archival research

and oral history. JPEG: wpt144a,b.





WPT: 148

DESCRIPTION: An upright stone set in mound near the foghorn.

CHRONOLOGY: Unknown

CONTEXT: May be a grave marker.

LINKAGE: Unclear

SIGNIFICANCE: Unknown VULNERABILITY: No impacts. FURTHER RESEARCH: n/a

DESCRIPTION: A low mound, possibly a lime kiln adjacent to a very shelly area on the beach.

CHRONOLOGY: Indicated to exist on a plan dated 1895.

CONTEXT: Site inundated with overburden, now in partially buried context. LINKAGE: Close to perimeter road.

SIGNIFICANCE: Significant site in that it is associated with lime making - one of the major industries on the island which may have involved prison labour.

VULNERABILITY: Not impacted at present, but may become vulnerable with re-surfacing of Perimeter Road.

FURTHER RESEARCH: Archaeological investigation is likely to confirm identity of the feature.

JPEG: wpt 149



WPT:150

DESCRIPTION: A triangular stone lined pit with zinc shuttering inside, likely to be a rifle post.

CHRONOLOGY: 1942.

CONTEXT: Defense against enemy landing - one of a chain of similar positions on the east and south side of the island.

LINKAGE: Perimeter road.

SIGNIFICANCE: One of a wide variety of defenses that were present on the island.

VULNERABILITY: These trenches have a very casual appearance and may be unwittingly damaged by persons intent on "clearing up" old zinc sheeting on the island, or used as rubbish pits.

FURTHER RESEARCH: Some archaeological investigation may be helpful in confirming identity of the site. Oral history research could potentially provide significant information.

JPEG: Wpt 150



DESCRIPTION: A mound, which may be the remains of a lime kiln. Nearby is a stone marked U3.

CHRONOLOGY: Kiln in approximate position is marked on plan dating to 1895.

CONTEXT: Partially buried archaeological site. LINKAGE: Perimeter road, shelly shoreline.

SIGNIFICANCE: Significant site in that it is associated with lime making - one of the major industries on the island which may have involved prison labour.

VULNERABILITY: Not impacted at the moment, but may be vulnerable to impacts with respect to re-surfacing of perimeter road.

FURTHER RESEARCH: Archaeological excavation will confirm identity and state of preservation of the find.

JPEG: wpt 151.



WPT: 152

DESCRIPTION: A large pile of earth associated with a machine cut trench excavated into the raised beach/coastal berm. Steel ventilation shafts are visible on the top of the mound indicating that there may be a cavity within.

CHRONOLOGY: Unknown - possibly WW2. CONTEXT: ? Part of the WW2 landscapes.

LINKAGE: Perimeter Road. SIGNIFICANCE: Unclear.

VULNERABILITY: Corrosion of ventilators, otherwise no other impacts.

FURTHER RESEARCH: Oral histories and map work, excavation may also provide an explanation.

JPEG:

WPT: 153

DESCRIPTION: A small pit dug into the cobble raised beach. Possibly a small cobble mine for collecting cobbles for building and paving purposes.

CHRONOLOGY: Unknown

CONTEXT: Part of the landscape of mining.

LINKAGE: Perimeter road. SIGNIFICANCE: Unknown. VULNERABILITY: Not impacted. FURTHER RESEARCH: n/a

DESCRIPTION: Concrete machine gun post. Three gun ports. Access is via steps and steel hatch to the rear. Metalwork comparatively well preserved. There is a wooden ammunition box still in position close to a gun mounting inside.

CHRONOLOGY: 1942

CONTEXT: One of a typical design of concrete machine gun posts that make up the island defences.

LINKAGE: No visible linkages.

SIGNIFICANCE: Site is significant in that it is a well-preserved component of a largely complete complete WW2

defense system.

VULNERABILITY: Gradual corrosion of metal components. FURTHER RESEARCH: Oral history, archival research.

JPEG: wpt154







DESCRIPTION: hexagonal 3 story high concrete observation tower indicated by Riley to be a radar position. Nearby a portion of machinery (?radar mounting) lies on the ground in long grass. Observation ports have been covered over with wood perspex. and There is no evidence of heavy steel shutters characteristic of WW2 period buildings. Access between the floors is via steel The ladders. ground floor of the tower has plastic tiles on the floor and contains a toilet.





This adjoins a room, which

contains a stainless steel sink, and has steel framed windows.

CHRONOLOGY: The exact date of the building of this tower is unknown, however it is hypothesized that it post-dates WW2 and is indicated by Riley in her study of 1993 as being an operational radar tower.

CONTEXT: Associated with apartheid era defenses and maximum-security prison.

LINKAGE: A calcrete road (Steenbok Avenue) links the site with the rest of the island infrastructure. The hexagonal form has commonalities with another tower in the village area as well as a similar hexagonal addition to the Cornelia Battery observation post.

SIGNIFICANCE: The site is a significant landscape feature. At this time its role is not well undertood, however is does seem to have played a role in the maintenance of security on Robben Island during the apartheid era. VULNERABILITY: Corrosion of metal components. Accumulation of bird droppings in interior. Corrosion of ladders.

FURTHER RESEARCH: Oral history, archival research. JPEG: Wpt 155.



DESCRIPTION: A toppled radio mast, the base of which is associated with

piled earthworks.

CHRONOLOGY: Possibly WW2. CONTEXT: Part of WW2 defenses.

LINKAGE: Associated with Wpt 157 - sister radio mast.

SIGNIFICANCE: Significant as a possible component of WW2 defenses.

VULNERABILITY: Deterioration of metal components. FURTHER RESEARCH: Oral histories, archival research.

JPEG: wpt156.



WPT: 157

DESCRIPTION: A toppled radio mast, the base of which is associated with piled earthworks. There are the

remains of a steel pole set into the ground.

CHRONOLOGY: Possibly WW2. CONTEXT: Part of WW2 defenses.

LINKAGE: Associated with Wpt 156- sister radio mast.

SIGNIFICANCE: Significant as a possible component of WW2 defenses.

VULNERABILITY: Corrosion of metal components. FURTHER RESEARCH: Oral history, archival research.

JPEG:

WPT: 158

DESCRIPTION: A small walled dam popularly known as the "lepers pool". The dam is built of cement with shell inclusions, and in places, steel reinforcing. Although the dam takes the form of a tidal pool set





among rocks on the shoreline, it is unlikely to have been influenced by seawater apart from at high spring tide and northwesterly storms. The dam was probably built to catch water from a fresh water seepage that flowed into the sea at this point.

CHRONOLOGY: Late 19th-early 20th century.

CONTEXT: Tradition has it those members of the Leposy Settlement came to the dam to bathe. In reality the dam was probably built in an attempt to capture fresh water.

LINKAGE: The site is very close to Perimeter Road.

SIGNIFICANCE: The sites significance lies mainly in its traditional association with the Leprosy Settlement.

VULNERABILITY: Natural deterioration and weathering.

FURTHER RESEARCH: Archival research (?).

JPEG: Wpt158 a,b.

DESCRIPTION: A "V" shaped trench lined with corrugated iron. This is

probably a WW2 rifle trench. CHRONOLOGY: 1942. CONTEXT: WW2 defences.

LINKAGE: Close to informal track linking with Perimeter Road.

SIGNIFICANCE: In conjunction with the machine gun posts, rifle posts

made up part the immediate defense in the event of enemy landings. VULNERABILITY: Corrosion of corrugated iron. Collapse of sides.

FURTHER RESEARCH: Oral history, archival research.

JPEG: wpt159



WPT: 161-171

DESCRIPTION: The above 10 waypoints represent co-ordinates on airport runways. The airport consists of two asphalt landing strips, each about 700m in length orientated in south east and north west directions. The site is currently disused and overgrown.

CHRONOLOGY: The airport was built during WW2 to provide access for supplies, personnel, and possibly as a point from which to operate aircraft playing an active defensive role.

CONTEXT: Part of WW2 defensive system. LINKAGE: Linked by tracks from each runway to Perimeter Road and to maximum-security prison.

SIGNIFICANCE: An important component of the WW2 defenses, but also used during the apartheid era.

VULNERABILITY: Slow deterioration of asphalt surface as a result of plant growth.

FURTHER RESEARCH: Oral history, archival research.

JPEG: wpt161



WPT: 172

DESCRIPTION: 4 small pits dug into the coastal berm. This was probably for collecting cobbles for building

purposes.

CHRONOLOGY: Unknown.

CONTEXT: Small aspect of the landscape of mining.

LINKAGE: Coastal berm and Perimeter Road

SIGNIFICANCE: Unknown

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: n/a

WPT: 173.

DESCRIPTION: A coastal shell mine in a very shelly area of the coast. Dense accumulations of shell along the high water marked have been excavated for material that was probably burned in the lime kilns for making lime and mortar.

CHRONOLOGY: 18th-

19th century.

CONTEXT: An aspect of the archaeology of

mining.

LINKAGE: Physically associated with Shelly beach area and the perimeter road. Industrial links are with the lime kilns located on Perimeter Road not far away.

SIGNIFICANCE:

Significant in terms of being one of the two industries that took place on the island. Convicts and prisoners may also have worked these small quarries.

VULNERABILITY: Not impacted at present. FURTHER RESEARCH:

n/a

JPEG: wpt173.



WPT:174

DESCRIPTION: A cobble mine located on the inland side of the Perimeter Road.

CHRONOLOGY: Unknown

CONTEXT: Aspect of the landscape of mining LINKAGE: Associated with Perimeter Road.

SIGNIFICANCE: Unknown

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: n/a

JPEG:

WPT: 175

DESCRIPTION: A small transverse trench in the coastal berm.

CHRONOLOGY: Unknown. CONTEXT: Ad hoc activity. LINKAGE: Perimeter Road. SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: n/a

WPT: 176 - 179

DESCRIPTION: Waypoints bracket the extent of about 30 small stone piles that lie on the inside of the coastal berm. The identity or origin of the piles is unknown. There is a possibility is that that they are grave markers of shipwreck victims.

CHRONOLOGY: Unknown.

CONTEXT: Archaeology of an un-identified activity. LINKAGE: Coastal Berm and Perimeter road.

SIGNIFICANCE: Unknown.

JPEG: 177-179.



WPT: 180

DESCRIPTION: Two small shallow excavations, heavily vegetated.

CHRONOLOGY: Unknown.

CONTEXT: May relate to calcrete mining/prospecting.

LINKAGE: Perimeter road. SIGNIFICANCE: Unknown.

VULNERABILITY: Dense vegetation growth.

FURTHER RESEARCH: n/a

JPEG:

WPT: 181



DESCRIPTION: A square wall alignment of about 33x24 m. Built form dry stone, this feature is very similar to the DEIC gardens identified on the northwest side of the island. Like other similar structures on the island, the walls are hidden in thick grass and somewhat tumbled.

CHRONOLOGY:
Unknown possibly 18th
century.
CONTEXT: Early
landscape of
farming.
LINKAGE: No
clear linkages.
SIGNIFICANCE:
Possible

relationship with early farming landscape and convict agriculture gives the site high significance.

VULNERABILITY: Gradual disturbance by vegetation growth, trampling by animals.

FURTHER RESEARCH: Detailed mapping, clearing of vegetation and excavation.

JPEG: wpt 181



DESCRIPTION: A possible WW2 rifle trench excavated into the coastal berm. The trench is "w" shaped and not lined with corrugated iron.

CHRONOLOGY: 1942

CONTEXT: Part of a network of rifle and machine gun posts designed to repel invaders.

LINKAGE: Perimeter Road.

SIGNIFICANCE: A significant site in terms of the various classes of WW2 features. The small rifle trenches represent the most archaeologically vulnerable aspects of WW2 features on the island.

VULNERABILITY: Most vulnerable class of WW2 sites in that sides are likely to collapse, and become overgrown and lost.

FURTHER RESEARCH: Archival

research, oral history, limited excavation may be of benefit.

JPEG: wpt 182



WPT: 183

DESCRIPTION: A cast iron machine component or axel placed upright at the intersection of Perimeter and boundary road.

CHRONOLOGY: Possibly 19th century.

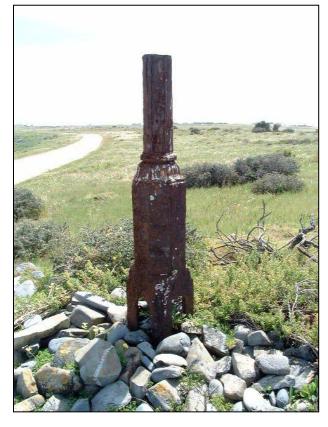
CONTEXT: Landscape feature

LINKAGE: Corner of Perimeter and boundary roads. SIGNIFICANCE: Significant as a landscape feature of

some antiquity.

VULNERABILITY: Slow corrosion. FURTHER RESEARCH: n/a

JPEG: wpt183.



DESCRIPTION: 4 weathered whales bones lying off the edge of Perimeter Road. They are somewhat

weathered and covered with algae.

CHRONOLOGY: Unknown

CONTEXT: May be associated with a whale beaching, or date to Robben Island whaling industry.

LINKAGE: Close to Perimeter Road.

SIGNIFICANCE: Unknown.

VULNERABILITY: Bones are weathering and are also prone to illegal removal.

FURTHER RESEARCH: Diagnosis of species.

JPEG:

WPT: 185

DESCRIPTION: Three piles of stone between the Perimeter Road and the coast.

CHRONOLOGY: Unknown CONTEXT: Unidentified activity. LINKAGE: Perimeter road. SIGNIFICANCE: Unknown.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: n/a

JPEG:

WPT: 188

DESCRIPTION: A small brick and plaster building dating to WW2 period. Structure is raised off the ground surface on 4 concrete beam rests. The corrugated iron roof (single pitch) has decomposed. There are ventilation louvers on the seaward side (front).

CHRONOLOGY: 1939-1945

CONTEXT: Possibly a flammable store - part of WW2 defenses.

LINKAGE: Slightly separated from, but associated with nearby WW2 barracks, powerhouse and search light positions. SIGNIFICANCE: Specific significance is unclear, however significant as part of the WW2 landscape.

VULNERABILITY: Has suffered from corrosion of metal work, rotting of woodwork, penguin residence.

FURTHER RESEARCH: Oral histories and archival.

JPEG: Wpt 188.



WPT: 189 - 190

DESCRIPTION: A small shallow quarry in which lies an excellent exposure of a fossil beach deposit from a previous sea level.

CHRONOLOGY: Beach deposit may be from mid-Holocene or Eemian marine transgressions. The age of the quarry is unknown but may have been exploited in the 20th century. Nearby is a platform and ramp used for loading the material onto a vehicle.

CONTEXT: Part of the landscape of mining.

LINKAGE: Linked to island infrastructure by Boundary Road.

SIGNIFICANCE: Feature may have been utilized and worked by recent prison labour.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Site may be of interest to geologist specializing in palaeoenvironments.

JPEG:

WPT: 191



CHRONOLOGY: 1942

CONTEXT: One of a network of machine gun posts positioned throughout the coastal areas of the island.

LINKAGE: Access is via Takbok Avenue between Eland Avenue and Boundary Road.

SIGNIFICANCE: Well preserved aspect of WW2 defense system. VULNERABILITY: Corrosion of metal work, however not as

advanced as on other more seaward ww2 sites.

FURTHER RESEARCH: Oral history and archival research.

JPEG: Wpt 191

DESCRIPTION: Concrete machine gun post, with 3 gun ports facing towards Table Bay. Steel gun port shutters in place but entrance hatch (rear) has been removed. This machine gun post is one of the typical 3 gun port variety that are relatively common the island.



WPT: K Series

DESCRIPTION: A burial ground hidden is dense alien bush behind the Kramat. Some 15 -20 graves marked with simple shale head and footstones are visible. They lie consistently in a northeast - southwest orientation. None of the grave markers show any inscriptions. It is likely that the burial ground is far bigger than its surface indications, as recent experiences by archaeologists on burial sites in Cape Town have revealed that there are often 3 or more bodies buried to every marked grave.

CHRONOLOGY: The physical association of the burial ground to the Kramat (grave of Hadje Mattarm buried in 1755) may indicate that these graves are among the oldest identified on the island. A hand drawn map of the island circa WW2 refers to the graves as an old military graveyard.

CONTEXT: Unmarked graves of unkown age but may relate to the oldest historical human occupation of the island.

LINKAGE: Physical association with Kramat, other linkages such as roads and paths are no longer visible.

SIGNIFICANCE: A potential significant site in terms of its suspected age. May contain bodies of prisoners, soldiers and exiles. Significance will change as more is learned about the site.

VULNERABILITY: The greatest threat to the site is encroaching vegetation causing humus accumulation and movement of grave markers. Penguin burrows have impacted the site and caused toppling of markers.

FURTHER RESEARCH: Detailed mapping (using EDM) of graves stones. Exhumation should only be considered if the site is to be impacted, or if it can contribute to resolution of critical research questions. JPEG:

WPT: 192

DESCRIPTION: An open area in a forest of alien vegetation. An ancient raised beach of cobbles has hindered vegetation growth. In the area are nine piles of stone of human made origin.

CHRONOLOGY: Ancient geological feature, age of stone piles is unknown.

CONTEXT: Visible aspect of island geology.

LINKAGE: No linkage

SIGNIFICANCE: Potentially significant geological site that has some potential to provided information about local marine transgressions.

VULNERABILITY: A seldom-visited area, which is not very vulnerable.

FURTHER RESEARCH: Site could form a component of a geological study of the island.

JPEG: Wpt 192



WPT: 193

DESCRIPTION: An old rifle trench (?) filled with chunks of cement, corrugated iron and a piece of tramline.

CHRONOLOGY: WW2 (?). CONTEXT: Unclear. LINKAGE: No linkage. SIGNIFICANCE: Unknown.

VULNERABILITY: Has been used as a dumping area and this

could continue.

FURTHER RESEARCH: Oral history, archival records, clearing

out of rubbish and limited excavation.

JPEG: wpt 193.



DESCRIPTION: Cape Corps Memorial. A cement and shell commemorative feature, decorated with sea shells and engraved with names and numbers of personnel.

CHRONOLOGY: Exact dates not established.

CONTEXT: Part of landscape of ww2.

become covered with sand and debris.

LINKAGE: Access is via Springbok Avenue.

SIGNIFICANCE: Significant site commemorating stationing of members of the Cape Corps on Robben Island. It is the only such feature on the island commemorating WW2 personnel and was probably erected by members of the Cape Corps themselves. VULNERABILITY: A site threatened by alien vegetation growth and root movement, which is degrading the concrete work. Parts of the site have

FURTHER RESEARCH: Physical clearing of the site, recording of names, ranks and numbers, detailed photography and genealogical research.

JPEG: wpt 194



DESCRIPTION: A small shed with a kitchen located below No 1 gun on the Table Bay side. Nearby are animal drinking troughs, a braai area and a large shallow dam in a gully. Suspect that this is the area referred to as "the duck pond".

CHRONOLOGY: 20th century, possibly post 1960. CONTEXT: One of several recreation facilities on the island.

LINKAGE: Close to no 1 gun.

SIGNIFICANCE: Prison staff recreation area - oral histories may help clarify the significance of the site. VULNERABILITY: Weathering of structure, damage

by birds.

FURTHER RESEARCH: Oral histories.

JPEG: wpt195abc









DESCRIPTION: A dense exposure of fossil shell representing an ancient raised beach is visible in a quarry on the south side of the island. The quarry is currently used as a dumping area for garden and domestic refuse. The fossil shell exposure, which is raised some 12m above the present sea level is extremely old - possibly dating back several million years.

CHRONOLOGY: Raised beach is an ancient geological feature of Pleistocene or earlier age. age of the quarry is unknown but may date to 19th century.

CONTEXT: An instance where mining has exposed a geological feature.

LINKAGE: Road access is via a track from Boundary Road.

SIGNIFICANCE: The raised beach is a significant feature in terms of the information it may hold about geological



history of Robben Island. The significance of the quarry is unclear, other than it represents one of the major mining activities that took place, possibly using prison labour.

VULNERABILITY: The site is not heavily impacted. In places garden refuse has been piled making the site somewhat unsightly.

FURTHER RESEARCH: A site of geological/palaeontological research potential.

JPEG: Wpt196

WPT: 197

DESCRIPTION: A pebble mine. CHRONOLOGY: Unknown.

CONTEXT: Aspect of landscape of mining.

LINKAGE: South Perimeter Road. SIGNIFICANCE: Unknown. VULNERABILITY: Not impacted. FURTHER RESEARCH: n/a

JPEG: Wpt197.



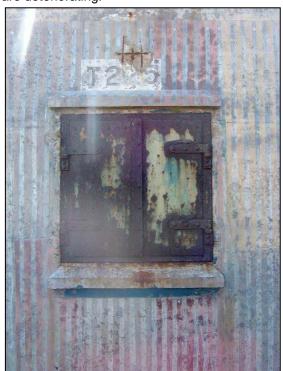
DESCRIPTION: Power station building (T225) with engine mountings and cable conduits in the interior. Most of the fittings have been removed, apart from the windows. Building appears to have had several different paint

CONTEXT: One of 5 electrical generating stations that were active during WW2.

LINKAGE: Set back from Southern Perimeter road. Original linkages in the form of underground cable routes are no longer visible.

SIGNIFICANCE: A significant element of WW2 defenses, particularly with respect power searchlights and gun positions that defended the sea and air between Robben Island and the City of Cape Town.

VULNERABILITY: Metal fittings and paintwork are deteriorating.



schemes - initially painted red and cream, later painted with WW2 camouflage. Roof is pitched ((?) to disguise it as a civil building) but actually built of flat cast reinforced concrete. Outside the building is an open cable trench leading towards one of the two search light positions on the southern shore. Site probably provided power for barracks and southern shore AA emplacements. CHRONOLOGY: Used to provide power to facilities during WW2.





FURTHER RESEARCH: Archival and oral history, documentation of paintwork and camouflage detail. JPEG: Wpt198abcd

DESCRIPTION: Concrete searchlight position. Front shutters have been very badly corroded; the electrical system has been stripped. Interior is painted light blue. Exterior may have originally been camouflage paint but

not much of this has survived. There is a cable trench leading towards powerhouse.

CHRONOLOGY: 1939

- 1945

CONTEXT: One of two sets of searchlight strategically positions located to cover Table Bay and the Blouberg Channel.

LINKAGE: South Perimeter road, cable connection with power

station.

SIGNIFICANCE: An important aspect of the WW2 surveillance measures established to defend Table Bay.

VULNERABILITY:

Advanced deterioration of paintwork and metal fittings, some spalling of concrete.

FURTHER RESEARCH:

JPEG: Wpt199



WPT: 200

DESCRIPTION: Concrete searchlight position. Front shutters have been very badly corroded; the electrical system has been stripped. Interior is painted light blue. Remnants of camouflage are still visible on the exterior.

CHRONOLOGY: 1939 - 1945

CONTEXT: One of two sets strategically searchlight positions located to cover Table Bay and the Blouberg Channel.

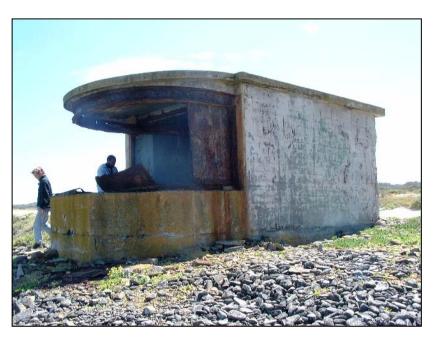
South Perimeter Road, LINKAGE: cable connection with power station.

SIGNIFICANCE: An important aspect of the WW2 surveillance measures established to defend Table Bay.

VULNERABILITY: Deterioration of paint and metal work, concrete spalling.

RESEARCH: FURTHER Oral and archival research.

JPEG: Wpt200



DESCRIPTION: A zig-zag ("VW" shape) combat trench dug into the coastal berm.

CHRONOLOGY: 1939 -

1945.

CONTEXT: WW2 coastal

defense system.

LINKAGE: Southern

Perimeter Road.

SIGNIFICANCE: One of the most vulnerable remnants of the WW2 era, designed to protect the island from landing of enemy forces.

VULNERABILITY: Trench will eventually fill with debris and become overgrown.

FURTHER RESEARCH: Archival research, oral histories.

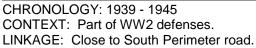
JPEG: wpt201



DESCRIPTION: A complex of 5 semi-buried concrete bunkers, each with a gun mounting organized round a large central bunker. Gun mountings with electrical connections are present - possibly for 40mm Bofors heavy machine guns (anti-aircraft weapons) or 3.5 inch AA. In general, more research is required to understand the role of this site in theWW2 defenses.







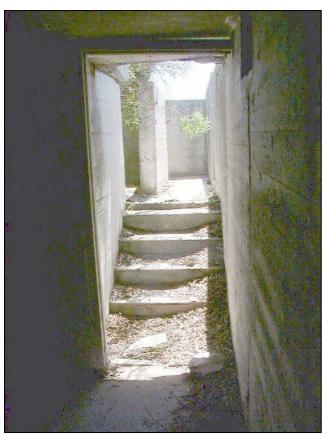
SIGNIFICANCE: Full significance is not understood, however, significant as an obvious component of

WW2 defenses.

VULNERABILITY: Some deterioration of concrete, inundation by alien vegetation growth.

FURTHER RESEARCH: Map work, archival research, oral history.

JPEG: Wpt203abcd





DESCRIPTION: Beached forecastle of a Taiwanese trawler. Sole visible remains of this vessel, which ran aground in the 1970's.

CHRONOLOGY: 1970

CONTEXT: Remains of one of three beached commercial vessels visible on Robben Island.

LINKAGE: Southern Perimeter Road.

SIGNIFICANCE: Significant as a reminder of Robben Island's long history as a maritime hazard (and shelter). Site has acquired some significance as a popular identifying feature of the Island due it being the subject of a commercial postcard.

VULNERABILITY: Vessel has deteriorated (expected and inevitable) as a result of natural processes.

FURTHER RESEARCH: n/a

JPEG: Wpt204.



WPT: 205 - 219

DESCRIPTION: A complex of buildings referred to as WAAS/SWANS barracks by Riley (1993). Standing buildings are in a neglected condition without roofs and missing windows and doors. Rumours of "underground passage" to 9.2 inch gun emplacements was not verified during field survey.

205 Ablution block.

206 ? Wash house.

207 Building base.

208 Single room building.

209 Single room building.

210 Foundations of temporary structure.

211 Floor base and foundations of temporary structure.

212 Floor base and foundations of temporary structure.

213 Floor base and foundations of temporary structure (evidence of internal rooms).

214 Floor base and building foundation.

215 Floor base and building foundation.

216 ? Wash room.

217 Standing building with 5 internal divisions.

218 Standing building with 4 internal divisions.

219 Floor base and foundations of temporary structure.

CHRONOLOGY: 1939 - 1945

CONTEXT: WW2 additions to the island infrastructures.

LINKAGE: Access roads from South Perimeter Road, and track from light house area. Staff would have had quick access via vehicle to Robben Island battery.



JPEG: wpt205, wpt208ab, wpt213, wpt219, wpt217ab.







SIGNIFICANCE: WW2 military personnel were accommodated on this site. More needs to be known about life and conditions of the times, which will add/change the significance of the site.

VULNERABILITY: Major impacts to structures have already taken place. Expected future impacts are related to natural deterioration and weathering of concrete and brickwork.

FURTHER RESEARCH: Oral history and archival research to determine purposes of individual buildings.

DESCRIPTION: Underground plotting room. A deeply buried WW2 bunker accessed by a series of ladders leading approximately 10m underground from a concrete and steel hatchway. The only surface indication that the bunker exists is the presence of several mushroom ventilators and the steel access hatch with steel balustrade. Below the ground surface is a complex of 4 rooms with steel doors. One of the rooms contains the air-conditioning system for the bunker - electric fans, which drew in air via ventilation shafts from the surface mushroom ventilators. Within the complex is evidence of many cable conduits for power and probably telephone connections. A most of the original fittings have been stripped. The entire underground complex is



surrounded by a circular tunnel with a drainage sump – a device also used on the battery shell magazines to control ground water seepage. The interior of the bunker is well preserved and the walls are painted light blue (similar to search light positions). The walls are covered in recent graffiti, much of it postdating 1994.

The area is the vicinity of the entrance to the bunker appears to have once been well maintained with formal foot paths delineated with cobble stones.

CHRONOLOGY: Exact date of construction is unknown, however is probably contemporary with Robben Island Battery of which the first

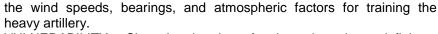
gun was installed in 1940.

CONTEXT: Part of the WW2 landscape, however forms part of the Robben Island Battery complex.

LINKAGE: Linked by paths to Robben Island Battery Complex. Unseen linkages in the form of electrical and telephone connections with the command post, battery observation posts and gun emplacements.

SIGNIFICANCE: The underground plotting room was the nerve centre of operation for the heavy guns on Robben Island. The plotting room contained contained a mechanical computer known as the "Admiralty plotting table". This machine, operated by women (WAAS) calculated

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VULNERABILITY: Slow deterioration of paintwork and metal fittings, danger of flooding without operational sump drainage system.





FURTHER RESEARCH: In general a great deal more needs to be understood with respect to the operation of the defense system and the relationship between the plotting room, observation posts and gun emplacements. Archival research within SA and abroad may help, but first hand accounts from surviving witnesses would be of great benefit.

JPEG: Wpt 220a-k.













DESCRIPTION: Cornelia Battery No 2 gun emplacement.

Mounting: A circular mounting for 6 inch quick firing Naval gun. Mounting bolts are present. Concrete emplacement contains ready use lockers, field telephone position as well as the opening for the shell hoist. Adjacent to the mounting is the battery store with camouflage shrubs still growing on the roof. The cannon and shelter (which would have been similar to those at Fort Wynyard on the mainland) have been removed. Oral sources indicate that barrels of the cannons were seen in thick bush close to the harbour (Bisset pers com) but were not located during this survey. There are unsubstantiated reports of the barrels having been dumped in the harbour.

It is not clear which model of weapon was used, however the most commonly used type for coastal defence was the Marks VII and VIII. The weapons were designed in 1899, fired a 50.8 kg projectile at a maximum range of 16.340 km at 20 degrees of elevation. Separate propellant bags were used. Between 5 and 7 shots could be fired per minute.

Magazines: A flight of stairs provides access to underground magazine about 10m below surface. The magazine surrounded by a ground water control tunnel with a sump located close to the entrance of the magazine. Steel door leads to magazine interior where steel shell racks are still in place. Also present is shell hoist tunnel and ventilation shafts leading to mushroom ventilators on the surface. The shell hoisting equipment and electric motor has been removed as have all the bronze bolts and fixtures that were used in areas where explosive were stored. The entranceway to the magazine is presently flooded by ground water as a result of neglect of the sump pumping system.

Note: Gun emplacement No 1 is identical.

CHRONOLOGY: Barrels built for Naval use at turn of $19^{th} - 20^{th}$ century then kept in storage after scrapping of warships. Weapons were re-deployed for coastal defense at the start of WW2. Construction of Cornelia Battery began in 1939. Coastal artillery was disbanded in 1958.

CONTEXT: Landscape of WW2

LINKAGE: Cornelia Road, cable connections with power station, telephone connections with Battery Observation Post. Gardened pathways linking aspects of the two guns with command post, and road.

SIGNIFICANCE: The principal defensive position for repelling any enemy activity in Blouberg channel

VULNERABILITY: Underground structures are subject to seasonal flooding. Camouflage paint is deteriorating, corrosion of ventilators and other steel fittings. Old garden features and paths are overgrown with alien vegetation.

FURTHER RESEARCH: Establish location of gun barrels, oral history and archival research.

DESCRIPTION: Cornelia Battery no 1 gun emplacement.

Mounting: Cornelia Battery east gun emplacement. A circular mounting for 6 inch Vickers design quick firing Naval gun. Mounting bolts are present. Concrete emplacement contains ready use lockers, field telephone position as well as the opening for the shell hoist. Adjacent to the mounting is the battery store with a camouflage shrubs still growing on the roof. The cannon and shelter (which would have been similar to those at Fort Wynyard on the mainland) have been removed. Oral sources indicate that barrels of the cannons were seen in thick bush close to the harbour (Bisset pers com) but were not located during this survey. There are unsubstantiated reports of the barrels having been dumped in the harbour.

It is not clear which model of weapon was used, however the most commonly used type for coastal defence was the Marks VII and VIII. The weapons were designed in 1899, fired a 50.8 kg projectile at a maximum range of 16.340 km at 20 degrees of elevation. Separate propellant bags were used. Between 5 and 7 shots could be fired per minute.

Magazines: A flight of stairs provides access to underground magazine about 10m below surface. The magazine surrounded by a ground water control tunnel with a sump located close to the entrance of the magazine. Steel door leads to magazine interior where steel shell racks are still in place. Also present is shell hoist tunnel and ventilation shafts leading to mushroom ventilators on the surface. The shell hoisting equipment and electric motor has been removed as have all the bronze bolts and fixtures that were used in areas where explosive were stored. The entranceway to the magazine is presently flooded by ground water as a result of















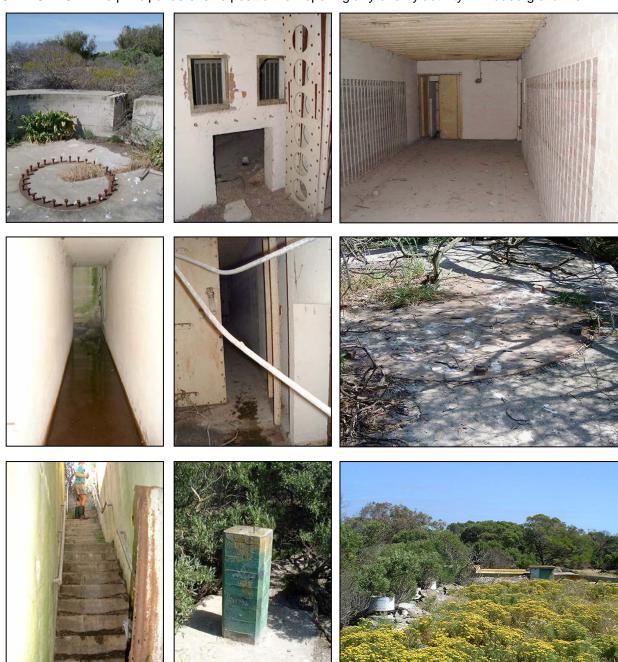




neglect of the sump pumping system. Note: Gun emplacement No 2 is identical. CHRONOLOGY: Barrels built for Naval use at turn of $19^{th} - 20^{th}$ century then kept in storage after scrapping of warships. Weapons were re-deployed for coastal defense at the start of WW2. Construction of Cornelia Battery began in 1939. Coastal artillery was disbanded in 1958.

CONTEXT: Landscape of WW2

LINKAGE: Cornelia Road, cable connections with power station, telephone connections with Battery Observation Post. Gardened pathways linking aspects of the two guns with command post, and road. SIGNIFICANCE: The principal defensive position for repelling any enemy activity in Blouberg channel



VULNERABILITY: Underground structures are subject to seasonal flooding. Camouflage paint is deteriorating, corrosion of ventilators and other steel fittings. Old garden features and paths are overgrown with alien vegetation.

FURTHER RESEARCH: Establish location of gun barrels, oral history and archival research.

JPEG: wpt221a-r

DESCRIPTION: An unusually large machine gun post built of cement filled bags. There are 5 gun ports set to cover the north eastern coast line of the island. Entrance to the facility is via a tunnel, originally built of wood and iron, and covered by a mound of earth. This tunnel has been curved to minimise the chances of ricocheting rounds form entering the machine gun post. The iron is badly decomposed and the tunnel is partially collapsed. There is the remains of what appears to be part of a wind pump protruding from the roof of the feature. Nearby is a collapsed wood and iron bucket toilet.

CHRONOLOGY: 1942.

CONTEXT: Part of the complex of machine gun posts on the island designed to repel









enemy landings.

LINKAGE: No visible linkages – geographical proximately to Cornelia Battery.

SIGNIFICANCE: An atypical machine gun post, larger than the others but similar in size to that at Murray bay, and the only position of its ind on the northern side of the island.

VULNERABILITY: Deterioration of metal fittings, collapse of corrugated iron and wood tunnel, accumulation of penguin guano.

FURTHER RESEARCH: Archival research and oral history.

JPEG: Wpt 224a-f.

DESCRIPTION: A concrete search light position facing in a northeasterly direction over the Blouberg channel. The steel shutters are in place but highly corroded. Electrical wiring has been stripped. The exterior is painted in camouflage paint. The position is marked "P13" and "T225".

CHRONOLOGY: WW2

CONTEXT: One of 4 sets search light positions on the island.

LINKAGE: North perimeter road, cable conduits to Cornelia Road power station.

SIGNIFICANCE: This search light, along with its sister light was positioned to augment surveillance measures on the Blouberg Channel.

VULNERABILITY: Deterioration of metal work and camouflage paint.

FURTHER RESEARCH: Oral history and archival research

JPEG: Wpt 225a,b.





WPT: 226

DESCRIPTION: A small disused stone quarry. The quarry, which is often flooded, was dry at the time of visiting. In its bottom is a very interesting collection of artefacts consisting of late 19th and early 20th century items – kitchen utensils, chamber pot, mineral and wine bottles, pan handles. This material dates to the period of the Leprosy Settlement.

CHRONOLOGY: Late 19th-early 20th century artefacts. Age of quarry is unknown.

CONTEXT: Items disposed of in a disused quarry.

LINKAGE: Close to larger stone quarry and tramline terminal.

SIGNIFICANCE: Artefact collection is significant, as not many from this period on the island have been identified to date.

VULNERABILITY: Metal artifacts will corrode.

FURTHER RESEARCH: Archaeological excavation and conservation of metal artefracts.

JPEG:

WPT: 227

DESCRIPTION: A concrete search light position facing in a northeasterly direction over the Blouberg channel. The steel shutters are in place but highly corroded. Electrical wiring has been stripped. The interior contains old clothes and other garbage. The exterior is painted in camouflage paint.

CHRONOLOGY: WW2

CONTEXT: One of 4 sets search light positions on the island.

LINKAGE: Was connected to Cornelia Battery electrical grid.

SIGNIFICANCE: This search light, along with its sister light was positioned to augment surveillance measures on the Blouberg Channel.

VULNERABILITY: Deterioration of metal work and camouflage paint.

FURTHER RESEARCH: Oral history and archival research

WPT: 228-233

DESCRIPTION: Archaeological remains of the Female Leprosy Settlement.

228: Foundations of a stone and cement building hidden in thick bush. A narrow structure with several rooms and a set of cement stairs added to one of the openings.

229: A pile of debris in thick bush that appears to be the collapsed remains of a stone building. Adjacent to it is a linear clearing in the bush, which may be an old road alignment.

230: Concrete foundations and building bases, many stone and cement building ruins, steel drums, old iron buckets, stoneware jar.

231: A shale and cement wall.

232: Many walls and bases, foundations of temporary structures.

233: Collapsed shale walls, remains of an antique galvanized bucket.

CHRONOLOGY: Female lepers separated after legislation in 1892, and housed and guarded. The Female Leprosy Settlement was demolished circa 1931.

CONTEXT: Collapsed remains of Female Leprosy Settlement demolished in 1930's, thereafter lost in thick bush

LINKAGE: No linkages are currently visible. Geographically close to Cornelia Battery and Rubbish Dump.

SIGNIFICANCE: A highly significant site in the history of the island as this is where female Lepers were accommodated. Furthermore, the archaeology of the Leprosy Settlement is extensive representing nearly every aspect of the leprosy settlement in a sub-surface context. This provides for a potential opportunity for public archaeology interpretive centers.

VULNERABILITY: A very well hidden site in thick bush; is currently impacted by natural decay, especially tree growth and root movement.

FURTHER RESEARCH: Well researched from documents, however sites is ideally suited to program of archaeological excavation, and follow up display interpretation. JPEG: Wpt228.

WPT: 234

DESCRIPTION: The Cornelia Battery Power Station. A flat roofed concrete building with 3 large and 1 small engine mountings within. There are conduits for electrical cables cast into the concrete floor. The interior appears to contain original colour scheme – grey and white walls separated by a lateral dark coloured strip. The exterior of the building still bears remnants of camouflage paint, in this instance characterised by somewhat creative "tree and branch" forms. This power plant provided power for the Cornelia Battery complex, the Blouberg channel searchlights, and possibly aspects of the submarine detection cable system. CHRONOLOGY: WW2

CONTEXT: Aspect of WW2 defenses positioned to defend the Blouberg Channel.

LINKAGE: Links to Cornelia Road, electrical cable linkages to battery, search-lights, command post.

SIGNIFICANCE: A significant feature emphasizing the manner in which the Robben Island and Cornelia Battery were powered by separate engine houses so that each battery was independent in the event of damage in an attack.

VULNERABILITY: Deterioration of camouflage paintwork.

FURTHER RESEARCH: Archival and oral histories, recoding of camouflage before it disappears.

JPEG: wpt234.



DESCRIPTION: The Cornelia Battery Observation Post. A three story high concrete structure with steel shuttered observation ports. Base currently houses ablution facilities for incinerator workers, and the structure is kept locked. Exterior has been repainted, the top floor has been modified to incorporate a hexagonal tower built well after WW2, and probably served as an observation or radar post within the last 40 years.

Nearby, obscured by bush is a toilet block with hatches in the rear for removal of buckets.

CHRONOLOGY: Circa 1940.

CONTEXT: Part of the Cornelia Battery Complex. LINKAGE: Cornelia Road and existing incinerator.

SIGNIFICANCE: A very important feature of the Cornelia Battery. The observation post was important for target acquisition, observing the fall of shot and providing feedback to the gunners.

VULNERABILITY: Unable to assess interior due to locked door. Exterior metal fixtures are corroding.

FURTHER RESEARCH: Oral histories and archival research to understand linkages between batteries and observation and command posts.

JPEG:

WPT: 236

DESCRIPTION: Cornelia Battery Store. A concrete building with steel blast doors but fitted with a pitched corrugated iron roof over cast concrete - a possible measure to disguise it as a civil building. A well preserved structure with good metal work and well preserved camouflage exterior (green, white, black). Over the road is a camouflaged toilet block.

CHRONOLOGY: Battery built circa 1939, store may have been built at the same time or shortly after,

CONTEXT: Cornelia battery complex, WW2 defenses.

LINKAGE: Cornelia Road and gun emplacements. Cornelia battery electrical grid.

SIGNIFICANCE: Component of Cornelia battery, however its detailed role is not understood.

VULNERABILITY: Building is currently used as a storage area for drums of used oil and other waste. Paintwork will deteriorate in ime.

FURTHER RESEARCH: Archival research, oral histories, recording of camouflage paintwork.

JPEG: wpt236

WPT: 237

DESCRIPTION: Command post. A single storied concrete structure with a single room. Steel shuttered observation port in front. Inside is a concrete pedestal with 3 mounting bolts for instrumentation. Interior paintwork is original – blue over yellow/white. All electrical fittings have been stripped. The camouflage paint on the exterior is in very good condition (white, malachite blue and black). There is evidence of extensive gardening around command post – cobble stone circular beads, path edges and alignments.

CHRONOLOGY: circa 1940

CONTEXT: Aspect of the Cornelia Battery.

LINKAGE: Cornelia Road, over grown pathways.

SIGNIFICANCE: Point from which the order to fire the battery was executed.

VULNERABILITY: Paintwork is vulnerable to deterioration.

FURTHER RESEARCH: Archival and oral histories, recording of paintwork.

DESCRIPTION: A concrete building foundation heavily overgrown with bushes. Many cinderblock bricks are

lying around.

CHRONOLOGY: Unknown, likely to be 20th century, possibly WW2.

CONTEXT: Archaeology of unidentified structure.

LINKAGE: Lighthouse road. SIGNIFICANCE: Unknown

VULNERABILITY: Root displacement.

FURTHER RESEARCH: Map work and archival research could help in establishing the identity of the structure.

JPEG:

WPT: 241

DESCRIPTION: A concrete building foundation, heavily overgrown, close to a very large pine tree. Lying around are large quantities of shell. May indicate that the area was used for storing shell for lime burning.

CHRONOLOGY: Unknown

CONTEXT: Unidentified building and possible activity to do with lime

burning.

LINKAGE: Behind village close to lighthouse road.

SIGNIFICANCE: Unknown

VULNERABILITY: Root displacement.

FURTHER RESEARCH: Map work and archival research may help

establish identity. JPEG: Wpt241



WPT: 242

DESCRIPTION: A mound of loose calcrete in thick bush.

CHRONOLOGY: Unknown

CONTEXT: Unidentified activity – possibly lime burning. LINKAGE: Site lies very close to Lighthouse Road.

SIGNIFICANCE: Unknown

VULNERABILITY: Vegetation growth may obscure the site in time.

FURTHER RESEARCH: n/a

JPEG:

WPT:243

DESCRIPTION: Flat concrete helipad.

CHRONOLOGY: Post WW2

CONTEXT: Aspect of transport infrastructure.

LINKAGE: Close to lighthouse road and lighthouse precinct.

SIGNIFICANCE: Alternative point of embarkation for air transport from the island, emergency facility for

personnel in the event of heavy seas prohibiting ferry services.

VULNERABILITY: Not impacted at present.

FURTHER RESEARCH: Oral history.

DESCRIPTION: A large deep calcrete quarry, filled with building rubble and

overgrown with thick bush.

CHRONOLOGY: Unknown - possibly

19th century or earlier.

CONTEXT: Landscape of mining.

LINKAGE: Not far from lighthouse road and informal track leading from Minto Hill down to Southern Perimeter Road. SIGNIFICANCE: Not established.

VULNERABILITY: Dense vegetation

growth.

FURTHER RESEARCH: n/a

JPEG: Wpt244.



WPT: 245

DESCRIPTION: A large wooden Celtic cross close to the staff cemetery.

CHRONOLOGY: Unknown, although Riley (1993) (assuming that it was once associated with buildings known as Irish Town), has suggested it may date to circa 1870.

CONTEXT: A feature that appears to have no connection with any existing

structures.

LINKAGE: Close to Welsford Avenue.

SIGNIFICANCE: Unknown

VULNERABILITY: Natural weathering

FURTHER RESEARCH: Archival, oral history.

JPEG: wpt245.



WPT: 246

DESCRIPTION: A concrete floor base of what was an asbestos clad building. Covered with long grass.

CHRONOLOGY: Unknown. CONTEXT: Unidentified building. LINKAGE: No clear linkages. SIGNIFICANCE: Unknown.

VULNERABILITY: Hidden in thick grass, no acute impacts.

FURTHER RESEARCH: Archival and oral history has a remote chance of producing results.

DESCRIPTION: Staff Cemetery. Burial ground of island staff members.

CHRONOLOGY: In use from 1858 –1923 (Riley 1993)

CONTEXT: Aspect of the Village precinct.

LINKAGE: Between Lighthouse Road and Welsford Avenue.

SIGNIFICANCE: Significant as area where people who staffed the island during much of the Leprosy Settlement and Convict Station period were buried. Memorials contain the identities, ages and sex of these people, and are a potential starting point in writing their histories.

VULNERABILITY: Vegetation is encroaching and memorials are in a poor state of repair. Some have become displaced from the graves, which they mark.

FURTHER RESEARCH: According to Riley (1993) genealogical research has been completed by M. Cairns (Historian). Conservation measures are required for maintenance of the cemetery. JPEG:

WPT:248-249

DESCRIPTION: A small WW2 period concrete building that was once surrounded by a sturdy fence. Within is a mounting for a power plant and some machinery that may indicate the presence of a revolving antenna. Outside are cable stretchers indicating that some form of wireless/radar/or radio direction finder was set up here. Nearby toilet (wpt 249) contains urinal and bucket toilet with wooden seat in good order.

CHRONOLOGY: WW2

CONTEXT: An unidentified aspect of WW2 landscape.

LINKAGE: Evidence of an overgrown track from behind the village to the site.

SIGNIFICANCE: Significance is unclear – fence indicates high security facility. Possibly a very early radar station.

VULNERABILITY: A seldom visited structure that appears to be well preserved. Metal components are corroding and vegetation is encroaching.

FURTHER RESEARCH: Oral history may be of assistance, however, it must be bourn in mind that certain WW2 facilities were highly classified and information is difficult to come by today. JPEG: Wpt248.

WPT: 250

DESCRIPTION: A 10m long alignment of dry stone wall very close to the staff cemetery. Possibly was once an extension to the staff cemetery that was never completed.

CHRONOLOGY: 19th century. CONTEXT: Incomplete wall. LINKAGE: Staff cemetery SIGNIFICANCE: Unknown

VULNERABILITY: Accute impacts not noted, however vegetation will displace stones in the long-term.

FURTHER RESEARCH: Unlikely to be fruitful.



WPT: 280 - 283

DESCRIPTION: Waypoints indicate the location of what was once the old convict station, which was demolished in the early half of the 20th century. None of this historic site is visible at the moment but it is likely to have a strong archaeological signature. floors and foundations may be present below the land surface.

CHRONOLOGY: The convict station was built between 1807 and 1843, and demolished in the early 20th century.

CONTEXT: Possible buried archaeological site.

LINKAGE: East Perimeter Road, outer edge of village precinct, close to cricket field. Site is currently bisected by beach road.

SIGNIFICANCE: A potentially important site, that once revealed or commemorated, could demonstrate the long history of incarceration on the island.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the site, and enhancing the fabric and visitor experience of the island. JPEG:

WPT: 283 - 286

DESCRIPTION: These waypoints indicate the estimated location of what used to be the "female asylum". Aspects of this facility may be incorporated within existing buildings, however, it is very probable that the foot print of the original facility (foundations and floors) may have survived under the present ground surface.

CHRONOLOGY: The medical institutions of the island were established in 1846, however specific structures and improvements were made some years later. The structure known as the "female asylum" is indicated on maps of the island dating to the late 19th century.

CONTEXT: Largely buried archaeological site with foundations and floors potentially below ground surface and under newer buildings.

LINKAGE: Situated between Church Street and Beach Road.

SIGNIFICANCE: Very little has survived of the infirmary aspects of the island, and as a result this function that the island has performed is not overtly commemorated. Archaeological exposure of aspects of the site could reveal physical fabric that could be used as an educational/tourism feature.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the area, and enhancing the fabric and visitor experience of the island. JPEG:

WPT: 287 - 290

DESCRIPTION: These waypoints indicate the estimated location of the "male asylum", which has been completely demolished and replaced with mostly 20th century public works style houses.

CHRONOLOGY: It is not clear when construction began on creating an improved male hospital, however Deacon (1996) indicates that arrangements for males were not complete by 1871.

CONTEXT: Largely buried archaeological site with foundations and floors potentially below ground surface and other newer buildings.

LINKAGE: Church Street and Shearer Avenue, immediately south of English Church.

SIGNIFICANCE: The male infirmary, like the female infirmary is an aspect of the island's history that has become obscured due to the lack of visible material that pertains to this time period. The significance of this era would be enhanced through some form of exposure of archaeological finds or site interpretation.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the site, and enhancing the fabric and visitor experience of the island. JPEG:

WPT: 292 -296

DESCRIPTION: An archaeologically sensitive area of the village that incorporates what is now the club house building, the adjacent land as well as land to the west of Church Street, that contained the old PWD yards. Riley (1993) has indicated that the Club House used to be the old Medical Superintendents house, and Deacon (1996) indicates that the structure started as the home of the Commandant. The old PWD yard north of the church and parsonage has been completely demolished, however this may have been where the first prisoners of the British period was housed as well as the first leprosy infirmary.

CHRONOLOGY: More research is required to understand the sequence of events, however the Club House was built circa 1840.

CONTEXT: Apart from the Club House, no other original structures have survived in this precinct. Any surviving material therefore consists of below surface archaeology. Some of which lies under more recent structures and features.

LINKAGE: West and east sides of Church Street, north of Church and Parsonage, west of cricket ground.

SIGNIFICANCE: Site is significant as this represents the first development of the infirmary and prison during the British Period.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the site, and enhancing the fabric and visitor experience of the island. JPEG:

WPT: 297-298

DESCRIPTION: A buried quarry indicated by undulations in the topography just south of the Guest House. Site is covered with vegetation and bush, in some areas deep hollows in the land-surface can be seen.

CHRONOLOGY: A composite map produced by Riley indicates that the quarry was open in 1905. The quarry is likely to have been active in the 19th century.

CONTEXT: Buried archaeological site - disused quarry that may contain midden material as fill.

LINKAGE: Immediately south of Guest House.

SIGNIFICANCE: Quarry may have been worked by prison labour, disused and backfilled, it may contain archaeological deposits in the form of domestic waste form the village area.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the site and the kinds of activities and lifestyle in the village during the 19th century.

JPEG:

WPT: 299-300

DESCRIPTION: Estimated location of a set of buildings referred to as "Irishtown" initially used for housing warders, then used as a nurses home during the late 19th - 20th centuries.

CHRONOLOGY: Details are unclear, however buildings erected during the late 19th century and are indicated on an 1894 map of the island (Riley 1993). The date of the demolition of "Irishtown" is unknown - Riley suggests that demolition took place between 1933 and 1972.

CONTEXT: The site is now occupied by modern cottages built circa 1972. Remains of original structures may exist in a below surface context.

LINKAGE: Site in the area of Craig and Welsford Avenue.

SIGNIFICANCE: An example of staff housing during the late 19th - early 20th centuries.

VULNERABILITY: The site is buried and not impacted at present. Future impacts may take place with structural changes, laying of services, roads which could disturb buried archaeological material.

FURTHER RESEARCH: A site where research or impact driven archaeological excavation could make a contribution to understanding the site, and enhancing the fabric and visitor experience of the island. Unfortunately this is difficult to achieve, as much of the site lies under more modern structures. JPEG:

DESCRIPTION: A slab of smooth shale, which partially lies in the access road to the quarry. This is covered with 18th and 19th century inscriptions (1745 - 1818), some of which are very faint. There are likely to be more inscriptions on parts of the rock that are currently buried under shallow overburden. The exposed parts of this site are under immediate threat as it lies in a road leading into the quarry used by tourist busses. Vos first recorded the site in 1987. Illustrations in his report indicate that deterioration of the inscriptions has taken place over the last 10 years

CHRONOLOGY: 1745 - 1818 CONTEXT: An open engraving site. LINKAGE: Road into Van Riebeeck

SIGNIFICANCE: This is the only site



of its kind identified to date.

VULNERABILITY: This site has degenerated despite recommendations for mitigation. Tour busses continue to drive over the site and erode away the graffiti. Some aspects that were visible in 1998 are no longer discernable. Access road must be closed.

FURTHER RESEARCH: Area should be excavated (more graffiti under loose sand) and graffiti recorded in detail.

JPEG: wpt301a-c



DESCRIPTION: There is a large open shale quarry on the south side of the island which is purported to be one the oldest on the island - possibly used by Commander Wagenaer in the 17th century as a source of stone for structures on the mainland²⁹. The quarry shows signs of long-term use spanning several hundred years. Modern drill and blasting holes attests to recent working. The quarry has also exposed aspects of the geology of the island - a layer of shale with ancient cross-bedding ripple marks on it. This represents a fossilised landform that is up to 800 million years old. At present the quarry is no longer in use and partially flooded. It is home to small flocks of both wild and domestic ducks.

historic/scenic drive around the island. Vehicular traffic An inspection of the site has not revealed any artefactual material that relates to the earlier period of its use. There are, however, a number of features of interest that are being negatively impacted by vehicular traffic through the quarry. A large portion of the base of the quarry consists of an exposure of bedding planes (ripple marks) in the Malmesbury shale.

CHRONOLOGY: Rock may have been quarried from the site as early as the 17th century. Recent drill marks attest modern use of the quarry.

CONTEXT: Early element of the landscape of mining. Geological exposures.

LINKAGE: Access to the quarry is via a diversion from the South Perimeter Road.

SIGNIFICANCE: Thought to be one of the earliest quarries on the island. Worked by slaves and convicts, it provided high quality shale for mainland structures, and use on the island.

VULNERABILITY: Geological bedding planes are being eroded by busses.

FURTHER RESEARCH: Geological analysis (chemistry) and rock sourcing of Cape Town historic structures. JPEG:

²⁹ Hall, M.J., Miller, D. & Moore, J. 1993. Provenance studies for stone from the castle gateway, Cape Town. South African Journal of Science. 89: 110-112.

DESCRIPTION: British 9.2" (24.3cm) BL caliber coastal artillery gun, shelter, mounting, stores, and underground shell and propellant stores. The Mark 9 and Mark 10 ordinances were extensively used by the British Army during WW2 for Coastal Defense purposes. 112 guns were produced for naval use and a further 170 were built for the army. Those on Robben island are typical coastal defense batteries. Riley (1993) has indicated that the Robben Island guns are of the Mark 7 and Mark 9 type which are significantly rarer than the Mark 10s. Further research is needed to establish the models.

The batteries are the most complete WW2 assets on the island. All three are very similar in layout but differ in detail, in particular the hydraulic loading mechanisms. Areas of similarity are the shelters and underground magazines. Shells and propellant bags were stored underground - the 49-55kg bags of cordite propellant and 174.4kg high explosive shells were delivered to the gun crew via an electric ammunition lift and were then loaded in to the breeches with the assistance of an hydraulic loader. The weapon was fired electrically from the command post once the gun had been trained according to information fed from the plotting rooms and battery observation posts. The maximum range was 32.6 km with maximum propellant charges. Each weapon could fire 3-4 rounds per minute.

Some areas of the underground magazines could not be accessed due to flooding of the shafts, however the shell stores were accessible at all 3 guns. A flight of stairs led down to a passage (about 10m below surface) with a water collection sump immediately in front of the steel blast doors to the magazine. The shell room stairs are equipped with a small gantry for delivering ammunition to the stores below. The shell room, elongated and divided into two separate areas is completely surrounded by a low damp control tunnel built with an internal gradient to lead seeping ground water to the sump area. Within the store itself area racks for the storage of propellant charges while the shell room equipped with floor racks and an overhead traveling hoist used to convey the shells to the shell hoist. Although the shell hoist mechanisms survive the electric drive motors have been removed from all three guns. Various ventilation shafts provided the underground rooms with fresh air. The gun crews who had to observe strict measures to eliminate accidental sparking that could cause a cordite fire in the magazines adopted a behavior protocol that involved special procedures and changes of cloths before entering certain areas. Extensive use was made of bronze and wood in the magazine fittings to avoid generation of sparks. Most of these bronze and wood fittings have been stolen.

At ground surface each emplacement has typically 3 cast concrete storerooms with steel doors, camouflaged and planted on top, as well as a male and female bucket toilet facility. Mushroom and other ventilators are visible among the planted camouflage vegetation. The lower part of the gun turrets also contain rooms as well as the electric hydraulic motor used to power the loading and gun training mechanisms. Within the turrets, the bronze breech mechanisms of the cannons have been removed and copper and bronze fixtures as well as instrumentation have been stolen. The hydraulic loaders have survived, but are beginning to corrode.

CHRONOLOGY: Weapons designed in 1895 as primary weapons on armoured cruisers and as secondary weapons on pre-dreadnought battleships. The British Army also used weapons as the primary coastal defense gun until WW2. Originally destined for use in the Far East, these guns were installed at the Robben Island Battery from 1939 onwards as a measure to repel possible Japanese attack. Once possibility of attack had passed, they went into care and maintenance in 1944, eventually being disbanded in 1958.

CONTEXT: The main defensive battery on Robben Island designed to protect the Table Bay area. Similar batteries existed on the mainland at Simonstown, Apostle Battery, Gordons Bay.

LINKAGE: Part of a complex of military installations that included the concrete access road, workshops, BOPs, an underground power station, plotting room, radio shack connected by paths, roads and electrical and communications cables.

SIGNIFICANCE: Significant as the main defensive facility of Table Bay had the capability of repelling a small landing force or inflicting enemy shipping. In reality, a concerted Japanese attack would have destroyed these defenses, as the Imperial Japanese Navy was equipped with naval weapons up to six times larger than those of Robben Island.

Rottnest Island in Western Australia claims to have the best preserved 9.2 inch gun emplacements. At least 5 similar gun emplacements exist in SA, however their state of preservation is unknown. The weapons at the Scala Battery in Simonstown have been badly vandalized. The status of other emplacements in other parts of the world is not known. Clearly the Robben Island Battery Complex is a very well preserved WW2 facility, and as such is somewhat unique in that it is the only site of this kind in the country that is open to visitors.

The significance of the individual guns still has to be established, which requires more information about their individual histories.

VULNERABILITY: Underground rooms are all subject to seasonal flooding since sump pumps are no longer in service. Gun shelters are corroding, while turret revolving mechanisms are showing rapid deterioration on the exterior. Camouflage paint (not original WW2 according to Bisset pers.com) is deteriorating rapidly and this will accelerate corrosion. Bronze fittings within the gun shelters are all missing, presumably stolen for scrap value.

FURTHER RESEARCH: The models of the guns needs to firmly established. Oral history may provide information about how the magazines and training mechanisms worked. Documents describing the procedures involved in operating the magazines and weapons were produced during WW2. A starting point would be to consult Cmdr Bisset at the Navy Museum. He has documentation available. JPEG FILE:

APPENDIX 2 GPS CO-ORDINATES

Wpt No	Time	Date	South	East
1	09:09	30-Aug-00	-33.80173	18.36745
2	13:35	28-Mar-01	-34.09583	18.48421
3	10:02	30-Aug-00	-33.79794	18.36857
4	10:10	30-Aug-00	-33.7974	18.36797
5	10:25	30-Aug-00	-33.79802	18.37025
6	10:40	30-Aug-00	-33.79817	18.37143
7	10:49	30-Aug-00	-33.79787	18.37149
8	11:00	30-Aug-00	-33.79671	18.37074
9	13:35	28-Mar-01	-34.09583	18.48421
10	11:22	30-Aug-00	-33.79669	18.37027
11	11:52	30-Aug-00	-33.7953	18.37022
12	09:36	01-Sep-00	-33.79862	18.37145
13	10:33	01-Sep-00	-33.79663	18.36877
14	11:02	01-Sep-00	-33.79474	18.36826
15	11:35	01-Sep-00	-33.7951	18.36731
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17	13:49	01-Sep-00	-33.79461	18.37223
18	13:56	01-Sep-00	-33.79467	18.37268
19	14:13	01-Sep-00	-33.7947	18.37303
20	14:29	01-Sep-00	-33.7939	18.3733
21	08:44	06-Sep-00	-33.79789	18.37462
22	09:20	06-Sep-00	-33.8027	18.37396
23	09:21	06-Sep-00	-33.80285	18.3737
24	09:22	06-Sep-00	-33.80309	18.37323
25	09:24	06-Sep-00	-33.80304	18.3728
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30	09:40	06-Sep-00	-33.80208	18.37243
31	09:43	06-Sep-00	-33.80184	18.37236
32	09:53	06-Sep-00	-33.80096	18.37273
33	09:54	06-Sep-00	-33.80085	18.373
34	09:55	06-Sep-00	-33.8009	18.37309
35	09:56	06-Sep-00	-33.80111	18.37328
36	09:58	06-Sep-00	-33.80124	18.37344
37	09:59	06-Sep-00	-33.80135	18.37356
38	10:07	06-Sep-00	-33.80244	18.37424
39	08:45	07-Sep-00	-33.80414	18.37514
40	09:02	07-Sep-00	-33.80508	18.37603
41	09:06	07-Sep-00	-33.80536	18.3761
42	09:20	07-Sep-00	-33.8062	18.37685
43	09:28	07-Sep-00	-33.80714	18.37767
44	11:01	07-Sep-00	-33.80068	18.37415
45	11:02	07-Sep-00	-33.80073	18.37422
46	11:24	07-Sep-00	-33.80388	18.3767
47	11:36	07-Sep-00	-33.80427	18.37639
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52	15:27	07-Sep-00	-33.80512	18.37479
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55 12:12 11-Sep-00 -33.80392 18.3736 56 11:42 11-Sep-00 -33.80633 18.37412 57 12:30 11-Sep-00 -33.80418 18.37413 58 14:26 11-Sep-00 -33.80242 18.37074 59 14:32 11-Sep-00 -33.80261 18.37033 60 14:37 11-Sep-00 -33.80264 18.37033 60 14:37 11-Sep-00 -33.80265 18.3699 62 14:44 11-Sep-00 -33.80306 18.37008 63 14:46 11-Sep-00 -33.80303 18.37018 64 14:48 11-Sep-00 -33.80343 18.37014 65 14:51 11-Sep-00 -33.80386 18.37114 67 14:56 11-Sep-00 -33.80283 18.37115 68 15:00 11-Sep-00 -33.80281 18.3711 69 15:07 11-Sep-00 -33.80221 18.36947 71 15:13	-		11-Sep-00	-33.80577	18.37273
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79 10:04 15-Sep-00 -33.8071 18.36924 80 08:53 19-Sep-00 -33.80025 18.37348 81 09:41 19-Sep-00 -33.79302 18.36287 82 09:44 19-Sep-00 -33.79319 18.36293 83 10:10 19-Sep-00 -33.7903 18.36305 84 10:39 19-Sep-00 -33.79568 18.36366 85 10:56 19-Sep-00 -33.7953 18.36297 86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18				-33.80444	18.37205
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81 09:41 19-Sep-00 -33.79302 18.36287 82 09:44 19-Sep-00 -33.79319 18.36293 83 10:10 19-Sep-00 -33.7903 18.36305 84 10:39 19-Sep-00 -33.79568 18.36366 85 10:56 19-Sep-00 -33.7953 18.36297 86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79545 18.36179 91 11:27 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.81645 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548		10:04		-33.8071	18.36924
82 09:44 19-Sep-00 -33.79319 18.36293 83 10:10 19-Sep-00 -33.7903 18.36305 84 10:39 19-Sep-00 -33.79568 18.36366 85 10:56 19-Sep-00 -33.7953 18.36297 86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.81645 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	80	08:53	19-Sep-00	-33.80025	18.37348
83 10:10 19-Sep-00 -33.7903 18.36305 84 10:39 19-Sep-00 -33.79568 18.36366 85 10:56 19-Sep-00 -33.7953 18.36297 86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79547 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.81645 18.37948 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.79249 18.36559 96 09:10 21-Sep-00 -33.79253 18.36548	81	09:41	19-Sep-00	-33.79302	18.36287
84 10:39 19-Sep-00 -33.79568 18.36366 85 10:56 19-Sep-00 -33.7953 18.36297 86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.79249 18.36559 96 09:10 21-Sep-00 -33.79253 18.36548	82	09:44	19-Sep-00	-33.79319	18.36293
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86 10:59 19-Sep-00 -33.79493 18.36287 87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	84	10:39	19-Sep-00	-33.79568	18.36366
87 11:08 19-Sep-00 -33.79637 18.36233 88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	85	10:56	19-Sep-00	-33.7953	18.36297
88 11:13 19-Sep-00 -33.79601 18.36189 89 11:13 19-Sep-00 -33.79598 18.3619 90 11:16 19-Sep-00 -33.79545 18.36179 91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	86	10:59	19-Sep-00	-33.79493	18.36287
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91 11:23 19-Sep-00 -33.79517 18.35949 92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	89	11:13	19-Sep-00	-33.79598	18.3619
92 11:27 19-Sep-00 -33.79607 18.36075 93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	90	11:16	19-Sep-00	-33.79545	18.36179
93 12:36 19-Sep-00 -33.80545 18.37834 94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	91	11:23	19-Sep-00	-33.79517	18.35949
94 14:17 19-Sep-00 -33.81645 18.37948 95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	92	11:27	19-Sep-00	-33.79607	18.36075
95 14:18 19-Sep-00 -33.81648 18.37955 96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	93	12:36	19-Sep-00	-33.80545	18.37834
96 09:10 21-Sep-00 -33.79249 18.36559 97 09:12 21-Sep-00 -33.79253 18.36548	94	14:17	19-Sep-00	-33.81645	18.37948
97 09:12 21-Sep-00 -33.79253 18.36548	95	14:18	19-Sep-00	-33.81648	18.37955
•	96	09:10	21-Sep-00	-33.79249	18.36559
•	97	09:12	21-Sep-00	-33.79253	18.36548
90 U9.14 Z1-Sep-UU -33.79Z85 18.36556	98	09:14	21-Sep-00	-33.79285	18.36556
99 09:16 21-Sep-00 -33.79294 18.36504	99	09:16	21-Sep-00	-33.79294	18.36504
100 09:19 21-Sep-00 -33.79259 18.36522	100	09:19	•	-33.79259	18.36522
101 09:19 21-Sep-00 -33.79257 18.36519	101	09:19	•	-33.79257	18.36519
102 09:22 21-Sep-00 -33.79242 18.36508			•		
103 09:26 21-Sep-00 -33.79201 18.36554			•		
104 09:29 21-Sep-00 -33.79201 18.36521					
105 09:31 21-Sep-00 -33.79163 18.36527			-		
106 09:33 21-Sep-00 -33.79171 18.36558			•		
107 09:35 21-Sep-00 -33.79128 18.36551			•		
108 09:39 21-Sep-00 -33.79128 18.36565			•		

Wpt No	Time	Date	South	East
109	09:43	21-Sep-00	-33.79111	18.36562
110	09:50	21-Sep-00	-33.79098	18.3655
111	09:52	21-Sep-00	-33.79122	18.36482
112	09:55	21-Sep-00	-33.79161	18.36491
113	09:58	21-Sep-00	-33.7918	18.36499
114	09:59	21-Sep-00	-33.79184	18.36483
115	10:01	21-Sep-00	-33.79169	18.36454
116	10:03	21-Sep-00	-33.79159	18.36453
117	10:14	21-Sep-00	-33.79056	18.36548
118	10:16	21-Sep-00	-33.79053	18.36604
119	10:18	21-Sep-00	-33.79071	18.36606
120	10:26	21-Sep-00	-33.79193	18.3642
121	10:53	21-Sep-00	-33.79242	18.36412
122	10:56	21-Sep-00	-33.79287	18.36426
123	10:59	21-Sep-00	-33.79334	18.36438
124	11:03	21-Sep-00	-33.79339	18.36454
125	11:05	21-Sep-00	-33.79362	18.36507
126	11:51	21-Sep-00	-33.7915	18.36569
127	11:54	21-Sep-00	-33.7918	18.36572
128	11:56	21-Sep-00	-33.79201	18.36582
129	12:02	21-Sep-00	-33.79152	18.36579
130	13:09	21-Sep-00	-33.79386	18.36543
131	13:15	21-Sep-00	-33.7953	18.3658
132	13:18	21-Sep-00	-33.79551	18.36514
133	13:21	21-Sep-00	-33.79581	18.36574
134	13:37	21-Sep-00	-33.79873	18.3663
135	09:15	03-Oct-00	-33.79719	18.35996
136	09:32	03-Oct-00	-33.79824	18.36036
137	09:33	03-Oct-00	-33.79819	18.36012
138	09:35	03-Oct-00	-33.79815	18.3599
139	09:37	03-Oct-00	-33.79813	18.35972
140	09:38	03-Oct-00	-33.79834	18.35961
141	09:38	03-Oct-00	-33.79839	18.35983
142	09:57	03-Oct-00	-33.80038	18.36027
143	10:05	03-Oct-00	-33.80161	18.35894
144	10:27	03-Oct-00	-33.80272	18.35973
145	10:30	03-Oct-00	-33.80246	18.36047
146	10:32	03-Oct-00	-33.80313	18.36059
147	10:34	03-Oct-00	-33.80319	18.35979
148	11:04	03-Oct-00	-33.80414	18.36001
149	11:17	03-Oct-00	-33.8048	18.36026
150	11:21	03-Oct-00	-33.80549	18.36022
151	11:26	03-Oct-00	-33.80564	18.3601
152	11:34	03-Oct-00	-33.80766	18.36115
153	11:43	03-Oct-00	-33.80834	18.36144
154	11:51	03-Oct-00	-33.80841	18.36415
155	12:15	03-Oct-00	-33.80892	18.36496
156	14:05	03-Oct-00	-33.80431	18.36254
157	14:15	03-Oct-00	-33.80607	18.36288
158 150	14:38	03-Oct-00	-33.80255	18.35828
159 160	15:01 08:51	03-Oct-00 06-Oct-00	-33.79639 -33.80112	18.36025 18.36577
160 161	09:02	06-Oct-00	-33.80112	18.36577
162	09:02	06-Oct-00	-33.80374	18.36683
163	09.05	06-Oct-00	-33.80125	18.3638
103	03.10	00 001-00	00.00120	10.0000

164 09:21 06-Oct-00 -33.80031 18.36425 165 09:24 06-Oct-00 -33.79967 18.36343 166 09:26 06-Oct-00 -33.79967 18.36343 167 09:31 06-Oct-00 -33.79906 18.36129 168 09:37 06-Oct-00 -33.80017 18.36188 170 09:44 06-Oct-00 -33.80323 18.36295 172 10:29 06-Oct-00 -33.80323 18.36296 172 10:29 06-Oct-00 -33.80873 18.36296 172 10:29 06-Oct-00 -33.80932 18.36291 173 10:36 06-Oct-00 -33.80974 18.36217 173 10:36 06-Oct-00 -33.8103 18.36217 175 10:41 06-Oct-00 -33.81037 18.36224 176 10:47 06-Oct-00 -33.81127 18.36307 179 10:57 06-Oct-00 -33.81127 18.363307 179	Wpt No	Time	Date	South	East
165 09:24 06-Oct-00 -33.79967 18.36307 166 09:26 06-Oct-00 -33.8006 18.36307 167 09:31 06-Oct-00 -33.79841 18.36199 168 09:33 06-Oct-00 -33.80017 18.36188 170 09:44 06-Oct-00 -33.80285 18.36296 171 09:45 06-Oct-00 -33.80873 18.36179 173 10:36 06-Oct-00 -33.80844 18.36217 174 10:41 06-Oct-00 -33.80904 18.36224 175 10:44 06-Oct-00 -33.80904 18.36221 176 10:47 06-Oct-00 -33.8103 18.36224 176 10:47 06-Oct-00 -33.8103 18.36224 177 10:49 06-Oct-00 -33.8103 18.36224 177 10:49 06-Oct-00 -33.81129 18.36316 180 11:00 06-Oct-00 -33.81129 18.36345 181 11:0	-				
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201 11:18 10-Oct-00 -33.81861 18.36959 202 11:37 10-Oct-00 -33.81828 18.37093 203 11:44 10-Oct-00 -33.81851 18.37151 204 12:09 10-Oct-00 -33.81975 18.37201 205 12:36 10-Oct-00 -33.8172 18.37419 206 12:37 10-Oct-00 -33.81708 18.37441 207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.81748 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81747 18.37342 214 12:50 10-Oct-00 -33.81726 18.37323 216 1			10-Oct-00	-33.81832	
202 11:37 10-Oct-00 -33.81828 18.37093 203 11:44 10-Oct-00 -33.81851 18.37151 204 12:09 10-Oct-00 -33.81975 18.37201 205 12:36 10-Oct-00 -33.8172 18.37419 206 12:37 10-Oct-00 -33.81715 18.37441 207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.81744 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37342 214 12:50 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 1		11:18	10-Oct-00	-33.81861	18.36959
203 11:44 10-Oct-00 -33.81851 18.37151 204 12:09 10-Oct-00 -33.81975 18.37201 205 12:36 10-Oct-00 -33.8172 18.37419 206 12:37 10-Oct-00 -33.81715 18.37441 207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37342 214 12:50 10-Oct-00 -33.81726 18.37323 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81762 18.37297		11:37	10-Oct-00	-33.81828	18.37093
204 12:09 10-Oct-00 -33.81975 18.37201 205 12:36 10-Oct-00 -33.8172 18.37419 206 12:37 10-Oct-00 -33.81715 18.37441 207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81739 18.37292 216 12:52 10-Oct-00 -33.81762 18.37297		11:44		-33.81851	18.37151
206 12:37 10-Oct-00 -33.81715 18.37441 207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	204	12:09	10-Oct-00	-33.81975	18.37201
207 12:40 10-Oct-00 -33.81708 18.37423 208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	205	12:36	10-Oct-00	-33.8172	18.37419
208 12:42 10-Oct-00 -33.81693 18.37399 209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	206	12:37	10-Oct-00	-33.81715	18.37441
209 12:43 10-Oct-00 -33.81722 18.37417 210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	207	12:40	10-Oct-00	-33.81708	18.37423
210 12:45 10-Oct-00 -33.8174 18.37393 211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	208	12:42	10-Oct-00	-33.81693	18.37399
211 12:46 10-Oct-00 -33.81748 18.37379 212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	209	12:43	10-Oct-00	-33.81722	18.37417
212 12:47 10-Oct-00 -33.81726 18.37391 213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	210	12:45	10-Oct-00	-33.8174	18.37393
213 12:48 10-Oct-00 -33.81728 18.37376 214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	211	12:46	10-Oct-00	-33.81748	18.37379
214 12:50 10-Oct-00 -33.81747 18.37342 215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	212	12:47	10-Oct-00	-33.81726	18.37391
215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	213	12:48	10-Oct-00	-33.81728	18.37376
215 12:52 10-Oct-00 -33.81726 18.37323 216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	214	12:50	10-Oct-00	-33.81747	18.37342
216 12:52 10-Oct-00 -33.81739 18.37292 217 12:54 10-Oct-00 -33.81762 18.37297	215	12:52		-33.81726	18.37323
217 12:54 10-Oct-00 -33.81762 18.37297					
	218	12:57	10-Oct-00	-33.81745	18.37312

Wpt No	Time	Date	South	East
219	12:59	10-Oct-00	-33.81732	18.37332
220	15:17	10-Oct-00	-33.81221	18.37479
221	11:04	13-Oct-00	-33.79362	18.37077
222	11:15	13-Oct-00	-33.79308	18.37003
223	11:30	13-Oct-00	-33.79106	18.36966
224	11:43	13-Oct-00	-33.79194	18.37047
225	12:11	13-Oct-00	-33.7927	18.37322
226	12:20	13-Oct-00	-33.79274	18.37217
227	12:28	13-Oct-00	-33.79323	18.37373
228	14:28	13-Oct-00	-33.79739	18.37185
229	14:34	13-Oct-00	-33.79731	18.37217
230	14:38	13-Oct-00	-33.797	18.37212
231	14:47	13-Oct-00	-33.79665	18.37193
232	14:49	13-Oct-00	-33.79679	18.37161
233	14:55	13-Oct-00	-33.79679	18.3714
234	15:04	13-Oct-00	-33.79494	18.3715
235	15:09	13-Oct-00	-33.79452	18.37054
236	15:13	13-Oct-00	-33.7939	18.37033
237	15:17	13-Oct-00	-33.7935	18.37019
238	11:42	18-Oct-00	-33.8117	18.67945
239	10:26	19-Oct-00	-33.81233	18.37498
240	10:53	19-Oct-00	-33.81315	18.37596
241	10:59	19-Oct-00	-33.8132	18.37649
242	11:10	19-Oct-00	-33.81382	18.37565
243	11:15	19-Oct-00	-33.81468	18.37488
244	11:17	19-Oct-00	-33.81495	18.37484
245	14:29	19-Oct-00	-33.81417	18.37822
246	14:32	19-Oct-00	-33.81453	18.37824
247	14:38	19-Oct-00	-33.81342	18.37771
248	14:45	19-Oct-00	-33.81507	18.37732
249	14:53	19-Oct-00	-33.81503	18.37752
250	15:03	19-Oct-00	-33.81403	18.37761
280			-33.80827	18.38007
281			-33.80775	18.3798
282			-33.80733	18.37959
283			-33.81165	18.38048
284			-33.81081	18.37978
285			-33.81026	18.38045
286			-33.81066	18.38116
287			-33.81112	18.3789
288			-33.81151	18.37812
289 290			-33.81289 -33.81256	18.37889 18.37969
290 291			-33.81009	18.37924
292			-33.80966	18.37891
293			-33.80892	18.37827
294			-33.80996	18.37704
295			-33.81078	18.37756
296			-33.80998	18.37842
297			-33.81419	18.3809
298			-33.81417	18.38125
299			-33.8146	18.37933
300			-33.81425	18.37916
301			-33.81775	18.37749
302			-33.81714	18.37622

Wpt No	Time	Date	South	East
K01	09:28	01-Sep-00	-33.79882	18.37151
K02	09:30	01-Sep-00	-33.79879	18.37138
K03	09:32	01-Sep-00	-33.79871	18.37143
K04	09:32	01-Sep-00	-33.79873	18.37148
K05	09:33	01-Sep-00	-33.79869	18.37153
K06	09:34	01-Sep-00	-33.79864	18.37149
K07	09:36	01-Sep-00	-33.79862	18.37144
K08	09:37	01-Sep-00	-33.7986	18.37138
K09	09:39	01-Sep-00	-33.79864	18.37139
K10	09:40	01-Sep-00	-33.79847	18.37132
K11	09:46	01-Sep-00	-33.79839	18.37135
K12	09:47	01-Sep-00	-33.79839	18.37131
K13	09:48	01-Sep-00	-33.79845	18.37121
K14	09:49	01-Sep-00	-33.79845	18.37122
K15	09:50	01-Sep-00	-33.79841	18.3712