



BARRENJOEY HEADLAND

CONSERVATION MANAGEMENT PLAN

Prepared for the Office of Environment and Heritage



Office of
Environment
& Heritage

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EXECUTIVE SUMMARY

This Conservation Management Plan (CMP) aims to provide guidance to the NSW National Parks and Wildlife Service (NPWS), Office of the Environment and Heritage to assist in management of the heritage values of the Barrenjoey Headland. The CMP identifies and describes all buildings and structures within the Barrenjoey Headland and analyses their historic development and role in supporting the development of the community in the area.

The Barrenjoey Lighthouse and its setting are of State heritage significance as one of a collection of lighthouses which combine the natural values of a rugged coastal environment with the cultural values of a prominent landmark. This site retains evidence of cultural values, both Aboriginal and European, which are legible in the landscape and demonstrate the changing uses of the site, against a constant of natural values.

The main precincts are established in this CMP:

- Lighthouse Keeper's Precinct: Lighthouse and associated structures; Head Lighthouse Keeper's Cottage; and Assistance Lighthouse Keeper's Duplex (semi-attached cottages)
- Customs House Precinct: Boatman's Cottage and outbuildings; and two former Fishermen's Cottages

Other aspects of interest include the:

- Access Track and Trolley Way
- Smuggler's Track
- Stewart Towers

This CMP identifies a heritage curtilage for the site and establishes policies and guidelines for its ongoing management. The management approach is based on an understanding of the physical context of the individual sites in their historic landscape setting and the overall heritage values.

In conjunction with this CMP, a Conservation Manual has been prepared. This Manual recommends catch-up maintenance works and refurbishment works for the site.

1 INTRODUCTION

1.1 BACKGROUND

This Conservation Management Plan (CMP) has been prepared by the Heritage Group of the NSW Public Works Government Architect's Office (GAO) on behalf of the National Parks and Wildlife Service (NPWS), Office of the Environment and Heritage. The subject of this study is the Barrenjoey Headland which forms part of Ku-ring-gai Chase National Park.

A Conservation Management and Tourism Plan was prepared for the NPWS lighthouses in 2001¹ and a Conservation Management Plan was prepared for the Barrenjoey Lighthouse suite of buildings (excluding the Fishermen's and Boatman's cottages) in 1994². These plans, together with some additional research, form the basis for the development of this CMP.

This CMP aims to be a guiding document when planning or documenting future works including maintenance. For detailed catch-up/cyclic maintenance requirements refer to the Conservation Manual which has been prepared by GAO Heritage in conjunction with this document.

This CMP contains site location information about Aboriginal sites. Its distribution should be controlled and restricted to the NPWS staff and others with a specific need to know.

1.2 Study Area

The Barrenjoey Headland is situated at the northern end of Palm Beach, approximately 45km north of Sydney. The headland projects northwards into Broken Bay and forms the southern entrance to that large waterway and to Pittwater (see Figure 1.1). Situated within Ku-ring-gai Chase National Park, the Headland forms a visual focus for the natural features of the Headland. The study area for this CMP includes the following buildings and features located on the Headland (see Figure 1.2):

- Lighthouse and associated structures
- Head Lighthouse Keeper's Cottage and associated outbuildings
- Assistance Lighthouse Keeper's Duplex (semi-attached cottages) and outbuildings
- Boatman's Cottage and outbuildings
- Two former Fishermen's Cottages on the water's edge
- Historical Archaeology and Indigenous heritage

¹ Graham Brooks and Associates, NSW Lighthouses Conservation Management and Cultural Tourism Plan prepared for NSW National Parks and Wildlife Services, November 2001.

² Clive Lucas, Stapleton and Partners P/L, 1994, Barrenjoey Lightstation Conservation Management Plan, in Graham Brooks and Associates, NSW Lighthouses Conservation Management and Cultural Tourism Plan prepared for NSW National Parks and Wildlife Services, November 2001, Volume 2: Barrenjoey Lighthouse.

- Access Road and Smugglers Track (walking access track)

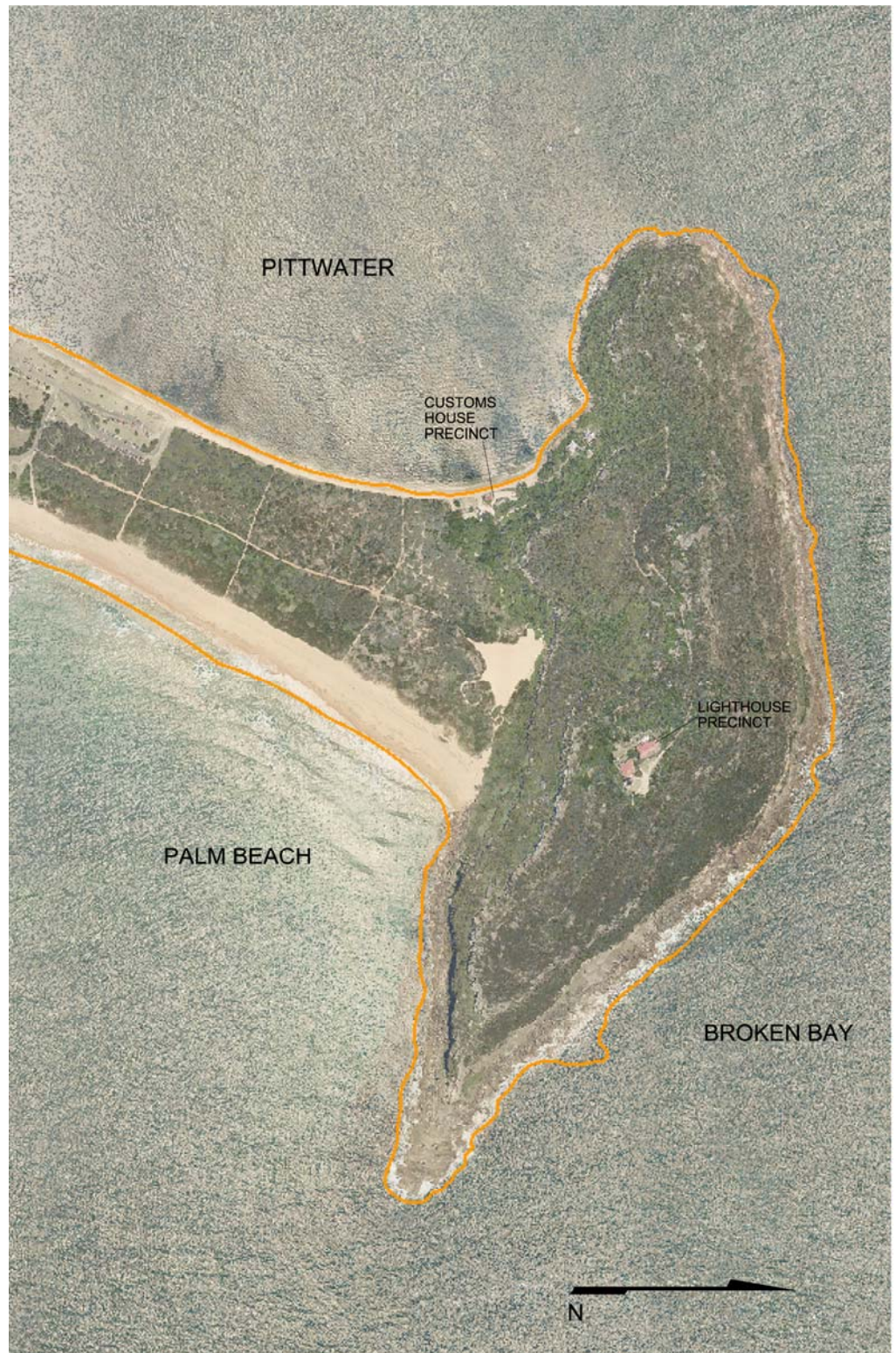


Figure 1.1
Aerial showing Barrenjoey
Headland (Source: SIX
Viewer)

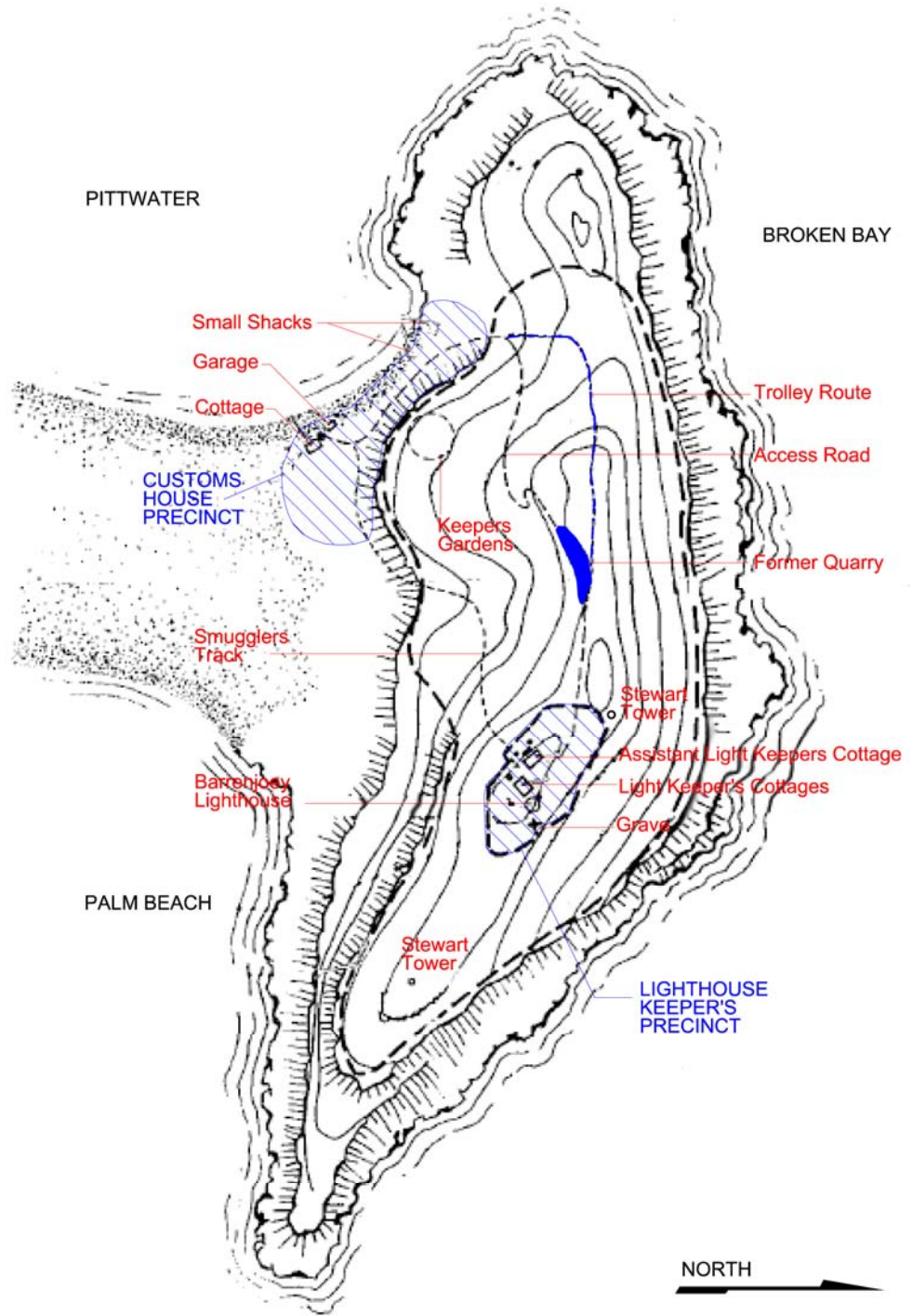


Figure 1.2
 Plan of study area showing location of various buildings and features (Source: GAO 2011)

1.3 STATUTORY AND NON-STATUTORY LISTINGS

Statutory and non-statutory listings for the entire study area are listed below.

1.3.1 STATUTORY LISTINGS

NSW State Heritage Register

The *Heritage Act 1977 (NSW)* affords protection for State significant items through the State Heritage Register (SHR). 'Barrenjoey Head Lightstation' was placed on the SHR in April 1999 (listing number 00979). It is recommended that the listing is restricted to the curtilage shown in Figure 8.1.

Section 170 Heritage and Conservation Register

Barrenjoey Lighthouse is listed on the s170 Heritage and Conservation Register maintained by NPWS. The s170 Register assists NSW government agencies to identify and manage government owned properties of heritage significance.

Pittwater Local Environmental Plan (LEP) 1993

Barrenjoey Lighthouse falls within land subject to *Pittwater Local Environmental Plan 1993*. A number of items within the Barrenjoey Headland are listed on Schedule 9 of the LEP (refer to Section 7.5.3 for more information).

1.3.2 NON STATUTORY LISTINGS

Barrenjoey Lighthouse Group, Beach Rd, Palm Beach, NSW Australia is listed on the Register of the National Estate (now a non-operational list).

1.4 METHODOLOGY AND STRUCTURE OF THE REPORT

This CMP has been structured to provide easy access to information about the history and heritage significance of the Barrenjoey Headland. The report contains a history, site analysis, a statement of heritage significance and recommended conservation policies for both individual elements and the precinct as a whole.

This report has been designed to comply with the requirements and standards set out by the NSW Heritage Branch, Office of Environment and Heritage (the Heritage Branch) and the *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (The Burra Charter). It has also been written to provide a concise and usable conservation framework for NPWS.

The following research sources were consulted during the investigation of significance of the place:

- Contemporary newspapers;
- Secondary published histories and studies;
- Previous heritage studies and conservation planning documents for the place.

Site visits were undertaken by Amy Chew, Caitlin Allen and Danielle Hynard on the 10th and 11th May 2011, at which time the contemporary photographs contained within this report were taken.

1.5 LIMITATIONS

The scope of this report did not allow for:

- Any invasive investigation of structures (any assessment of condition has been based on a visual inspection only).
- Detailed archaeological field survey.
- Inspection of the fishermen's cottages (assessment of this property has been based on photographs provided by NPWS). The area around the fishermen's cottage was also not inspected.

1.6 AUTHORSHIP & ACKNOWLEDGEMENTS

This CMP has been prepared by Amy Chew (Heritage Specialist), Caitlin Allen (Archaeologist and Heritage Specialist), Mark Dunn (Historian) and Danielle Hynard (Project Assistant) from the Government Architect's Office Heritage Group. The overall project review was undertaken by Mary Knaggs, Senior Heritage Architect, GAO Heritage Group.

Mark Withford and Col Brown of NPWS provided access, background information on the properties and accompanied the project team during the site visits. The NSW client representative was Robin Aitken, Acting Cultural Heritage Manager.

2 HISTORICAL OVERVIEW

2.1 BARRENJOEY HEADLAND

2.1.1 PRE-EUROPEAN OCCUPATION

The Barrenjoey Headland is within the traditional land of the Garigal people, who occupied the northern peninsula along Sydney's coast to Broken Bay, across the waters to West Head and along the southern shore of the Hawkesbury River. The headland itself was linked to the mainland between 6000 and 8000 years ago, previously standing as an island before the build up of sand and a sea level change created the connection. Aboriginal people may have visited the headland when it was an Island and certainly did after it was connected to the mainland, as at least three identified sites remain on the headland, including two rock shelter sites and an open midden site. The rock shelters include an occupation deposit and a midden with local shellfish and estuarine species, with a collection of middens also present along the sand isthmus joining the headland to the Palm Beach and in Governor Phillip Park. The variety of sites in the area point to the abundant local resource that provided the Garigal people with seafood, shellfish as well as other terrestrial species that lived along the foreshore and in the bushland.³

2.1.2 EUROPEAN DISCOVERY AND EARLY SETTLEMENT

Europeans first sighted Barrenjoey Head in 1788 when Governor Phillip led an exploratory party to Broken Bay in March. In June 1789 Phillip led a second party back to Broken Bay where they followed the bay west discovering the Hawkesbury River in the process. By 1791 it had been established that the Nepean River in Sydney's west and the Hawkesbury were in fact one river, and so when settlement began to develop on the Nepean from 1794 it was soon obvious that taking produce to the Sydney markets was considerably easier and quicker via the river through Broken Bay and down the coast then going overland through the scrub and bush. So it was from the late 1790s that Europeans first began a regular contact with the Barrenjoey headland, using it as a prominent landmark in their comings and goings along the coast. Through the early 1790s, a number of exploratory parties set out from Sydney and Manly to explore the land connection to Barrenjoey. In 1792, William Dawes walked from Manly to Barrenjoey, producing a map marking out the route and the land that looked suitable for sheep grazing. By 1796 Europeans were beginning to settle in the area and conflict with the Garigal people became more pronounced. By 1808, one of the first farmers in the area, Pat Flynn was growing vegetables under Barrenjoey headland, supplying the Sydney market as well as the river travellers.⁴

³ Governor Phillip Park Plan of Management 1995 Pittwater Council

⁴ Burton, C, Barrenjoey Peninsula and Pittwater Heritage Study, prepared for Pittwater Council by McDonald McPhee Pty Ltd, January 1989, Volume 2, Chronology.

In 1816 Governor Macquarie granted Surgeon James Napier 400 acres which extended from Barrenjoey Headland to Whale Beach. Napier named his grant Larkfield which was later acquired by D'Arcy Wentworth.⁵

Despite a gradual occupation by Europeans, the Pittwater and Barrenjoey area remained remote and isolated with scattered farms and few visitors. In 1832 it was reported that three old fishermen occupied Barrenjoey supplying the river trade and the ferry passengers heading across Brisbane Waters.⁶

By the 1840s, there was enough trade occurring around the waterways of Broken Bay and along the coast between Newcastle, the Central Coast and Sydney that a customs house was deemed necessary for the area, to monitor the vessels and check on smuggling and other illegal operations. In June 1842 a site was chosen on the Pittwater side of the sand isthmus at the western base of Barrenjoey Head for the development of a small customs station. By this time Broken Bay had developed into a busy waterway with vessels travelling up and down the Hawkesbury, as well as others that utilised the Pittwater to shelter from bad weather when travelling along the coast. The customs station was opened in April 1843 and consisted of a three bedroom cottage with storeroom and detached mess buildings. A jetty was constructed out from the shore at the front of the site.

The success of the station in reducing smuggling in the area led to the recommendation by the Commissioner of Customs in 1846 to make the station permanent. The station included a wooden hut on the top of the headland which acted as an observation and signal hut. A signal light was lit from here in bad weather from as early as 1855.⁷ In 1869 the site was upgraded with new buildings erected to replace the original cottages. A house for the Customs Waiter or Custom Agent was built on a rise above the beach, with a more modest cottage for the boat crews placed closer to the water and jetty. In 1871 Broken Bay was officially designated a port reflecting the increasing traffic on the waterway, with an average of 370 vessels a year travelling up the Hawkesbury in the 1870s.⁸ The customs station remained in operation throughout the nineteenth century with the State Government purchasing the site from the Bassett-Darley Estate in 1881 as part of the larger purchase of the headland for the construction of the Barrenjoey lighthouse. The site was transferred to the state for a total of £1250.⁹ The customs station also acted as a telegraph station and as a post office, however with an ever decreasing number of boats using the

⁵ Lawrence, J, Pictorial History Pittwater, Kingsclear Books, Sydney, 2006, p18.

⁶ Burton, op cit.

⁷ Graham Brooks and Associates, NSW Lighthouses Conservation Management and Cultural Tourism Plan prepared for NSW National Parks and Wildlife Services, November 2001: Barrenjoey Lighthouse, p4.

⁸ Sparks, J, Tales from Barrenjoey, Jarvis Sparks, 1992, p143.

⁹ Cultural Resource Management, The Boatman's Cottage, Barrenjoey: Statement of Heritage Impacts, prepared for National Parks and Wildlife Service, DECC,

river and Broken Bay operations at the station ceased in 1904, including the post office although the telegraph station continued until 1920.¹⁰

Figure 2.1

George Penkivil Slade's "Barrenjoey Broken Bay", watercolour 1869 looking north showing the original customs station and boatman's cottage on the waterfront with its associated jetty. Note the flagstaff on the headland behind. (Source: National Library Pic an645687-v)

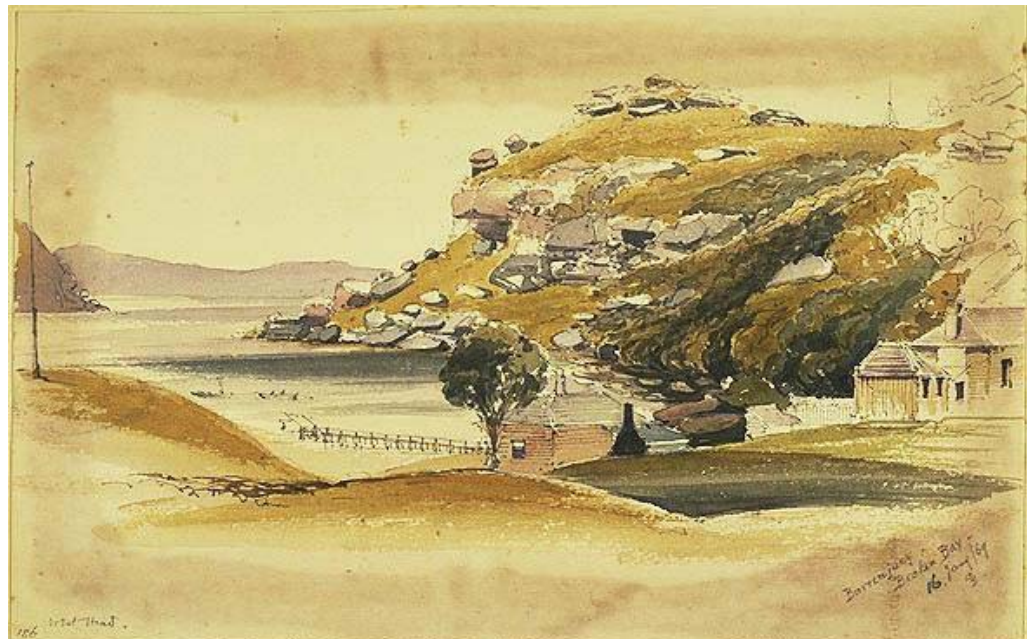


Figure 2.2

1881 Photograph of the Customs Station showing the main customs house and the Boatman's cottage in the centre left (Source: Pittwater Library)



¹⁰ Sparks, op cit, p143.

2.2 BARRENJOEY LIGHTHOUSE

2.2.1 THE FIRST LIGHTS

While there had been the report of a light being shown from the headland by the customs station from 1855, it was not until 1863 that any official action was taken to provide for a lighthouse on the headland. In that year a select committee recommended the erection of a lighthouse which was followed in 1867 with £500 being set aside in the Colonial Architect's Office for the construction of a lighthouse at Barrenjoey.¹¹ The same year a wild storm washed away a number of huts and their gardens on the Barrenjoey sand spit, reinforcing the need for a lighthouse in bad weather. In 1868 the first official, although temporary, lights were built on the headland to guide shipping. Named the Stewart Towers after Robert Stewart the member for East Sydney who lobbied for them, the two towers were of timber construction painted white and placed approximately 100 metres apart so as to provide a light for the inner harbour and for vessels at sea.¹² The two towers were approximately 6 metres and 4 metres in height and were visible for a distance of nearly 5 kilometres. The lights were inspected in July 1868 by the superintendent of pilots, Captain Francis Hixson, who spent a night at Barrenjoey to satisfy himself that the lights were working and effective.¹³

Although the two towers were an improvement on the temporary light, their construction was only a temporary measure. In 1873 a conference of the marine departments of the Australian Colonies held in Sydney heard the recommendation by Hixson, the President of the Marine Board of NSW, that a permanent lighthouse should replace the Stewart Towers. The loss of three lives in the wreck of the ketch *Traveller* in 1868 at Barrenjoey reinforced the need for a better light.

2.2.2 FRANCIS HIXSON AND JAMES BARNET

Francis Hixson, a former Royal Navy surveyor who had surveyed parts of the eastern Australian coast as well as New Zealand and the South Pacific had been made superintendent of pilots, lighthouses and harbours in New South Wales in 1863, becoming president of the amalgamated marine board in 1872, a position he held until the late 1890s. As President, Hixson advocated a building program of lighthouses along the coast of New South Wales so as it would be illuminated like a street with lamps.¹⁴ Hixson was driven in part by the increasing numbers of ship wrecks along the NSW coast as trade boomed from the 1850s. His strong advocacy for lighthouses was a fortunate match to a government that was both willing and able to provide them.

¹¹ The Sydney Morning Herald 21 September 1867, p8.

¹² Gledhill, P.W, Barrenjoey Headland and Lighthouse, Robert Day Son & Co, Sydney, 1935, p1.

¹³ Maitland Mercury & Hunter River General Advertiser, 25 July, 1868, p3.

¹⁴ Reid, G, From Dusk till Dawn: A History of Australian Lighthouses, MacMillan, South Melbourne, 1988, p77.

Hixson's requests were handled by the Colonial Architect's Office, which at the time was headed by Colonial Architect, James Barnet. Barnet had been born in Scotland in 1827 to a builder, while his mother's family were lighthouse builders, with whom he gained some early experience.¹⁵ In 1843 he had moved to London where he was apprenticed as a builder and began instruction in drawing. He migrated to Australia with his wife in 1854 where he joined the Colonial Architect office in 1860. In 1865 he was appointed as Colonial Architect, a position he held until his retirement in 1890.

Hixson and Barnet developed a style that was in many ways peculiar to NSW lighthouses during their respective times in office. In 1883 Barnet had replaced Sydney's first lighthouse designed by Francis Greenway in 1816-1818. Impressed by Greenway's design, Barnet proposed the new lighthouse tower be built in the same style with modification to house the necessary equipment needed for an upgraded light. Barnet commented at the time that Greenway's design was *good, well balanced and effective...possessing a bold and striking outline*.¹⁶ The Macquarie lighthouse included attached accommodation with two identical rooms placed either side of the tower giving the structure a symmetrical unity. This was a style that Barnet copied, with local variations depending on the site, for most of the lighthouses he designed along the coast of NSW (a total of fifteen). The result was the development of a distinctive NSW style of lighthouse Architecture.¹⁷

2.2.3 BARRENJOEY LIGHTHOUSE

Soon after the completion of the Macquarie Lighthouse, Barnet turned his attention to a new lighthouse for Barrenjoey on a site recommended after the 1873 conference. Barrenjoey was one of seven sites recommended which also included Sugarloaf Point (1875), South Solitary Island (1880), Montague Island (1881), Green Cape (1883), Bowen Island (not built) and Point Danger (not built).

Barnet had drawn the plans for Barrenjoey in 1874 and had visited the site in May 1875 with Hixson. However, tenders were not called for the construction until 1878. Part of the reason for the delay was that the headland was still in private ownership as part of the Larkfield Farm, by then known as the Bassett-Darley estate. Barnet's plans included the light tower facing the sea with entry via an oil room at its base. The tower was closely integrated with the living quarters, with the main keeper's cottage attached via a protected gallery to the west stepped down the slope of the hill top. Two assistant Keeper's cottages were constructed adjacent to the tower to the southwest, enclosed in high stone walls to act as some protection against the prevailing winds, with an underground tank also installed to collect and provide water for the site.

The tender for the construction was won by Isaac Banks and in April 1880 the foundation stone was laid by Barnet's daughter Rosa who was one of the official parties that attended the ceremony,

¹⁵ Johnson, C, P Kohane & P Bingham (eds), James Barnet: The Universal Values of Civic Existence, Pesaro Publishing, Sydney, 2000, p35.

¹⁶ Johnson, C, Shaping Sydney: Public Architecture and Civic Decorum, Hale & Iremonger, 1999, p157.

¹⁷ Reid, op cit, pp75-76.

including Barnet, his wife and Captain Hixson amongst others. The party had travelled by steamer from Circular Quay to Manly then overland to the head of Broken Bay and thence by steamer to the customs house jetty. To ascend to the top of the headland the men walked, while the women were transferred via a trolley car system built by Banks to transport building materials from the jetty to the worksite. Banks' ingenious system involved a rail track made out of hardwood, with a trolley drawn by two horses. As part of the ceremony a time capsule, in a bottle, was placed in the foundation with copies of the Sydney newspapers, coins, medals, the recommendations of the 1873 conference and other relevant historical material included. Banks completed the tower and quarters for £18,695 in July 1881 using sandstone quarried on site, with the lantern apparatus, obtained from the Chance Brothers of Birmingham England, being added for a further £2210.¹⁸

The light was first exhibited in August 1881. Two workers had died during the twelve month construction period, one who drowned and one killed in an on-site accident.¹⁹ When completed the tower was 11.5 metres high with the lantern room and dome adding a further 8.25 metres to the structure. Unlike other lighthouses along the coast however, the Barrenjoey tower was not painted white but rather left unpainted in the natural stone. It remains as one of only two unpainted lighthouses on the NSW coast, the other being at Montague Island. When first shown, the light consisted of a four wick burner with red screens visible for 18 miles (approximately 29 kilometres).

The first keeper was George Mulhall Snr who lived on site with his wife until he died in 1885. Mulhall was buried on site close by the lighthouse on the seaward side. His wife who died the following year was buried next to him. In 1907 the Keepers were reduced from three to two, with the third cottage converted for use as a store.²⁰

In 1915 the lighthouse was taken over by the newly formed Commonwealth Lighthouse Service. The Commonwealth Lighthouse Service was established in part to secure national control over the lighthouses as well as allowing the construction of new lighthouses paid for through a national ship tonnage charge that could be spread across all the states. Prior to the takeover, Commander CRW Brewis, a retired Royal Navy surveyor was commissioned to report on the condition of all existing lights and recommend any additional ones. Brewis noted that the Barrenjoey tower, lantern, apparatus and quarters were old but serviceable. The light however was obsolete and due to its red colour was of a very low power. He recommended that the light be replaced by a modern and more powerful white light of the acetylene type with 3000 candle power. The new light should be flashing, with two flashes each of two seconds duration in quick succession shown every six seconds. He recommended that the lantern and lens be retained and that the tower also be retained and modified for the new equipment.²¹ The upgraded light would increase the visibility from approximately ten nautical miles to over seventeen nautical miles.

¹⁸ The Sydney Morning Herald, 17 April 1880, p7.

¹⁹ Graham Brooks and Associates, op cit, p6.

²⁰ Sparks, J, The Red Light of Palm Beach, Jarvis Sparks, 2005, p xxii

²¹ Brewis Report, March 1913 provided by Australian Marine Safety Authority.

In July 1915 the Commonwealth took responsibility for 179 marine marks including 104 manned stations of which Barrenjoey was one, although State and Commonwealth bickering meant that it was not taken over until 1927. In 1931 as part of the use of Broken Bay as a live aerial bombing exercise range, bombing signals were installed at the lighthouse which were monitored by the Keepers. The lighthouse boatsheds were used for storage of the target floats and equipment.

Due to the prolonged negotiations over the transfer of the lighthouse from State to Commonwealth control, Brewis's recommendations were not implemented at Barrenjoey until 1932. In that year the light was converted to the group flashing automatic light. The automation made the Keepers jobs redundant and the last two, Fred Warren and John Berryman and their families left the site, leaving the cottages unoccupied. Since its opening in 1881, 21 Keepers and families had lived on site at Barrenjoey.²²

During World War II the headland was incorporated into defence land, with searchlights being installed close by the Barrenjoey Trig Station west of the lighthouse. The searchlights were part of the wider Hawkesbury Fire Command area that included a gun battery at West Head as well as batteries and anti-aircraft guns at Juno Point, Brooklyn, Dangar Island and the Hawkesbury Railway Bridge. An anti-submarine boom was also extended between West Head and Barrenjoey during 1942.²³

Despite the defence presence, the empty cottages attracted vandals with a report from 1944 noting that the cottages had been broken into and one cottage damaged. After this a renewed interest in having the site occupied saw Warringah Shire Council receive permission to occupy a portion of the unused defence reserve in 1949.

From 1946 a number of young Sydney artists had been visiting the lighthouse and some began to stay at the cottages, forming the nucleus of a small artists' camp that remained until 1961. The camp was established by Bruen Finey, son of artist George Finey. Amongst others who stayed at the lighthouse were Collinridge Rivett and Fay Bottrell. The camp was visited by university students, artists and models and visiting actors including Katherine Hepburn, who painted the lighthouse while there, Sir Robert Helpmann and the painter Arthur Murch.²⁴

Following the artists, the cottages were again empty and appear to have once again been damaged by vandals. In 1968 Jarvis Sparks took over the lease of one of the lighthouse cottages. Sparks set out to restore the cottage, which he did over the next thirty four years while he and his wife lived on site²⁵. Sparks became a local expert on the history of the lighthouse, writing two books on the history of Barrenjoey lighthouse during his time there. During the same period, the other two cottages were also leased and occupied. In 1968 as well as the three lighthouse

²² Sparks, Tales from Barrenjoey, p57.

²³ Royal Australian Artillery Historical Society, NSW World War II Fortification Study prepared for National Parks and Wildlife Service, January 1993, Part 9 p3.

²⁴ Pittwater Council Library, Barrenjoey Lighthouse Vertical File, Pittwater Local Studies.

²⁵ Pittwater Life, August 1999, Pittwater Local Studies.

cottages, there were eight cottages at the base of Barrenjoey headland of which six were leased as weekenders. These included the Boatman's Cottage known as Doo Mee, the original residence of the coast-waiter, the Red Boatshed (so named because it had been built in 1938 using cast off red roofing iron from the lighthouse cottages) and a derelict boatshed, as well as four fishermen's huts facing Pittwater. The two remaining huts are currently used by descendants of some of the earliest occupants. One hut is used by the Kavanagh family, descendants of returned serviceman Ted Kavanagh and his wife Norma. The other is used by the Arblaster family, descendants of William John Arblaster who moved there after marrying the daughter of John Berryman, the last Lighthouse Keeper.

In 1972 the lighthouse underwent a major upgrade with the light being converted to electric operation with a connection to mains power with a backup emergency battery start generator. In 1976 the original coast-waiter residence was destroyed in a fire and the same year the Warringah Council demolished three other cottages at Barrenjoey. Five years later in 1981 the lighthouse was opened for public tours for the first time.

2.2.4 TRANSFER TO NATIONAL PARKS AND WILDLIFE SERVICE

In 1986 part of the Barrenjoey headland was placed under an interim conservation order to protect it against sand reclamation that was being carried out by Warringah Council. In the same year the National Parks and Wildlife Service (NPWS) began the process of transferring the headland to Ku-ring-gai Chase National Park.

In 1991 the cottages, lighthouse, fishermen's cottages and Boatman's Cottage (Doo Mee) were all damaged after a freak storm blew over the site. Coming from a westerly direction with wind speeds close to 200km per hour, the storm and its accompanying hail and lightning broke the glass of the lighthouse lantern room, de-roofed the outbuildings of the assistant Keepers cottages as well as part of the head Keeper's cottage, knocked a double chimney over on the head Keeper's cottage, smashed guttering and downpipes, uprooted trees and holed the walls of the Boatman's Cottage and fishermen's cottages.²⁶

In March 1995 the Barrenjoey headland, not including eleven hectares which made up the lighthouse estate, was transferred to the NPWS to be incorporated into the Ku-ring-gai Chase National Park. The lighthouse estate included the lighthouse and its associated cottages. This section of the headland was the subject of dispute between the Federal and State Governments at a time when the Australian Marine Safety Authority (AMSA) which was the Commonwealth Department that managed and maintained the major coastal lighthouses around Australia, was negotiating the return of fourteen lighthouses to state control. Those lighthouses being proposed for return were mostly secondary lighthouses, no longer required as part of the national lighthouse estate. Barrenjoey was offered to the NSW Government for less than one million dollars; however the NSW Government refused to pay for the site.

²⁶ Vertical File, Pittwater Local Studies.

In December 1996 the AMSA agreed to transfer the eleven hectares of the Barrenjoey lighthouse site to NPWS, with NPWS agreeing to allow the tenants living in the lighthouse cottage, including Jarvis and Bridgit Sparks to stay.²⁷ With the transfer process underway, NPWS began the first stages of works at Barrenjoey with stabilisation and rebuilding of the Smuggler's Track to the headland in 1998. At the same time the NSW Waterways Authority took over the ownership including maintenance of the optics for the Barrenjoey lighthouse. Part of the reason for the delayed handover had been NPWS's desire to gain vacant possession of the lighthouse cottages. At the same time, two of the fishermen's cottages at the base of the headland were proposed to be demolished by NPWS, with the larger Boatman's cottage being retained for use by NPWS staff. The proposed demolition of the fishermen's cottages provoked a local media campaign against the plan. Currently the fishermen's cottages remain standing at the base of the headland.

Despite the transfer agreement, it was to be close to another six years before the lighthouse and cottages were finally handed over to the NPWS, with the official gazettal of the summit of the Barrenjoey headland to NPWS taking place in May 2002.²⁸ With the final handover NPWS undertook a general clean up of the lighthouse area to ready it for opening to the public. The first phase concentrated on getting the lighthouse open and accessible to the public. An estimated \$230,000 was spent on the cleanup operation. NPWS engaged heritage consultants to advise on the restoration and conservation of the buildings on site as well as seeking advice on landscape design and interpretation. In 2002 the roofs of the cottages were all replaced, which was followed in 2003 by the electricity services and telephone lines being placed underground, replacing the poles that had been erected in 1972. The poles were found to have been attacked by white ants and were in danger of collapse.

Stage Two of the ongoing NPWS work concentrated on the landscaping of the area around the lighthouse which included the upgrade of paths around the site, the construction of new vantage and lookout points, work on new stonework walls for the lookouts and rest areas, the clearing of vegetation, especially Tea Tree from around the lighthouse and cottages and the removal of chain wire fencing around the lighthouse²⁹. This work was carried out throughout 2004 and 2005.³⁰

The third phase of the NPWS clean-up and upgrade focussed on the access roads and paths from the base of the headland up to the lighthouse. To get to the top of the headland there are two routes, the Smugglers Track and the main road, both steep paths which required major upgrades. During the years after the last lighthouse Keepers left, the maintenance of the road and track had been largely left in the hands of the tenants of the cottages. Despite their best efforts, the tenants had only ever been able to maintain the road and track to a standard high enough to allow them

²⁷ The Manly Daily, 6 December 1996.

²⁸ The Manly Daily, 11 May 2002.

²⁹ Heritage Landscape Plan For Barrenjoey Headland, Ku-ring-gai Chase National Park prepared for NSW National Parks and Wildlife Service Northern Beaches Area by Phillips Marler Architecture/Landscape Architecture

³⁰ Pers Comm Mark Watt, former Ranger Barrenjoey 2001-2007, 29 April 2011. The Manly Daily 29 April 2004.

access, usually with 4 wheel drive vehicles. In 2006 NPWS began the first stage of the access upgrade with work starting on the Smugglers Track which continued through 2006 and early 2007, after which the main access road was closed and work to rebuild it began. The work was guided by the Barrenjoey Headland Archaeological Management Plan³¹ and 3D scan drawings of the road produced for OEH to identify significant heritage fabric³². An estimated \$700,000 was budgeted for the repair of the 850 metre long road. With the first 650m of the main road rebuilt by 2008-2009, safe vehicle access was afforded to the lighthouse. Maintenance on the remaining section of the access road is ongoing in 2012.



Figure 2.3

1877 Contour Survey of the Barrenjoey (sic) Headland. This plan shows the two Stewart Tower lights at each end of the headland as well as the proposed site for the erection of the new lighthouse (Source: National Archives Australia Map 4957003)

³¹ Banksia Heritage + Archaeology, 2004, Barrenjoey Headland Ku-ring-gai Chase National Park: Archaeological Management Plan, unpublished consultancy report for the NSW Department of Environment and Conservation.

³² HLA Envirosiences P/L 2007, The Heritage Survey of Barrenjoey Lighthouse Access Track Ku-ring-gai Chase National Park, including survey plans by 3D Geometria P/L and DVD Photographic Archive by Adrian Dreyer Photography.

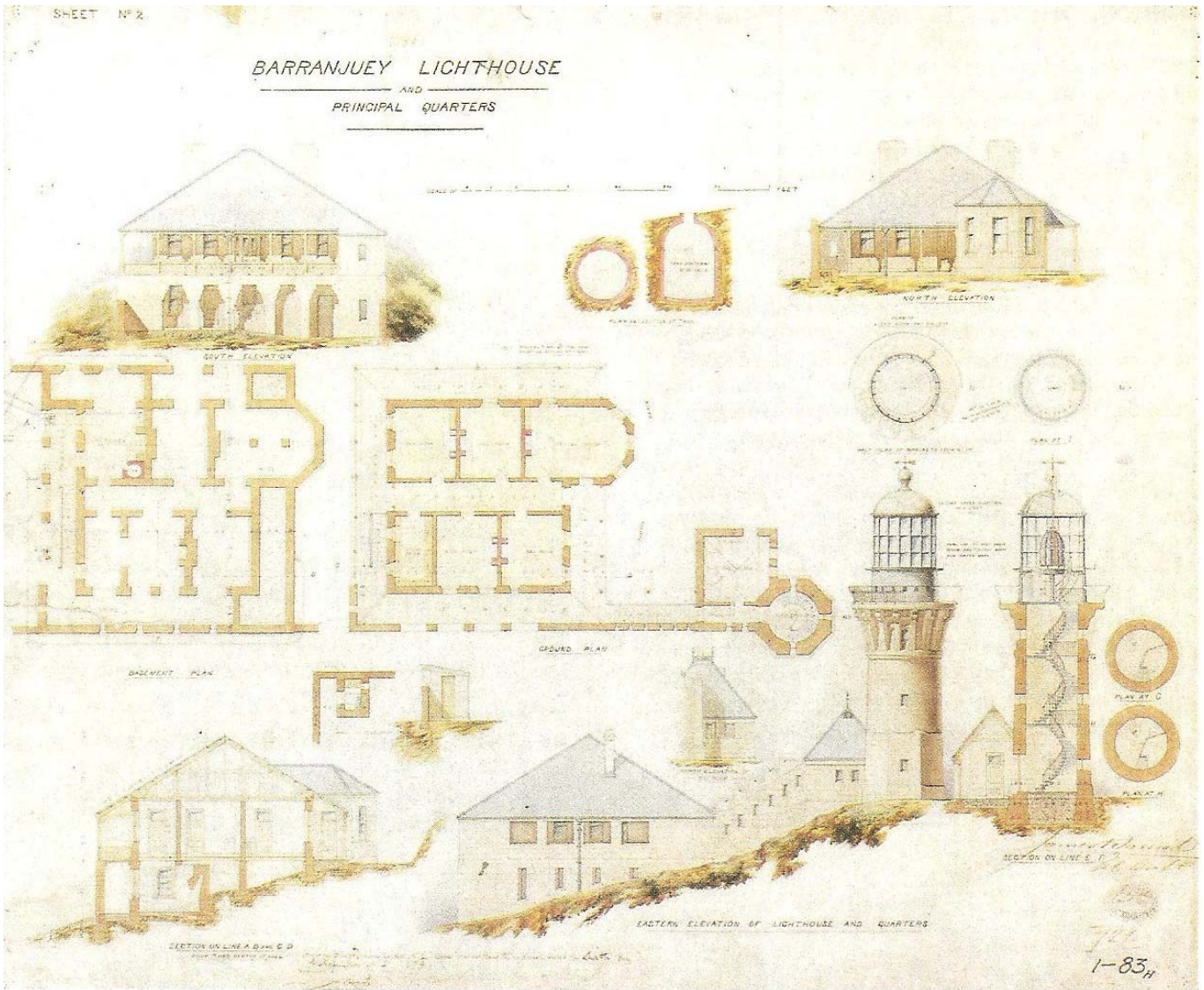


Figure 2.4

James Barnet's plan for the Barrenjuey Lighthouse and attached head Lighthouse Keeper's Cottage. This plan shows clearly the use of the site topography for the placement of the quarters (Source: reproduced in AMSA CN-1-83H)

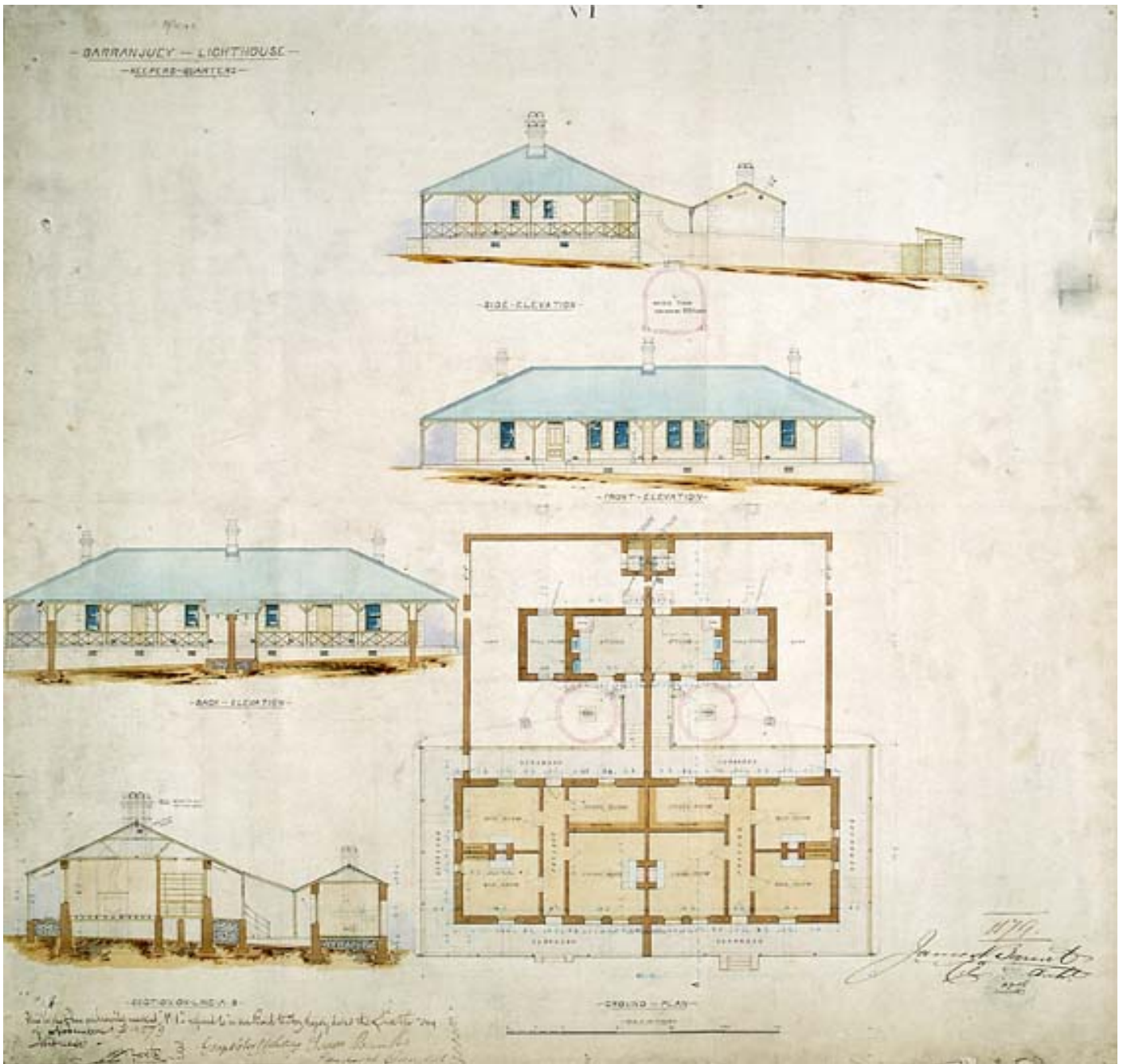


Figure 2.5

1879 Barnet Plan of the Assistant Keepers' Duplexes for Barrenjoey Lighthouse showing the underground water tanks inside the enclosed yards (Source: reproduced in AMSA CN-1-83H)

Figure 2.6

Barrenjoey Lighthouse c1902 looking east with the Assistant Keepers' Duplexes in the foreground. The enclosing yard wall is clear with the lighthouse and its attached oil room visible above the roof line (Source: State Library of NSW a154002h)



Figure 2.7

In the early Twentieth Century, Barrenjoey was a favourite excursion for Sydney's well off. Barrenjoey Lighthouse is visible in the background (Source: SLNSW Allen Family Album 1909 a1373019h)





Figure 2.8

C1910 showing the keeper, his family and some visitors to the lighthouse (Source: SLNSW pxe 711 418)



Figure 2.9

View east showing the Assistant Keepers' Duplexes on the left and the principal Head Lighthouse Keeper's Cottage attached to the lighthouse, c1980 (Source: Australian Heritage Photo Database Dept of Environment rp03041-2767764)

Figure 2.10

The customs station site in 1908 showing the boatshed on the right and the Boatman's cottage in the centre distance.

(Source: Pittwater Library Local Studies)



Figure 2.11

View of the customs station and boat-crew's cottage and jetty in c. 1925 (Source Pittwater Library Local Studies)



3 ABORIGINAL & HISTORICAL ARCHAEOLOGY

3.1 ARCHAEOLOGICAL POTENTIAL

Some areas of the Barrenjoey Headland were subjected to systematic archaeological survey in 2004.³³ This Banksia Heritage assessment was based on a high-resolution 1947 aerial photograph of the site, some oral histories, historic photographs, previous listings of archaeological sites prepared by Jervis Sparks and field survey. The field survey was particularly focused on the areas immediately surrounding the key buildings, on obvious open rock platforms and in rock shelters immediately adjacent to the access roads. Vegetation cover was dense when the Archaeological Management Plan (AMP) was prepared in 2004 as well as during the site inspection for the preparation of this CMP in 2011. An additional and more detailed assessment was prepared for the access track upgrade work in 2005.³⁴ This was limited to the track itself. The area around the Fishermen's Cottages on the western side of the headland has not been inspected during the preparation of any of these reports, including this CMP.

The following discussion of archaeological potential and the assessment of significance for the archaeological resource as well as individually identified archaeological features have been drawn heavily from the 2004 Banksia Heritage report. The Banksia Heritage report should be referred to for further detail.

A summary of identified sites is in Appendix A of this CMP.

3.2 ABORIGINAL HERITAGE

This analysis relies entirely on the sections of the 2004 Archaeological Management Plan prepared by Susan McIntyre-Tamwoy and Banksia Heritage and commentary by OEH staff during the field visits for the preparation of this CMP in 2011. No new field survey or assessment was undertaken for this CMP. This section provides a summary of what is known about Aboriginal heritage on the Headland to support the development of management policies. For more detailed analysis, refer to Section 4.2 of the 2004 Archaeological Management Plan.

Although McIntyre-Tamwoy suggests there is debate about whether Barrenjoey Headland forms part of the traditional lands of the Darug or Gurringai language groups, it currently falls within the custodianship of the Metropolitan Aboriginal Land Council.³⁵ Unfortunately there is little recorded

³³ Banksia Heritage + Archaeology, 2004, Barrenjoey Headland Ku-ring-gai Chase National Park: Archaeological Management Plan, unpublished consultancy report for the NSW Department of Environment and Conservation.

³⁴ Banksia Heritage + Archaeology, 2005, Barrenjoey Headland: Access Road and Smugglers Track Works: Statement of Heritage Impact, unpublished consultancy report for the NSW Department of Environment and Conservation.

³⁵ Op cit, Banksia Heritage, 2004

history about the pre-contact Aboriginal people from this area and as such, archaeological evidence forms an important connection to and source of information about them.

In the 2004 Archaeological Management Plan, McIntyre-Tamwoy re-identified 3 sites that had already been listed on the NSW Aboriginal Heritage Information System (AHIMS), found six new sites and eleven potential archaeological deposits (PADs). She noted the high likelihood of more sites that have not yet been recorded across the headland.

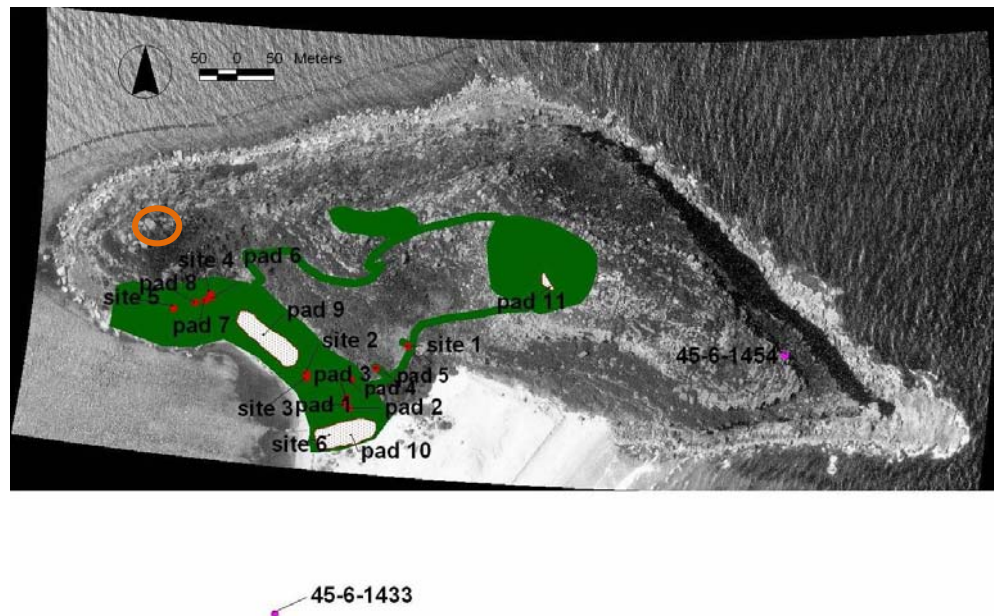


Figure 3.1
Sites identified by McIntyre-Tamwoy in 2004. The site numbers relate to the data in Table 3.1 below)

Table 3.1 Aboriginal Sites identified by McIntyre-Tamwoy in 2004.

Element No.	Name	Location known	Remains identified	Comments
BH 1	Palm Beach Sand dune Midden. ASR# 45-6-1433	Y	Y	
BH 2	Shelter with deposit. ASR# 45-6-1105	?		There are no location details for this site apart from an imperial grid reference that cover too large an area for certainty.
BH 3	Shelter with midden ASR# 1454	Y	Y	
PAD 1	Smugglers Track PAD 1	Y	N	
PAD 2	Smugglers Track PAD 2	Y	Y	
PAD 3	Smugglers Track PAD3	Y	N	
PAD 4	Smugglers Track PAD 4	Y	N	
PAD 5	Smugglers Track PAD 5	Y	N	

Element No.	Name	Location known	Remains identified	Comments
BH 4	Smugglers Track site 1	Y	Y	
BH 5	Head Keeper's cottage site PAD 6	Y	N	
BH 6	Site 2 Fishermen's Cottage track	Y	Y	
BH 7	Site 3 Fishermen's Cottage track	Y	Y	
BH 8	Site 4 Fishermen's Cottage track	Y	Y	
BH 9	Site 5 Rock climbers shelter with midden	Y	Y	
BH 10	Site 6 Rangers cottage midden site	Y	Y	
PAD 6	Fishermen's cottage track PAD 6	Y	N	
PAD 7	Fishermen's cottage track PAD 7	Y	N	
PAD 8	Fishermen's Cottage track PAD 8	Y	N	
PAD 9	Fishermen's cottage area PAD 9	Y	N	
PAD 10	Customs Station / rangers cottage – PAD 10	Y	Y	The visible location of shells is described as Site 6 but the PAD extends well beyond the visible extent of the shell midden. [Note that a pit was excavated adjacent to the cottage for a directional drill to the top of the headland subsequent to the preparation of this archaeological report and that NPWS staff reported that no sign of midden material was seen in the profile of the pit.]
PAD 11	Area behind the Head Keeper's cottage wall – PAD 11	Y	Undetermined	Shell noted in the disturbed ground outside the garden wall is likely to be related to the occupation of the lighthouse, Aboriginal archaeological remains however, cannot be discounted.

In addition to these sites, the current Field Officer at the site identified two caves on the western end of the headland that local Aboriginal groups use for student education programs. They were not visited during the site inspections for this CMP but the approximate location is circled in Figure 3.1.

McIntyre-Tamwoy suggests that the sites so far identified largely indicate the importance of the river and sea as a source of food, but that further investigation would be needed to better understand activity on the headland and place it in a regional context.

The first recorded contact between Aboriginal people and Europeans in this area is in 1804. Attenbrow estimates that by 1820 there would have been no Aboriginal people in the Sydney region that were not affected by British settlement.³⁶ Because the food resources of the Hawkesbury may have provided a chance for Aboriginal people to maintain aspects of their traditional diet and lifestyle for longer than other areas, McIntyre-Tamwoy also suggests that there is still a possibility that contact sites may occur around the Barrenjoey area and these may provide insights into the adaptive strategies employed by Aboriginal people in this rapidly changing physical and social landscape.³⁷

3.3 HISTORICAL ARCHAEOLOGICAL REMAINS

3.3.1 CUSTOMS HOUSE PRECINCT

The Customs House precinct at the base of the headland on its south-western side forms the main public entry to the lighthouse. The existing Coast Waiters Residence and boatshed are the remnants of a former complex of buildings forming the Customs Station that was established on the site in 1843. Figures 3.2 to 3.4 show the complex as it existed around the turn of the twentieth century. The buildings shown here are the residences rebuilt in 1862, presumably on the site of the earlier customs station.



Figure 3.2

The Customs Station Complex in c.1906. The still extant Coast Waiter's Residence is in the foreground with the now demolished Customs House on the upper terrace behind. The lighthouse can be seen on the top of the headland in the far distance (NSW State Library pictures collection).

³⁶ Ibid, Banksia Heritage 2004, p 19.

³⁷ Ibid, Banksia Heritage 2004, p 20.

Figure 3.3

The now demolished Customs House as it was in c. 1900. Note the lack of vegetation on the headland in the background (Sparks 1992: 134).



Figure 3.4

Small sheds to the north of the Coast Waiter's residence and boatshed in c.1906. None of these structures has survived.



The Customs House burned down in 1976 but the archaeological remains of the house and outbuildings can be located despite the thick vegetation cover and spreading coral trees (Figure 3.4). The remains include corrugated iron sheet fencing, piles of sandstone rubble, a remnant mid-twentieth century bathroom floor, an iron ship's tank and the occasional artefact. A temporary access way to the Smuggler's Track has been established directly through the middle of the archaeological site and some cultural material including iron and glass fragments was visible in the exposed sand of the pathway. This area appears to have been heavily impacted by vegetation.

In the 2004 Archaeological Management Plan, Gojak (Banksia Heritage) indicates that the Customs House residence was of weatherboard on pier construction.³⁸ If this is the case, structural remains of the buildings would be limited although the bases of the fireplaces should survive and hard floor surfaces such as the bathroom floor have clearly survived. Although Gojak notes that sand is not an ideal matrix to retain complex stratigraphy it is possible that there will be artefact deposits.

In the gully to the east of the Customs House archaeological site, there are remnant telegraph poles. There may also be evidence of the Customs Station jetty off the shoreline to the west of the Coast Waiters Residence. This jetty was stone with a timber walkway (Figure 3.5). Some of the base courses of the stone section may still be within the bay.



Figure 3.5

The Customs jetty c1900 (Mitchell Library – a116421h. Reproduced from Banksia Heritage 2004: 31).

In summary, the archaeological sites (the ID numbers used by Gojak are in brackets) within the Customs Station are as follows:

Location Known - Identified

- The site of the 1862 Customs House and associated deposits (BH 22)
- Remnant telegraph poles (not identified by Gojak)

Locations Known - Potential

- Artefact deposits associated with use of the Coast Waiter's Residence (BH 32)
- Evidence of the former jetties (BH17 and BH25)

³⁸ Ibid, Banksia Heritage 2004, pp 28-9.

Locations Known – Low Potential

- Small huts to the north of the Coast Waiter's Residence (BH30 and shown in Figure 3.4)

Locations Unknown – Low Potential

- 1843 Customs Station residences (BH23)
- 1843 Customs Station accommodation huts (BH15)
- 1843 sentry box (BH18)
- 1843 waterhole (BH21)
- Wooden Soldiers ³⁹(BH26)

3.3.2 LIGHTHOUSE KEEPER'S PRECINCT

The Lighthouse Keeper's Precinct appears to have a relatively low level of archaeological potential. The original lighthouse and residences are still standing. Sparks indicates that the residences had tongue and groove flooring made from 5 inch tallow wood boards.⁴⁰ If this is the case, few artefact deposits would have collected in the underfloor spaces. The enclosed courtyards on the northern sides of the cottages are all flagged. This leaves the rear yards and internal spaces such as fireplaces as possible sources of artefact deposits although less likely in the latter case as the fireplaces has remained in use until recently. Former privy pits may also contain artefact deposits.

The construction of the lighthouse may have left some archaeological traces from the associated huts, mason's yard, smithy and other work areas. Historic photographs of the lighthouse complex at the time of construction indicate that there were two weatherboard buildings on the headland that appear to have been demolished shortly after the lighthouse and cottage were built. There was a small office, which possibly also housed the head contractor, next to the access road at the head of the former trolley way (Figure 3.6). This was a temporary hut during the construction period only. It is likely that few if any archaeological remains of this hut survive. There may be some rock cut postholes to anchor the building to bedrock surviving beneath the thick vegetation that now lines the track. No evidence was found by Gojak in 2004 or during the 2011 site inspections.

³⁹ Gojak suggests in his report carved and painted wooden soldiers were placed around Barrenjoey Headland.

⁴⁰ Sparks, Jervis, Tales From Barrenjoey, Jervis Sparks, 1992.



Figure 3.6

The Lighthouse Complex in 1881 shortly after it was constructed. The Superintendent's Hut can be seen in the foreground next to the former trolley way now access track (Reproduced from Sparks 1992:14).

There was also a small weatherboard building below the Lighthouse Keeper's Cottage to the south-east shown in an early photograph that is not present during the construction phase (Figure 3.7). Animals, possibly goats are visible on the rocky outcrops around this building so it may have been a byre or similar shed for them to shelter from the weather. This area is thickly vegetated and no evidence of this structure is visible on the site today. Like the Superintendent's hut it is likely to have left minimal archaeological remains although there may be some rock-cut postholes where the structure was anchored to the bedrock.

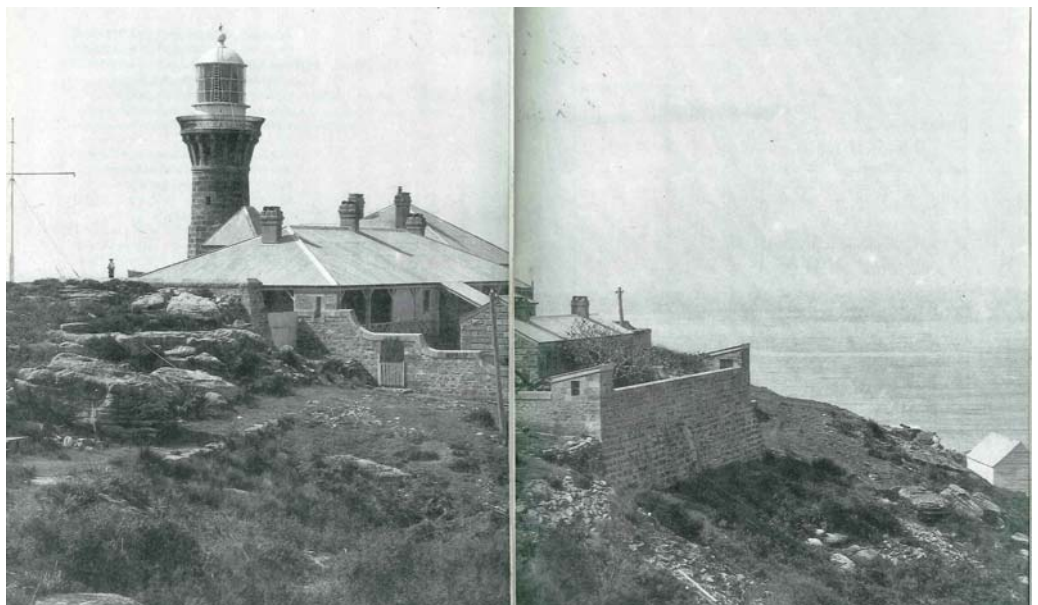


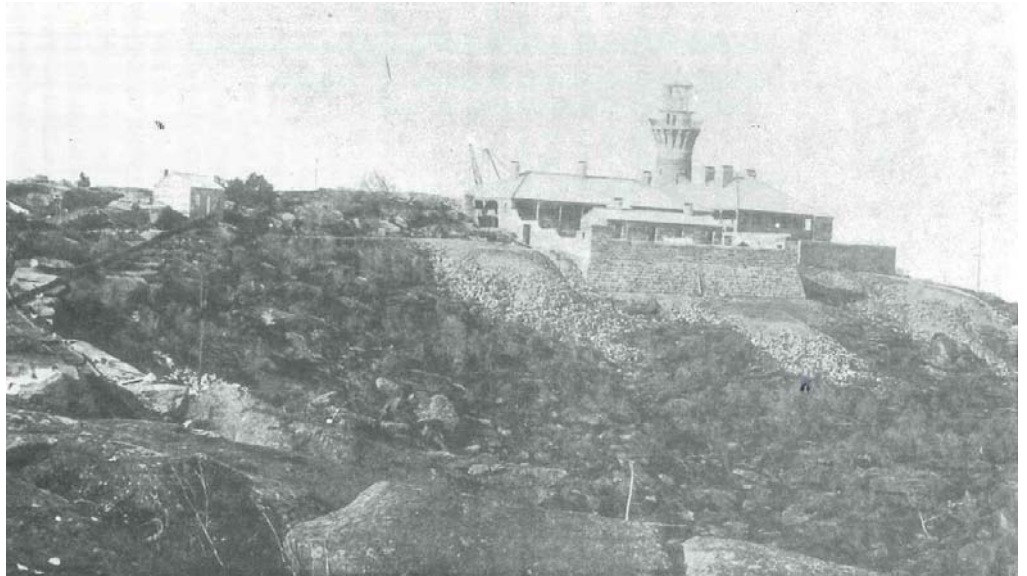
Figure 3.7

The Lighthouse Complex (Reproduced from Sparks 1992:vi-vii).

The Assistant Lighthouse Keepers' duplex sits in a quarried cut, which was also presumably a source of stone for construction. Gojak also noted areas of scree that he interpreted as quarry waste below the Assistant Lighthouse Keepers' Cottages. These can be clearly seen in Figure 3.8.

Figure 3.8

The Lighthouse Complex in June 1881 during the last month of construction. The screes of stone noted by Gojak can be seen in front of the Assistant Lighthouse Keeper's Cottage duplex (Reproduced from Sparks 1992:26).



In summary, the archaeological sites (the ID numbers used by Gojak are in brackets) within the Lighthouse Keeper's Precinct are as follows:

Location Known - Identified

- The quarry at the Assistant Lighthouse Keepers' Cottages (BH44)
- Scree below the Assistant Lighthouse Keepers' Cottages (BH45)

Locations Known – Low Potential

- Superintendant contractor's hut (BH49)
- Small white hut below lighthouse Keepers' cottage (BH50)
- Artefact deposits within the residences and yards

Locations Unknown –Potential

- Construction workers' Huts (BH51)
- Rubbish dumps (possibly this material was dumped in the ocean)

3.3.3 ACCESS ROAD AND FORMER TROLLEY TRACK ROUTE

Construction of the lighthouse required material to be transported from the Customs House Precinct at the base of the headland to the site of the lighthouse. To assist this, a trolley way was built up the centre of the headland, flanked by areas of quarrying to supply stone for the new buildings.

Gojak notes areas of quarrying along the access road.⁴¹ The main quarry is on the northern side of the access road. Around the quarry there are blocks, which have sockets for hoisting cut into them. There are also several examples of jack steel marks, extant pieces of jack steel and footing holes cut to house the derricks. Gojak also cites an earlier recording by Jervis Sparks that identified four sets of carvings including a feathered arrow, a man's face with a gaff rigged sloop above it, a crescent moon with the words 'a Gypsy Tent' and two sets of initials "J.M." and "B.B." carved one above the other (Figure 3.9). These were inspected by Gojak in 2004 but he was unable to find the names "Lyell Russell", "E.C.Hagon" and the date "11 April 1912" carved within a shield design reported by Sparks.

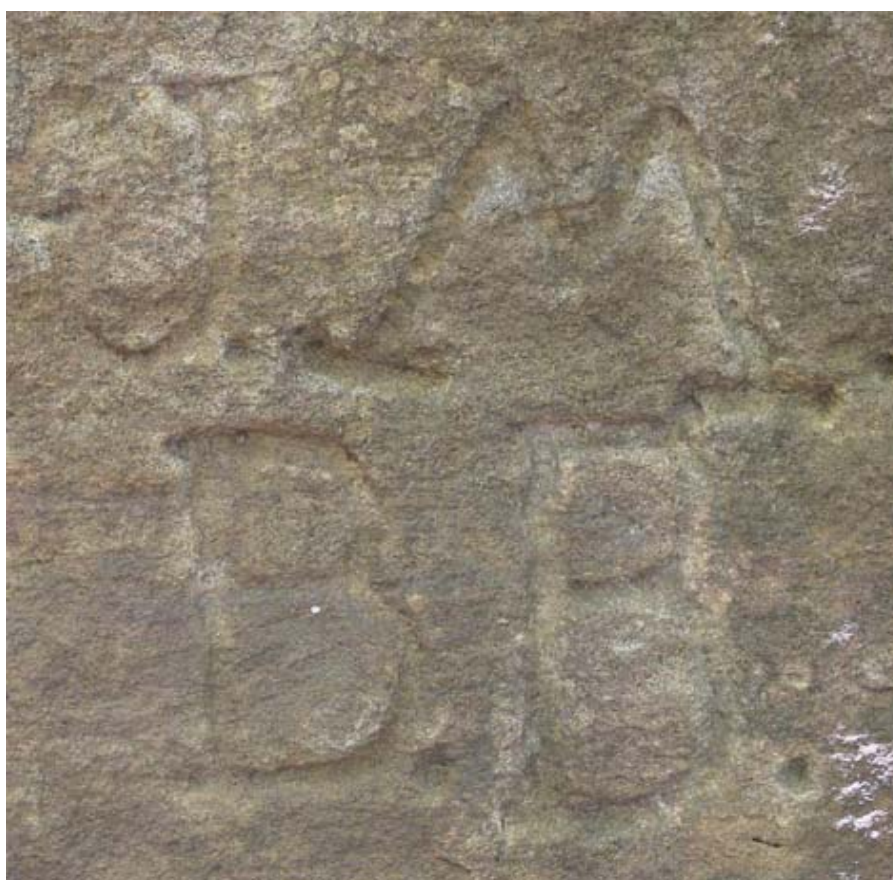


Figure 3.9

Engravings at the main quarry adjacent to the access track (Banksia Heritage 2004: 37).

Gojak also noted areas of scree that he interpreted as quarry waste along the access track.

The route of the former trolley way still exists although it was difficult to inspect in 2011 due to heavy vegetation cover. The lower and upper sections of the trolley way are now part of the access track. The middle section was abandoned. The trolley way was constructed to bear two parallel timber rails on which the trolleys ran, pulled by pairs of horses that walked beside the tracks. Built up sections of the trolley way can still be seen with sandstone blocks used to form a

⁴¹ Op cit Banksia Heritage 2004, p 37.

bed for the rails. In 2004, Gojak reported that the abandoned section was sound throughout with little evidence of erosion or collapse.⁴² Only the lower section of the abandoned section of the trolley way was re-examined in 2011 due to heavy vegetation cover.



Figure 3.10

The route of the former trolley way marked on a 1940s aerial plan. The existing access track can be seen immediately below as a white line in the landscape (Banksia Heritage 2004: 37).

In regards to the access road itself, at least half of it was originally laid out for the trolley way. Along its length there is evidence associated with the original construction methods and ongoing maintenance and repair. A detailed discussion of the road and its construction can be found in Gojak's archaeological assessments.⁴³ At the time Gojak wrote his report, evidence associated with the historic access road included: its alignment, which has not changed since the track was established; original and later modified road surfaces; side cuttings in the stone and soil; embankments where the road surface is benched; and several culverts and drainage points. The original road was constructed to a desired width of approximately 2.75m requiring sections of quarrying areas where embankments of dry-laid stone blocks and stone quarry waste were laid to form a level road base. The road surface was formed between two edge alignments of roughly square-sectioned stone blocks laid lengthways to form a curb at surface level. The surface itself was made of tightly packed irregular cobbles in a single thickness. In some locations bedrock formed the road surface. In such cases the side blocks were still placed but slightly above the surface level. The major track upgrade that is currently underway retains evidence of the original construction, but obscures some less significant evidence of later repairs. There are many locations up the track where there is evidence of rock quarrying to clear a route. Gojak also noted

⁴² Ibid, Banksia Heritage, 2004, p38.

⁴³ Op cit, Banksia Heritage, 2004 and 2005.

survey points at various locations up the track although they have not been plotted on a plan of the headland. The main survey marks are a small diameter circle enclosing a dot.

In summary, the archaeological sites (the ID numbers used by Gojak are in brackets) within the access track and trolley way precinct are as follows:

Location Known – Identified

- Road side quarry (BH43)
- Former trolley way route (BH48)
- Roadside scree of stone (BH46)
- Evidence of the construction of the roadway, including quarrying marks (BH62)
- Survey marks (BH70)

3.3.4 SMUGGLER'S TRACK

The Smuggler's track, which runs from the Coast Waiter's residence to the Lighthouse appears to closely follow the track established in the 1840s. Aside from the modification of the bedrock in various locations to form steps and sections of the pathway no archaeological features have been identified along the Smuggler's Track.

3.3.5 HEADLAND GENERALLY

It is likely that there are numerous sites across the headland that have not been identified due to access issues and vegetation cover. The sites that have so far been identified relate to the use of the headland for lighthouse keeping since the 1860s.

In 1868 two timber towers (known as the Stewart Towers) were constructed 400m apart on the eastern end of the headland, each showing a light at night to provide guiding entry lights for vessels entering Broken Bay. They were connected to the city by a telegraph line shortly after. It is not clear when these towers were demolished but certainly by the time the current lighthouse was built in 1881. In 2004, Gojak recorded the site of the easternmost tower (Figure 3.11), represented by 4 post holes in a square formation approximately 12 feet apart. Despite the heavy vegetation cover some of the postholes were re-identified again in 2011.

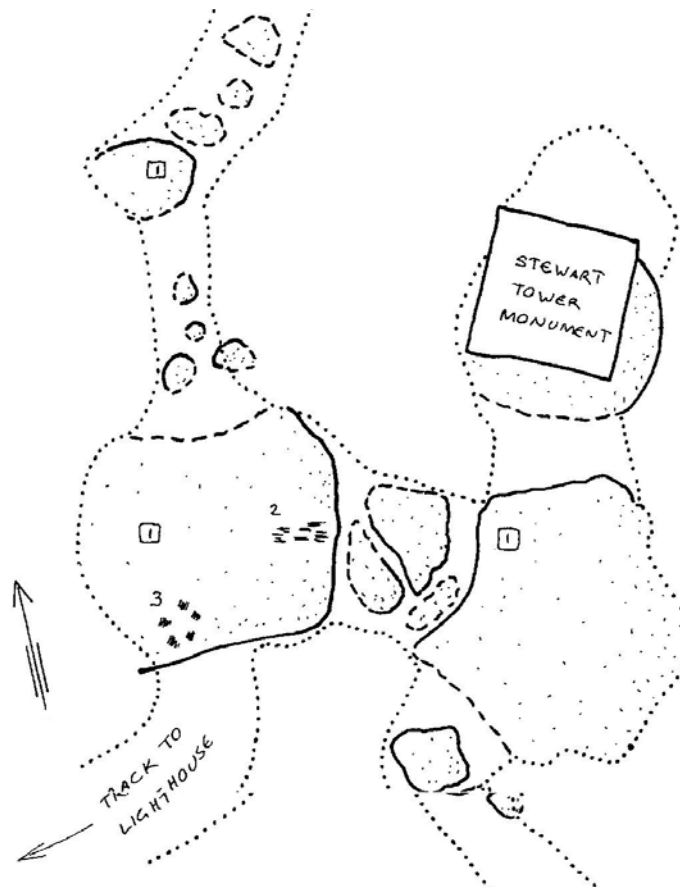


Figure 3.11

Sketch of the sites of the easternmost Stewart Tower in 2004.

1. The three remaining postholes of the tower supports.
2. Pecked sandstone surface.
3. Splashes of mortar (Banksia Heritage 2004: 34).

Gojak also notes a range of bedrock cut inscriptions on the headland that had been recorded by Jervis Sparks in the 1990s.⁴⁴ They have not been re-identified since and Gojak does not show their exact location. There is a group of inscriptions relating to the Steere family (Figure 3.12) on the south-eastern side of the headland in an area that is not readily accessible. A full transcription is contained in Gojak's 2004 report.

⁴⁴ Ibid, Banksia Heritage 2004, pp 46-48.



Figure 3.12

Inscriptions relating to the Steere family who were one of the first families at the Lightstation in the 1880s. (Sparks 1996, reproduced from Banksia Heritage 2004: 47).

Gojak also notes two dolphin inscriptions on the road at 268m and 289m from the bottom of the headland. Gojak was unable to re-identify the dolphin on the left in Figure 3.13. Neither of the carvings were found in 2011⁴⁵. Sparks had also reported a number of names carved in rocks over the headland that now appear to be obscured by thick vegetation.



Figure 3.13

Dolphin engravings near the quarry along the access road (Sparks 1996, reproduced from Banksia Heritage 2004: 48).

⁴⁵ Carvings were damaged by contractors when moved off the access road during works in 2008-2009. The damage was recorded by the Ranger and NPWS Country Culture and Heritage Division (CCHD), with rubbings and photographic records taken. The rocks were then moved to the side of the trail.

There is some evidence of activity on the headland during WWII in the form of a concrete anchor point for a boom net that once spanned the entrance to the bay. This is on the rocky foreshore at the western end of the headland.

In summary, the archaeological sites (the ID numbers used by Gojak are in brackets) within the access track and trolley way precinct are as follows:

Location Known - Identified

- Western Stewart Tower (BH33)
- Eastern Stewart Tower (BH34)
- WWII boom net anchor point

Location Known – Low Potential

- Telegraph line (BH35)
- Telegraph Cottage (BH36)

4 PHYSICAL EVIDENCE

4.1 LANDSCAPE AND VIEWS

4.1.1 NATURAL HERITAGE

The Barrenjoey Headland forms part of Ku-ring-gai Chase National Park. The oldest rocks in the Park are the Narrabeen Group of sandstones and shales. These outcrop at the lower elevations along the western shores of Pittwater, the shores of Cowan water and around the edges of Barrenjoey Headland.⁴⁶

The 2002 Plan of Management for Ku-ring-gai Chase National Park notes that it is particularly important in conserving a large area of relatively undisturbed vegetation of the type which gives Sydney bushland its distinctive character. It is also important for conserving vegetation types which are significant in a regional and local context (see Figure 4.1).

The littoral rainforest and the *Themeda* grassland which occur on the Barrenjoey Headland are listed as endangered ecological communities under the *Threatened Species Conservation Act, 1995*. Open heath dominates the headland which is exposed to strong winds.⁴⁷ The two key forms include *Allocasurina distyla* and *Allocasurina disyla/Banksia ericifolia/Hakea teretifolia*. Open woodland and littoral rainforest occupies only a small area in sheltered areas of the headland to the south and west. Snow Wood (*Pararchidendron pruinatum*) and Twining Bamboo (*Flagellaria indica*) occur in the low closed forest, which is uncommon in the Sydney region, although it is not identified as a community of particular significance in the Park Plan of Management.⁴⁸

Two fauna species listed on the schedules of the *Threatened Species Conservation Act, 1995* have been found on the headland. They are the Osprey (*Pandion haliaetus*) and the Sooty Tern (*Sterna fuscata*).⁴⁹

⁴⁶ NSW National Parks and Wildlife Service, 2002, Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management.

⁴⁷ Phillips Marler Architects, July 2003, Heritage Landscape Plan for Barrenjoey Headland, Ku-ring-gai Chase National Park, unpublished consultancy report prepared for NSW National Parks and Wildlife.

⁴⁸ Op cit, NPWS, 2002, p18.

⁴⁹ Op cit NPWS, 2003.

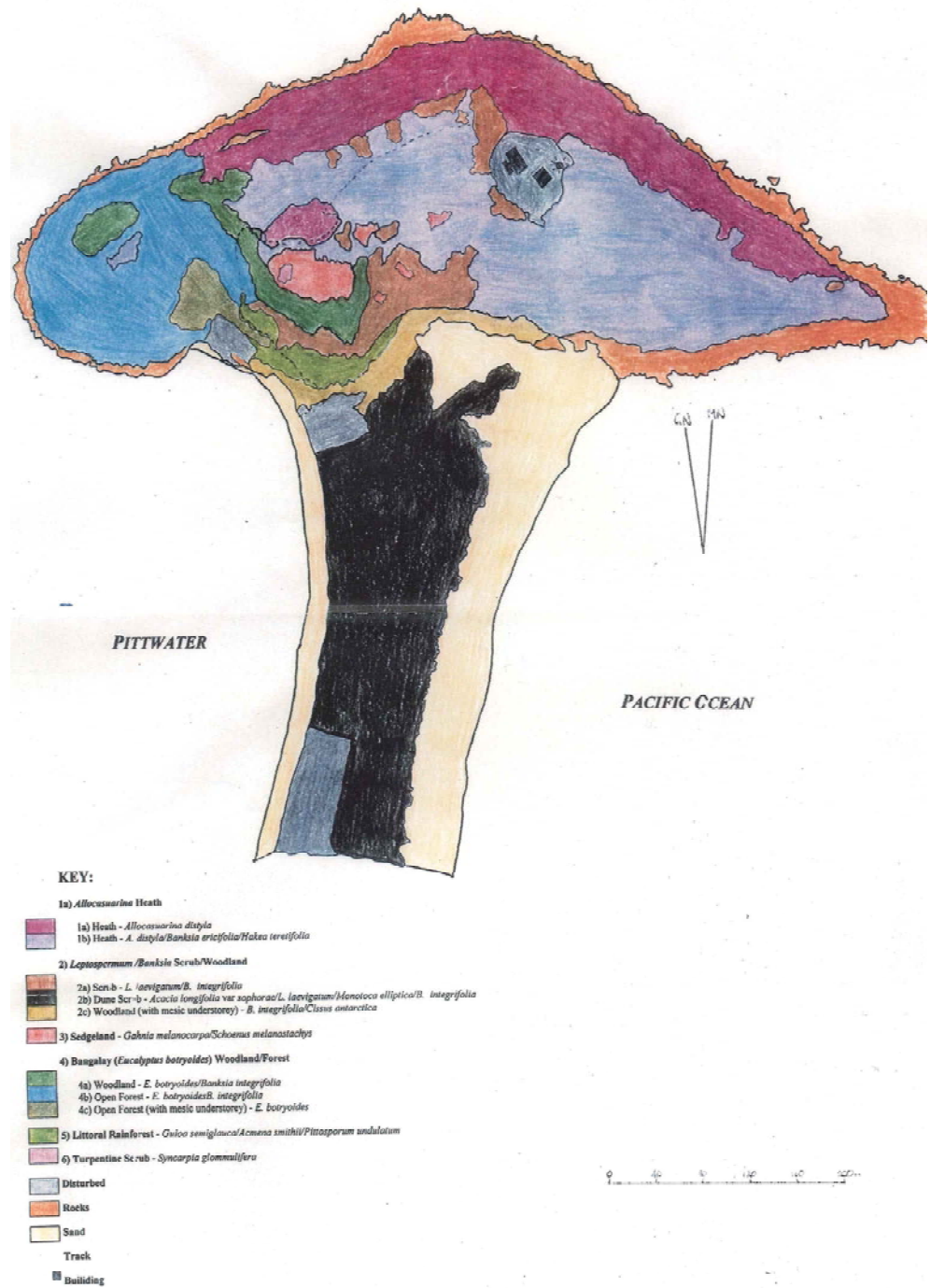


Figure 4.1
Barrenjoey Headland Vegetation
Map (Source: NPWS, OEH).

4.1.2 SITE STRUCTURE

There is evidence across the headland of modification to the natural landscape for the establishment of the Customs Station and the Lighthouse. The patterns of open and closed spaces; terracing, quarrying and clearing of natural vegetation form an introduced landscape structure that demonstrates the efforts to construct and operate both complexes during the nineteenth and twentieth centuries.



Figure 4.2

Plan of Barrenjoey Headland
(Source: Adapted by GAO from
original plan prepared by D.M.
Taylor Landscape Architects Pty
Ltd)

The overall layout of the site reflects both the constraints provided by the topography and functionality. The Customs Station is in the lee of the headland at its eastern foot with ready access to a jetty on a sheltered bay. The Lightstation is on the highest point of the headland, a necessary placement to optimise the visibility of the light from the ocean and in return the ability of the lighthouse Keepers to see approaching ships. This exposed location in turn affected the robust design of the buildings and the creation of open and closed spaces. The two complexes are joined by a walking path, the Smugglers Track, low down on the southern slopes of the headland and a

wider access track also on the southern side of the headland but higher up towards the ridgeline partly following the trolley way route established during construction of the Lighthouse. There are also secondary paths on the top of the headland connecting the sites of the former Stewart Towers which are currently not maintained by NPWS. The Smuggler's Track and main access track are used as access ways and recreational walking paths by visitors to the site.

Because lightstation complexes were often isolated and housed more than one family or living unit, they had to be fairly self-sufficient and were usually organised spatially to delineate and regulate the use of public and private spaces. This is demonstrated within the Barrenjoey Lighthouse group in the use of retaining and boundary walls to create private walled garden spaces. These features speak not only of the social structures within the site and the relative isolation of the lighthouse keeping community, but also how to live with the elements in a harsh and exposed location.

A key characteristic of the site, created by the placement of the lighthouse complex on the eastern end of the headland and the steep access routes to it is a sense of difficulty and isolation. This is reinforced by visitors to the site still accessing it by foot.

4.1.3 LANDSCAPE TREATMENT

Photographs of the site in the early 1900s show the Lighthouse Keeper's Precinct devoid of vegetation and surrounded by grass, trimmed no doubt by the goats that the first keeper kept on the headland and through the clearing for bushfire protection that was common on lighthouse headlands along the eastern seaboard.⁵⁰ The surrounding headland is sparsely vegetated and the coastal shrubs are sparser than the vegetation cover seen on the site today. It appears to have remained sparsely vegetated until the management of the site was transferred to NPWS.



Figure 4.3

The lighthouse and keepers cottages shortly after construction. Note the open grassed areas and lack of plantings (Mitchell Library a116418h, reproduced from Banksia Heritage 2004: 42).

⁵⁰ Op cit Marler, 2003, p 12

Marler notes that the Keepers maintained kitchen gardens with small vegetable plots planted on the sheltered southern slopes of the headlands and the cottage courtyard gardens were planted with fruit trees and flowers. She suggests that the Keepers established a large garden halfway down the Smuggler's trail in which they grew an extensive variety of vegetables, including cabbages, cauliflowers, melons, beans and tomatoes.⁵¹ This area could not be accessed during the 2011 site visit for the preparation for this CMP due to heavy vegetation cover. No clear evidence of the garden can be seen in the 1948 aerial photo of the site (Figure 4.1) but this area would be worth further investigation to determine if any evidence remains. Between 1965 and 2000 when the cottages were privately leased by AMSA the courtyard gardens were developed with predominantly succulent species. Other plantings included coral trees, many of which were removed during implementation of the first stage of the NPWS Heritage Landscape Plan⁵².

Currently the headland is heavily vegetated with few open areas. The 2003 landscape plan by Phillips Marler Architects recommended clearing the overgrown vegetation within the Lighthouse Keeper's Precinct and reinstating areas of lawn to recapture the sense that this was a working complex of buildings. Large sections of this plan were implemented in 2004. Beds of low native shrubs were planted against the retaining walls to the north of the three residences to provide a visual buffer for the courtyards to the cottages. Overgrown vegetation and introduced species such as coral trees were cleared from around the historic buildings and large areas of grass with sandstone edging laid on the existing terraces.

In the Customs House Precinct the gardens around the two cottages featured low garden beds and specimen trees (Figures 3.2 and 3.3). A number of the larger trees remain on the site including coral trees which have spread, uncontrolled over the site of the former Coast Waiter's residence and into the gully to the east.

The Stewart Towers Monument was erected at the site of the easternmost Stewart Tower. Made of sandstone blocks with a shell mortar, the monument is approximately four metres high, square in plan and is stepped over six courses.

4.1.4 VIEWS

The lighthouse, with its position on the highest point on the headland commands spectacular views of the ocean and coastline. This is an attraction for many visitors to the site. The Lighthouse and Keepers' cottages are also a landmark visible from the ocean and the nearby settlement of Palm Beach.

In addition to their picturesque qualities, the views also serve a practical purpose. The functioning of the lighthouse relies on clear views to and from the ocean and the lighthouse. When the Keepers' cottages were occupied by lighthouse staff, clear views from the residences to the

⁵¹ Op cit Marler, 2003, p 12

⁵² Ibid Marler, 2003

coastline and ocean were also important. Continued maintenance of these views supports an ongoing understanding of the site and its function in the past.

Views that should be Conserved

- Views to the Lighthouse Keeper's Precinct from the water
- Views to the Lighthouse Keeper's Precinct from the access road
- Unobstructed view of the sea from the lighthouse to the north, east and south;
- Unobstructed view from the lighthouse to the Customs House Precinct;
- Unobstructed view of Broken Bay, Pittwater and Pittwater peninsula from the Lighthouse Keeper's Precinct.

4.2 BUILT ELEMENTS IN LIGHTHOUSE KEEPER'S PRECINCT

The core buildings (see Figure 4.3) within the Lighthouse Keeper's Precinct comprise the:

- Lighthouse and associated structures
- Head Lighthouse Keeper's Cottage and associated outbuildings
- Assistance Lighthouse Keepers' Duplex (semi-attached cottages) and outbuildings
- Mullhull Grave

Plans and elevations of the buildings are attached at Appendix B.

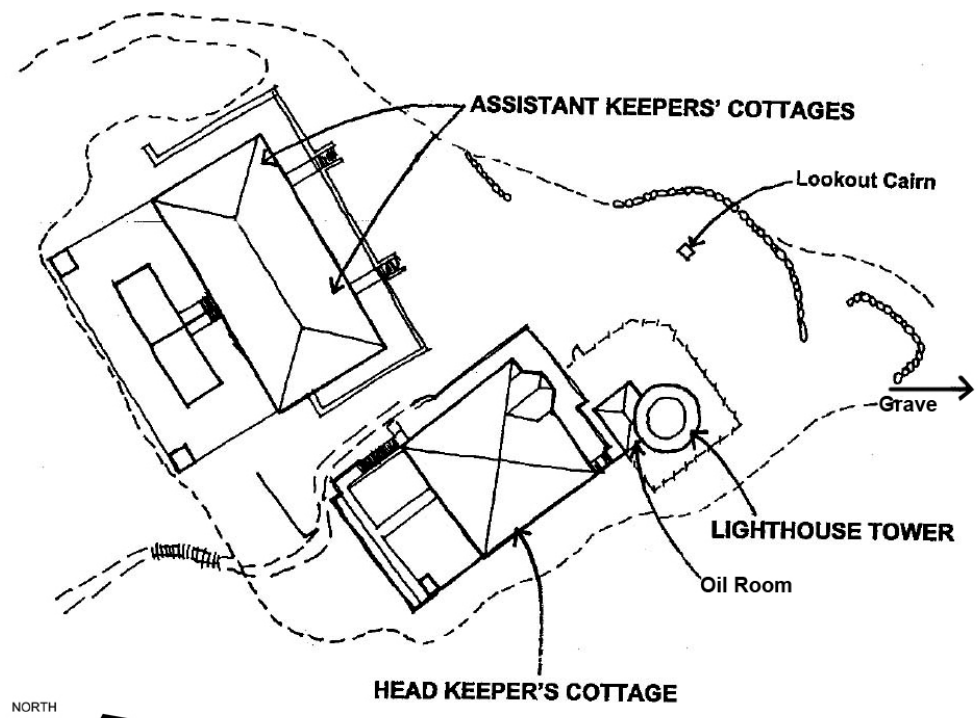


Figure 4.4
Built Elements in Lighthouse
Precinct (Source: Graham Brooks
& Associates Pty Ltd)

4.2.1 LIGHTHOUSE

The lighthouse is 19.5m high, rising three storeys above the base with iron floors and staircases. The tower is octagonal in plan to a height of 4m and circular above. The square oil room at the base of the lighthouse provides access to the interior of the tower and connects the Lighthouse to the north east corner of the Head Keeper's cottage via a covered sandstone stair with a windbreak wall featuring slender openings. Externally the oil room is consistent with the tower's sandstone finish and has a corrugated colorbond pyramidal pitched roof.

The walls of the tower are of sandstone with a sparrow peck finish and margin. They are 900mm thick at the base tapering to 600mm at the top. The northern facade of the tower features a Victoria Regina 1880 insignia carved in stone. There are also a number of small openings housing wrought iron casement windows.

Internally the tower walls are exposed sandstone. A geometric stair with transitional landings winds up through the centre of the tower providing access to the lantern level. The stairs are painted iron with moulded detailing to the stringer and goings, the balustrade is cast iron with a 'scroll' handrail profile. The large stone brackets that support the gallery with balustrade provide a transition between the tower and the lantern.

The lantern level of the tower comprises a lantern control room with painted iron walls and glazing above. The lantern manufactured by Chance Brothers and Co is the original 12ft diameter cast iron and copper lantern with diagonal pattern glazing system, comprising a segmental cast iron murette, cast iron framed copper clad dome, precast internal and external catwalks and copper ball vents.



Figure 4.5
Lighthouse and attached oil room (Source: GAO, 2011)

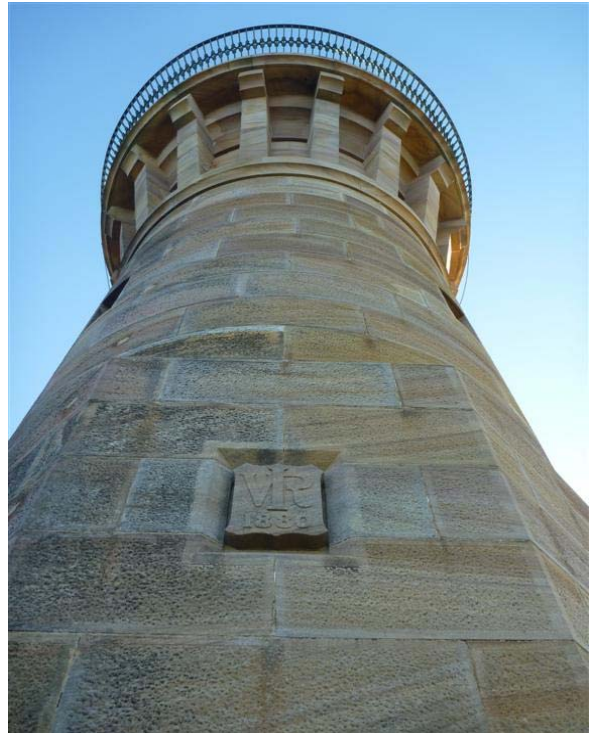


Figure 4.6
Victoria Regina 1880 insignia carved in stone (Source: GAO, 2011)



Figure 4.7
Lantern within Lighthouse (Source: GAO, 2011)



Figure 4.8
Original Chance Bros. Lantern (Source: GAO, 2011)

4.2.2 HEAD KEEPER'S COTTAGE

Located to the south corner of the lighthouse precinct, the cottage is cut into the ridge west of the lighthouse providing protection against the prevailing north easterlies. Nestled into the side of the cliff the building is one storey on the north side of the cottage and two storeys to the southern side.

The cottage has a corrugated colorbond pyramidal pitched roof that is continuous over the verandah. Externally the walls of the building are regular coursed sandstone ashlar blocks (sparrow-pick with heavy chisel finish). A timber verandah wraps around all sides of the cottage. The verandah is enclosed on three sides; on the eastern facade with stone consistent in profile to the other external stonework; on the south facade, with timber and glazed infills; and on the western facade, with timber lattice installed by tenants to provide security against intruders. The lower level features a portico on the south facade constructed of sandstone and supported with square columns with corbel capitals.

The cottage, square in plan, comprises six main rooms on the upper floor accessible by a central corridor. The lower floor, accessible via external sandstone staircase with wrought iron balustrade at the rear (south) of the cottage accommodates a kitchen featuring a grand sandstone fireplace with painted finish, service areas and storage spaces.

The automation of the lighthouse in 1932 left the building unprotected resulting in much of the original interior detailing being destroyed. A number of changes are noted. Largely the internal walls of the upper floor are sandstone covered with painted Masonite lining however in some of the bedrooms the sandstone has been directly painted over. There is evidence of plaster and lath ceilings, and timber floors exist throughout this level of the cottage. This floor also features five sandstone fireplaces all with finishes consistent with other stonework within the cottage. The lower floor has been modified by the addition of a kitchen fit-out.

The internal walls on the lower floor are in poor condition. The sandstone is painted or rendered with a painted finish. The floors are sandstone flooring. Lower floor ceilings display a variety of finishes including timber 'shiplap with channel' boarding, exposed sandstone slab and plaster and lathe.

Windows throughout are a variety of styles comprising single and multi-paned sashes both fixed and double hung. Doors throughout are later additions. The front exterior door comprises four panels in stained timber and features fanlights. The rear exterior door comprises a large stained timber French door half glazed with small panes of glass at the top, and recessed moulded timber panels at the bottom.

The cottage is surrounded by a sandstone retaining wall comprising uncoursed square rubble with random ashlar stencilled render finish and large moulded capping stone. The wall defines the boundaries of the cottage. In the south east corner of the yard is an outdoor sandstone privy with galvanised corrugated iron flat roof featuring quoining detail to the window opening. An underground water tank was provided to the cottage and is located under the courtyard area.



Figure 4.9
Head Light Keeper's Cottage (view from lighthouse) (Source: GAO, 2011)



Figure 4.10
Rear of Cottage (Source: GAO, 2011)



Figure 4.11
Front courtyard of Head Light Keeper's Cottage (Source: GAO, 2011)



Figure 4.12
Rear verandah Head Light Keeper's Cottage (Source: GAO, 2011)

4.2.3 ASSISTANT KEEPER'S COTTAGE

The Assistant Keepers' Cottage is located in the south western quarter of the lighthouse precinct. It is a sandstone duplex with a single corrugated iron hipped roof spanning both dwellings. The dwellings, square shaped in plan with four main rooms accessible by a central corridor, are mirrored about a central sandstone party wall. Cut into the ridge behind the tower to protect from prevailing north easterlies this composition utilises a strong pattern of sandstone retaining walls to define the front yards of the cottages.

Like the Head Keeper's cottage the duplex is split level with an external sandstone staircase connecting the upper floor to the service buildings at its rear. The external walls of the cottage are sandstone with a rock faced finish. The dwarf wall to the rear of the dwellings and continuous party wall comprise regular coursed ashlar with some render imprinted as random ashlar.

A verandah runs along the front and rear of each cottage. The roof line is continuous over the verandah with square timber verandah columns that are 'chamfered and stopped'. This profile is repeated in the Federation style timber brackets with the rear elevation featuring a timber balustrade with simple crossed timber member infills.

Each dwelling has two associated service outbuildings located in a rear yard that has been enclosed by a sandstone wall. Comprising rock faced finish to the sandstone walls, the outbuildings comprise two rooms and are connected to each dwelling via a covered walkway and sandstone stairs off the rear verandah. The roofs of these outbuildings have been modified with one being replaced by a galvanised metal deck roof whilst the other remains without upper roof lining having only a flat membrane roof with stone walls continuing up to form parapets. A privy also exists in the rear corner of each yard. Also featuring rock faced finished sandstone, the privies have been subject to severe weather and exist in a semi-ruinous state.

Internally the rooms are generally unlined sandstone walls with convict pick finish.

A number of changes to what would have been earlier detailing are noted. Due to the unmanning of the light station in 1932 until the 1950s vandalism, fire, and occupation by tenants prior to NPWS management of the site, the internal joinery, fittings, and finishes of the duplex has been substantially altered. Although these changes are relatively sympathetic or neutral in their aesthetic heritage impact, they do detract from the integrity of what would otherwise be a good example of federation style stone cottages. Replacement of internal wall linings and general reconstruction of joinery and adaptation of rooms have been made over time to suit the occupants' lifestyle, these include a timber loft bed, a gallery, shelving, windows and internal fit-outs such as kitchen and ablution facilities.

Two underground water tanks are located in the space between the main building and the out buildings.



Figure 4.13
Southern most Assistant Light Keeper's Cottage (Source: GAO, 2011)



Figure 4.14
Outbuilding to northern most Assistant Light Keeper's Cottage (Source: GAO, 2011)



Figure 4.15
Northern most cottage showing covered access way to outbuilding (Source: GAO, 2011)



Figure 4.16
Internal view of Northern most cottage (Source: GAO, 2011)

4.2.4 MULLHULL GRAVE

Located to the north west of the lighthouse complex is the grave of the first Lighthouse Keeper, Mr George Mulhall who was struck by lightning. His wife who died 6 months after her husband, was buried beside him. The grave and its headstone was subject to continuing vandalism which resulted in the headstone being broken. In 1992 Jervis Sparks unveiled the repaired stone, which was replaced in a reclining position with a small fence around it. The grave fence has now been removed.



Figure 4.17
Mullhull Grave (Source: GAO, 2011)



Figure 4.18
Headstone to Mullhull Grave (Source: GAO, 2011)

4.3 BUILT ELEMENTS IN CUSTOMS HOUSE PRECINCT

The core buildings (see Figure 4.19) within the Customs House precinct comprise the:

- Boatman's Cottage and Outbuildings
- Two Former Fishermen's Cottages

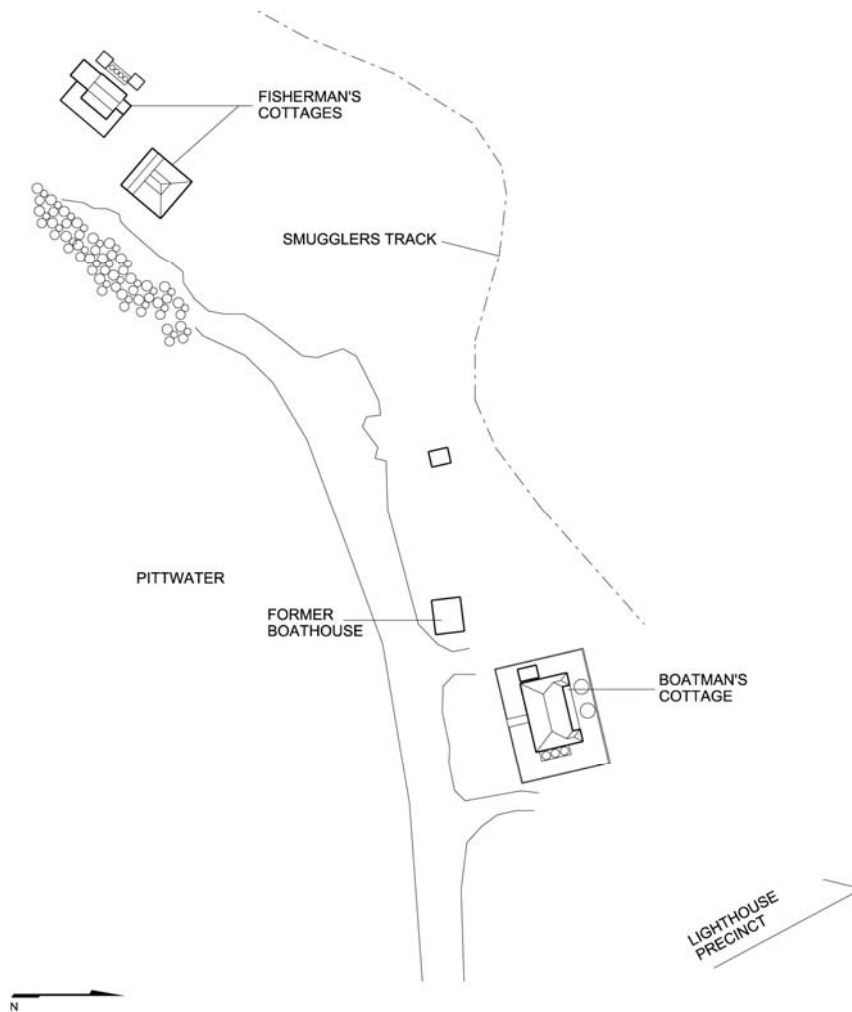


Figure 4.19
Built Elements in Customs House Precinct (GAO 2010)



Figure 4.20
View to the Fishermen's Cottages in the Customs House Precinct (GAO 2010)



Figure 4.21
View to the Boatman's
Cottage, Customs House
Precinct (GAO 2010)

4.3.1 BOATMAN'S COTTAGE AND OUTBUILDINGS

Located to the south west of the Customs House precinct, the Boatman's Cottage opens out onto Barrenjoey Beach facing Pittwater. Erected in 1932 around the same time the lighthouse was automated, it is thought to have been associated with the Customs Operations operating between 1843 and 1900.

The boatman's cottage is a single storey weatherboard cottage comprising a low pitched hipped galvanised corrugated iron roof and painted horizontal weatherboards that are 'splayed, checked and chamfered' profile.

Rectangular in plan the cottage features four main rooms flanking a west facing verandah which has been semi-enclosed. The rear, east wing, of the cottage has been extended providing an additional living space. The cottage features timber flooring supported by sandstone blocks on end piers. The floors are covered with new carpet and linoleum linings.

Internally, the original walls and ceilings are lined with wide timber horizontal v-jointed boarding with a timber ovolo cornice. Additions to the east wing have introduced fibre cement lining to the walls and ceiling.

The cottage features a centrally located sandstone fireplace, believed to be remnants of the original cottage that perished in a fire. There is also a painted brick stove located within the kitchen.

Externally there are a variety of painted timber doors which include painted French doors opening out onto the verandah and double hung timber painted windows.

A schedule of works was provided in 2009 for all buildings at Barrenjoey, including the Boatmans Cottage⁵³. This built on an earlier schedule of works done by the same consultant in 2002 and inspection reports done in 1998⁵⁴, and identified catch-up maintenance works and refurbishment works that have been incorporated into the Barrenjoey Conservation Manual.

A Statement of Heritage Impact produced for the cottage in 2009 assesses the impact of carrying out the specified works⁵⁵.

To the north of the cottage is a single storey timber framed boat shed constructed in the 1970s. It is a small, timber framed structure, clad in fibrous cement sheet with concrete floor and colorbond corrugated steel roof.



⁵³ Davies, Paul P/L, Ku-ring-gai Chase National Park, Barrenjoey Headland Schedule of Maintenance Works 2009. Unpublished report for NPWS.

⁵⁴ Tyrells, 1998, Property and Inspection Reports for Buildings at Barrenjoey Headland, unpublished report prepared for Australian Maritime Safety Authority.

⁵⁵ Cultural Resources Management 2009, The Boatman's cottage, Barrenjoey, Statement of Heritage Impacts. Unpublished report for NPWS.

Figure 4.22

Front of Boatman's Cottage (Source: GAO, 2011)



Figure 4.24

Sandstone Fireplace (Source: GAO, 2011)

Figure 4.23

Rear of Boatman's Cottage (Source: GAO, 2011)



Figure 4.25

Internal Timber Linings (Source: GAO, 2011)

4.3.2 TWO FORMER FISHERMENS' COTTAGES

The following descriptions are based on photographs provided by NPWS. The cottages were not inspected as instructed by NPWS.

The two former Fishermens' Cottages are located to the south west of the Customs House precinct and north of the Boatman's Cottage along Barrenjoey Beach facing Pittwater. These cottages are single storey weatherboard timber framed cottages comprising timber frame construction light weight cladding and low pitched galvanised corrugated iron roof.

Cottage One, dating from c.1928, is a single storey weatherboard cottage, rectangular in plan, with low pitched galvanised corrugated iron roof. A number of changes to what would have been earlier detailing are noted however these changes are relatively sympathetic or neutral in their aesthetic heritage impact. The cottage may have been built in two stages with the original wing of house under a north pitched roof and a later wing under a mansard corrugated iron roof. Externally the weatherboards are semi-rusticated in profile. The timber verandah to the east of the cottage is a later addition c.1990.

Cottage Two, located to the north of Cottage One, is a single storey weatherboard cottage with low pitched corrugated iron roof. Originally square in plan, the eastern and western wings to the cottage are latter additions to the cottage c.1980 as is the extension of the south facade adding additional living space. A timber deck wraps around the southern facade of the cottage elevated on stone piers.

The cottage comprises a pitched corrugated iron roof that extends over the southern facade of the cottage whilst the east and western wings feature flat corrugated iron roofs. The external weatherboards are painted and 'splayed plain' in profile. There are a variety of painted timber doors which include painted bi-fold doors that open out onto the deck as well as a variety of timber window types which include casement and sliding.

Associated with the cottage are a number of outbuildings consistent in form with the main building. These comprise weatherboards 'semi-rusticated' in profile and flat galvanised corrugated iron roofs. There are also large galvanised corrugated iron water tanks above ground and timber decking supported by brick and stone piers.



Figure 4.26
Fishermen's Cottage One (Source: GAO, 2011)



Figure 4.27
Fishermen's Cottage Two (Source: GAO, 2011)



Figure 4.28
Sandstone piers (Source: GAO, 2011)

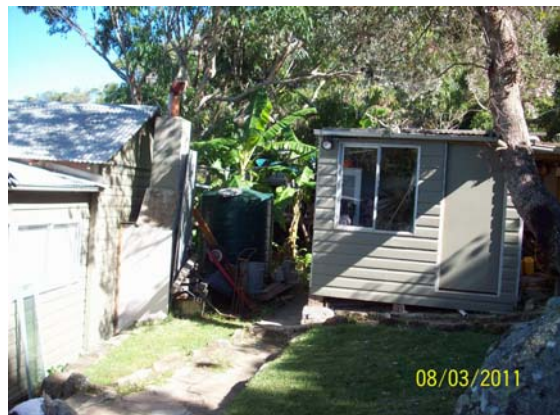


Figure 4.29
Fishermen's Cottage and outbuilding (Source: GAO, 2011)

5 COMPARATIVE ANALYSIS

5.1 NPWS LIGHTHOUSES

Barrenjoey Lighthouse is one of 10 major lighthouses managed by the NPWS out of a collection of 13 built between 1858 and 1903 along the NSW coast as part of the 'coastal highway' of lights envisaged by Francis Hixson. The NPWS collection includes:

- Inner South Head (1858);
- Port Stephens (1863);
- Sugarloaf Point (1875);
- South Solitary (1880);
- Barrenjoey (1881);
- Montague Island (1881);
- Green Cape (1883);
- Smoky Cape (1891);
- Cape Byron (1901); and
- Cape Bailey (1951).

Barrenjoey is the only lighthouse in NSW to employ face sandstone in the construction of the tower and its associated outbuildings and cottages. The remaining lighthouses are built of different masonry construction, including granite, brick and concrete with all except Montague Island being painted white.

With the exception of Inner South Head and Cape Bailey, each of the lighthouses exhibits a similar architectural style as developed by Colonial Architect James Barnet who oversaw the construction of the lighthouses through the Colonial Architect's office between 1863 and 1890. Each of the lighthouses displays a symmetrical unity through the position of the tower and the base rooms, generally one either side of the tower entrance. The lighthouses also include keepers' cottages at each site with the exception of Cape Bailey. The collection is more broadly referred to as Barnet's Lights to reflect these similarities.

Within the NSW lighthouse collection, two variations in the height of the towers are obvious, being tall slender towers and short squat towers. The tower heights correspond to the topography of the sites upon which the tower is built and are designed to allow the maximum range for the light. Tall towers dominate low ground, while shorter towers were employed for higher sites. Barrenjoey is one of three short, squat towers with Smokey Cape and Sugarloaf Point being the other two. Each has a heavily bracketed balcony and metal balustrade, considered to be a major trademark of Barnet's style.

5.1.1 AUSTRALIA WIDE

James Johnstone Barnet oversaw the construction of thirteen lighthouses between 1862 and 1890 as Colonial Architect for Colonial Architect's Office; these include Sugarloaf Point (1875), Crowdy Head (1879), Tacking Point (1879), Montague Island (1881), Macquarie (1883), Green Cape (1883), Kiama (1887), Warden Head (1889) , and Smoky Cape (1891).

Whilst by no means the oldest lightstation in NSW, Barrenjoey Lightstation is relatively old being established in 1881 and is one of seventy Australian lightstations of recognised heritage significance. Composed of face sandstone, it is one of comparatively few surviving stone lighthouses built, with other examples being Macquarie, Point Stephens, Cape St. George (ruin), Boyd's Tower, Nobby's head and South Solitary Island.

The cast iron stair in the lighthouse is a very good example of its type. In NSW others exist at Port Stephens, Macquarie, Sandy Cape and possibly at other Barnet era lights. Its rare wrought iron detailing, sheet metal landings as well as distinctive gunmetal balustrade are a hallmark of Barnet's lighthouses.

Barrenjoey has a rare optic in that it is fixed and does not rotate on a chariot. The optic has belts and sits on its original cast iron pedestal. Only nine 700mm Chance Bros. lenses are known to exist in Australia; of these Cape Bruny, Port Adelaide, Moore Point and Norah Head are rotating, and Barrenjoey, Table Cape, Mersey Bluff, and Bathurst Point are fixed, but effective flashing by electrical means. Consequently the Barrenjoey lens and pedestal is very rare in Australia. The Chance Bros 12 ft diameter lantern is also one of five known examples to contain the diagonal pattern glazing system normally associated with fixed optics.

Barrenjoey Lighthouse forms part of a group of lighthouses that included residences for their Keepers. The collection of cottages are not as well documented as the lighthouses in which they belong, however they are as follows:

- Swan Island (Tas; 1845)
- Rottnest Island (WA; 1851, 1874)
- Troubridge Shoal (SA; 1856)
- Hornby (NSW; 1858)
- Breaksea Island (WA; 1858)
- Cape Borda (SA; 1858)
- Cape Northumberland (SA; 1859)
- Cape Moreton (Qld; 1856)
- Cape Schanck/ Wilsons Promontory (Vic; 1859)
- Twofold Bay (NSW; 1861)
- Gabo Island (Vic; 1862)
- Point Stephens (NSW; 1862)

Of these the cottages associated with Barrenjoey Lighthouse precinct display a distinct architectural typology, characterised by siting, relationship to the light, modes of weather protection and specific accommodation requirements.

The residences associated with the Lighthouse have greater architectural merit with lighthouses at Cape Schanck, Gabo Island and Point Stephens. As a group, the design of the residences have been tailored for the location that they occupy. Verandahs have screens and roofs are deliberately shaped to provide protection from the wind. The attributes collectively describe a clear architectural idiom which was developed in Australia at least through the nineteenth century. The Barrenjoey quarters well fit this evolutionary pattern. Their high stone garden walls and substantial retaining walls also distinguish them from comparable designs. Due to the split level design of the cottages the houses contain rare stone stairs, iron balustrades and the remains of covered ways. The houses are relatively rare in that only possibly two other groups, at Port Stephens and Macquarie, are built of ashlar stonework. Other rare items contained as part of these residences are several fine stone kitchen chimneys.

6 HERITAGE SIGNIFICANCE

6.1 INTRODUCTION

The following Statement of Significance has been developed from an understanding of the historical development of the Barrenjoey Headland, an analysis of its extant fabric and an assessment of the heritage significance against the Criteria for listing on the State Heritage Register. Decisions on the future management of the collection of buildings, archaeological remains and landscape elements within the Barrenjoey Headland Precinct should be based on an understanding of the place's heritage significance.

This section also contains gradings of significance for individual areas and elements, which is an important management tool in future options for conservation and development of a place of heritage significance.

6.2 RELATIONSHIP TO HISTORIC THEMES

The significant values of the Barrenjoey Headland relate to a number of key historical themes, as identified below. The state themes have been taken from the Historical Thematic framework developed for the NSW State Heritage Inventory (and are numbered accordingly).

Australian Theme	NSW State Theme	Associated Elements
2 Peopling Australia	Aboriginal cultures and interactions	<ul style="list-style-type: none"> • Early accounts of contact with 'Broken Bay tribe' • Potential contact sites
3 Developing local, regional and national economies	Communication - Activities relating to the creation and conveyance of information	<ul style="list-style-type: none"> • Communicating by signals using the lighthouse beacon. • Struggling with remoteness, hardship and failure; dealing with hazards and disasters
	Commerce- Colonial coastal trade	<ul style="list-style-type: none"> • Customs Station role in monitoring river traffic • Stewart towers • Lighthouse servicing '90 miler' coastal coal shipping • Moving goods and people; shipping to and from Australian ports • Developing an Australian engineering and construction industry

Australian Theme	NSW State Theme	Associated Elements
	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	<ul style="list-style-type: none"> • Building and maintaining public light houses and stations.
	Technology	<ul style="list-style-type: none"> • Lighthouse design • Stewart towers • Lighthouse machinery • Trig station / survey marks • Developing harbour facilities • Inventing devices to cope with Australian specific problems
4 Building settlements, town and cities	Towns, suburbs and villages	<ul style="list-style-type: none"> • Barrenjoey Head as a small community • Pittwater as a dispersed community
	Land tenure	<ul style="list-style-type: none"> • Land grant boundaries
	Accommodation	<ul style="list-style-type: none"> • Customs residences • Lighthouse keeper residences • Fishermens' shacks • Aboriginal occupation of shelters
5 Working	Labour	<ul style="list-style-type: none"> • Customs Station crew quarters • Construction of the road • Construction evidence for lighthouse-quarries etc • Quarry inscriptions • Survey marks
7 Governing	Government and administration	<ul style="list-style-type: none"> • NSW government responsibility for lighthouses – as reflected in corporate style construction • Survey marks • Colonial government and impetus to Federation • Conserving Australian resources; conserving fragile environments, conserving Australia's heritage

Australian Theme	NSW State Theme	Associated Elements
8 Developing Australia's Cultural Life	Domestic Life	<ul style="list-style-type: none"> • Lightkeeper's residences • Evidence of consumption/discard/household economy • Informal gardens and plantings • Terracing
	Creative endeavour	<ul style="list-style-type: none"> • Rock inscriptions • Pursuing excellence in the arts and sciences; designing and building fine buildings
	Leisure	<ul style="list-style-type: none"> • Bushwalking • Relaxation in beautiful surroundings
9 Marking the phases of life	Birth and death	<ul style="list-style-type: none"> • Steere engravings • Mulhall grave
	Persons	<ul style="list-style-type: none"> • Mulhall grave • Steere engravings

6.3 ANALYSIS OF SIGNIFICANCE

Criterion (a) An item is important in the course, pattern of NSW's cultural or natural history.

Barrenjoey Headland has STATE heritage significance under this criterion.

The following elements of the site embody the heritage values outlined above: Aboriginal sites; the tramway alignment; the sites of the two Stuart Towers; the construction quarries; the access road and Smuggler's Track; Lighthouse and Keeper's Cottages; engravings; the Custom's building and associated archaeological remains. The collection of buildings is the oldest remaining collection of structures in Pittwater.

The collection of buildings, works and landscape modifications on the headland encompass a vast sweep of historical activity from Aboriginal occupation of the area to the establishment of maritime related industry by European settlers. They demonstrate the processes of constructing, accessing, working and living in a Customs Station and Lighthouse in difficult terrain during the nineteenth and twentieth centuries. The collection also demonstrates the establishment of early navigation and coastal shipping networks along the NSW coast and reflects the economic development of the surrounding region.

The lighthouse in particular forms part of the most productive phase of Lighthouse construction in NSW. It is one of a collection of major lighthouses built in the mid to late nineteenth century forming the "coastal highway lights" scheme designed to light up the coastline like a street. A light has operated from the headland from 1855 making it one of the longest continually lit headlands along the NSW coast.

The Fishermen's Cottages illustrate the local early 20th century history of coastal crown land being occupied by Fishermen.

The recreational use and landmark values of the place are also of local historical heritage significance.

Criterion (b) An item has strong or special association with life or works of a person or group of persons, of importance in NSW cultural or natural history.

Barrenjoey Headland has STATE heritage significance under this criterion.

Barrenjoey Lighthouse is associated with the work of Colonial Architect James Barnet and the Superintendent of pilots, lighthouses and harbours Francis Hixson. Barnet and Hixson shaped the construction and placement of lighthouses along the NSW coast through the second half of the nineteenth century, creating what was to be called the 'coastal highway of lights'. Their long association with each other through the construction of lighthouses lead to a collection of lighthouses similar in form and style unique in Australia.

The Lighthouse and associated Cottages also have an association with the Keepers and their families.

Criterion (c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.

Barrenjoey Headland has STATE heritage significance under this criterion.

The following elements of the site embody the heritage values outlined above: views to and from the lighthouse precinct; the tramway alignment; the construction quarries; the sites of the two Stuart Towers; the open spaces around the lighthouse and Keepers cottages.

The Lighthouse demonstrates a high level of technical and aesthetic significance demonstrating the evolution of lighthouse technology. Designed by James Barnet, NSW Colonial Architect, in 1881; Barrenjoey Lighthouse is a significant intact example of a late Victorian lighthouse featuring attractive face sandstone construction and strong sandstone brackets supporting the upper balcony with curving gunmetal balustrade. The original Chance Bros. cast iron and copper lantern within the lighthouse features a diagonal pattern glazing system normally associated with fixed optics, there are only five known examples of this in Australia.

The collection of buildings, works and landscape modifications are local landmarks, visible from both the ocean and the nearby settlement of Palm Beach. The open spaces around the lighthouse and cottages with tended lawns and low planting beds reflect the cleared nature of the site for most of its period of use as a lighthouse with resident Keeper's; and support an understanding of the historic function of the lighthouse, which relied on open views to the ocean and coastline.

Also Barnet designed, the cottages display the typical robustness of the Victorian Georgian style used extensively by the NSW Colonial Architect's office throughout the late 19th century.

Constructed in ashlar, the cottages feature high stone garden walls and substantial retaining walls which demonstrate the technical significance in the buildings which have been designed to respond to their extreme exposure to the weather.

The construction and operation of the tramway was a technical achievement in difficult terrain. The contrast of the substantial stone buildings and their dramatic bushland setting also highlights this achievement.

Criterion (d) An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.

Barrenjoey Headland has LOCAL heritage significance under this criterion.

The collection of buildings, works and landscape modification within the Barrenjoey Headland have significance to the residents that have resided within the cottages and are closely associated with the maritime history of the area. The various remains, earlier and associated features are significant for the role they played in the early navigation and coastal shipping network, commercial shipping network and by their association with the functioning and role of the lighthouse complex.

From its initial construction to the present day the lighthouse has generated a great deal of local and general interest. It is a popular destination for informal walks by local residents and those from greater Sydney. It is also of significance to the community for its landmark values.

Criterion (e) An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.

Barrenjoey Headland has LOCAL heritage significance under this criterion.

None of the identified historical archaeological elements within the site have an Exceptional level of significance in their own right. Rather they are elements that contribute to an overall understanding of the operation of the site over time.

They demonstrate:

- the changes in lighthouse technology over time from a simple timber tower to a sophisticated tower with an optical lens (Stewart Towers);
- the construction processes on a difficult site (quarries, access road, trolley way);
- access (Smuggler's Track; Access Road);
- life of the Lighthouse Keepers and their families (potential artefact deposits in and around the cottages);
- associated maritime functions and the lives of the customs officials and their families (ruin of the Customs Station and associated artefact deposits);
- use of the headland for surveying, navigation and communication (survey and trig point carvings in the bedrock across the headland, remnant flagstaff base and anchor points).
- The Aboriginal sites including any potential convict period sites have the potential to provide information about the lives of the Aboriginal people living in the region, their food sources, social and ceremonial lives and their strategies for adapting to British settlement in the Sydney Region. This is a region that is otherwise poorly documented through eyewitness accounts and Aboriginal testimony and little archaeological investigation has been carried out in the area.

Criterion (f) An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (RARE).

Barrenjoey Headland has STATE heritage significance under this criterion.

Whilst by no means the oldest lighthouse in NSW, Barrenjoey Lighthouse is relatively old, being established in 1881. It is one of only 16 lighthouses in NSW forming part of the 70 Australian lighthouses of recognised heritage significance.

The original Chance Bros. cast iron and copper lantern within the lighthouse features a diagonal pattern glazing system normally associated with fixed optics, there are only five known examples of this in Australia. The lantern also has an unusual fixed optic, not rotating on a chariot, which sits on its original cast iron main pedestal. The tower retains its disused 1932 acetylene sun valve and flasher.

The cast iron stair in the lighthouse is a very good example of its type. The rarity of its wrought iron and sheet metal landings is difficult to assess, but these are very likely to be rare in NSW.

The headland is host to small areas of littoral rainforest including *Pararchidendron pruinatum* (Snow Wood) and *Flagellaria indica* (Twining Bamboo), which are considered an endangered ecological community.

Criterion (g) An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places, or cultural or natural environments (REPRESENTATIVE).

Barrenjoey Headland has STATE heritage significance under this criterion.

Barrenjoey Lighthouse is an important and representative example of the so called "coastal highway lighthouses" that were erected along the NSW coastline in the mid to late nineteenth century. The lighthouse is also a good example of a James Barnet lighthouse design. Barnet designed a series of lighthouse towers in NSW which are perhaps the most architecturally sophisticated in Australia.

The lighthouse is intact with limited internal and external changes. Together with the cottages, it clearly demonstrates the planning and operation of a nineteenth century lighthouse and exhibits design characteristics that have been tailored to suit the exposed locations they occupy.

Integrity/Intactness

The lighthouse and head Light Keeper's house are mostly intact. The assistant Light Keepers' cottages are in stable condition despite having some adaptation and with loss of finishes following a fire c1940s. The cottages were heavily damaged by vandals during the 1940s, following unmanning of the station and later leased by residents who have repaired and adapted the houses for their own use. The Australian Maritime Safety Authority also undertook basic maintenance.

The boat shed was apparently constructed by the Nott family in the 1970s. It is a small timber framed structure clad in asbestos cement sheet with concrete floor and corrugated colorbond roof.

In 1972 the light was converted to electric operation from mains power with a backup emergency battery start generator. The original optical lens supplied by Chance Bros. of Birmingham is still in use today with a focal height of 113 metres above sea level and a range of 19 nautical miles.

6.4 STATEMENT OF SIGNIFICANCE

Barrenjoey Headland is of State heritage significance.

Barrenjoey Lighthouse, built in 1881, is significant as one of a group of “coastal highway lighthouses that were erected along the NSW coastline in the mid to late nineteenth century. The collection of buildings, works and landscape modifications on the headland are important elements in the establishment of navigational aids along the NSW coast and reflect the economic development of the surrounding region.

Built as an isolated outpost of European settlement, the lighthouse and cottages are notable works of NSW Colonial Architect James Barnet. The lighthouse retains components of 19th Century lighthouse technologies. Of particular significance is the original Chance Bros. cast iron and copper lantern featuring a diagonal pattern glazing system, of which there are only five known examples in Australia. The lantern also has an unusual fixed optic, not rotating on a chariot, which sits on its original cast iron main pedestal. Today the lighthouse retains its original function by using recent technology to allow for automated operation.

The Lighthouse and cottages are the oldest remaining structures in Pittwater. The lighthouse is intact with limited internal and external changes. Together with the cottages, it clearly demonstrates the planning and operation of a nineteenth century lighthouse and exhibits design characteristics that have been tailored to suit the exposed locations they occupy. The structures are also significant for providing material evidence of the changing living and working conditions of the lighthouse Keepers and their families and are closely associated with the maritime history of the area.

The collection of buildings, works and landscape modifications are highly significant as they combine the natural values of a rugged coastal environment with the cultural values of a prominent landmark. This site retains evidence of cultural values, both Aboriginal and European, legible in the landscape which demonstrates the changing uses of the site against a constant of natural values.

6.5 GRADING OF SIGNIFICANCE

The Grading of Significance of the various components and spaces of a place is an important management tool for places of heritage significance. It enables decisions on the future conservation and development of a place to be made based on an understanding of the nature and degree of significance of the various components and qualities which comprise the place. When developing conservation policies, the Grading of Significance should be taken into account alongside other considerations such as client and statutory requirements and physical constraints. The grading should be used as the essential guide to determining how particular components and areas should be treated.

The various elements and fabric have been graded in accordance with the levels identified in James Kerr's The Conservation Plan (1996) and NSW Heritage Manual:

<i>Exceptional</i>	Items of exceptional significance are rare or outstanding items that feature a high degree of original fabric and intactness or are integral to understanding the place as a whole. Their loss would have a serious and negative impact on the heritage significance of the place as a whole. This loss would be irreversible and would represent a loss to the people of NSW as a whole. Their conservation maintains the key characteristics that make the place interesting and unique.
<i>High</i>	Items in this category have a high degree of original fabric and demonstrate key elements of their significance, with a degree of alteration that does not unduly detract from that significance. They are important to understanding the place as a whole. Their loss would have a negative impact on the heritage significance of the place as a whole. Their conservation maintains important characteristics that are central to the significance of the place.
<i>Moderate</i>	The fabric, buildings or elements of moderate significance are altered or modified elements or elements of lesser historic value, but contribute to the overall character and significance of the place. Their loss would detract from the overall significance of the place and the context of the elements of exceptional and high significance.
<i>Little / Neutral</i>	<p>Includes fabric which make little contribution to heritage value of the item, but which also are neutral in terms of intrusiveness. May also include fabric required to accommodate changing functional requirements. These are components generally of neutral impact on the complex's significance.</p> <p>Elements assessed as being of little significance and neutral elements are generally not regarded as essential to the major aspects of significance of a building or place, often fulfilling a functional role. Both retention and removal are acceptable options, depending on the element. Any major interventions to the item should be confined to areas where the fabric is of little significance.</p>
<i>Intrusive</i>	Items which are considered to be physically or visually damaging to the overall significance of the place, an aspect of the site's significance and/or significance fabric are identified as "Intrusive". Their removal will lessen and in some cases reverse this negative impact on significance.

6.5.1 GRADING OF COMPONENTS

This significance grading of components reflects the extent to which particular components of the place embody its overall heritage significance taking into account the relative importance of later additions and overall physical condition.

It should be noted the following descriptions of the Fishermans' Cottages are based on photographs provided by NPWS. The cottages were not inspected as instructed by NPWS.

Area	Item	Grading
Lighthouse		Exceptional
	Tower	Exceptional
	Cast iron stair-case	High
	Original doors and windows	High
	Lantern (roof, base, glazing, internal catwalk, external catwalk, floor)	Exceptional
	Optical apparatus (lens assembly, pedestal, drive mechanism)	Exceptional
	Balcony floor (sandstone)	High
	Balcony balustrade	Exceptional
	Oil-room	High
	Modern light fittings	Little/Neutral
Head Lighthouse Keeper's Cottage		Exceptional
	Planning- arrangement of upstairs rooms	Exceptional
	Original walls, doors and windows and joinery	High
	Roofing and rain-water goods	Little/Neutral
	Verandah- sandstone floor and timber posts	High
	Weatherboard infill panels on rear verandah	Moderate
	Staircase- sandstone with wrought iron handrail to outbuildings	High
	Original Plaster and Lathe Ceilings	High
	Original Timber floors	High
	Chimney pieces	High
	Fireplaces- Sandstone	High
	Kitchen fit out	Little
	Modern light fittings	Little/Neutral
	Sandstone Privy	High
	In-ground water tank	High

Assistant Keepers' Duplexes	Exceptional
Planning- arrangement of rooms	Exceptional
Original walls, doors, windows and timber joinery	High
Timber floors	High
Roof sheeting and rainwater goods	Little/Neutral
Verandah- sandstone floor and timber posts	High
Staircase- sandstone with wrought iron handrail to outbuildings	High
Chimney pieces	High
Fireplace- Sandstone, timber, wrought iron	High
Kitchen fit outs	Little/Neutral
Light fittings	Little/Neutral
Non original fabric	Little/Neutral

Assistant Keepers' Duplexes Outbuildings	Exceptional
Original walls, timber doors, windows and floor	High
Moulded sandstone fireplace	High
Roof framing	High
Roof and guttering	Little/Neutral
Wrought iron access ladders	Moderate
Hand operated water pump	Moderate
Original water tanks at rear courtyards	High

Grounds	Exceptional
Access Road	Exceptional
Smuggler's Walking Track	Exceptional
Stone retaining walls of cottages	Exceptional
Stewart Towers	Exceptional

Other Archaeological Features	
Trolley Route	Exceptional
Former quarry	High
Rock cut features from construction period buildings	Moderate
Smugglers Track	High
Stone Carvings	Moderate
Former Jetty Remnants	High

Mullhull Grave		High
	Headstone	Moderate
	Stone Markers	High
	Alignment of cemetery boundary	High
Boatman's Cottage		High
	Original walls, timber doors, windows and floor	High
	Roof sheeting and rainwater goods	Little/Neutral
	Fireplace- Sandstone	High
	Original brick kitchen stove	High
	Chimney pieces	High
	Timber lined ceilings and internal walls	High
	Verandah- Timber and Glazed enclosures	Moderate
	Sandstone footings	High
	Fibro-boat shed	Little
Fishermen's Cottages		Moderate
	Original walls, timber doors, windows and floor	Moderate
	Roof sheeting and rainwater goods	Little
	Masonite internal linings	Little
	Verandahs- Timber Deck and Timber Balustrade	Little
	Sandstone Footings	Moderate

6.5.2 GRADING OF SPACES

The significance of spaces within each of the buildings above are summarised in the following figures.

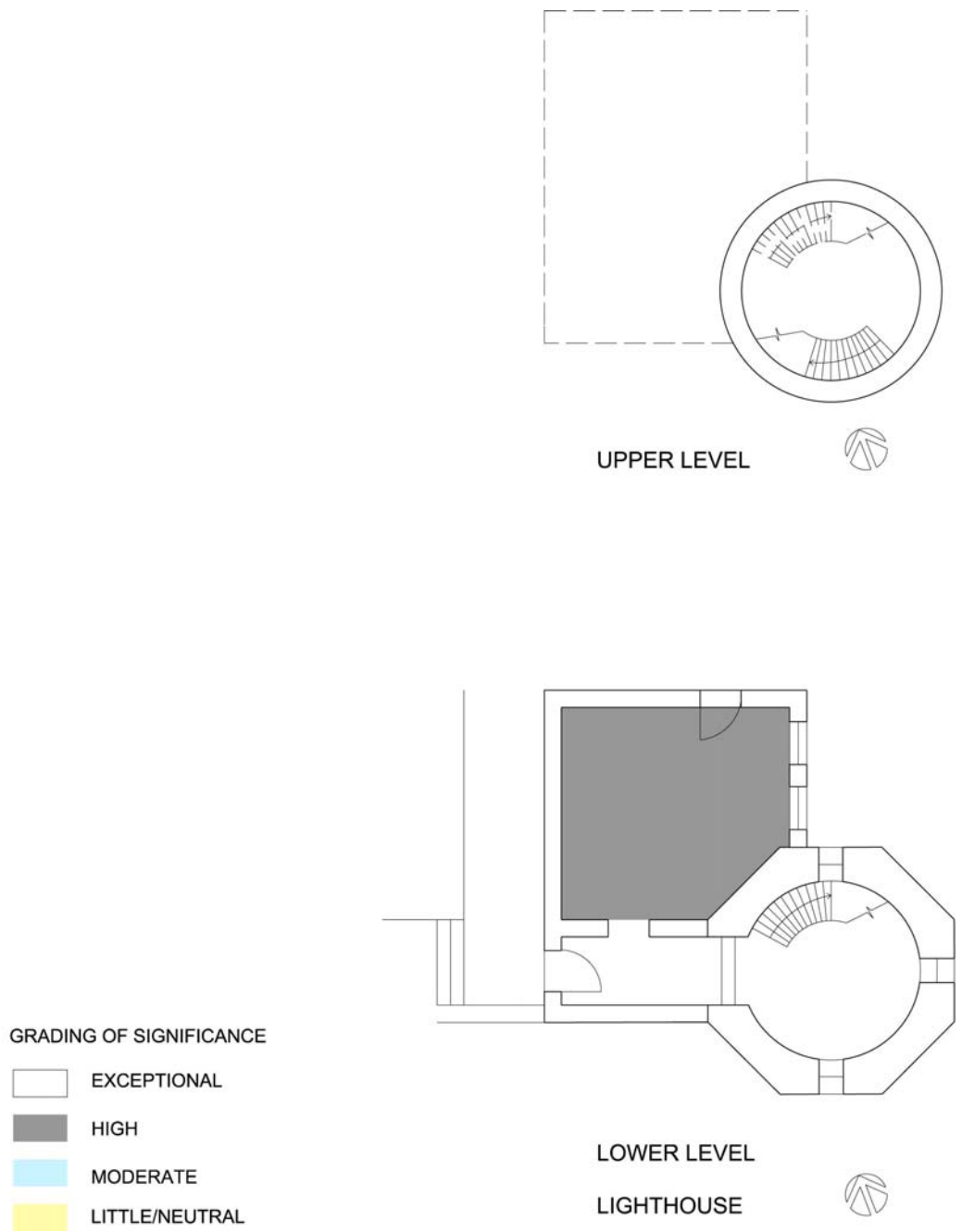
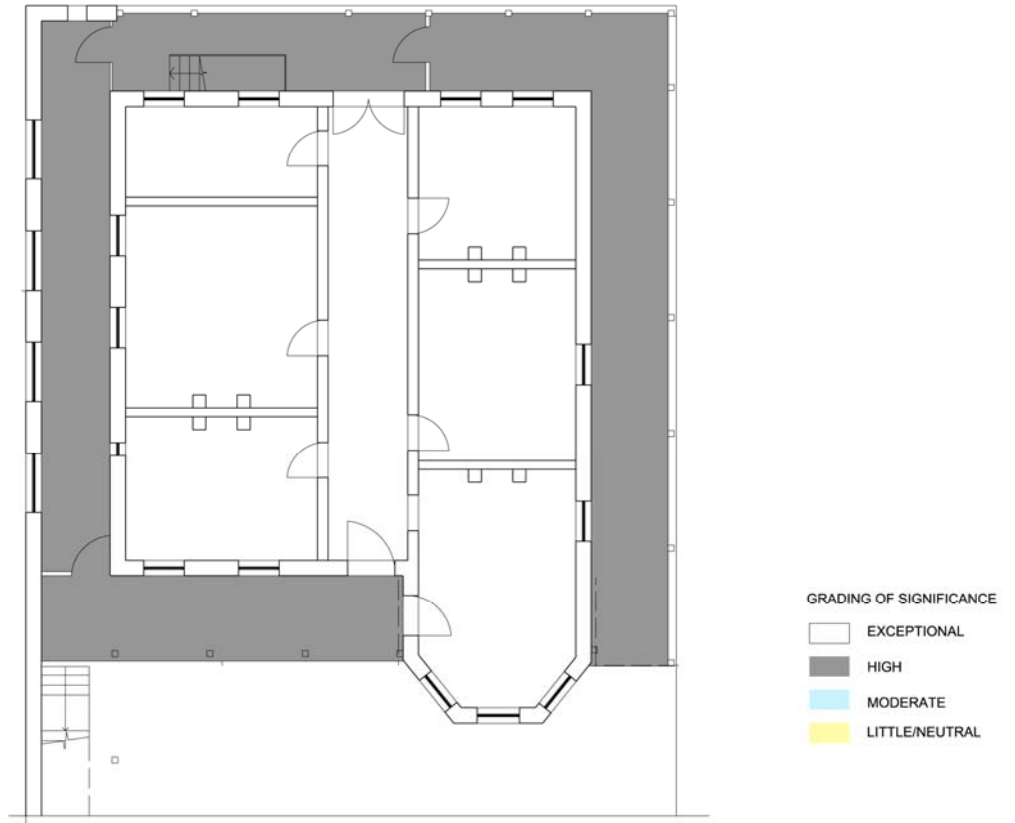
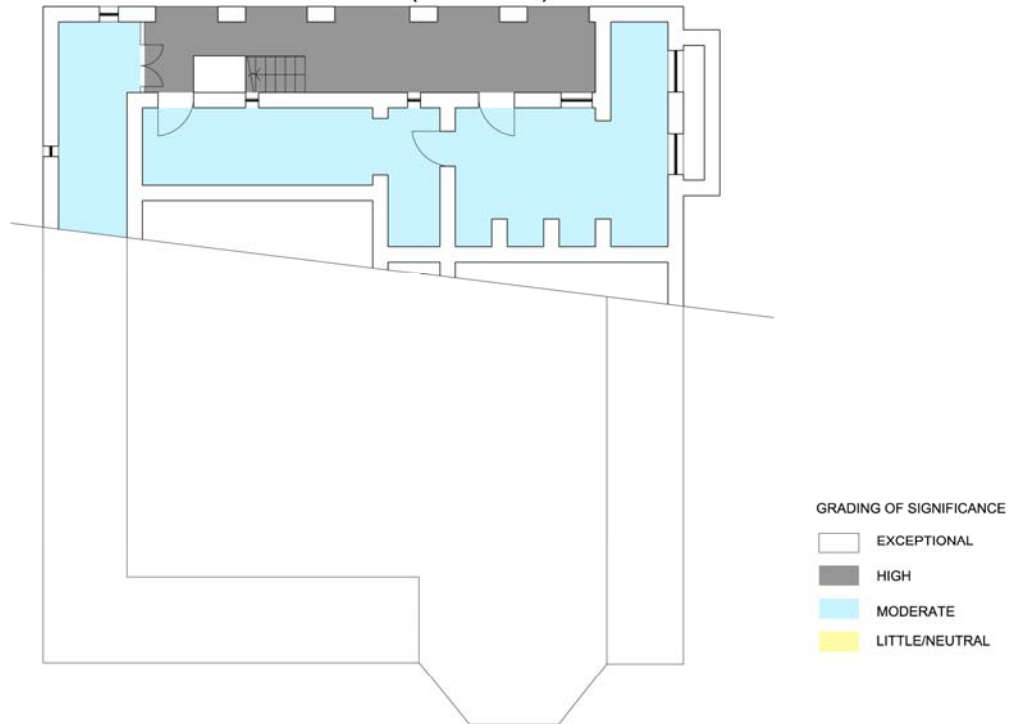


Figure 6.1
Grading of significance of spaces within the Lighthouse



HEAD KEEPER'S COTTAGE (GROUND)



HEAD KEEPER'S COTTAGE (BASEMENT)

Figure 6.2
Grading of significance of spaces within the Head Lighthouse Keeper's Cottage

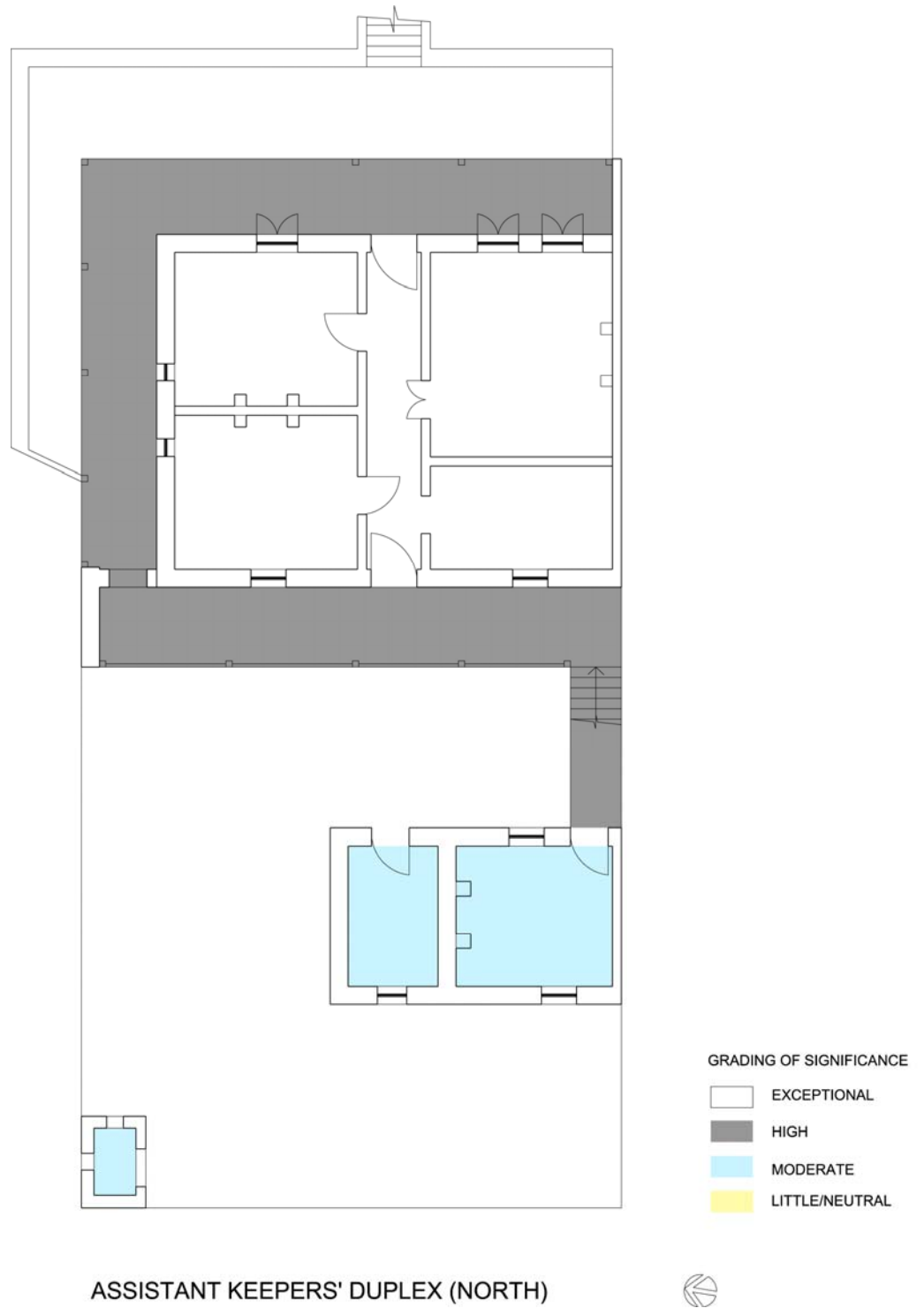
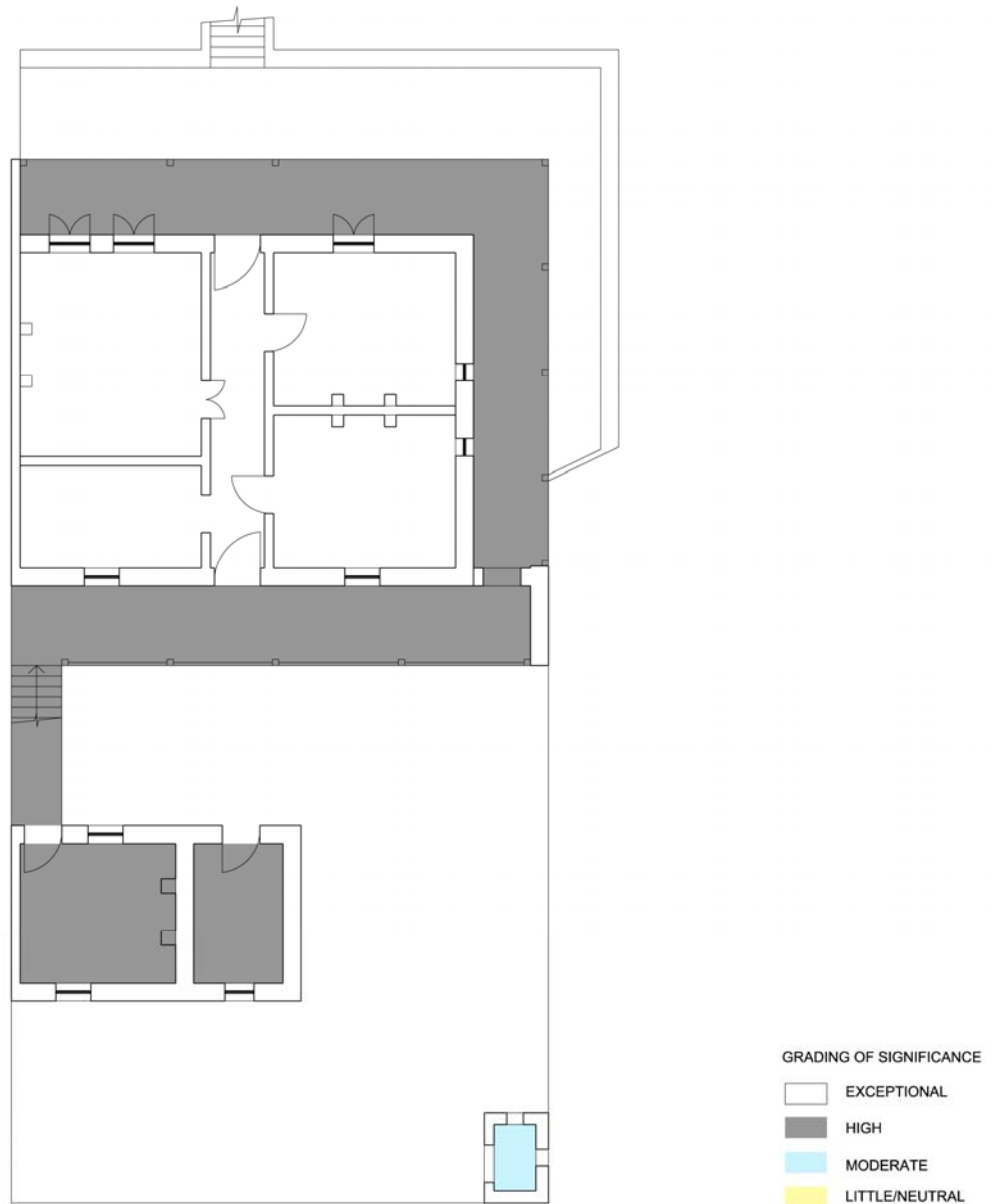


Figure 6.3
 Grading of significance of spaces within the Assistant Keepers' Duplex (north)



ASSISTANT KEEPERS' DUPLEX



Figure 6.4
Grading of significance of spaces within the Assistant Keepers' Duplex (south)

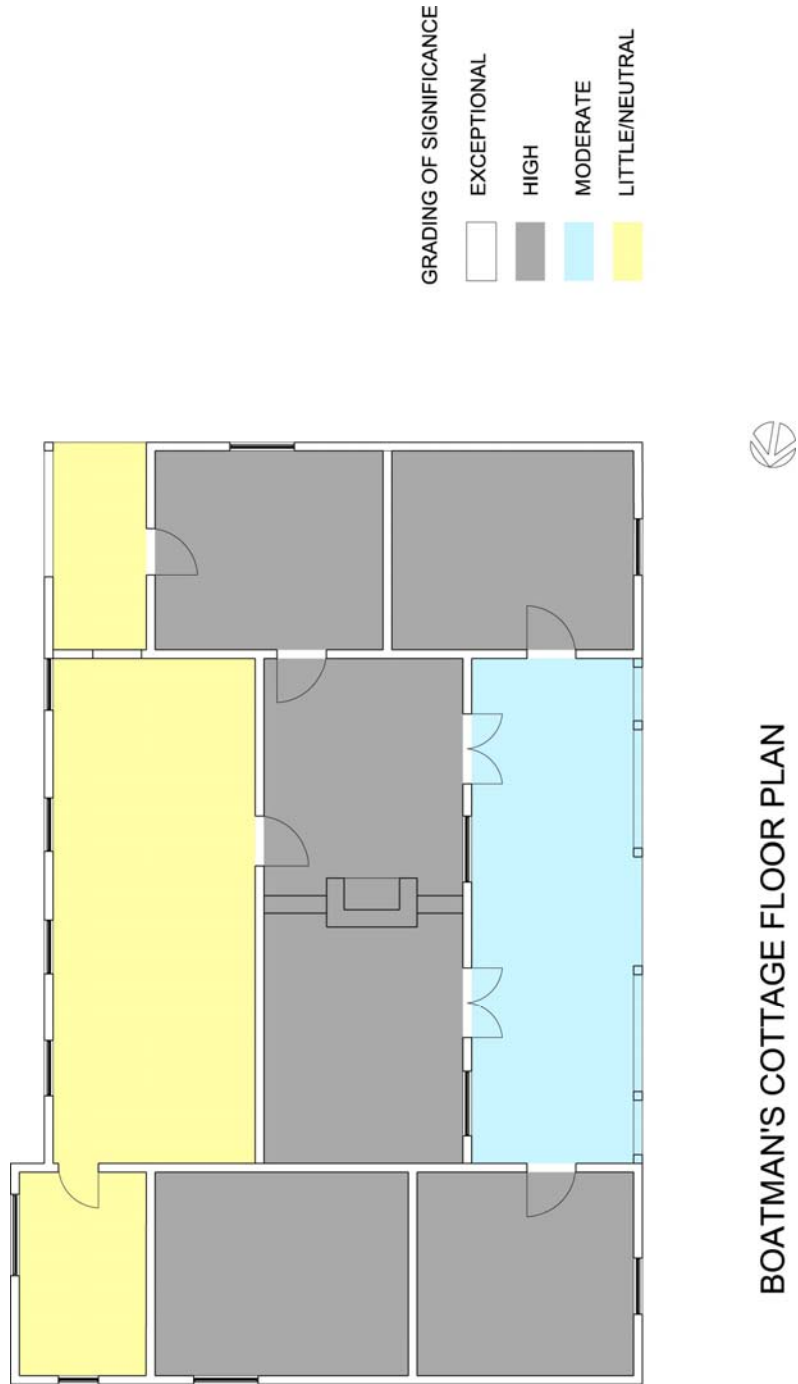
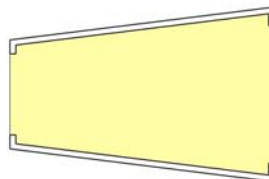


Figure 6.5
Grading of significance of spaces within the Boatman's Cottage



7 OPPORTUNITIES AND CONSTRAINTS

7.1 INTRODUCTION

The State Heritage values of the Barrenjoey Headland described in Section 6.0 result in constraints and opportunities that may apply to the future use and management of the place, and must be taken into account in its ongoing conservation and maintenance.

The following section outlines the principal heritage constraints and opportunities which may arise from relevant state and local legislation, as well as the *National Parks and Wildlife Act 1974* (as amended 1998). Other constraints and opportunities that may be due to legislative compliance are also briefly outlined.

Potential constraints and opportunities arise from the following:

- Statement of Significance;
- Interpretive and re-use potential of the place and access issues;
- Physical Condition of the Buildings; and
- Legislation, departmental policy and heritage listings.

The opportunities and constraints summarised in this section underpin the Conservation Policies located within Section 8.

7.2 STATEMENT OF SIGNIFICANCE

The future conservation, development and ongoing management of the Barrenjoey Headland should take account of constraints arising from the identified heritage values of the site and its setting. Constraints that arise from the assessed heritage values of the place include:

- The lighthouse and the original lighting equipment within the lantern should be retained in their existing configuration.
- The aspects of the buildings within the Lighthouse Keeper's Precinct that reflect their modelling to the location in response to the weather and environment should be retained and conserved.
- The three lighthouse keepers' cottages with their distinguishing features, ashlar sandstone construction, associated gardens and substantial retaining walls, sandstone stone staircases, cast iron balustrades and stone chimney pieces, should be retained.
- The alignment and significant features of the main access track, smugglers track and trolley route should be retained.

While the heritage significance of the place poses constraints on management, it also opens opportunities for enhanced recreational facilities and services; cultural tourism, education and heritage studies; on-going use and potential adaptive re-use of buildings, and interpretation and presentation of the complex layers of cultural and natural historical development.

Opportunities to interpret the heritage values of the place should be investigated and implemented, particularly where they can be integrated into the daily use and ongoing care of the place. The three lighthouse keepers' cottages in particular should be subject to specialist interpretation to the public in future proposals for adaptive re-use.

The opportunity also exists to:

- Retain the natural vegetation of Barrenjoey Headland including the remnant Victorian and Edwardian garden plantings in the Lighthouse Keepers' Precinct. These should be conserved in a way that continues to contribute to the evocative character of the place.
- Interpret landscape features associated with the Barrenjoey Headland including the Stewart Towers and Mullhull Grave as points of interest.

7.3 INTERPRETATION / RE-USE / ACCESS

Lighthouses are popular tourist attractions and provide opportunities for the public to learn about Australia's maritime history and life in the late 1800s and early 1900s, and to enjoy the beauty of some of the most rugged sections of the NSW coastline. Currently visitors can access the Lighthouse Keeper's Precinct by walking up a steep walking track. Access into the Lighthouse and one of the rooms in the Head Lighthouse Keeper's Cottage are through guided tour only. Currently tours take place between 11am and 3pm every Sunday. The Assistant Light Keepers' duplex is not open to the public and is vacant, while the Fishermens' Cottages are tenanted, and the Boatman's Cottage is leased by a NPWS Field Officer responsible for the area. There are currently no toilet or water facilities for public use anywhere on the headland. The lack of toilet facilities is an ongoing issue due to the amount of time it takes to climb the headland and the lack of available fresh water is a safety issue especially on hot days and particularly due to the steepness of the climb to the Lighthouse Precinct.

The opportunity exists for the current level of interpretation and public access to be increased through increased tours and more interpretive material. Given the history of the cottages as residences, the opportunity also exists to adaptively reuse the cottages for accommodation. This is in keeping with Section 20 of the Conservation Management and Cultural Tourism Plan⁵⁶, which outlines a range of preferred uses for lighthouse complexes.

Any decisions relating to the interpretative capacity and re-use potential of individual buildings will be constrained by the heritage significance of their components (see Section 6.5.1) as well as their relative contribution to the overall significance of the Barrenjoey Headland. Any adaptive re-use option within the Barrenjoey Headland will be constrained by:

⁵⁶ Graham Brooks and Associates, NSW Lighthouses Conservation Management and Cultural Tourism Plan prepared for NSW National Parks and Wildlife Services, November 2001

- the difficulties of access (presently there is one access road and one walking track from the Customs House Precinct up to the Lighthouse Precinct);
- National Construction Code (NCC) requirements (formerly BCA);
- The need to conserve the setting and maintain visual presence of the place as a whole; and
- Costs of providing upgraded service infrastructure.

In keeping with the principles of adaptive re-use, the proceeds from any tourism opportunities should be used to maintain the historic buildings within the Barrenjoey Headland.

7.4 PHYSICAL CONDITION OF THE BUILDING

Given the level of significance and intactness of much of the external and internal fabric, this fabric should be conserved and maintained to extend its life as long as possible.

In general, the complex of buildings and structures within the Barrenjoey Headland are in sound condition. There are however opportunities to reinstate elements that are missing and to undertake maintenance works to the interior and exterior of the structures. The Conservation Manual prepared in conjunction with this CMP summarises the catch-up and refurbishment works that need to be undertaken to prolong the life of the structures and maintain their heritage significance. The Manual also identifies refurbishment works that are required to bring the condition of the cottages to a state which will allow for potential leasing for accommodation. The vacant cottages are at risk of vandalism and ongoing deterioration. Providing a use for these cottages will ensure the general up-keep and maintain the significant heritage fabric.

Funding opportunities should be sought to undertake the catch-up maintenance works as well as the refurbishment works identified in the Manual to conserve and extend the life of the external and internal fabric.

7.5 LEGISLATION, DEPARTMENTAL POLICIES & LISTINGS

7.5.1 HERITAGE LISTINGS

The Barrenjoey Lighthouse Station has the following heritage listings.

State Heritage Register

The *Heritage Act 1977* (NSW) includes a range of provisions for identifying and protecting items of environmental heritage. The State Heritage Register (SHR) is a list of heritage items of particular importance to the people of New South Wales. It includes items and places (buildings, works, relics, movable objects or precincts) of State heritage significance endorsed by the Heritage Council of NSW and the Minister. 'Barrenjoey Head Lightstation' was placed on the SHR in April 1999 (listing number 00979). The curtilage for this listing has not been established.

The SHR is established under Section 22 of the *Heritage Act*, and pursuant to Section 57(1) of the *Act*, the approval of the Heritage Council of NSW is required for any proposed development within the site including subdivision, works to the grounds or structures or disturbance of archaeological 'relics'.

The *Heritage Act* requires the minimum standards of maintenance and repair to apply to items included on the SHR to ensure that heritage significance is maintained. These standards are set out in the *Heritage Amendment Regulation 1999*, and relate to weatherproofing, fire protection, security and essential maintenance.

Non-indigenous relics on the headland are protected by the *NSW Heritage Act, 1977*. According to s60 of the *Act*, approval is required if relics (defined as any non-Aboriginal deposit, artefact, object or material evidence of State of Local heritage significance) will, or are likely be affected by development, moved, damaged, destroyed or excavated. Because the site is listed on the State Heritage Register, application for these activities within the listed curtilage needs to be made pursuant to s60 of the *Heritage Act*.

Section 57(2) of the *Heritage Act* provides for a number of Exemptions to Section 57(1) approval requirements. Exempted development does not require prior Heritage Council of NSW approval, nevertheless an exemption notification form needs to be completed and submitted to the Executive Director of the Heritage Branch. Exemptions are of two types: Standard and Specific.

Standard Exemptions which apply to all items on the SHR generally include minor and non-intrusive works and are subject to some qualifications in some instances. Typical exempt works include maintenance (to buildings and gardens), minor repairs and repainting in approved colours. The Heritage Council of NSW's current Standard Exemptions are provided in Appendix C. Standard Exemptions do not apply to the disturbance, destruction, removal or exposure of archaeological 'relics'.

Specific Exemptions include those works specifically approved for a site on the SHR. Opportunities to develop specific exemptions for the management of the site should be developed where possible to allow for efficiency in obtaining heritage approvals for routine conservation works. It is recommended that NPWS make an application for Specific Exemptions through the Heritage Council of NSW for particular works or activities specified in this CMP and Conservation Manual which are to be endorsed by the Heritage Council of NSW.

NPWS Heritage and Conservation Register

Under Section 170 of the *Heritage Act*, all Government instrumentalities are required to establish and maintain a Heritage and Conservation Register that details each item of environmental heritage that the agency owns, manages or leases. This register, also referred to as a Section 170 Register, comprises individual inventory entries for each item or place that has been identified to be of heritage significance. Barrenjoey Lighthouse is identified as item 00979 on NPWS's Historic Heritage Information System.

Listing on the Register does not result in any additional approvals requirements, but under Section 170A(1) of the *Heritage Act*, it does require NPWS to notify the NSW Heritage Council in writing no less than 14 days prior to:

- removing the item from the register;
- transferring ownership of the item; or
- ceasing to occupy or demolishing the item.

Section 170A(2) of the *Heritage Act* also requires that listed items be maintained with due diligence and that government owners comply with the State Owned Heritage Management Principles contained in the State Agency Heritage Guide. The principles advocate a best practice approach to heritage management, and consequently, NPWS will need to actively and carefully monitor the condition of the building in order to ensure that the principles within the State Agency Heritage Guide are achieved.

Pittwater Local Environmental Plan 1993 (LEP)

The following items are included on Schedule 9 of the LEP which lists items of environmental heritage within the LEP area:

- Barrenjoey Lighthouse & two cottages (Database No. 2270104) - Lots 1–4, DP 849249
- Site of former Customs House (Database No. 2270102) - Western side, Lot 5, DP 849249
- Memorial Cairn (near lighthouse) (Database No. 2270093) - Lot 1, DP 849249
- Grave (Database No. 2270095) - Lot 5, DP 849249
- Memorial Cairn (Database No. 2270) - Lot 5, DP 849249
- Stone path leading to Barrenjoey Lighthouse (Database No.2270127) - Lot 5, DP 849249

The lighthouse is also situated in a Heritage Conservation Area, 'Barrenjoey Conservation Area', which is an area made up of Barrenjoey headland and Sand Isthmus (comprising Lots 1–6, DP 849249, Lot 2, DP 540435, Lot 132, DP 752046, Land Nos 023 and 015).

Australian Heritage Council – Register of the National Estate

The Australian Heritage Council is a Commonwealth authority, which compiles and maintains the Register of the National Estate, an inventory of places of natural and heritage significance in Australia.

Barrenjoey Lighthouse Group was registered on the Register of the National Estate in 1980 (Place File No. 1/13/037/0003).

Listing of the Register of the National Estate however has no statutory implications for the management of places of non-Commonwealth ownership. It is however a recognition of the significance of Barrenjoey Lighthouse and its associated structures.

7.5.2 LEGISLATION, DEPARTMENTAL POLICIES

National Parks and Wildlife Act 1974 as amended 1998

The *NSW National Parks and Wildlife Act 1974* (NPWA) established the NSW National Parks and Wildlife Service (NPWS now also referred to as the Parks and Wildlife Group), which is part of the Office of Environment and Heritage (OEH).

The main function of the NPWS is to administer national parks and other lands under the *National Parks and Wildlife Act* and under the *Wilderness Act*. NPWS also have responsibility for threatened species under the *Threatened Species Conservation Act 1995*.

The purpose of reserving land as national parks is to identify, protect and conserve 'areas containing outstanding or representative ecosystems, natural or cultural features or landscapes or phenomena'.

Among the other types of reserves established under the NPWA is a historic site. These are sites with buildings, objects, monuments, features or landscapes that are associated with a person, events or historical themes of cultural significance. Dedication as an historic site can facilitate greater involvement of private enterprise and commercial opportunities, than is generally allowed in a national park.

The objects of the NPWA are as follows:

- a) The conservation of nature, including, but not limited to, the conservation of:
 - (i) Habitat, ecosystems and ecosystem processes, and
 - (ii) Biological diversity at the community, species and genetic levels, and
 - (iii) Landforms of significance, including geological features and processes, and
 - (iv) Landscapes and natural features of significance including wilderness and wild rivers,
- b) The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to:
 - (i) places, objects and features of significance to Aboriginal people, and
 - (ii) places of social value to the people of New South Wales, and
 - (iii) places of historic, architectural or scientific significance,

Approvals Processes

The approvals process for cultural heritage items is set out in OEH's guidelines *Guide to approvals: Cultural Heritage Items on Land Gazetted under the National Parks and Wildlife Act 1974*. These guidelines set out in detail the assessment and approval requirements to fulfil the OEH's statutory and heritage management responsibilities under the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Heritage Act 1977* (Heritage Act) and the *National Parks and Wildlife Act 1974* (NPW Act) and provide additional advice to accompany the OEH's REF guidelines and EP&A Manual.

Plan of Management

Management Plans must be prepared 'as soon as practicable' for national parks, historic sites, nature reserves and karst conservation reserves, upon which the community can comment, and which endorsed by the Minister for the Environment. Plans of management are subject to regular review which may incorporate the findings of planning documents prepared subsequently including Conservation Management Plans. The headland is included in the 2002 Plan of Management Kuring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature

Reserves⁵⁷. One of the specific objectives of the Plan of Management is: "Promotion of increased public awareness and understanding of the importance and value of protecting the natural and cultural heritage of the national park and nature reserves in their own right, and as part of a system of conservation reserves within the Sydney metropolitan area."

Policies and actions identified in the current Plan of Management directly related to historic heritage within the Barrenjoey Headland are listed below:

- The shacks and boat shed at the base of Barrenjoey Head will be recorded and may be removed subject to the provisions of the Conservation and Cultural Tourism Plan.
- The Service will implement the Conservation and Cultural Tourism Plan following public exhibition and adoption.
- The 1881 configuration and pre-1932 fabric of the lighthouse and lighthouse keeper's cottages will be managed in accordance with the Conservation and Cultural Tourism Plan.
- As far as possible the fabric of the lighthouse and the lighthouse keepers cottages will be preserved and interpreted; the roofs of the cottages may be coloured to make them less obvious; the verandahs may be reconstructed

Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSCA) aims to conserve threatened species, populations, ecological communities and their habitats; to promote their recovery, and manage the processes that threaten or endanger them. A number of plant species found within the Ku-ring-gai National Park are listed as either endangered or vulnerable under the TSCA (Refer to Section 4.1.3 of Plan of Management document). Under the TSCA, a recovery plan and/or threat abatement plan must be prepared for endangered and vulnerable plants.

Noxious Weeds Act 1993

The *Noxious Weeds Act 1993* places an obligation on public authorities to control noxious weeds on land it occupies to the extent necessary to prevent such weeds spreading to adjoining lands. Weeds identified under this Act that occur on the Barrenjoey Headland include bitou bush, asparagus fern and lantana.

Draft Metropolitan North East Region Pest Management Strategy 2012-16

The draft strategy (in preparation) identifies priorities for management of weeds including:

- Critical – control of weeds from the endangered ecological communities and a buffer area around them

⁵⁷ NSW National Parks and Wildlife Service, 2002, Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management.

- High – control of weeds within the Customs House and Lightkeepers’ precincts

Leases and Licences in National Parks

The Minister can grant leases within a national park to provide accommodation and facilities and licences to carry out trade or business activities. Within the terms of the *National Parks and Wildlife Services Amendment Act 2001*, Section 151B states that Leases and Licences of reserved land are to be in accordance with the plan of management. Leasing and licensing includes:

- Licences for ‘modified natural areas’ for ‘any purpose’
- Leases for ‘adaptive reuse’ of existing buildings and structures for specified purposes
- Restrictions on leases for residential accommodation, and
- Public register for all leases, rights of way and easements.

In relation to the Barrenjoey Headland, the 2002 Plan of Management⁵⁸ document states that: “Leases, licences and consents for commercial activities may prescribe the approved activities, location and frequency of activities, maximum group sizes and minimum guide ratios for each activity, guide standards, fees, appropriate behaviour and other special provisions to ensure the long term protection of the park, park visitors and recreation opportunities.”

Community Consultation

Various community groups, non-government agencies and professional associations have an on-going interest in the conservation and management of the cultural values of Barrenjoey Headland. Although the NPW Act does not specifically provide for the participation of members of the public in the management of NPWS’s responsibilities other than under Part 4A (Aboriginal Ownership provisions) and Part 5 (Plans of Management), the OEH Interim Corporate Plan 2012-13 specifies active engagement with the community across the spectrum of management issues to achieve common goals.

OEH also requires effective consultation with Aboriginal people as a fundamental component of the Aboriginal Heritage Impact Permits assessment process under part 6 of the NPW Act 1974. The process for Aboriginal community consultation is outlined in the OEH guideline Aboriginal Cultural Heritage Consultation Requirements for Proponents 2012.

The management, conservation and analysis of the Headland should also comply with the principles of other current OEH cultural heritage policies and guidelines .

⁵⁸ Op cit NSW National Parks and Wildlife Service 2002

8 CONSERVATION POLICIES

8.1 VISION STATEMENT AND PURPOSE OF THE POLICIES

The heritage significance of the Barrenjoey Headland carries with it implications for the future use and management of the site. The following vision statement captures the vision and aims of the conservation policies for the Precinct that arises from the historical development of the place, its heritage significance, and relevant constraints and opportunities.

The collection of buildings, works and landscape modifications within the Barrenjoey Headland illustrates significant themes and stories associated with early navigational history, the local environment, culture, and communities of the area.

Barrenjoey Headland will be managed to enhance the visitor experience while conserving the state heritage significance of the place by sharing these stories, improving visitor amenities and providing a sustainable and compatible use for the buildings within their existing setting.

The following General Conservation policies for the Barrenjoey Headland have been developed to retain identified heritage significance, set appropriate future use options and enable procedures by which the above vision can, in the long term, be realised.

The conservation policies are aimed at guiding NPWS, consultants and contractors through the processes of using, changing, conserving, repairing and maintaining the site. The policies are sufficiently flexible in recognising both operational constraints and requirements, while enabling the significance of the place to be retained.

The Conservation Policies in this section are set out in italics and in each case are accompanied by further guidelines for implementation of the policy. In some cases they are preceded by text outlining relevant opportunities and constraints associated with the relevant subject. The policies and guidelines should be read in conjunction with each other. The individual policies are structured under a series of major headings as follows:

- General Policies
- Implications of Significance
- Natural Heritage and Curtilage
- Landscape and Setting
- Conservation and Maintenance Works
- Managing Change
- Archaeology & Aboriginal Heritage
- Public Access and Interpretation

8.2 GENERAL POLICIES

8.2.1 USE OF THIS PLAN

Conservation plans should not be seen as static documents. They are designed to provide the best possible guidance to owners and managers of significant heritage places. As new information comes to light about a place through research or on site investigation this should be used, where appropriate, to refine the conservation policies.

Policy 1

- *Adopt the CMP as the basis for managing the heritage values of the Barrenjoey Headland. Review it periodically and ensure it is accessible to park managers.*
- *Ensure that future revisions of the Ku-ring-gai Chase National Park Plan of Management are consistent with the key policies of this document.*

Guidelines

- Minor review of the plan at five year intervals and a major review at 10 years or whenever critical new information comes to light or when major changes in use or management are proposed.
- This CMP is a management document and should be provided to NPWS staff and those responsible for ongoing maintenance and management of the Precinct.
- Incorporate the findings and recommendations of this CMP in all relevant future plans of management.
- This CMP should be distributed by NPWS to the following repositories:
 - the local historical society
 - NSW Heritage Branch, Office of Environment and Heritage.
 - Pittwater Council

8.2.2 THE BURRA CHARTER

The *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance, The Burra Charter*, has been widely accepted across Australia as the underlying methodology by which all works to built structures, which have national, state or local significance are undertaken.

Policy 2

Ensure all conservation works, maintenance programs and new works are undertaken in accordance with the aims and intentions of the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance: The Burra Charter.

8.2.3 HERITAGE AND PLANNING APPROVALS

Work within the Barrenjoey Lighthouse Precinct is subject to approval as specified in the *NSW Environmental Planning and Assessment Act, 1979* (EP&A Act), as well as Section 57(1) and Section 170A of the *NSW Heritage Act, 1977*.

Policy 3

Check heritage and planning approval requirements prior to planning any changes to the place. Obtain any necessary approvals prior to undertaking work and carry out work in accordance with any conditions placed on these approvals.

Guidelines

- Any new conservation, adaptive reuse or redevelopment work undertaken will require approval under section 60 of the *Heritage Act*
- Details about approvals processes and their relationship to the EP&A Act can be obtained from the “Guide to Approvals: Cultural heritage items on land gazetted under the NPW Act” on the OEH website. Standard exemptions can be obtained from the NSW Heritage Council website www.heritage.nsw.gov.au.
- Section 57(1) of the NSW Heritage Act 1977 identifies Standard Exemptions for works not requiring Heritage Council approval (see Appendix C). In addition to these, it may be appropriate to identify site specific exemptions (refer to Section 8.5.3).
- As a state owned heritage asset, Barrenjoey Lighthouse is also listed on NPWS’s Heritage and Conservation Register and is thus subject to the requirements of s170 A of the NSW Heritage Act, 1977. This includes requirements to notify the Heritage Branch, Office of Environment and Heritage, if all or part of the asset is to be sold, transferred or proposed to be demolished. Further guidance can be obtained from the State Owned Heritage Principles and Asset Management Guidelines, which can be downloaded from the Heritage Branch website.

8.2.4 NPWS LIGHTHOUSES CONSERVATION MANAGEMENT AND CULTURAL TOURISM PLAN

Barrenjoey Lighthouse is one of a group of ten lighthouses managed by NPWS in NSW.

Policy 4

Refer to Part D and H of the 2001 Conservation Management and Cultural Tourism Plan specifically when considering Barrenjoey Lighthouse as part of the collection of NPWS lighthouses to ensure the cultural values of the precinct are readily accessible both to the people of New South Wales and to overseas visitors.

Guidelines

- Conservation of Barrenjoey Lighthouse Precinct shall take place in the context of well managed and responsible cultural tourism programs that link and co-ordinate the lighthouse into the overall NPWS collection.

8.2.5 NATURAL HERITAGE

The Barrenjoey Headland forms part of Ku-ring-gai Chase National Park and is subject to the 2002 Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management. The plan has the following general objectives, which apply to all National Parks in NSW:

- the protection and preservation of scenic and natural features;
- the conservation of wildlife, including the maintenance of biodiversity and populations of threatened species;
- the maintenance of natural processes as far as is possible;
- the preservation of Aboriginal sites;
- the conservation of historic features;
- the encouragement of scientific and educational enquiry into environmental features and process, Aboriginal and historic features; and
- the provision of appropriate recreation opportunities.

The following specific objectives also apply to the areas covered by the plan:

- Protection of the national park and nature reserves as part of a system of parks and reserves which together protect the natural and cultural heritage, water catchments and scenic values of the lower Hawkesbury River and its tributaries;
- Maintenance of ecological integrity within the park and reserves, and between the park and reserves and adjoining areas, consistent with their purpose of reservation;
- Promotion of Ku-ring-gai Chase National Park as a show place for the parks of the lower Hawkesbury River, with a variety of visitor facilities and experiences which are appropriate to the national park and lead towards ecologically sustainable use of the park; and

- Promotion of increased public awareness and understanding of the importance and value of protecting the natural and cultural heritage of the national park and nature reserves in their own right, and as part of a system of conservation reserves within the Sydney metropolitan area.

Policy 5

- *The landscape and scenic values of the park and nature reserves when viewed from both within and outside the park and reserves will be maintained.*
- *The natural foreshores, hill slopes and ridgelines will be retained free of built elements*
- *As far as possible the natural abundance, structure and diversity of all native plant species and communities will be conserved through the maintenance of natural processes, the mitigation of human impacts and through specific conservation programs and bush regeneration programs where necessary.*
- *Remove non-native vegetation from the areas of littoral rainforest on the headland.*

Guidelines

- The area of the former Lighthouse Keeper's garden above the Smuggler's Track will need to be further assessed to determine if any evidence, including vegetation, remains that needs to be retained for interpretative purposes.
- Implement the actions contained within the 2002 Plan of Management document relating to Noxious Weeds and Threatened Species.

8.2.6 CURTILAGE

A curtilage is a space or setting that provides a physical context as well as a buffer for elements or items that embody the key aspects of significance of a place.

Policy 6

- *Adopt the management curtilage for the Barrenjoey Lighthouse and setting as shown in Figure 8.1.*
- *Use this curtilage to update the heritage listing for the site on the NSW State Heritage Register.*
- *Manage the core aspects of the site's significance including its setting within the natural landscape.*

Guidelines

- Refer to the policies contained in section 8.4.

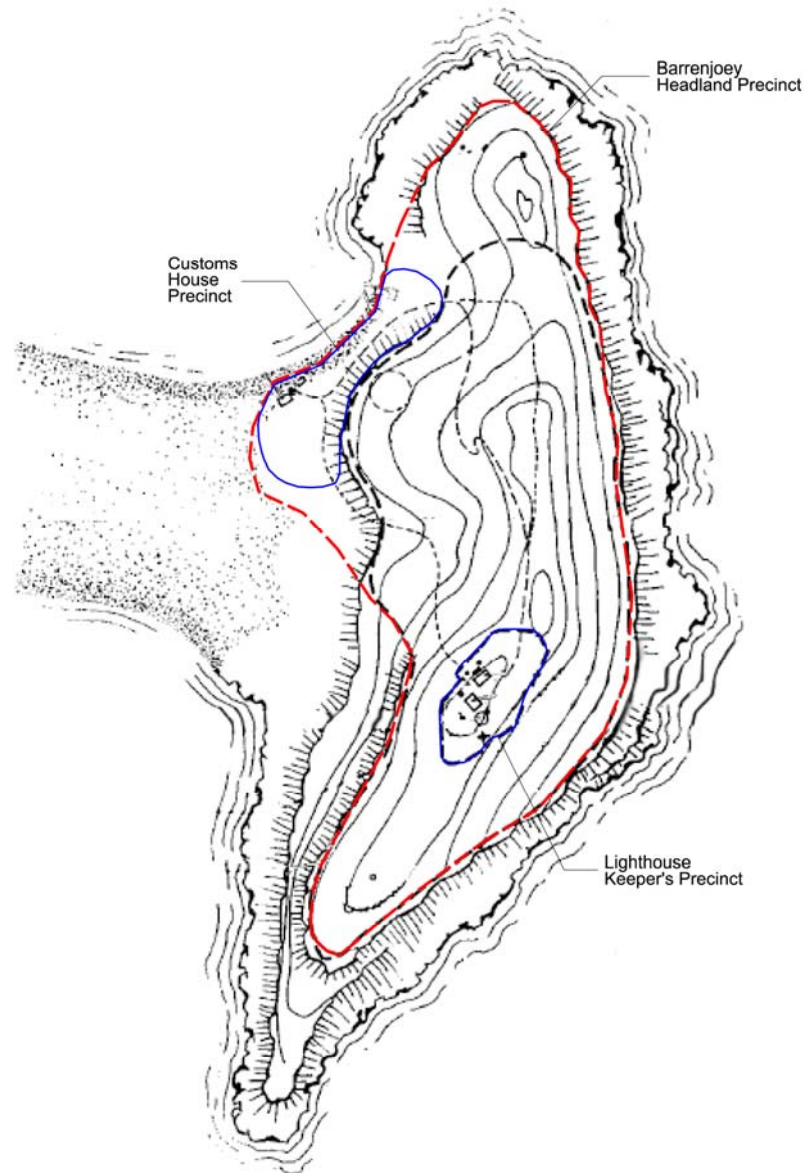


Figure 8.1
Proposed heritage curtilage for the Barrenjoey Headland, established to assist in managing the heritage values of the place (GAO 2010).

8.3 IMPLICATIONS OF SIGNIFICANCE

8.3.1 CONSERVATION OF KEY ASPECTS OF SIGNIFICANCE

Policy 7

Conserve the identified heritage values of the Barrenjoey Headland by retaining and managing the key aspects of heritage significance listed in the guidelines below, using the policies in this CMP for guidance.

Guidelines

- Values and characteristics outlined in Section 6.4 are integral to the heritage significance of the Barrenjoey Headland.
- The loss of any of values or characteristics identified in Section 6.4 graded as being of exceptional, high or moderate significance would represent a substantial and negative impact to the heritage significance of the place. The maximum amount of fabric, uses and meanings associated with them should be conserved. This should be an overarching aim in future management of the place.
- The ongoing operation of the Lighthouse by NSW Waterways as an operational navigation aid should be maintained.

8.3.2 TREATMENT OF GRADINGS OF SIGNIFICANCE

Policy 8

Manage the components of the Barrenjoey Headland according to the gradings of significance identified in Section 4.5.2 and the table below.

Guidelines

The following table provides policies relating to the treatment of components of different levels of heritage significance, as established in Section 4.5.2. The table should be referred to as a general guide only, as there may be exceptions to these general rules. Such appropriate exceptions should be assessed and determined by a suitably qualified heritage practitioner.

Level of Significance	Conservation Policies
Exceptional	<p>Items of Exceptional Significance should be conserved and interpreted as a priority.</p> <ul style="list-style-type: none">• Aim to retain all fabric.• Avoid adding new fabric, where this will result in a negative impact on significance.• If adaptation is necessary for the continued use of the place, minimise changes unless such changes have minimal impacts on significance.• Give preference to changes that are reversible.• Prior to any change, full archival recording is essential (refer to Section 8.6.8).• Take the opportunity to interpret the heritage significance of the item.

Level of Significance	Conservation Policies
High	<p>Fabric, elements and buildings of High Significance should be conserved and interpreted.</p> <ul style="list-style-type: none"> • Aim to retain the original fabric or renew using matching components. • Prior to major changes, archival recording is required. • Avoid adding new fabric, where this will result in a negative impact on significance. • Some adaptation may be acceptable, particularly if it is undertaken in a manner consistent with the significance, style and character of the site. • Give preference to changes that are reversible.
Moderate	<p>Fabric, elements and buildings of Moderate Significance should be retained.</p> <ul style="list-style-type: none"> • If the retention of the item compromises the future sustainable use of the item or site, where possible, consideration may be given to alteration or demolition, provided that the change enhances overall significance and can be justified. • Prior to any demolition or major change, archival recording is required.
Little/Neutral	<p>Fabric, elements and buildings of Little/Neutral Significance should be retained, but may be demolished or removed to reveal significant fabric or as required for the future use of the place, provided that their removal would cause no damage to adjacent significant fabric.</p>
Intrusive	<p>Intrusive fabric, elements and buildings should be demolished or removed. They could also be altered to reduce the level of intrusion as required for the future use of the place, to increase the heritage significance of the site or adjoining fabric, while minimising damage to adjacent significant fabric.</p>

8.3.3 MOVABLE HERITAGE

Movable heritage items may be an integral part of the significance of heritage places. It can also be associated with cultural groups, communities or regions of New South Wales. Movable heritage is used to define any natural or manufactured object of heritage significance (except for archaeological relics).

Like other types of heritage, movable heritage provides historical information about people's experiences, ways of life and relationships with the environment. Because movable heritage is portable, it is vulnerable to loss, damage, theft and dispersal, often before its heritage significance is appreciated.

The movable heritage collection at Barrenjoey Lighthouse consists of 65 items owned by NPWS and approximately 50 items on loan from Mark Sherriff (Barrenjoey Lighthouse maintenance consultant), Queensland Museum and the Australian Maritime Safety Authority. Some items are from the lighthouse cottages as well as the lighthouse itself.

The Northern Beaches Area of the OEH maintains a register of all the movable heritage items in the Head Lighthouse Keeper's Cottage and Oil Room. A summary of the items is provided below:

Books, documents and photographs: The collection includes some paper based materials including photographs, documents and visitors books, instruction and log books.

Lighthouse operational equipment: Signalling equipment such as a morse code signaller, Some items relate to the operation of the lighthouse and the history of the changing technology of the light such as kerosene cans, an electric lamp, kerosene lamp, diesel fuel storage tank, oil can for the lantern, kerosene pump, a copper funnel for filling kerosene, signalling code flags, volt meter, spare parts for the lighthouse diesel engine, fire escape rope, box containing Commonwealth Lighthouse Service brass clockwork items, acetylene bottle holder.

Maintenance items: for maintaining the lighthouse. These include a file brush, pressure spray for bugs, ladder for the external catwalk on Barranjoey, fire extinguisher, dustpan and tray, large metal pan with Dept of Defence logo, pegboard with lighthouse tools, fire bucket, lighthouse mechanics carry bags, heavy steel wedges, brass blowtorch.

Building fabric items : Fence posts, steel downpipe bracket, metal stake for the lighthouse flagpole, timber verandah brace, gate latch, fire grate.

Signs: Collection of signs including International code of signals, Buttercup Cakes, Barrenjoey Lighthouse with AMSA logo.

Furniture: Chairs, red cedar desk, lighthouse table, mirror.

Other: binoculars, 1881 sandstone rock, oar, Barrenjoey Head life buoy.

Policy 9

- *Comply with OEH's movable heritage guidelines.*
- *Continue to systematically locate, identify, catalogue, confirm ownership of and conserve items of movable heritage presently located at the site.*

Guidelines

- Ensure that remnant artefacts or surviving technology, such as equipment, documentary records, building fittings or services installations related to the construction and early operational phases of the Lighthouse are retained and conserved within the geographic context of the Lighthouse.
- Consider the development of a broad heritage collections policy that identifies particular pieces, which could be removed to a central interpretive display or collection.
- Any significant artefacts should be conserved and managed in accordance with the requirements of the *Heritage Amendment Bill 1998*.

8.3.4 ONGOING RESEARCH

Although a formal social significance assessment has not been carried out, it is clear that Barrenjoey Lighthouse is of some social significance as a popular destination for recreation and as the subject of numerous books and artistic representations of the Pittwater area. Further consultation is required to establish the level of social significance that the site possesses.

Policy 10

- *Research which assists in improving the management of Barrenjoey Headland will be encouraged.*
- *Commence an oral history collection programme among present and former NPWS personnel, past residents of the buildings within the Barrenjoey Headland and the local Pittwater community.*

Guidelines

- Oral history collection programmes should include capturing of visual evidence of the participants, through a variety of media.
- The results of the programme should be used to update the State Heritage Register listing for the site and also used to establish the extent of community consultation that may be required for any future proposals relating to changes of use, alterations, and or additions.
- The programme should be undertaken in accordance with OEH oral history guidelines.

8.4 LANDSCAPE AND SETTING

8.4.1 LANDSCAPING

Although natural heritage management is often given priority in national parks, management of cultural and natural values needs to be balanced on this site. This includes selective clearing of native vegetation that is obscuring significant cultural features as well as removal of cultural plantings that are spreading, have the potential to spread or are damaging potential archaeological deposits.

The 2003 Heritage Landscape Plan⁵⁹ for the upper area of the headland, including the Lighthouse Keeper's Precinct and Stewart Towers sites had a number of key aims. They focused on: clearing and re-opening spaces around and between the buildings that had been obscured by overgrown vegetation; improving and clarifying access points; revealing and defining building and wall edges and improving safety. The policies below support the aims of the landscape plan, which in turn directly support conservation of significant views, spaces and functional relationships associated

⁵⁹ Op cit Marler 2003

with the operation of the Lighthouse. The policies below also include the Customs House Precinct, which forms part the cultural landscape of the headland but was not included in the 2003 landscape plan.

Key issues in the Customs House Precinct are the spreading of non-native species both through the precinct and into adjoining areas of native vegetation and the potential of these species to damage archaeological deposit.

Policy 11

- *Manage the Barrenjoey Headland as a modified cultural landscape with significant cultural heritage values.*
- *Maintain the open space around the Lighthouse and Keepers' Cottages.*
- *Continue to implement the recommendations of the 2003 Heritage Landscape Plan.*
- *Control non-native vegetation in accordance with the critical and high priorities of the draft Metropolitan North East Pest Management Strategy 2012-15, including removal of non-native vegetation outside the original boundary of the Customs House Precinct that has spread across the dunes and into the gully to the east.*
- *Removal of non-native vegetation within the Lightkeepers and Customs House Precincts is permissible where it has spread from original plantings and/or is a threat to natural or archaeological values.*

Guidelines

- Roots of large trees and shrubs should be poisoned and left *in situ* to minimise disturbance of archaeological deposit.
- Retain and/or replant any non-native vegetation within the gardens of the Lighthouse Keeper's Cottages. Restrict non-native vegetation to this area and the Customs House Precinct.
- Implement outstanding actions from the 2003 Heritage Landscape Plan.⁶⁰
- Refer to the NPWS document: *Cultural landscapes: a practical guide for park management* to support the management of cultural heritage at a landscape scale. The guide reflects current heritage management practice and is available on the OEH website at:
<http://www.environment.nsw.gov.au/chresearch/culturallandscapesguide.htm>
- Make a photographic record of non-native vegetation prior to removing it and include photographs showing the vegetation for interpretation.

⁶⁰ Op cit Marler 2003

8.4.2 SITE STRUCTURE

Policy 12

- *Retain the dramatic landform of the headland as modified by construction and operation of Stewart Towers and the 1881 lighthouse and cottages.*
- *Retain the key elements of the site and their relationship to one another as shown in Figure 4.2.*
- *Continue to maintain the Smuggler's Track and the Access Road as the key points of access.*

Guidelines

- The elements that need to be retained include:
 - The tramway alignment and original fabric;
 - The access road alignment and remnant early fabric;
 - The Smugglers Track alignment and evidence of landform modification to accommodate it;
 - Terracing in the Lighthouse Keeper's Precinct to accommodate the buildings;
 - Open spaces around the lighthouse and Cottages;
 - Aspects of the buildings that reflect their response to the landform and weather including substantial boundary walls and recessed courtyards and access ways.

8.4.3 VIEWS

In order to maintain a sense of the lighthouse complex as it operated historically and its status as an important local landmark, it is important to maintain the views identified in Section 4.1.4 by managing vegetation in the immediate vicinity of the lighthouse and between the cottages themselves.

Policy 13

- *Maintain open views to and from the Lighthouse and the Keepers Cottages to the north, east and south.*
- *Implement a maintenance program to manage the height and density of vegetation at the top of the ridgeline immediately surrounding the lighthouse complex.*

Guidelines

- Native vegetation is becoming too tall in areas on the top of the ridgeline immediately adjacent to the Lighthouse Keeper's Precinct. This vegetation needs to be maintained to retain the significant views.
- Restrict visitor parking to the existing parking area at the bottom of the headland. Consider providing tenant parking outside the Lighthouse Keeper's Precinct.
- Remove overgrown vegetation from the sites of the two Stewart Towers and maintain these as cleared areas so that the sites and the Stewart Monument are not obscured.

8.5 CONSERVATION AND MAINTENANCE WORKS

8.5.1 CONSERVATION WORKS

The aim of any conservation works should be to ensure that the existing fabric is stable, and to retard further deterioration without detracting from the heritage significance of the place. An understanding of the historical development and heritage significance of the site should be a pre-requisite for all those making decisions or carrying out conservation works to the place

Policy 14

Implement the recommended catch-up maintenance works contained in the Conservation Manual (GAO, 2011) for the Barrenjoey Headland.

Guidelines

- Conserve and manage the Lighthouse and associated structures in the context of Barrenjoey Headland being a popular walking and recreational destination and lookout venue.
- Undertake conservation works in accordance with the policies in this CMP. The current methodology stresses the need to document the reasoning behind the selection of a particular approach to enable those undertaking work in the future to understand the aims and intentions of a particular project.
Important note: Current conservation philosophy also stresses the importance of physical or documentary evidence when restoring or reconstructing significant places. Sufficient documentary and/or physical evidence, must be available to ensure the accuracy and authenticity of any reconstruction of any original details or restoration works to highly significant items. Where such evidence is not available, and new work must be undertaken, it should be in harmony with the existing building, but contemporary in nature.
- Documentation and implementation of the works should be undertaken by heritage specialists and tradespersons (Section 8.6.7) and, where necessary, approval or exemption

sought under the *NSW Heritage Act, 1977*. Further advice on heritage approvals is in Section 8.2.3 of this CMP.

8.5.2 ONGOING MAINTENANCE

Maintenance is an important process in the conservation of an item of heritage significance. Currently, the Assistant Light Keepers Cottages receive little maintenance compared to the other structures within the Barrenjoey Headland as they have no primary use. Adequate, consistent and long-term funding for the implementation of cyclical maintenance to all structures within the Precinct is important to ensure conservation of the site's heritage values. This is in line with Part 3 of the *Heritage Regulation 2005*, which requires that items listed on the NSW State Heritage Register are maintained and secured to a minimum standard against the weather, fire, vandals and other intruders.

Once the catch-up maintenance works recommended in the Conservation Manual (GAO, 2011) are completed, it is anticipated that ongoing maintenance should be enough to ensure conservation of the significant heritage values of the group in the medium term.

Policy 15

- *Undertake the cyclic maintenance inspections recommended in the Conservation Manual (GAO, 2011) for the Barrenjoey Headland.*
- *Prepare and implement detailed schedules of works arising from the inspections.*

Guidelines

- Maintenance should not involve the removal of significant fabric, or any other changes to the site that will negatively impact on heritage significance or hinder NPWS's ability to conserve the key characteristics of the site outlined in Section 6.5.1.
- Maintenance activities should generally replace like with like, or ensure that the item is cleaned and maintained in its original or early working condition.
- It is essential that maintenance work does not result in incremental negative heritage impacts, irreversible change or replacement with non-matching materials. Note: maintenance of landscape features can easily result in incremental change
- Consultants and tradespersons involved in planning and implementing maintenance and repair works should be appropriately experienced in their fields and with knowledge of good conservation practice. Care should be taken during all work to ensure significant fabric and/or features are not damaged.
- NPWS should maintain an up-to-date record of all maintenance work undertaken within the Barrenjoey Headland.
- Consideration should be given to applying to the Heritage Office for detailed schedules of works to be recognised as site specific exemptions.

8.5.3 STANDARD AND SPECIFIC EXEMPTIONS

Section 57(1) of the NSW Heritage Act 1977 identifies Standard Exemptions for Works not requiring Heritage Council approval (refer to Appendix C).

Policy 16

- *Establish site-specific exemptions for conservation works, which are in accordance with the conservation policies of this CMP that allow for the efficient day to day operation of the Precinct without gaining unnecessary approvals. These should be based on the detailed schedules of catch-up maintenance works in the Barrenjoey Headland Conservation Manual*

Guidelines

- Site-specific exemptions require approval and gazettal by the Heritage Council in order to come into effect.
- Maintenance under standard exemptions should be preceded by notifying the Heritage Office or its delegate (Executive Director, CCHD) of proposed works.

8.6 MANAGING CHANGE

The policies in this section are designed to assist in managing the significant heritage values of the Barrenjoey Headland when changes are proposed. They cover a range of activities from basic and routine upgrading to major proposals for change.

Changes within the Barrenjoey Headland may occur for a range of reasons. The policies in this section have been divided into key types of change for ease of reference. It is noted however, that a proposal may fall into one or more of these categories and that aspects of the categories overlap. It is therefore important to check all policies in this section when proposing change.

Changes within Barrenjoey Headland will be dependent on approval under the Heritage Act, Types of change that may occur may vary from changes in use to actual physical construction works at the site. Types of changes, dependent on approval as required, could include (but are not limited to):

- conservation and maintenance work (see Section 8.6);
- use and ownership;
- introduction of new fabric (new construction or alteration);
- introduction of new buildings or works related to management and operation of the Lighthouse.

- landscape works
- access arrangements
- signage and interpretation

Policies for conservation and maintenance works are outlined in Section 8.6. Policies for other types of changes are outlined below.

8.6.1 GENERAL POLICY FOR MANAGING CHANGE

Proposed changes should always be carefully considered in the context of the significance of the place and the potential for the change to impact on that significance.

Policy 17

Make decisions requiring change to the Barrenjoey Headland with a clear understanding of the implications on its heritage values and seek to minimise negative heritage impacts.

Guidelines

- Generally, proposed changes that impact on heritage significance graded as exceptional or high should only be considered if:
 - the change is considered necessary to conserve the identified heritage values of the site;
 - the change helps to maintain the security / protection of the significant buildings / elements;
 - the change enhances the ability to communicate the significance to visitors and provides greater opportunities for them to engage with the site;
 - the action is as reversible as possible;
 - there is no feasible alternative.
- Consult with relevant consent authorities, particularly the NSW Heritage Council, as soon as practicable when planning changes to the site, unless there is a standard or gazetted exemption to cover the work.

8.6.2 ASSESS HERITAGE IMPACT PRIOR TO MAKING CHANGE

A heritage impact assessment should be made to evaluate the implications of any proposed changes to the place. This will ensure heritage impacts are clearly understood and taken into account.

Policy 18

Prepare a heritage impact assessment for any change not covered by standard or site specific exemptions.

Guidelines

The assessment should be undertaken by a suitably experienced heritage specialist. The timing of the assessment is important. Initial advice should be sought during early planning and design phases. This will allow heritage impacts to be identified early in the process and mitigated as necessary. Refer to the "Guide to Approvals: cultural heritage items on land gazetted under the NPW Act" on the OEH website for details of approvals. Further information about how to prepare a heritage impact assessment can be downloaded from the NSW Heritage Branch website www.heritage.nsw.gov.au.

8.6.3 PROVISION/UPGRADE OF SERVICES

There are neither toilet facilities nor fresh water available to the public in the Lighthouse Precinct. Public response to the lack of toilet facilities is currently having an impact on the natural heritage of the Lighthouse Precinct and the lack of water is a safety issue for the public, given the steep climb required to reach the Lighthouse Precinct. There is limited electrical service to the Lighthouse Precinct and no mains sewer or water services. A service corridor drilled from the base of the headland to the Lighthouse Precinct in c. 2004 has capacity for conduits for all of the above services but there is currently no service corridor between the base of the headland and the nearest mains connections at Governor Phillip Park. These issues would need to be addressed in order to make adaptive reuse for accommodation or food and beverage provision viable and/or to enable provision of flush toilets and water to the public in the Lighthouse Precinct.

Policy 19

- *Future consideration may be given to the provision of new toilet facilities and fresh water supply for public use, subject to the required environmental assessment and approvals and to other relevant policies.*
- *The provision of mains sewerage and water services and upgrade of electrical services to the Lighthouse Precinct should be investigated.*
- *The provision of new or extended infrastructure services to the Barrenjoey Headland should be undertaken with minimal physical impact on the environs and visual character of the locality.*
- *Any new toilet and/or water facilities should take account of policy 20: New Construction and Adaptation.*

Guidelines

- Where possible, new or extended infrastructure should utilise existing service corridors, which have already been disturbed by earlier development or infrastructure.
- The requirement for services to the Lighthouse Keeper's Precinct, including public toilet facilities, waste disposal and electricity, should be considered in any proposed re-use programmes.
- NPWS should ensure that the existing services to the buildings in the Barrenjoey Headland are maintained and of good quality, including providing a dependable drinkable water source.
- Alternative toilet facilities that do not rely on mains water and sewer connection could be investigated.

8.6.4 USE

A number of the buildings within the Lighthouse Keeper's Precinct are vacant. This places the heritage significance of the place at risk unless and until a new use or uses can be found which will ensure it has a viable future.

The future management and any adaptive re-use of the structures within the Barrenjoey Headland should aim to progressively increase public access and understanding of the heritage significance of the site complex.

Policy 20

- *Adaptive re-use of the buildings on Barrenjoey Headland is permissible.*
- *Future uses should be compatible with the retention and recovery of the character and primary significance of the buildings and their setting.*
- *Future use(s) must have minimal impact on the heritage significance of the place and involve minimal alteration to significant fabric, elements and spaces of exceptional or high significance. Alterations need to take into account the policies contained in Section 8.6.4.*
- *Preferred uses include short or long term accommodation, tourism, food and beverage provision and education..*
- *The use of the buildings within the Lighthouse Keeper's Precinct for accommodation is suitable in that it maintains sustainably the original function as well as ensuring that the buildings are occupied.*
- *The Customs House Precinct should continue to be used for accommodation or be used to enhance the visitor's experience.*
- *The policies set out in this document should apply irrespective of the uses to which the buildings are put*

- *Uses of the headland should be compatible with the retention of the natural and cultural values of the place and permissible under the Ku-ring-gai Chase National Park Plan of Management.*
- *All potential users of the built, landscape, beach and foreshore components of the Barrenjoey Headland should be made aware of the site's heritage significance.*

Guidelines

Barrenjoey Headland

- Future use(s) should enhance the visitor's experience (refer to Section 8.8 for policies relating to Interpretation).
- Any long-term re-use of the site which incorporates public visitation must take into account the need to provide safe access, acceptable levels of public safety, and adequate visitor services.
- All commercial activities within the Precinct are required to have a lease, licence or consent to provide the mechanism for ensuring that activities, levels of use and behaviour are appropriate. Commercial leases and licences need to be regularly reviewed to ensure that the operators are complying with their lease or licence. All leases are to be in accordance with the *National Parks and Wildlife Act 1974* and the Plan of Management⁶¹.

Lighthouse Keeper's Precinct

- The use of the buildings within this Precinct as accommodation will assist in conserving the historic use of the buildings as residences. This use would result in parts of the Precinct (directly surrounding each cottage) to be closed off from public access. As part of any leasing arrangement, ensure that mechanisms are in place that allow for public access throughout the whole Precinct at regular intervals throughout the year. Interpretive material should also be made available for the public to understand the historic connection between the buildings within the precinct.
- Other uses that are compatible with the ongoing conservation of the Barrenjoey Headland such as guided tours and tourism could also be considered. These uses are in keeping with Section 20 of the Conservation Management and Cultural Tourism Plan⁶² which outlines the range of preferred uses for lighthouse complexes.

Customs House Precinct

- Taking into consideration the access issues associated with reaching the Lighthouse Keeper's Precinct, visitor facilities and tourism facilities within the Customs House Precinct should be enhanced.

⁶¹ Op cit NSW National Parks and Wildlife Service 2002

⁶² Op cit Graham Brooks and Associates 2001

8.6.5 NEW CONSTRUCTION AND ADAPTATION

Any adaptation for accommodation or provision of food and beverages is likely to require services including water, sewerage, electricity and waste disposal and may require alterations to include bathroom and kitchen facilities.

Policy 21

- *External alterations or additions to existing buildings should be discouraged, however if required to meet approved interpretation, re-use or cultural tourism requirements, be of a minor nature, subservient to the primary architectural features and composition of the existing buildings, and located in areas which are relatively removed from the main circulation or public spaces within the complex.*
- *The original planning of the spaces within all the cottages should generally be retained. Subdivision of spaces is permissible if necessary for adaptive reuse provided it is reversible and has minimal impact on significant fabric.*
- *Existing spaces can be adapted to allow for re-use, for example as bathrooms or kitchens, provided the design of any approved internal alterations and additions is compatible with the scale, integrity and character of the individual building.*
- *Adaptation that includes upgrading of kitchen and bathroom facilities is permissible provided it is compatible with other policies in this document.*
- *Any site development proposals or programs must take account of Aboriginal and historical archaeological resources within the precinct (refer to Section 8.8).*
- *Any new facilities within the park will be designed, sited and maintained so as to harmonise with their surroundings and not be visually intrusive.*

Guidelines

- New works require s60 approval from the Executive Director, CCHD, OEH under delegation from the Heritage Branch.
- New construction may be permissible provided it is minimal, discreetly located, well designed to blend into the landscape and will not detrimentally affect the significance of the Headland. The visual isolation of the Lighthouse and associated structures should be maintained (see Section 8.4).
- Adaptation of structures should be well designed to minimise visual impact.
- Design and construct alterations and additions in a way that if they were to be removed in the future, the essential form and integrity of the earlier structure would be unimpaired or easily retrieved.

- Fabric identified as exceptional or high significance should be retained, preserved and restored and may be reconstructed. (Refer to Section 8.3.2 Treatment of Gradings of Significance.)

In general, period design or detailing for replacement fabric should be restricted to elements for which there is physical evidence of their original character, or documentary evidence in Architectural drawings or historic photographs.

The use of high quality, integrated, contemporary design is acceptable for new elements, and is preferable to inappropriate period design. Conjectural period detailing in new work is not recommended and is not in accordance with the conservation philosophy of the *Burra Charter*.

- There should be no new door or window openings cut into original external walls.
- Carry out the introduction of new services and associated fittings with the minimum of disruption to the structure's fabric and visual character. Avoid new externally mounted services, to both wall and roof surfaces of items of exceptional and high significance.
- Wherever possible, existing penetrations in original fabric should be re-used. New penetrations in this fabric should be kept to a minimum and located in areas of lesser significance wherever possible.
- Prior to, during and after any approved alterations or additions being made, either internally or externally to any building element or structure, or to the site infrastructure, a detailed photographic recording should be made of the existing state.

8.6.6 DEMOLITION

Policy 22

Demolition or removal of fabric for adaptive reuse in accordance with the guidelines in section 8.3.2 may be acceptable provided appropriate approvals are met including assessment by a heritage specialist and minimising of negative heritage impacts. Elements of Exceptional heritage significance should generally not be affected by any demolition work.

Guidelines

- Should any fabric be demolished or removed, under approved programs of re-use, a photographic recording of the existing state should be undertaken prior to the commencement of any demolition work.

8.6.7 USE APPROPRIATE EXPERTISE

When conserving the heritage values of a place with high to exceptional heritage significance it is particularly important to seek advice from heritage specialists when planning changes to the place.

It is important to involve heritage specialists in planning and design for changes proposed to the Barrenjoey Headland. These specialists can assist in applying the policies in this CMP to specific

proposals and provide options for achieving the desired outcomes while conserving heritage values. They can also detail and supervise work.

Policy 23

- *Seek advice from a suitably experienced heritage specialist when planning, designing and implementing changes to the elements listed as having moderate to exceptional heritage significance within this CMP or where new works are proposed that may aesthetically impact the surrounding cultural landscape.*
- *Engage suitably experienced trades persons who have had experience working at sites of heritage significance.*

Guidelines

Work to significant elements should be supervised and undertaken by consultants, contractors and staff who have proven experience and expertise in conservation project works in their relevant field. Many negative heritage impacts occur unintentionally and despite careful planning, where staff are unaware of heritage issues or are inexperienced in working with historic building materials and techniques. It is important that contractors undergo a heritage induction before commencing work on site. Specifically:

- Seek input from heritage specialists at the concept stage for any proposal to change elements listed as having exceptional, high or moderate heritage significance in the table in Section 6.5.1 of this CMP. Also seek advice at the concept stage for any other work that may affect the visual setting of the Lighthouse.
- Depending on the nature of the work proposed, advice may be needed from a heritage architect, stone conservation specialist, heritage engineer, archaeologist, interpretation or landscape specialist or it may be more appropriate to involve a team of specialists. Generally for structural or conservation works to the heritage buildings within the site, a heritage architect should be contacted. They can then advise if other specialist skills are needed.
- Heritage specialists including OEH staff can also assist with compliance of obligations under the *NSW Heritage Act 1977* and other planning regulations.

8.6.8 ARCHIVAL RECORDING

Archival recording allows characteristics of a place to be conserved in the historic record when changes are proposed. It also allows future researchers to understand how the place has changed over time. Keeping records of change including works specifications, heritage impact documentation, copies of works applications and before and after photographs will help future managers and heritage specialists to understand what has happened to the Barrenjoey Headland over time.

Policy 24

- *Archive the existing measured drawings for the structures within the Barrenjoey Headland.*
- *Undertake archival recording prior to works, including conservation works, to elements listed as having exceptional or high heritage significance in the table in Section 6.5.1 of this CMP.*

Guidelines

- In some cases, for minor works, a heritage impact assessment may suffice as a recording of the site and the proposed works. For more ambitious programs of conservation work, an archival recording before and after may be required in accordance with the NSW Heritage Council guidelines for such recordings.
- Records of future works proposed and executed should be permanently archived by the NPWS in electronic and hard copy formats.

8.7 PUBLIC ACCESS AND INTERPRETATION

8.7.1 PROVISION OF ACCESS

Vehicular access to Barrenjoey Headland is difficult as it involves crossing a beach and negotiating a steep, single lane road with hairpin bends and no turnarounds. Pedestrian access is via this main road or the Smugglers track, a steep, narrow foot track.

The listing of a heritage place on a statutory heritage register in Australia does not automatically confer exemption from compliance to the Commonwealth's anti-discrimination law, the *Disability Discrimination Act 1992* (DDA). Any heritage building or premises with a public function must be accessible to people with disabilities.

The new *Disability (Access to Premises – Building) Standards 2010* was enforced on the 1st May 2011. The 'Premises Standards' applies to new public buildings and parts of existing buildings undergoing renovation or upgrade including change of use. The Building Code of Australia (BCA) has recently been amended so it is consistent with the Access Code of the Premises Standards.

Federal, state/territory and local government discrimination and heritage legislation and regulations are complex, however the accepted principle is that federal legislation will override the states' if there is a conflict.

Policy 25

- *NPWS should maintain the existing access routes to the Lighthouse Keeper's Precinct via the existing walking track and access road. Upgrade of the access track should be completed*
- *Vehicular access to the Lighthouse Keeper's Precinct should be limited to NPWS, emergency and other vehicles identified as authorised through future leasing and/or contract agreements for the site.*
- *Any changes in use and major changes within the Barrenjoey Headland need to take into consideration the requirements of the Disability Discrimination Act 1992, the Disability (Access to Premises – Building) Standards 2010, and relevant BCA requirements.*
- *Alternative forms of intellectual access for those with disabilities should be provided where the provision of physical access would degrade the nature or significance of key features.*
- *A Disability Access plan should be prepared for the Lighthouse Keeper's Precinct where changes in use are proposed for the cottages.*
- *Changes in use that may limit public access to specific areas within the Lighthouse Keeper's Precinct are permissible provided that interpretive material is available for the public to understand the historic connection between the buildings within the precinct.*

Guidelines

- Assistance should be sought from the NSW Heritage Branch - Fire, Access and Services Advisory Panel (FASAP) on ways of achieving acceptable compliance with modern building standards while retaining the heritage significance of places. FASAP is an expert panel which provides formal advice on the latest thinking on fire safety, access, services and occupational health issues.
- The Premises Standards and the DDA both provide for 'unjustifiable hardship' conditions. Loss of heritage significance is one of the considerations in determining unjustifiable hardship under the Premises Standard.
- Visitor and public access into the Barrenjoey Headland should continue to be managed by the NPWS and/or private operators under license to NPWS.
- The entry point to the walking track up to the Lighthouse Keeper's Precinct should be made more amenable and identifiable to the public, with signage indicating that Barrenjoey Lighthouse is a historic site.

8.7.2 VISITOR USE AND INTERPRETATION

Heritage interpretation can be useful to communicate intangible aspects of a site's heritage values, highlight little known aspects of the site's history, explain conservation actions and identify features or elements of a site.

Heritage significance, if interpreted properly, can greatly enhance the visitor experience. Revealing the heritage significance of a place can help protect it through enhanced appreciation within the community and support for its conservation. Currently there is only public access to Barrenjoey Lighthouse and the Head Lighthouse Keeper's Cottage via guided tour. Other buildings within the precinct are generally not shown to the public.

Policy 26

- *Encourage the protection, conservation and appreciation of the significance of Barrenjoey Headland for present and future generations through interpretation programmes.*
- *Interpretation of the Barrenjoey Headland should take into account and provide for the participation of people or groups for whom the site has special association, meaning or significance.*
- *Additional visitor facilities may be permissible subject to approval under section 60 of the Heritage Act.*
- *There should be a level of interpretation easily accessible from the Customs House Precinct.*
- *Provide signage at the key entrance points within the Customs House Precinct which take you up to the Lighthouse Keepers' Precinct.*

Guidelines

- The heritage significance of the site should be physically, intellectually and/or emotively accessible to the public. These different forms of accessibility should be managed through visitor access facilities and interpretation programs, which evoke and acknowledge the complex and layered nature of the cultural significance.
- All interpretation should be based on the most accurate and insightful information and historiography available.
- Interpretation should provide public awareness of the role of the NPWS in the conservation and management of the cultural and natural values of the Barrenjoey Headland.
- Consideration could be given to expansion of the current interpretation program to include a wider variety of educational experiences and information, increased on-site presence by NPWS and wider advertising.
- In making significance accessible, the NPWS should take into account the policies and guidelines contained within the *ICOMOS International Cultural Tourism Charter*.
- Interpretation of the Barrenjoey Headland should take account of the significance of the historic and Aboriginal archaeological resource.
- The signage at key entrance points should include a map and provide in point form, an introduction to the identified heritage significance of the Barrenjoey Headland.

- Adopt the NPWS Signage Design Standards Manual, for the production and placement of signage.

8.8 ARCHAEOLOGY & ABORIGINAL HERITAGE

8.8.1 HISTORICAL ARCHAEOLOGY

Non-indigenous relics on the headland are automatically protected by the NSW *Heritage Act, 1977*. According to s60 of the Act, approval is required if relics (defined as any non-Aboriginal deposit, artefact, object or material evidence of State or Local heritage significance) will, or are likely be affected by development, moved, damaged, destroyed or excavated. Because the site is listed on the State Heritage Register, application for these activities within the listed curtilage is made pursuant to s60 of the Heritage Act.

The headland has low archaeological potential in regard to artefact deposits and buried features. The only exceptions to this are the Customs House precinct and the Stewart Towers site where the archaeological potential is high. There is also potential for sub-floor deposits in the buildings. The majority of archaeological features identified in this CMP are rock cut evidence of former structures, engravings and early evidence of access routes including the trolley way and road. Some of the engravings are fragile and seem to have eroded away over time. Many of the other features such as survey marks do not require active management.

Policy 27

- *Any excavation works within the Customs House precinct, Stewart Towers site and in the sub-floor area of the buildings in the Lighthouse Keeper's Precinct need to be subject to a Section 60 application under the Heritage Act and must conform to the requirements of any approval. Works will require monitoring. Excavation in other areas needs to be covered by a s60 exemption application. If unexpected finds are located during excavation works, any work in the area should cease until archaeological advice has been sought.*
- *The existing path through the Stewart Towers site should be re-routed as a priority in order to protect archaeological deposit.*
- *Protect the Customs House archaeological site until further investigations to determine its nature and extent are undertaken.*
- *Undertake a recording program to locate, map and record engravings across the headland.*

Guidelines

- Consider grassing and fencing the Customs House site to both define the extent of the former Custom's Station and to stabilize the sandy soils on the site once larger vegetation is removed. Refer also to policy 11 and its guidelines with regard to removal of exotic vegetation from this precinct.

8.8.2 ABORIGINAL HERITAGE

Aboriginal sites on the headland are protected under the NSW *National Parks and Wildlife Act*.

Policy 28

- *A section 90 permit under the NPW Act should be sought if excavation is proposed in the vicinity of a known Aboriginal site.*
- *Continue to record and register Aboriginal sites with AHIMS as they are found on the headland. Consider undertaking a systematic survey in times of low vegetation cover.*
- *Record sites on the western side of the headland that are being impacted by visitor activity including rock climbing and consider installing protective measures such as a boardwalk.*
- *Adopt a community-based approach as per OEH policy and guidelines to the investigation and documentation of archaeological sites and deposits.*

Guidelines

- Involve the Metropolitan Aboriginal Land Council in all archaeological projects.
- Ensure changes to management approaches on the headland involve community consultation.
- Ensure any proposed works to protect archaeological sites are informed by community consultation according to current guidelines produced by the OEH.

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APPENDICES - Barrenjoey Headland Conservation Management Plan

Appendix A – List of archaeological sites (Banksia Heritage 2004)

Potential archaeological evidence	Probability of survival	Possible research	Archaeological significance
Palm Beach Sand dune Midden. ASR# 45-6-1433	Survived	European – Aboriginal contact.	Medium – high
Shelter with deposit ASR# 45-6-1105	Survived		Not assessed
Shelter with midden ASR# 1454	Survived	Antiquity of Aboriginal use of headland.	Medium
Smugglers Track PAD 1		Is evidence present?	Undetermined
Smugglers Track PAD 2		Is evidence present?	Undetermined
Smugglers Track PAD 3		Is evidence present?	Undetermined
Smugglers Track PAD 4		Is evidence present?	Undetermined
Smugglers Track PAD 5		Is evidence present?	Undetermined
Smugglers Track site 1	Survived	Aboriginal deposit?	Undetermined
Site 2 Fishermen's Cottage track	Survived		Medium
Site 3 Fishermen's Cottage	Survived		Medium
Site 4 Fishermen's Cottage track	Survived		Low
Site 5 Rock climbers shelter with midden	Partially destroyed	Suggest salvage and use to enhance interpretation of Aboriginal occupation	Low (highly disturbed)
Site 6 Rangers cottage midden site	Survived		Low
Fishermen's cottage track PAD 6		Is evidence present?	Undetermined
Fishermen's cottage track PAD 7		Is evidence present?	Undetermined
Fishermen's cottage track PAD 8		Is evidence present?	Undetermined
Fishermen's cottages area		Is evidence present?	Undetermined
PAD 10- Customs Station/Rangers Cottage		Is evidence present?	Undetermined
PAD 11 the area behind the Head keeper's cottage wall.		Determine nature of deposit? Are visible shell remains Historic or Aboriginal midden or both? Does the site shed light on Aboriginal-European relationships?	
Fishing			
Fishing camp	Little		Medium
Land grant			
Land grant	Little		Low
Grazing	Nil		Low
Customs Station			
1843 station	Little	Generally for CH group: Do any of the missing structures survive? More detailed survey and recording following clearing needed.	High
1843 accommodation huts	Little		Low
1843 boat moorings	Little		Low
1843 jetty	Little		Low
1843 sentry box	Little		Low
1843 flagstaff	Little		Low
1843 Smugglers Track	Survived		Low
1843 Waterhole	Some	Does it still survive? Can it provide palynological information?	Medium
1862 Station	Substantial		High

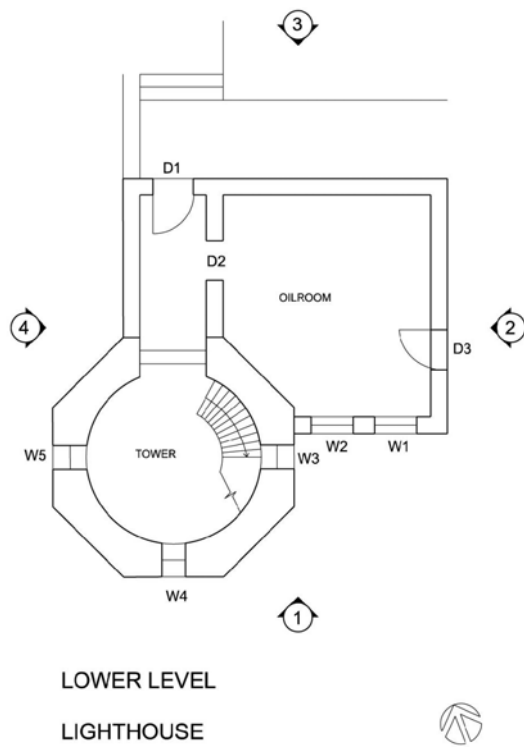
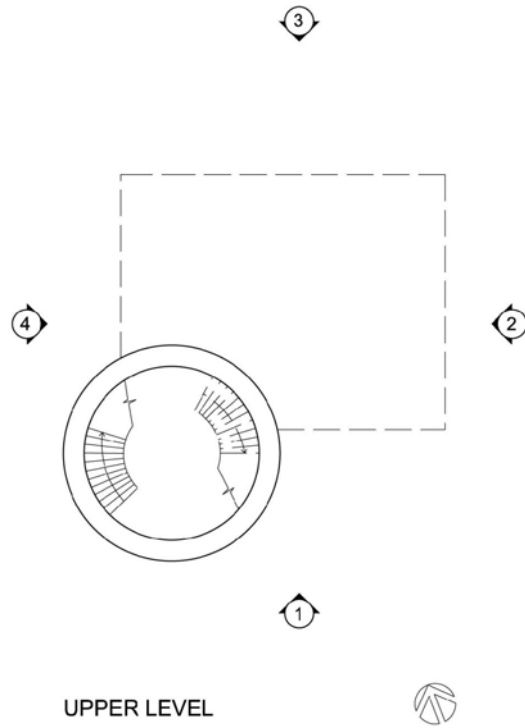
APPENDICES - Barrenjoey Headland Conservation Management Plan

Potential archaeological evidence	Probability of survival	Possible research	Archaeological significance
1862 Coast waiter res.	Little		High
Landscaping	Substantial		Low
Later jetty	Little		Low
Wooden soldiers	Nil		Nil
Sand dune channel	Survived		Low
Poss building on sand dune	Little		Low
Boat shed	Some		Low
Slab building	Little		Low
Weatherboard cottage	Little		Medium
Current cottage 'Doo Mee'	Survived	Does present cottage incorporate older elements?	Low
Stewart Towers			
Western Stewart Tower	Little	Does evidence survive? Was it same construction as eastern tower?	Medium
Eastern Stewart Tower	Little		Medium
Telegraph line	Little		Low
Telegraph cottage	Little		Medium
Flagstaff	Little		Low
1935 cairn	Negligible	Cairns generally- confirm their chronology	Low
Construction 1880-1881			
Light tower	Survived		Negligible
Fuel store	Survived		Negligible
Head Keeper's residence	Survived		Negligible
Assistant Keeper duplex	Survived		Negligible
Quarry- road side	Survived	What technology was used	Low
Feathered Arrow inscription	Physical	Inscriptions generally- are there others present and faded? Can we find more detail by enhanced recording?	Low
Face and Sloop inscription	Physical		Low
A Gypsy Tent inscription	Physical		Low
JM and BB inscription	Physical		Low
Lyell and Hagon inscription	Documentary		Low
Quarry- Asst Keeper's	Survived		Low
Scree- lightstation	Survived		Low
Scree- road side	Survived		Low
Stone removal- minor	Survived		Low
Trolley way	Survived	Trace in detail the full extent of the trolley way and record its construction.	High
Contractor's hut	Little		Low
White hut	Little		Low
Workers' hut- tombolo	Little		Low
Lightstation			
Terracing	Survived	Original date of construction of each terrace? Is domestic refuse incorporated in the fill?	Low
Lawns	Nil		Nil
Gardens and planting	Survived		Low
Western yard	Survived		Medium

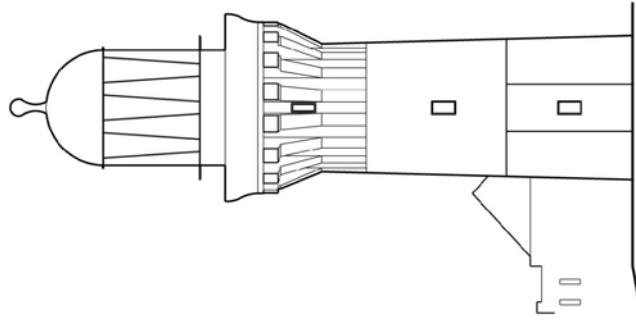
APPENDICES - Barrenjoey Headland Conservation Management Plan

Potential archaeological evidence	Probability of survival	Possible research	Archaeological significance
Power line	Survived		Low
Possible semaphore hut	Survived		Low
Flagstaff	Little		Low
Clothesline	Little		Low
Mulhall Grave	Survived		Low
Lookout cairn	Survived		Low
Access road	Survived	Further detailed recording. Did the upper section of road have similar construction to lower end originally?	Medium
Lives of the Keeper's			
Steere family inscriptions	Survived		Low
Dolphin inscription	Survived		Low
KELLI inscription	Survived		Low
Mae Don inscription	Documentary		Low
Charlie A inscription	Documentary		Low
Trig station	Some		Low
Survey marks	Survived		Low
Dyer and Rees inscriptions	Documentary		Low
Anti-submarine net	Survived		Low
Fishing shack	Survived		Low
Fishing shack	Survived		Low

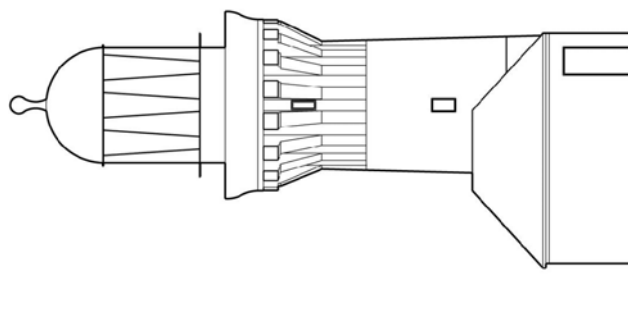
Appendix B – Plans and Elevations of the Buildings at Barrenjoey Headland



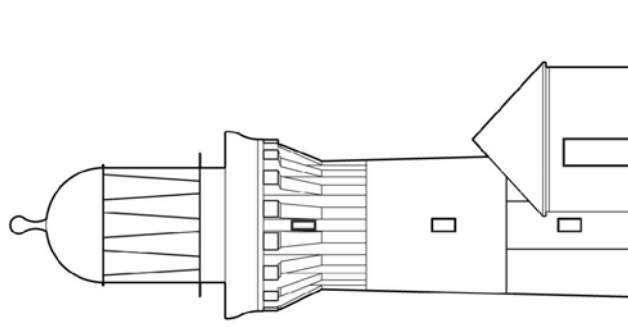
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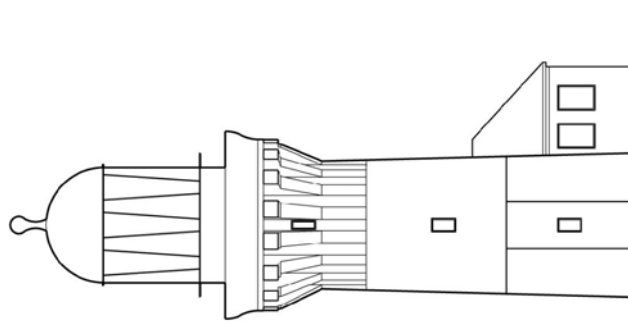
ELEVATION 4



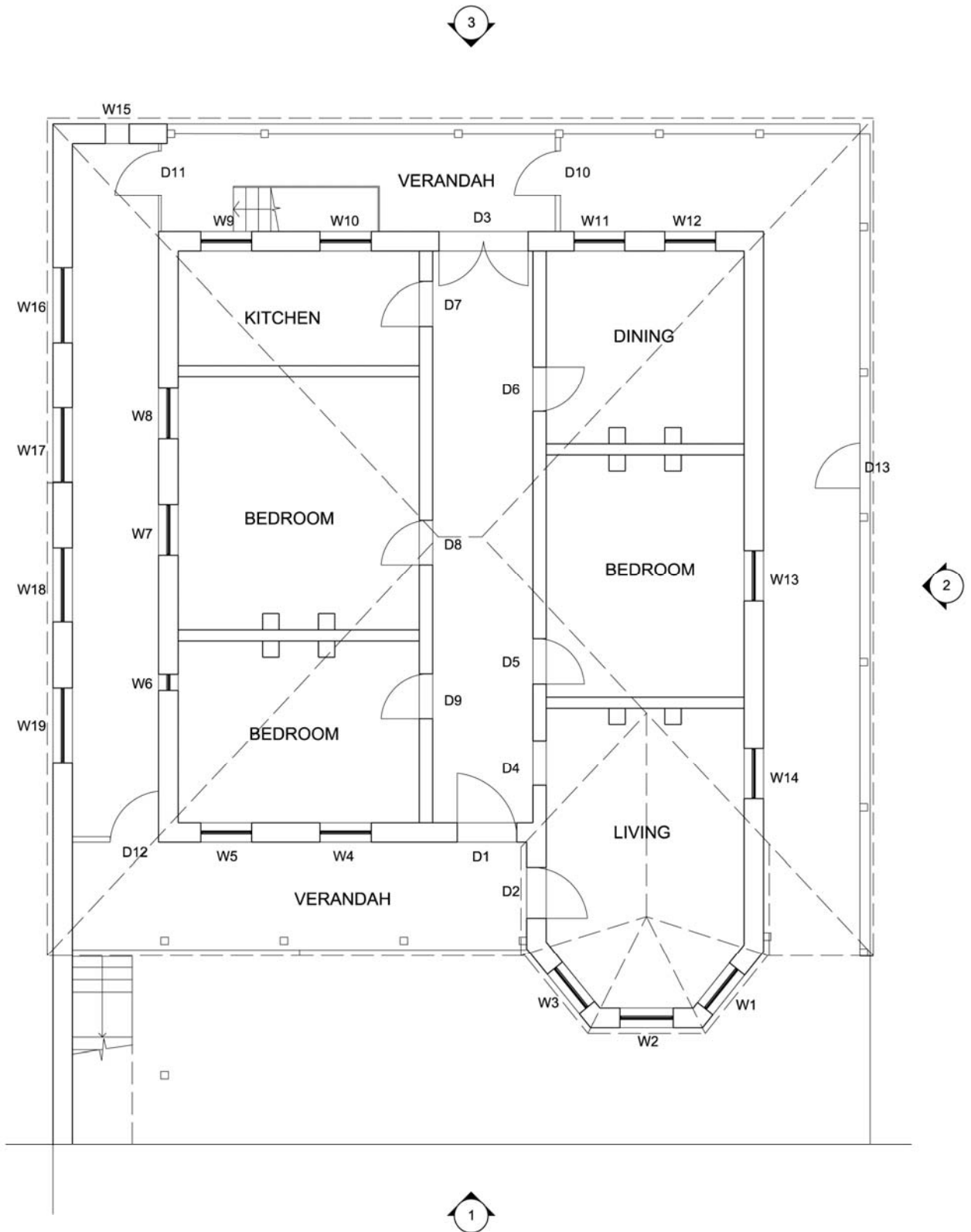
ELEVATION 3



ELEVATION 2

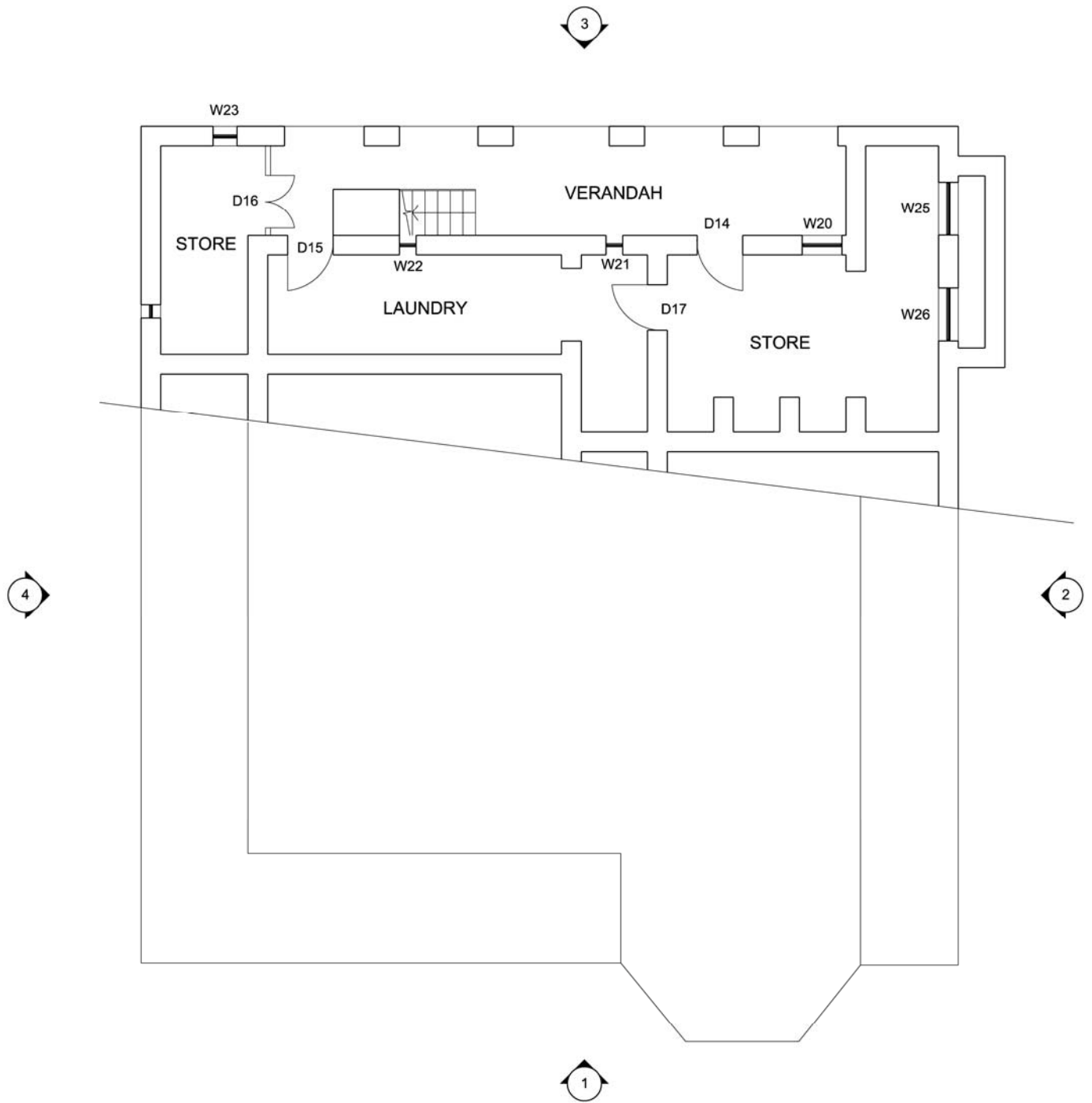


ELEVATION 1
LIGHTHOUSE



HEAD KEEPER'S COTTAGE (GROUND)





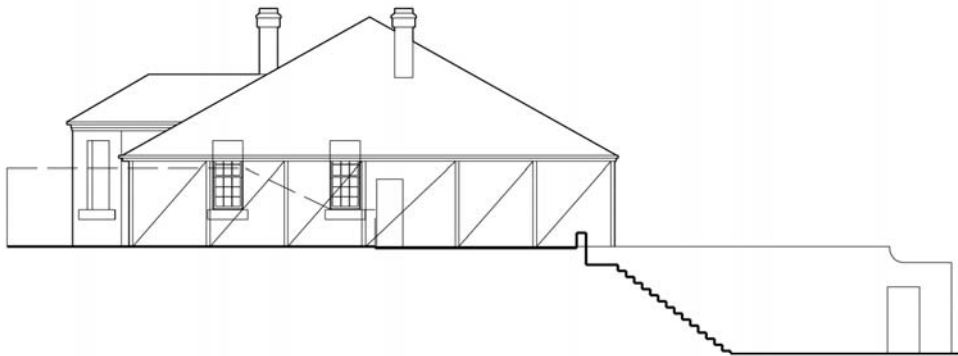
HEAD KEEPER'S COTTAGE (BASEMENT)



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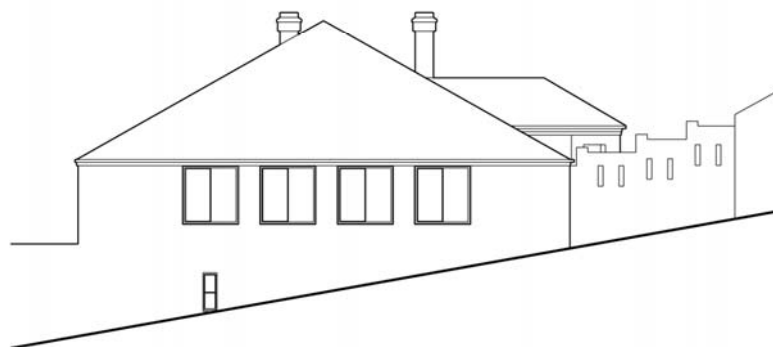
ELEVATION 1



ELEVATION 2

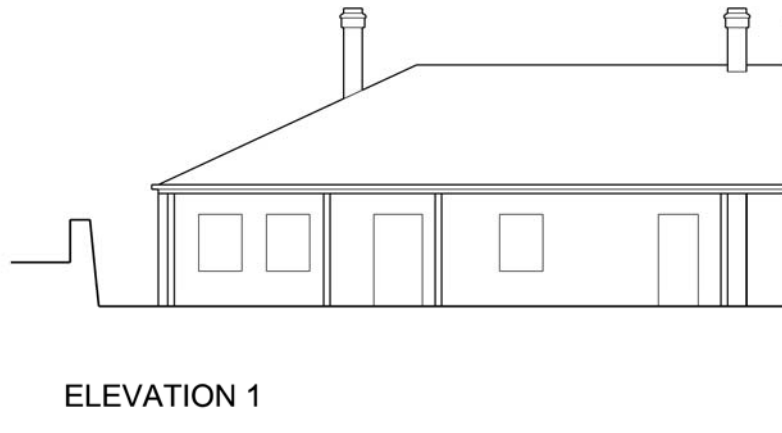


ELEVATION 3

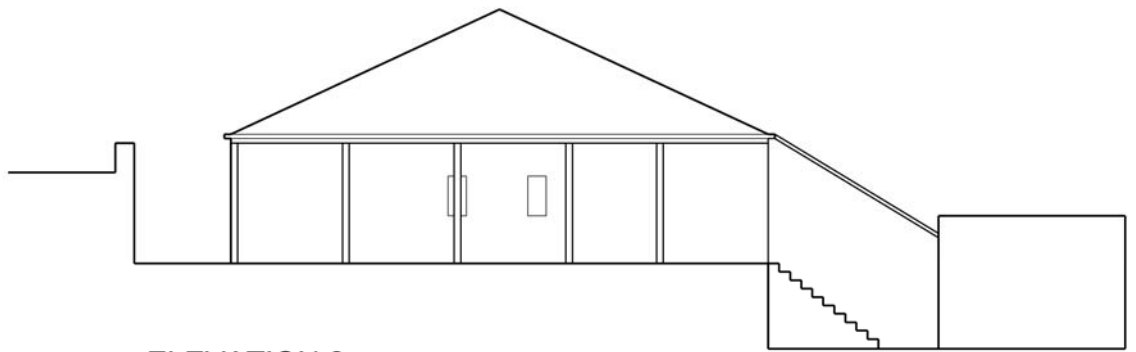


ELEVATION 4
HEAD KEEPER'S COTTAGE

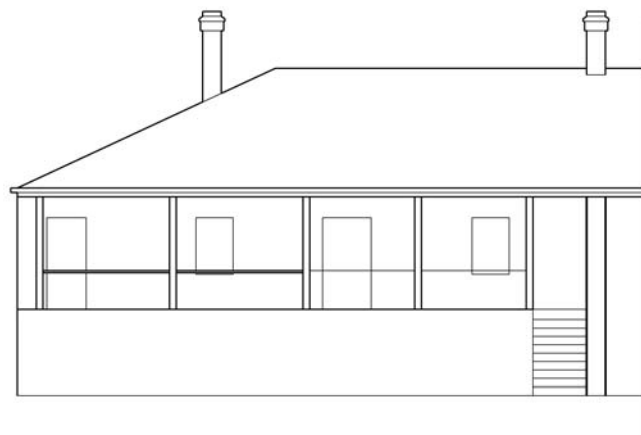
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ELEVATION 1

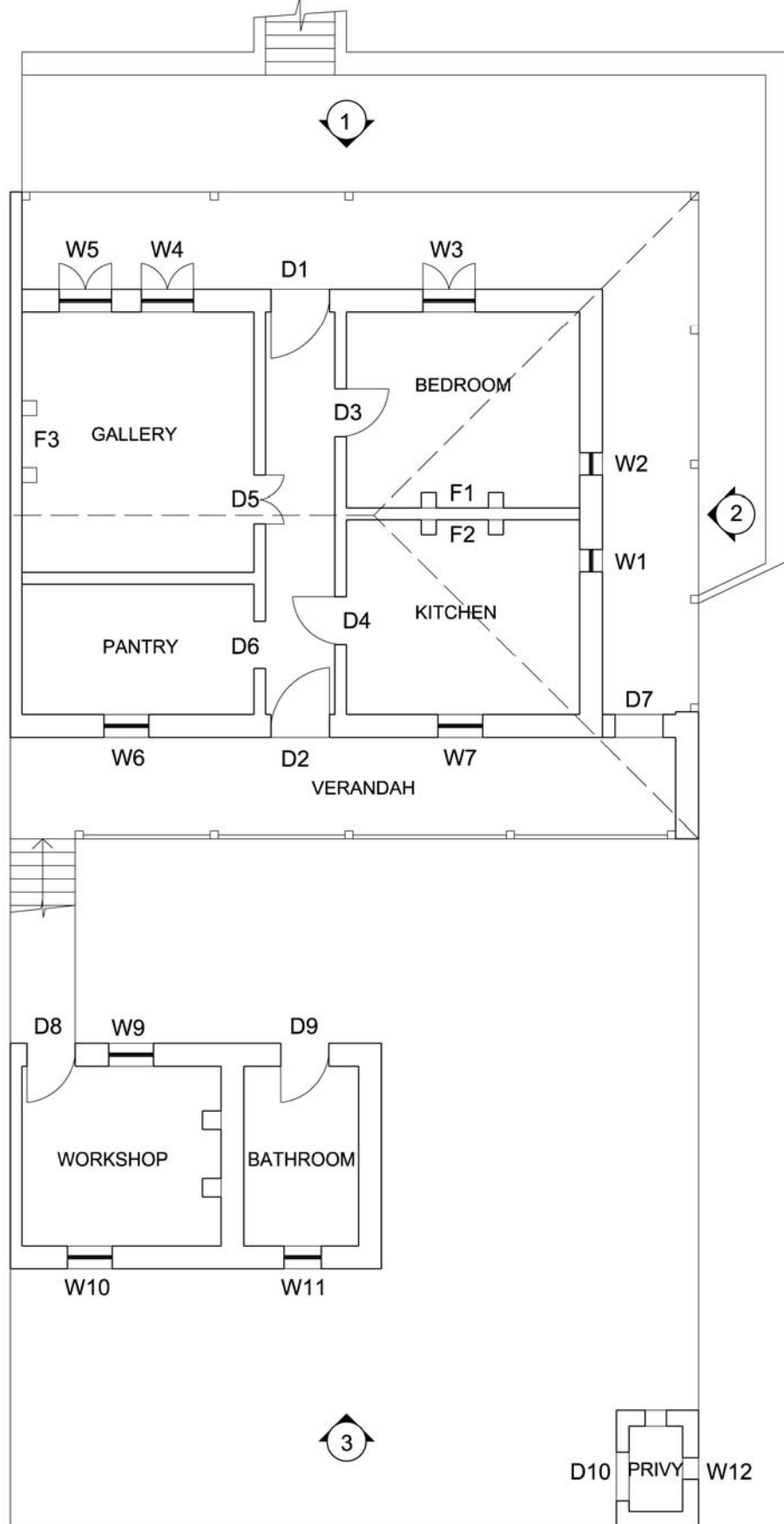


ELEVATION 2



ELEVATION 3

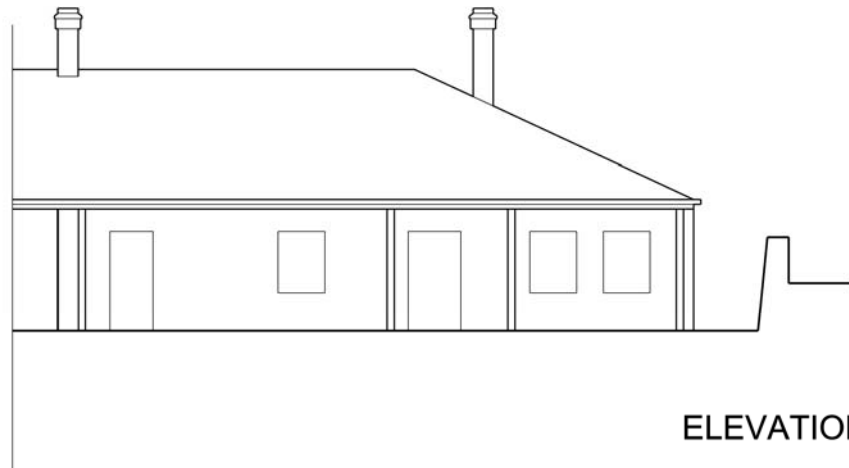
ASSISTANT KEEPERS' DUPLEX (NORTH)



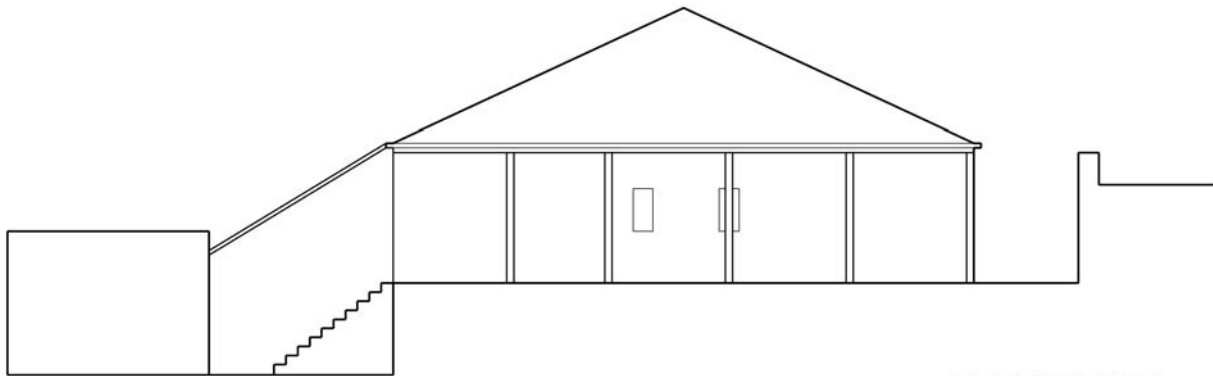
ASSISTANT KEEPERS' DUPLEX (SOUTH)



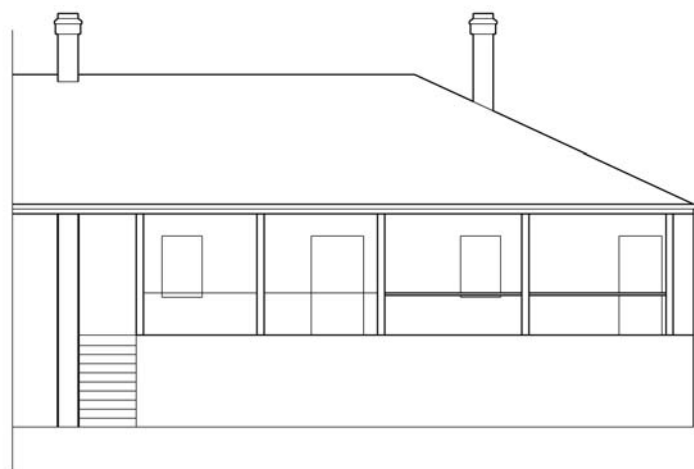
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ELEVATION 1

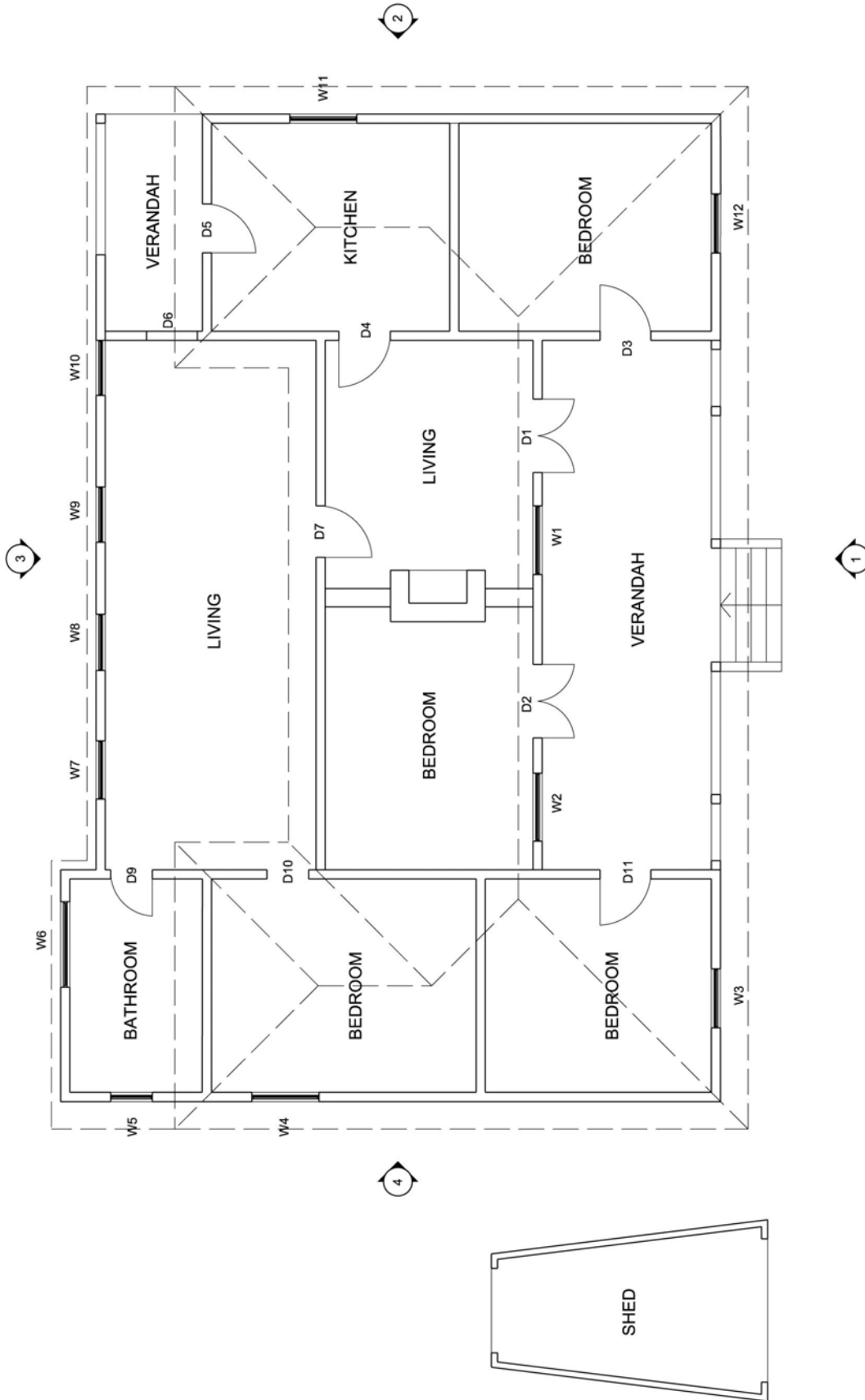


ELEVATION 2



ELEVATION 3

ASSISTANT KEEPERS' DUPLEX (SOUTH)

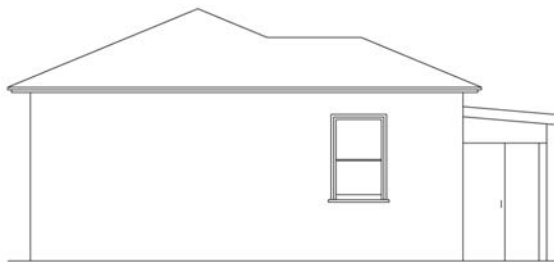


BOATMAN'S COTTAGE FLOOR PLAN

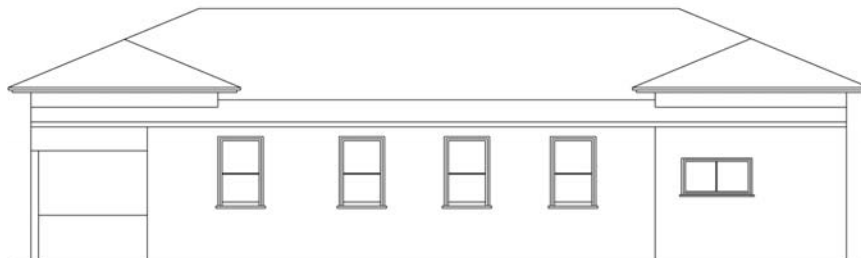
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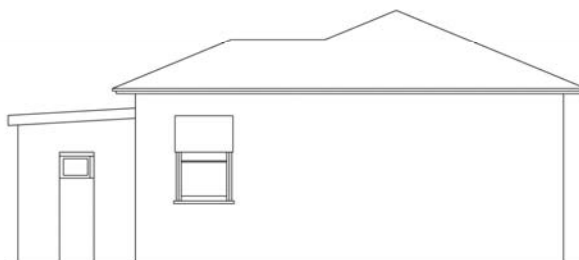
ELEVATION 1



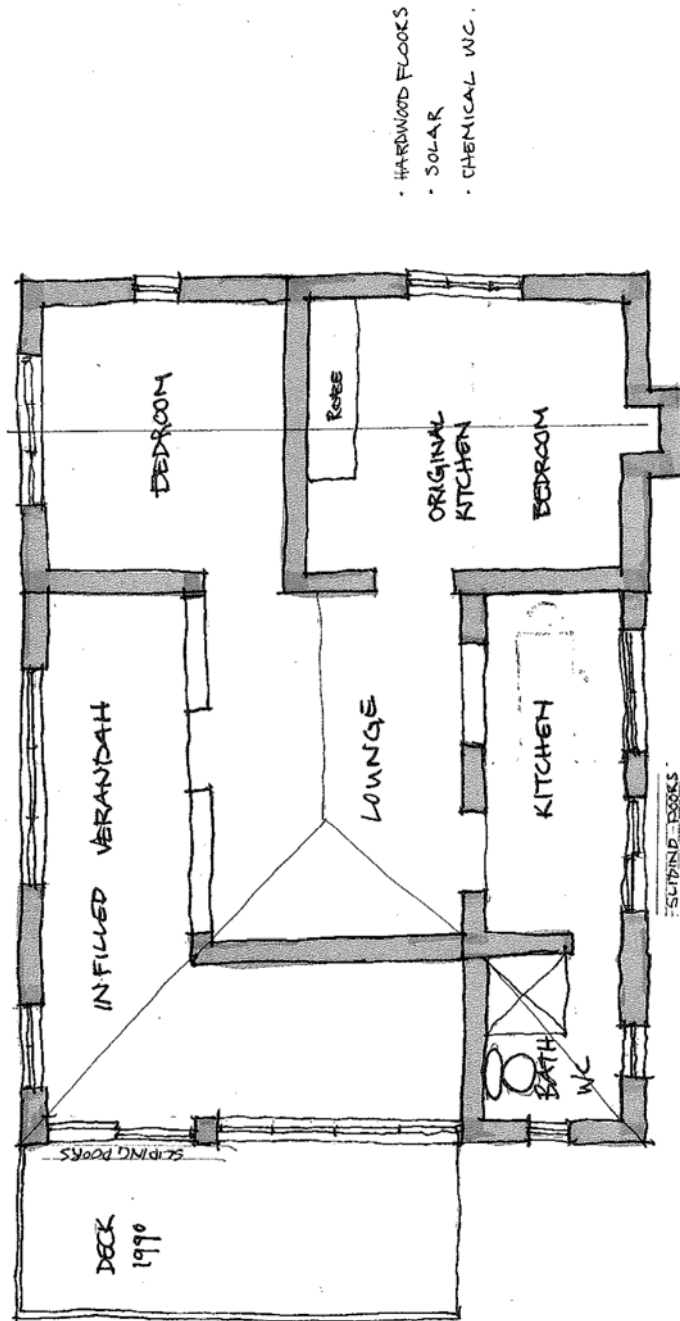
ELEVATION 2



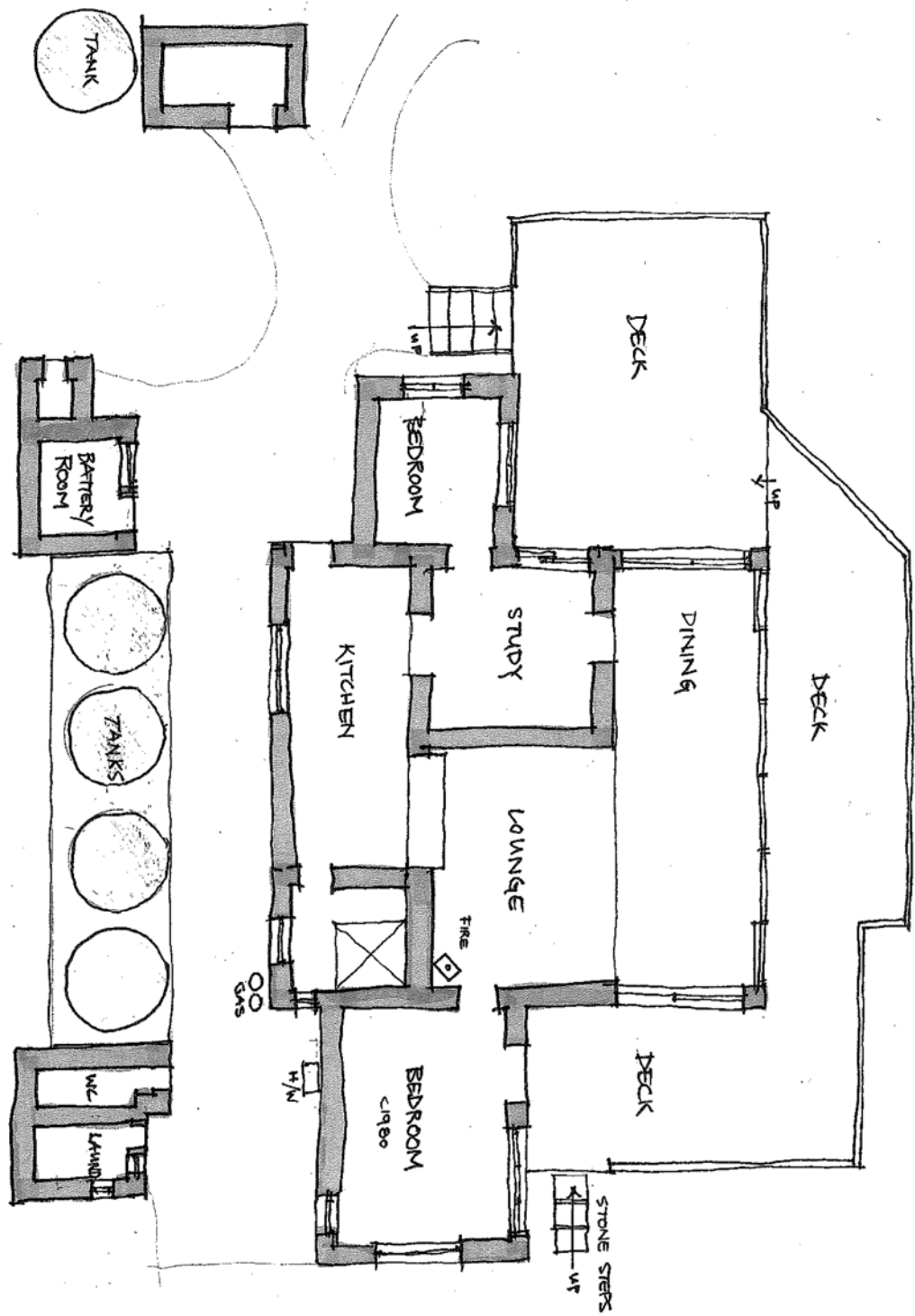
ELEVATION 3



ELEVATION 4



COTTAGE 1928
NOT TO SCALE



- TIMBER FLOORS
- TIMBER DECKING
- SOLAR
- ECO SYSTEM WC

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Appendix C – Standard Exemptions for Works Requiring Heritage Council Approval