

**HERITAGE AND ARCHAEOLOGICAL INVESTIGATIONS**

**OVER BLOCK 4873**

**LEE POINT ROAD, DARWIN**

**Final report**

**A report for GHD**

**On behalf of the Department of Defence**

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## 1.0 INTRODUCTION

As the Department of Defence is considering the future use or disposal of Block 4873, Lee Point Road, they requested GHD to examine any environmental issues that may arise. GHD then contracted Begnaze to carry out the cultural heritage component of the project.

This report describes the findings from an archaeological survey that was carried out over Block 4873 and the findings from a review of any previously recorded historic and Aboriginal listings and assessments over the survey area and to determine if any future documentation of heritage values is required.

Note that this report does not address places of contemporary Indigenous significance, as defined by the *Northern Territory Aboriginal Sacred Sites Act*.

## 2.0 ENVIRONMENTAL BACKGROUND

Block 4873 is located on the Lee Point Peninsula approximately 17 kilometres north of Darwin CBD and consists of 81 hectares (Figure1). The peninsula is a broad, low crest running in a north/east, south/west direction with a maximum elevation of 32m. There are relatively steep slopes on the northwest coastline, while the slopes are more gentle south and east (Cities Commission 1974). The Beagle Gulf lies to the west and north and Buffalo Creek and Leanyer Swamp lies to the east.

The survey area consists of gravelly soils overlaying deeply weathered fine sandstone and there are saline muds associated with the mangroves in the tidally inundated areas of mangroves along Sandy Creek which runs outside the western and southern boundaries of the survey area (Pietsch and Stuart-Smith 1987). Sandy Creek is tidal in its lower reaches and spring fed for most of the year. Along the western boundary of the survey area there is a vine forest which occurs between the higher ground and the sand dunes along Casuarina Beach and a monsoon forest that grows along areas adjacent to Sandy Creek and its tributaries.

On the higher ground which belongs to the Northern Plains geomorphic unit and the vegetation consists of either Vegetation Unit 4 and 9 of open forests or woodlands consisting of *Eucalyptus minata* or *tetradonta* and *Livistonia* and *Pandanus* with an understorey of sorghum grasses. (Wilson *et al.* 1991 and Pietsch and Stuart-Smith 1987).

Extensive topsoil stripping and associate vegetation removal on the upland areas of the peninsula took place in the early 1970s, which has caused soil erosion and drainage problems in the existing drainage lines. (Cities Commission 1974:15).

## 3.0 CULTURAL BACKGROUND

### 3.1. Ethnographic background

The Darwin area belongs to the Larrakia people. Tindale (1974:230) recorded that their land was from Fog Bay in the west to Gunn Point in the east and to an area north of Rum Jungle in the south. Foelsche (1881) and Basedow (1907) both noted that the Larrakia people were heavily dependent on fish and shellfish. Preferred camping areas were located near permanent water sources (Foelsche 1881) and sand ridges along the beaches.

Resources used in the areas were fish, ducks geese, water lilies and wallabies often ambushed along well-used paths to water. Items of material culture likely to be preserved in the archaeological record include stone artefacts such as spearheads and stone axes, shell mounds, and

hearths made of stone or lumps of termite mounds (Foelsche 1881, Basedow 1907). Foelsche (1881:5-6) recorded that the Larrakia buried their dead in shallow graves, presumably in sand deposits found in coastal areas.

The only items used to facilitate the subsistence activities described above that are likely to survive in the archaeological record are shell fish hooks, hearths containing cooking stone or termites nests and stone tools such as spear heads, axe heads, knives and, grindstones. Other items used in the daily life of the Aboriginal people in the past that are unlikely to have survived are wooden spears, digging sticks and small bags and nets.

### **3.2. Historic background**

It was not until World War II that the Lee Point area was used for any European developments. In early 1941 the area was used as a defensive position for the expected Japanese invasion. The beaches from Rapid Creek north were fortified by barbed wire and trenches, gun positions were constructed at Lee Point and Dripstone Caves, which also was the location for the No 31 RDF Station. The weapon pits and machine gun posts were manned by the 23<sup>rd</sup> Australian Infantry Brigade on the beaches (Rayner 1995, Heritage Surveys 2001). Following World War II Lee Point was abandoned by the military.

In the early 1950s the Department of Defence acquired Block 4873 to establish a radar and receiving station (Heritage Surveys 2001) and by the 1960s there were numerous buildings surrounded by earth and sand embankments. These activities were related to the strengthening of the defensive forces in Darwin during the period of hostilities between Indonesia and Malaysia in 1963 (Alford 2004) and when the Indonesian Air Force violated Australian airspace. These activities included the permanent detachment of No 30 Squadron RAAF between 1965 to 1968, a twelve gun battery which provided anti aircraft and seaward defences, six Bofors guns, surrounded by several two gun weapon pits, and the placement of Bloodhound MK1 surface to air missiles (SAM). No121 LAA was specifically formed as part of the 16 Air Defence Regiment for the Defence of Darwin during the Indonesian incursions. The radar station during this period was manned by the RAAF's 2CRU (Central and Reporting Unit)

The site, until recently, was used as a radar facility by the Department of Defence. The existing buildings consist of workshops, two towers and the remains of aerials.

### **3.3. Archaeological background**

While systematic archaeological research has occurred along the coastal areas of Darwin Harbour and Shoal Bay (Bourke 2000, 2005, Burns 1996, 1999) the majority of archaeological surveys further inland have been associated with archaeological clearances for development (Bourke 2004; Crassweller 2001a and b, 2002, 2006a and b, 2007, 2008, 2009a and b, 2010, Guse and Mowat 1993, Guse and Hiscock 1993, Guse 1996, Heritage Surveys 1997, 2001a and b).

Coastal shell middens are the most common site type around Darwin Harbour listed on the Archaeological Site Register held by the Heritage Branch followed by stone artefact scatters and less frequently quarries, knapping floors and skeletal remains and there is one recorded fish trap.

The middens are generally located less than 300 metres from mangrove communities and are dominated by *Anadara granosa*. They range in size from 10 to 100 metres and some contain a diverse stone assemblage of flakes, pestles, grinding stones and edge ground axes made from quartz, quartzite, sandstone, porcellanite, tuff and dolerite.

Along the western side of the Howard River sixteen shell mounds and nine shell scatters were identified (Crassweller 2010). The majority of shell in the mounds and scatters was *Anadara*

*granosa* with much lower frequencies of *Terebralia*, *Telescopium* and *Marcia* species. The majority of the sites are located in open woodlands or near the boundary of the open woodland and vine forest. Two were located on beach ridges in monsoon vine forests next to the mangroves.

There have been several archaeological investigations carried out over relatively undisturbed areas around the northern suburbs of Darwin where archaeological material has been identified. A previous survey over Block 4873 located two quartz flakes (Heritage Surveys 2001a). In the Darwin Airport area there were twelve archaeological sites, all stone artefact scatters and ten isolated stone artefacts (Navin and Officer). All these sites and isolated artefacts are located on the edge of Rapid Creek or in the area of the Marrara Swamp.

In the Leanyer Swamp area an artefact scatter was identified on a low ridge overlooking the mud flats and one isolated stone artefact was recorded on a gravelly plain (Crassweller 2009a). A survey carried out by Crassweller (2010) east of Robinson Barracks identified a quartzite quarry and eight areas containing a background scatter of isolated stone artefacts, manufactured from either quartzite or quartz.

Surveys in the wider Darwin region show that isolated quartz artefacts are common (Hiscock, 1995, Heritage Surveys 1995, 1997a 1997b) and quartz stone artefacts are the dominant artefact type identified in the stone artefact scatters and shell middens in the Darwin Harbour region. Quartz crops out widely across Middle Arm in the form of thinly scattered gravel or (less frequently) small sized cobbles. Heritage Surveys (1995) suggested that the prehistoric occupants of the area may have adopted a relatively opportunistic and widely spaced stone sourcing strategy, using individual pieces of quartz suitable for stone tool manufacturing as and when they were encountered.

### **3.4. Predictive model for the presence of cultural heritage material**

The ethnographic and existing archaeological record highlights that there are two main landscape features that were used as a focus of past human activity. Likely locations for archaeological sites are those near permanent water and the coastline boundary between the mangroves and the higher ground. Shell middens and stone artefact scatters should be the most common site type in the area.

## **4.0 METHODOLOGY**

### **4.1. Desktop review**

The data sources used for this section have been compiled from three principal sources:

- The Archaeological Sites Register held by the Heritage Branch (NRETA).
- The heritage lists maintained by the Australian Heritage Council.
- The Northern Territory Heritage Register held by the Heritage Branch (NRETA).

In addition to these sources, published and unpublished documents and reports describing Northern Territory historic places were used.

### **4.2. Field survey**

The aim of the archaeological field survey is to locate and record any archaeological objects or places to ensure that the provisions of the *Northern Territory Heritage Conservation Act 1991* and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the

*Environment and Heritage Legislation Amendment Act (No 1) 2003* are not contravened. The archeological survey was carried out as follows:

- The archaeological and heritage study identified archaeological and historic material within the designated area by means of transect carried out in a manner that ensured the highest possible coverage of the area. The survey consisted of pedestrian transects which were on average 50 metres apart. Access to some areas was difficult due to the dense grass and weed cover and areas where visibility was higher were targeted. The field work was carried out over one day by Christine Crassweller.

- Any archaeological or heritage places, objects or classes of objects located during the survey were recorded in such detail as to permit independent assessment of their significance. The location of any archaeological places and objects included coordinates obtained by a hand-held Global Positioning System using GDA94 datum.

After assessing the significance of the archaeological place or object, recommendations are made regarding compliance with the provisions of the *Northern Territory Heritage Conservation Act 1991* and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environment and Heritage Legislation Amendment Act (No 1) 2003*.

The survey consisted of both pedestrian and vehicular transects. There are numerous tracks and roads that criss-cross Section 4873 where the vehicle was driven at less than 5k.p.h. and the pedestrian transects were made between the tracks. These transects were on average 80-100 metres apart. As surface visibility was very poor, areas where visibility was higher were targeted. Pedestrian transects were also made on the higher ground around the two larger paper bark swamps. No transects were made on the grass covered low-lying areas as surface visibility was nil.

The following sections describes the definitions used to identify archaeological material

#### **4.3. Types of archaeological sites**

There are five types of Aboriginal sites previously recorded in the inland region of Darwin and can broadly be defined as follows:

- *Artefact scatters* which may contain flaked or ground artefacts and hearthstones. They occur as surface scatters of materials or as stratified deposits when there have been repeated occupations.

- *Stone arrangements* which range from simple cairn to more elaborate arrangements. These stone arrangements were used in ceremonial activities and represent sacred or totemic sites. Other stone arrangements were constructed for route or territory markers, the walls of huts, fish traps or small walls to stop water from entering a rock shelter or retain the floor.

- *Stone quarries* are generally sites where stone for flaked or edge ground artefacts have been extracted from an outcropping source of rock (Hiscock and Mitchell 1993).

- *Knapping sites* are discrete scatters of artefacts consisting of the remains of a single reduction event associated with the fabrication of implements.

- *Shell middens* contain mollusc material in the form of surface scatters or mounded deposits and represent the remains of human meals.

#### 4.4. Site definitions

An archaeological site is defined for this survey as having ten or more stone artefacts within an area of 2 m<sup>2</sup> or a concentration of artefactual material with an average density that is 5 times greater than the average density of the background scatter. A site will have an identifiable boundary where either artefact densities decrease to the extent as to be classified as background scatter or environmental features determine the boundary.

A background scatter is generally a very low density, more or less continuous distribution of artefacts over the landscape. Although these artefacts do not constitute a site they will be given location details for research purposes.

#### 4.5. Artefact identification

A requirement for a successful archaeological project involves the accurate identification of archaeological materials. The following principles were used in artefact identification.

Each time sufficient force is applied to the surface of an isotropic rock it will fracture into two pieces, the core and the flake. For an object to be identified as a flaked object it needs to possess one or more of the following:

- a positive or negative ring crack.
- a distinct positive or negative bulb of percussion.
- a distinct erailure scar in an appropriate position below the platform.
- definite remnants of flake scars on dorsal surface or ridges.

Stone artefacts are divided into four main technological types; cores, unretouched flakes, retouched flakes and flaked pieces (Hiscock 1984:128-129). They are defined as follows:

- *cores* are pieces of stone that have one or more negative scars and the absence of positive flake scars.
- *unretouched flakes* are pieces of stone that have been struck off another piece of stone and ideally possess platforms, positive bulbs of percussion, concentric ripples, ring cracks and /or erailure scars on the ventral surface.
- *retouched flakes* are flaked flakes. They are identified by the presence of negative scars that must have been created after the ventral surface of the flake had been created. There will be either negative scars on the ventral surface or negative scars on the dorsal surface, which have been formed by the flake being hit on the ventral surface.
- *flaked pieces* are stone artefacts that have been formed by knapping but cannot be identified as either a core or a flake.

Other artefact and implement types that have been identified in the region are listed below following characteristics outlined by McCarthy (1976) and Holdaway and Stern (2004).

- *Unifacial points* are flakes that have been retouched along the margins from one surface, either ventral or dorsal to give or enhance its pointed shape. They can be symmetrical or leaf shaped.
- *Bifacial points* are retouched along both ventral and dorsal surfaces of a flake to enhance or give the artefact its pointed shape. They may have the platform removed and the proximal end rounded.
- *Edge ground axes* have been shaped by the process of flaking, pecking and polishing. They generally have only one working edge that has been ground to a sharp margin although occasionally they may have two leading edges.
- *Grindstones* are characterized by a worn and abraded surface or surfaces. There also may be a concave surface.

- *Hammerstones* have use-wear on the surface in the form of the abrasion, pitting, edge fracturing with some negative scarring.
- *Manuports* are stone material that are not found naturally in an area and must have been carried in by humans.

#### **4.6. Assessment of significance**

According to Sullivan and Bowdler (1984) archaeological significance means that it has scientific, archaeological or research value, that is, it has the potential to assist current or future research into problems of human history or other areas of enquiry. The Australian ICIMOS Charter for the Conservation of Places of Cultural Significance, otherwise known as the Burra Charter (Maquis-Kyle and Walker 1992:73) states that the scientific value or research potential of a place depends upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place or object may contribute to further substantial information.

Therefore the significance of a site is firstly related to the intactness or integrity of a site, that is the state of preservation as well as the stratigraphic reliability of the cultural material. Secondly, the representativeness of a site is important either because a site is unusual or because the site has research potential when taken in conjunction with other sites. Thirdly a site may provide chronology extending back into the past.

There are further criteria that can be considered when assessing the significance of historic sites and these are:

- A site is associated with events, developments or cultural phases in human occupation.
- A site demonstrates a way of life no longer practiced or in danger of being lost or of exceptional interest, and
- A site provides information contributing to a broader understanding of the history of human occupation.

It should be noted that historical significance would not necessarily be equated with archaeological significance, as some events may leave nothing in the archaeological record.

## **5.0 RESULTS**

### **5.1. Desktop review**

Block 4873 does not contain any historic or indigenous archaeological sites recorded on either the Commonwealth or Northern Territory heritage registers or listings.

A background scatter of isolated stone artefacts was recorded at 705050E 8634250N (Heritage Surveys 2001a)

A review of past reports and articles indicate that there are no historic archaeological materials dating to the World War II period or earlier on Block 4873 (Heritage Surveys 2001a, Alford 2004, 2005).

However, the survey by Heritage Surveys (2001a) over Block 4873 located traces of sandbags and earth emplacement and shallow slit trenches around the main receiving station buildings which were most likely constructed during the 1950s and 1960s. Other remains consisted of mounded earth revetments with internal walls made from sheets of corrugated iron, star pickets and earth filled 44 gallon drums. Heritage Surveys (2001a:11) considered that while these features



are similar to World War II slit trenches and weapon pits, there were no other artefacts present which would indicate a link with World War II. Also, the metal items were in a relatively uncorroded state, which suggests a more recent period of construction. Heritage Surveys (2001) also stated that no historic archaeological materials dating to the Second World War or earlier were identified within the survey area.

A third feature identified during the survey on Block 4873 was thought to be the remains of the 1960s missile battery and were located north of the main building complex. These consisted of seven concrete slabs with a distinctive pattern of metal bolts, assumed to be the missile launcher foundations, two small concrete huts and two earth mounds sealed with bitumen. The location of the features identified by Heritage Surveys (2001a) are listed in Table 1.

**Table 1. Remnants of 1950-60s features on Block 4873 (from Heritage Surveys 2001a)**

<b>Description</b>	<b>Easting</b>	<b>Northing</b>
Earth revetment	705296	8634253
Earth revetment	705135	8634280
Earth revetment	704849	8634165
Earth revetment	705167	8634481
Concrete missile hardstand	705539	8634855
Concrete missile hardstand	705547	8634945
Concrete missile hardstand	705576	8635024
Concrete missile hardstand	705625	8635045
Concrete missile hardstand	705610	8635001
Concrete missile hardstand	705589	8635084
Concrete missile hardstand	705596	8634966
Earth ramp	705626	8634843
Earth ramp, adjacent to Lee Point Rd, poorly preserved		
Concrete bunker	705574	8634957
Concrete bunker	705595	8635039

A heritage assessment, detailed investigation and excavation was made on one of the Bofors anti-aircraft gun emplacements located south of Block 4873 (Alford 2004, 2005, De la Rue 2004) before it was destroyed. This site was considered to be notable because of its association with the tensions with Indonesia in the 1960s and the distinctive unusual shape. The emplacement consisted of a hollow cruciform arrangement of earth filled 44 gallon drums which were banked around the outside by earth. De la Rue (2004) considered that this shape is most suitable for 40mm Bofors anti-aircraft L/60 anti aircraft gun.

During the heritage assessment of the battery, two more of these sites were identified. One is on Block 4873 and the other is on the eastern side of Lee Point Road. The latter site has now been fenced and has signage explaining its history. Alford (2005) considered that their condition was inferior to the one being assessed.

## 5.2. Field survey

The survey found that the majority of the surface on Block 4873 had been previously disturbed. There are large areas dominated by Turkey Bush which usually indicates disturbed ground. There are numerous mounds and scrapings over the survey area in the southern section which are the remains of the 1970s topsoil removal. The mounds are now part of a trail bike track. This disturbance has also probably caused the eight metre deep erosional gully that runs in an east-west direction near the southern boundary. Two itinerant camps were also noted in the southern section.

Surface visibility was very poor and estimated to be, on average, less than 5% as the surface was either covered in deep leaf litter and / or *Sorghum* and Mission grass. The areas covered in Mission grass were inaccessible. A small area in the west had been burnt resulting in an average surface visibility of 50%.

No Indigenous archaeological material was located during the survey.

The survey over the area north of the existing buildings and thought to be associated with the 1960s defensive activities was basically unsuccessful due to the dense grass and weed growth. Only the larger features recorded by Heritage Surveys (2001a) were relocated and only one of the concrete bunkers and two of the missile foundations were identified. Figure 2 shows the shape and size of the concrete and bitumen slab on which the missile foundations and bunker are located.



Figure 2. Google map showing shape of missile facility.

A previously unrecorded feature, a possible revetted ammunition or explosive storage site is located next to Lee Point Rd and approximately 90 metres east of the remains of the missile complex.

**Table 2. Features recorded during this survey**

Description	Easting*	Northing
Missile foundations	705618	8635028
Missile foundations	705593	8635059
Concrete bunker	705602	8635028
Cruciform anti-aircraft battery	705129	8634242
Ammunition / explosive storage site	705743	8635050

\* Darwin 5072 1:100,000 map sheet

The details of the above features are recorded below.

**1. The missile foundations**

These two features consisted of ten circular metal bolt holes set in concrete. The smaller holes were cogged shape around the edge. To assess whether these were associated with the Bloodhounds, measurements were made on the Bloodhound missiles that are now outside the gates at the Darwin RAAF Base at the airport. The arrangement and dimensions of the holes corresponded to those at Lee Point.



Metal bolts set in concrete – base for Bloodhound missiles

**2. Concrete bunker**

This is located on the edge of the large bitumen / concrete slab. It has a concrete roof and steel door and the remains of an air conditioner housing unit is still attached. It is approximately 5 x 5 metres.



Concrete hut facing southeast

### 3. Cruciform anti-aircraft battery

This is located in an area where the surface has been highly disturbed. While the shape of the battery can still be identified, many of the 44-gallon drums are now in disarray.



Section of battery



Mounded soil on outside of battery, facing east

### 4. Ammunition / explosive storage site

As dense grass and vegetation was growing inside and around the structure its dimensions were difficult to assess. It appears that it is approximately 10 x 10 metres with an opening in the centre of the northern wall. A shorter wall has been constructed across the opening and about 2 metres from the main wall. This structure is constructed of sand bags covered in chicken wire and then covered in a thin layer of concrete.



Opening of explosive store with parallel wall outside opening

The Transmission Facility which until recently was operational, contains some buildings constructed during the early stages of its existence. However these structures appear to have undergone major updating and renovations over the years. The older buildings, for example the guard house and what appears to be an office / recreational area, are in poor condition. There are several concrete slabs and concrete blocks which are the remains of buildings that have now been removed. The other buildings consist of two towers, two water tanks with a pump house, several demountables and large workshops.

Research to identify the function of the buildings was not successful. Any information regarding their use may be helpful when assessing their historic significance.



Guard house



Possible office / recreation area



Water tanks and pump house



Workshops and demountable



One of the two towers and concrete slab floor foundation

## 6.0 CULTURAL HERITAGE ASSESSMENT

The desktop review carried out to identify any previously recorded cultural sites and the archaeological survey on Block 4873 Lee Point identified two areas that may hold cultural heritage values. These areas contain structures related to defence activities on Lee Point during the period of political tension between Australia and Indonesia during 1963-64.

The northern section of Lot 4271 contains the remains of the missile launching activities which probably includes the explosives store. These features include the remains of the missile foundations, the concrete bunker and the explosives / ammunitions store other features described by the Heritage Surveys (2001a) report which were not relocated during this survey due to the low surface visibility. However with the exception of the explosive store, all those features that were relocated appear to be in poor condition and the associated infrastructure has been removed. The survey did not identify other features mentioned in the Heritage Surveys (2001) report due to the very poor surface visibility.

When all the structures were first identified Heritage Surveys (2001:15) stated that:

*It is worth noting that with the possible closure of the Lee Point Communications Facility more than sixty years of Defence Activities at Lee Point will end. During this time, Lee Point has played a role in a number of important historic events, such as the bombing of Darwin, the defence of Australia during World War Two and the Malayan crises of the early 1960s. It would be appropriate to acknowledging and mark the historic significance of military activities at Lee Point within any future development at the site. This could be achieved, for example, by retaining some element of the existing defence infrastructure at Lee Point, with an appropriate plaque or signage, within any open space that may form part of future development at the site.*

The assessment by Alford (2005) of the cruciform battery south of Block 4873 also concluded that features related to the 1960s political tensions contained cultural heritage significance.

Some of the main buildings of the transmission facility which has only recently been abandoned may also hold historic significance due to their association with the military activities during the 1960s period of confrontation with Indonesia.

## **7.0 CONCLUSIONS**

If Block 4873, Lee Point is to be developed or sold off then there are several measures that are recommended for the protection of cultural values.

As none of these historic places and objects are listed on either the Commonwealth, or Northern Territory cultural heritage lists and registers, there are no statutory compliances that are presently required for their protection.

However the two isolated stone artefacts recorded on Block 4873 are protected under the *NT Heritage Conservation Act (1991)*. All Aboriginal places and objects are prescribed archaeological places and objects under Sections 29 and 39 of the Act and are protected. Consequently before these objects are disturbed, permission should be sought from the Heritage Branch, NRETAS.

It is highly unlikely that there are any unrecorded Aboriginal sites or objects still intact on Block 4873, as the area has been highly disturbed over many years.

As surface visibility was extremely low at the time of the survey, it is recommended that a further survey and heritage assessment is carried out after the area has been burnt over the cruciform battery and the northern section of Block 4873 where the remains of the missile

launching area are located. The previous assessment by the Heritage Branch, Northern Territory on another cruciform battery indicates that objects associated with the 1960s period of confrontation will hold heritage significance.

#### **ACKNOWLEDGEMENTS**

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Figure 1. Map of Block 4873 and location of features identified during the survey