SOUTH HEAD
SYDNEY HARBOUR NATIONAL PARK

Conservation Management Plan

Volume 2A and 2B – Inventory of Heritage Items

March 2010

Prepared for NSW National Parks and Wildlife Service
Department of Environment, Climate Change and Water

NSW National Parks and Wildlife Service
NSW GOVERNMENT
Environment, Climate Change & Water

Photograph on cover is a 1931 aerial photo provided by GAO

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VOLUME 2A AND 2B SOUTH HEAD STAGE 1 & 2 CMP INVENTORY OF HERITAGE ITEMS

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1 INTRODUCTION

The NSW Government Architect's Office was engaged in August 2006 by the NSW Department of Environment and Conservation (Parks and Wildlife Division) to prepare a Stage 1 Conservation Management Plan (CMP) for the Sydney Harbour National Park (SHNP) at South Head. Otto Cserhalmi & Partners were engaged in December 2007 to prepare Stage 2 of the CMP. The Stage 1 CMP analyses the historical development and physical characteristics and assesses the heritage values. The Stage 2 CMP addresses the constraints and opportunities and provides polices and an implementation strategy for appropriate management of the cultural heritage resources now and into the future.

Stage 1 of the CMP has three volumes:

- Volume 1A Site Recording, Research and Significance Assessment
- Volume 2A Inventory Sheets (for selected sites)
- Volume 3 Aboriginal Cultural Heritage Assessment

Stage 2 of the CMP has one new volume and one amended volume:

- Volume 1B Conservation Policies and Implementation Strategy
- Volume 2B Completed Inventory of Heritage Items from Stage 1

This volume contains inventory sheets for selected sites. The information entered in the inventory by Heritage Design Services of the Department of Commerce remains with minor corrections where images were in the incorrect inventory form. Generally the fields "management recommendations" and "notes" at the end of each of the inventory sheets have been completed by the Stage 2 authors and this is identified in each case. Additional images have been included, generally more detailed current photographs as well as some historic images and plans where these where found. The images have extended comments indicating items and issues.

The text in the "Management Objectives", "Policy Background and CMP Policies" fields are generally similar to those in the policy section of the CMP but include only those policies relevant in each case. Where additional detail has been found it has been included. The recommended works, "maintenance" and interpretation" fields were CMP.

2 LIST OF IDENTIFIED HERITAGE PRECINCTS & HERITAGE ITEMS

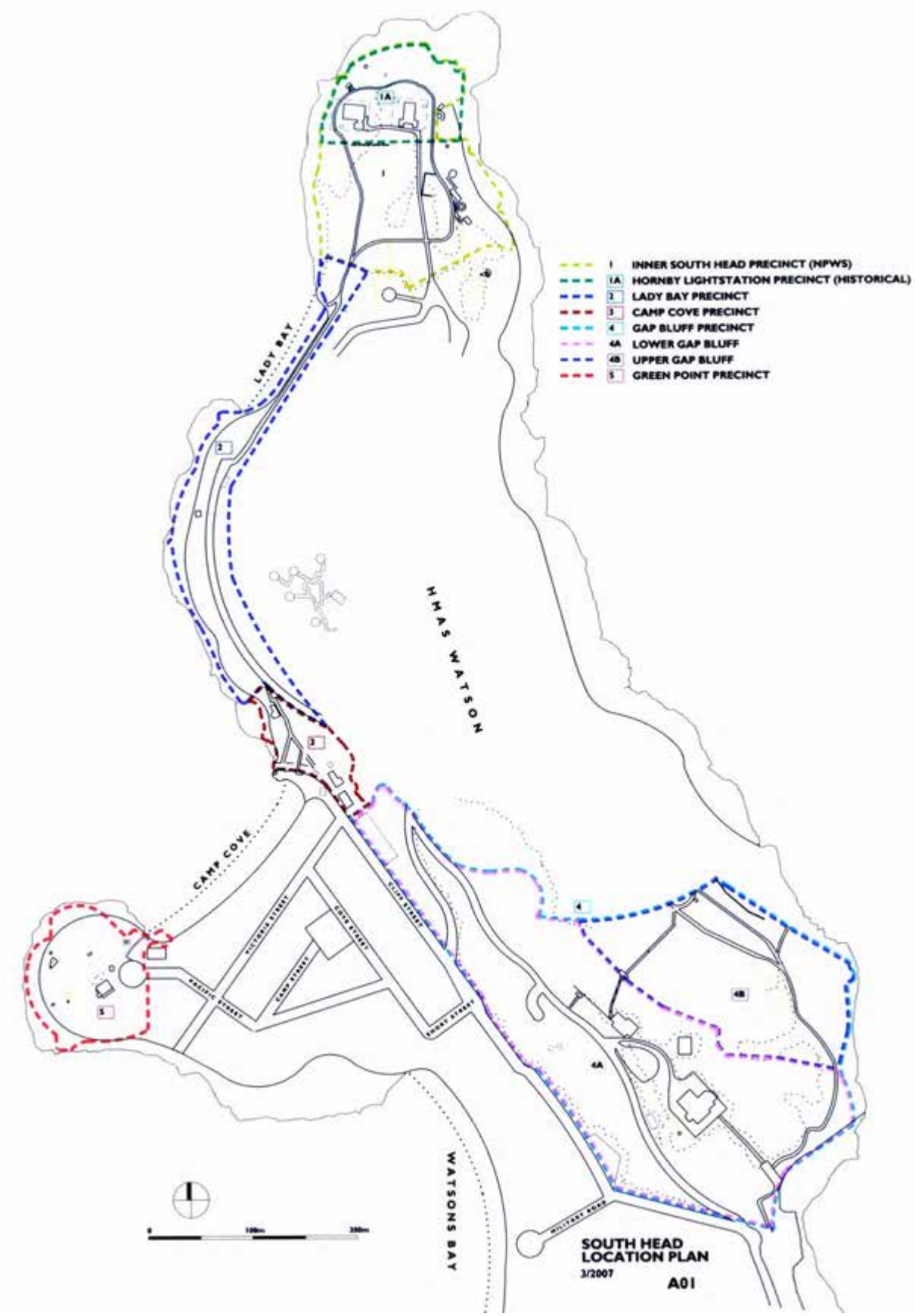
= Inventory Sheet prepared in 2007 CMP Stage One, added to in 2009 CMP Stage 2

#	Element Name	Element Type	Previous #
1.0	**Inner South Head Precinct**		
1A.0	Hornby Lightstation Precinct		
1A.1	Hornby Head Lightkeeper's Cottage	Building and Garden	N3
1A.2	Hornby Assistant Lightkeepers' Cottages	Building and Garden	N2
1A.3	Hornby Light	Building	
1.3	Hornby Battery, gun emplacements, passages, magazines and Directional Range Finder	Structure - Defence	N4
1.3A	Hornby Battery Shell Store & Collection	Structure / Movable - Defence	N4
1.3B	Hornby Battery Engine Room & Collection	Structure / Movable - Defence	D12
1.4	1854/5 gun emplacement	Structure - Defence	N8
1.5	World War II Searchlight Shelter, 1931–1941	Structure - Defence	N6
1.6	Searchlight Emplacement No. 2, 1890s	Structure - Defence	N7
1.7	Former Parade Ground	Landscape/Structure	

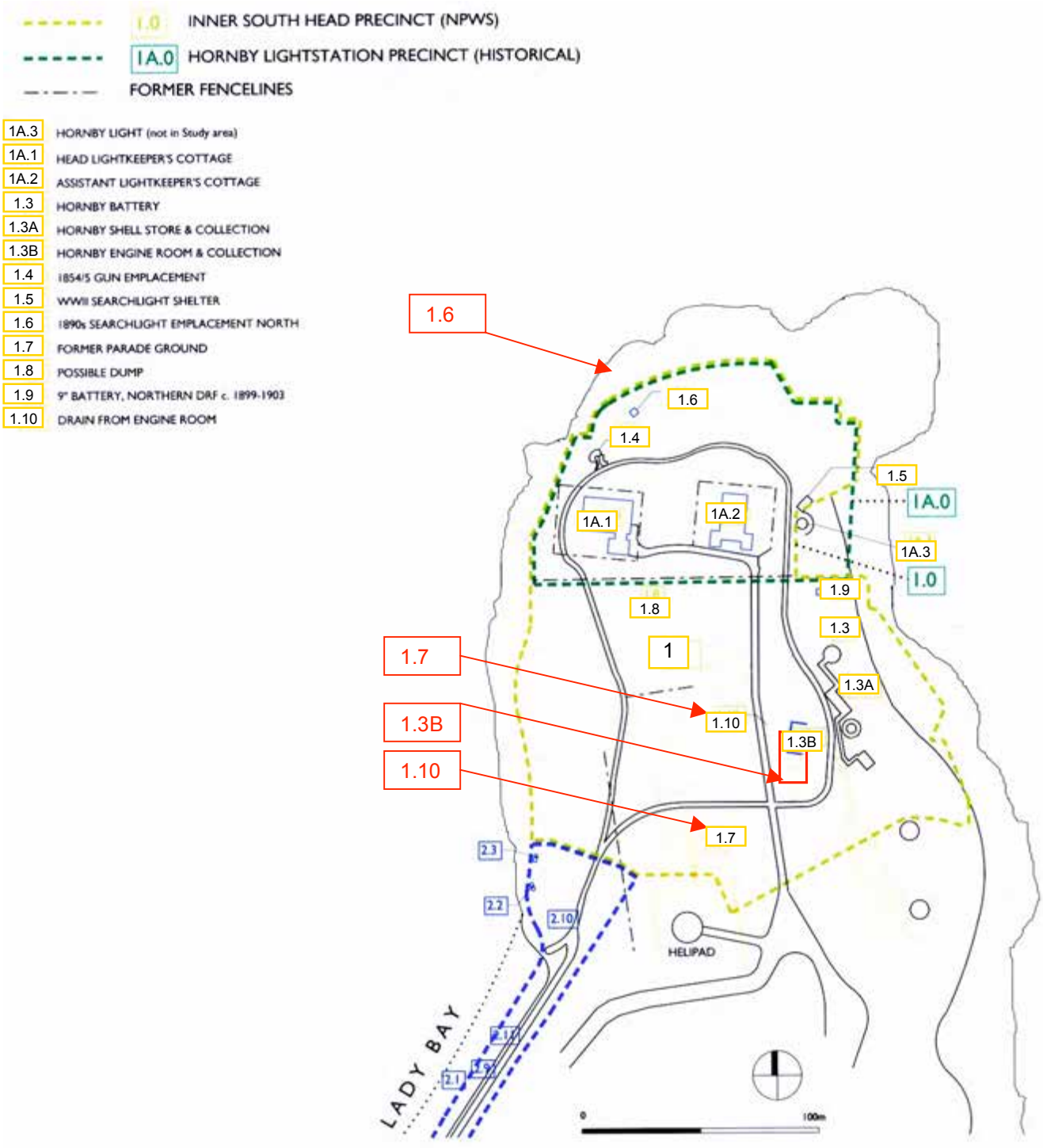
#	Element Name	Element Type	Previous #
1.8	Possible dump	Archaeology - Domestic	
1.9	9-inch Battery, Northern DRF, c1899–1903	Structure - Defence	N5
1.10	Drain From Engine Room	Archaeology - Defence	
2.0	**Lady Bay Precinct**		
2.0	Lady Bay Precinct	Precinct	
2.1	Lady Bay Beach Artefact	Archaeology - Defence	
2.2	Searchlight No. 3, 1891	Structure - Defence	N10
2.3	Defensive structure (unknown function)	Structure - Defence	N9
2.4	Platform, path and step remains	Archaeology - Defence	
2.5	Former Bridge and Walkway	Archaeology - Defence	
2.6	Stone walling	Archaeology - Defence	
2.7	L-shaped walling, possibly rifle gallery	Archaeology - Defence	
2.8	Searchlight Observation Station, 1890s	Structure - Defence	N11
2.9	Potential store and sheltered walkway	Structure - Defence	
2.10	Pit with concrete cover	Unknown	
2.11	Retaining wall behind Lady Bay Beach	Structure - Defence	
3	**Camp Cove Precinct**		
3.1	Constables Cottage (32 Cliff St)	Building and Garden	N19
3.1A	Garage 1980s (covered in 3.1 Inventory Sheet)	Building	
3.2	33 Cliff Street	Building and Garden	N20
3.3	Camp Cove gun emplacement and rifle walls	Structure - Defence	N12
3.3A	9-inch rifled muzzle-loading cannon on an iron carriage (covered in 3.3 Inventory Sheet)	Structure - Defence	
3.4	Cobblestone Road	Structure - Defence	
3.5	Camp Cove Slipway	Structure	N13
3.6	Water Police Landing Steps	Structure	N15?
3.7	Toilet Block	Structure	
4.0	**Gap Bluff Precinct**		
4.0	Gap Bluff Precinct	Precinct	
4A.0	Lower Gap Bluff Precinct (including significant plantings)	Precinct	
4A.1	Officers' Mess & Garden	Building	N21
4A.2	Armoury	Building	N24
4A.3	Cottage/former Workshop	Building	N24
4A.4	Site of the former 1912 barracks	Building	N26
4A.4A	Latrine (covered in 4A.4 Inventory Sheet)		
4A.5	Footings of 1912 barracks building	Archaeology - Defence	
4A.6	Footings of 1912 barracks building	Archaeology - Defence	
4A.7	Water tank	Structure	

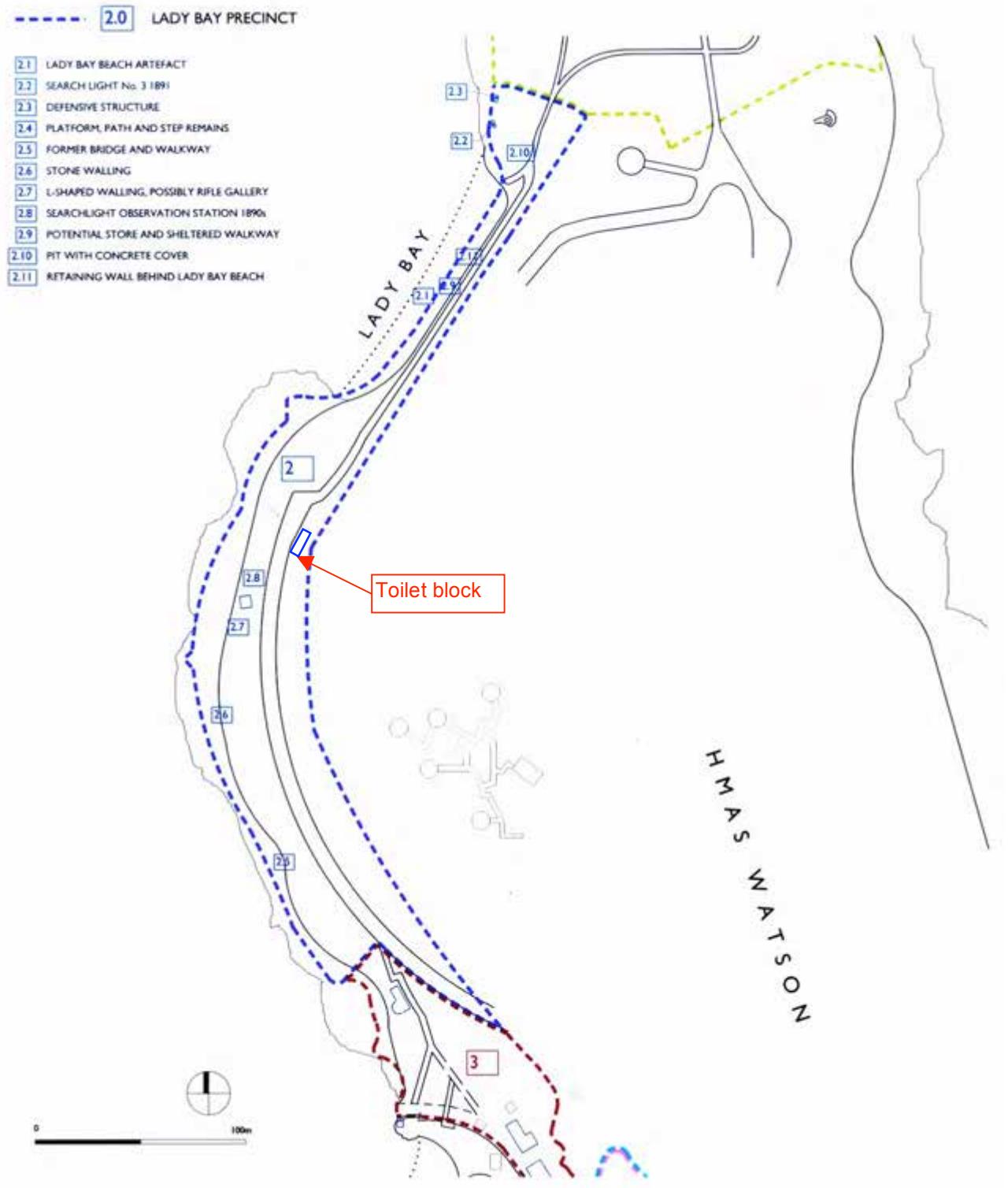
#	Element Name	Element Type	Previous #
4A.8	Cement slab (possible toilet).	Unknown	
4B.0	**Upper Gap Bluff Precinct** (defined by top of escarpment)	Precinct	
4B.1	National Park Lookouts	Structure – Landscape Feature	
4B.2	Practice Battery	Structure - Defence	W6
4B.3	Concrete pad with metal fixings	Archaeology - Defence	
4B.4	L-shaped shelter wall	Structure - Defence	
4B.5	Small concrete plinth with metal fixings	Structure - Defence	
4B.6	Large dump of demolition rubble and other debris	Archaeology - Defence	
4B.7	Various rings and bolts in bedrock	Archaeology - Defence	
4B.8	L-shaped shelter wall	Structure - Defence	
4B.9	Small cement slab (paving)	Archaeology - Defence	
4B.10	Small cement slab – 2 roomed structure	Archaeology - Defence	
4B.11	Curved cement slab (paving)	Archaeology - Defence	
4B.12	Cement slab (structural)	Archaeology - Defence	
4B.13	Terrace garden, various features	Archaeology - Landscape	
4B.14	Possible dump	Archaeology - Defence	
4B.15	Small brick building	Structure - Defence	N25
4B.16	Steps and section of pathway	Archaeology - Landscape	
4B.17	Small telephone or telegraph pole	Archaeology - Defence	
5.0	**Green Point Precinct**		
5.1	Green Point Cottage (33 Pacific St)	Building and Garden	GP5
5.2	Arthur Phillip monument	Structure - Monument	
5.3	1850s navigation obelisk	Structure - Defence	GP13
5.4	Submarine Miner Firing Station	Structure - Defence	GP4
5.5	Remains of Searchlight No 4 / Boom Net Winch House	Structure - Defence	GP6
5.6	WWII observation post	Structure - Defence	
5.7	Group of small concrete blocks and iron fixings (possibly related to WWII boom net)	Archaeology - Defence	
5.8	Partially exposed concrete slab above obelisk	Archaeology – Defence	GP10
5.9	Rectangular pen cut from rocky foreshore	Unknown	
5.10	Cement block	Unknown	
5.11	Cement slab	Unknown	
	Note no Inventory Sheet for 1940s boom net winch house as we think this has been confused with item 5.5. No clear evidence of a 1940s boom net winch house structure within the site. Item 5.7 may relate to a fixing point or spreader for the net. Further research is needed.		

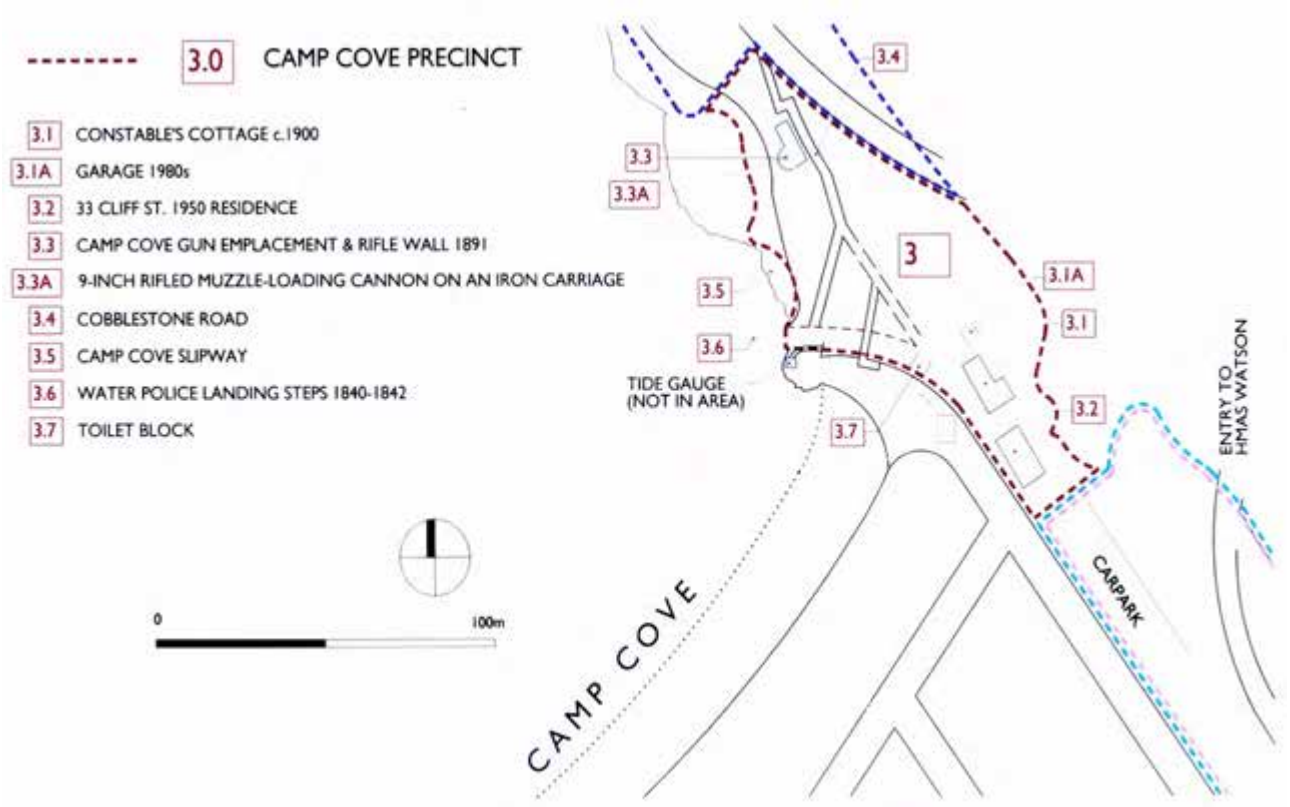
3 LOCATION PLANS

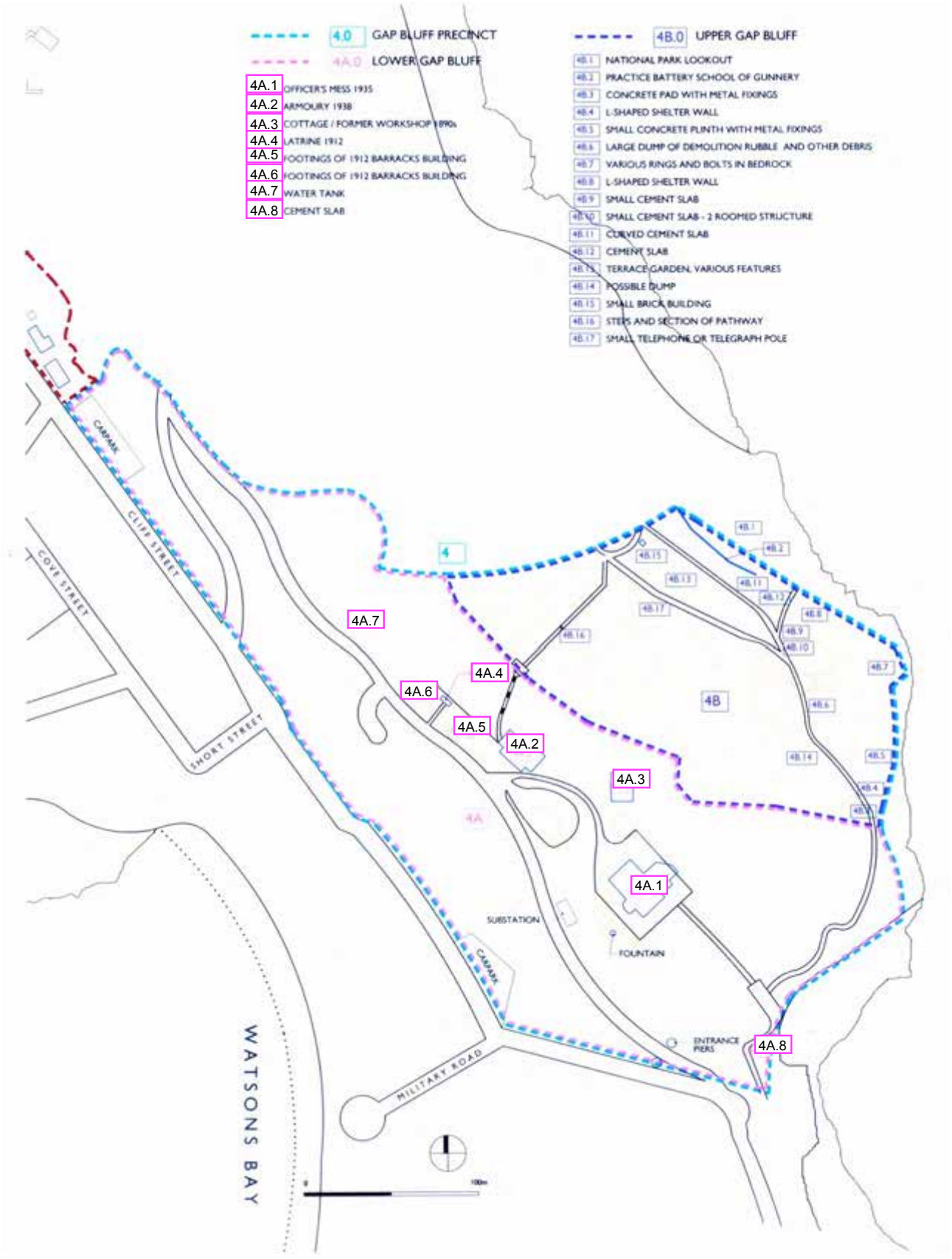


The sketch plan was prepared as part of the Stage 1 CMP. Some items are not mapped accurately. The red item numbers and arrows indicate their locations more accurately.




2.0 LADY BAY PRECINCT
2.1 LADY BAY BEACH ARTEFACT
2.2 SEARCH LIGHT No. 3 1891
2.3 DEFENSIVE STRUCTURE
2.4 PLATFORM, PATH AND STEP REMAINS
2.5 FORMER BRIDGE AND WALKWAY
2.6 STONE WALLING
2.7 L-SHAPED WALLING, POSSIBLY RIFLE GALLERY
2.8 SEARCHLIGHT OBSERVATION STATION 1890s
2.9 POTENTIAL STORE AND SHELTERED WALKWAY
2.10 PIT WITH CONCRETE COVER
2.11 RETAINING WALL BEHIND LADY BAY BEACH
LADY BAY
2
3
Toilet block
HMAS WATSON


3.0 CAMP COVE PRECINCT
3.1 CONSTABLE'S COTTAGE c.1900
3.1A GARAGE 1980s
3.2 33 CLIFF ST. 1950 RESIDENCE
3.3 CAMP COVE GUN EMPLACEMENT & RIFLE WALL 1891
3.3A 9-INCH RIFLED MUZZLE-LOADING CANNON ON AN IRON CARRIAGE
3.4 COBBLESTONE ROAD
3.5 CAMP COVE SLIPWAY
3.6 WATER POLICE LANDING STEPS 1840-1842
3.7 TOILET BLOCK
0
100m
3
TIDE GAUGE
(NOT IN AREA)
CAMP COVE
CARPARK
ENTRY TO
HMAS WATSON


4.0 GAP BLUFF PRECINCT
4A.0 LOWER GAP BLUFF
4A.1 OFFICER'S MESS 1935
4A.2 ARMOURY 1938
4A.3 COTTAGE / FORMER WORKSHOP 1890s
4A.4 LATRINE 1912
4A.5 FOOTINGS OF 1912 BARRACKS BUILDING
4A.6 FOOTINGS OF 1912 BARRACKS BUILDING
4A.7 WATER TANK
4A.8 CEMENT SLAB
4B.0 UPPER GAP BLUFF
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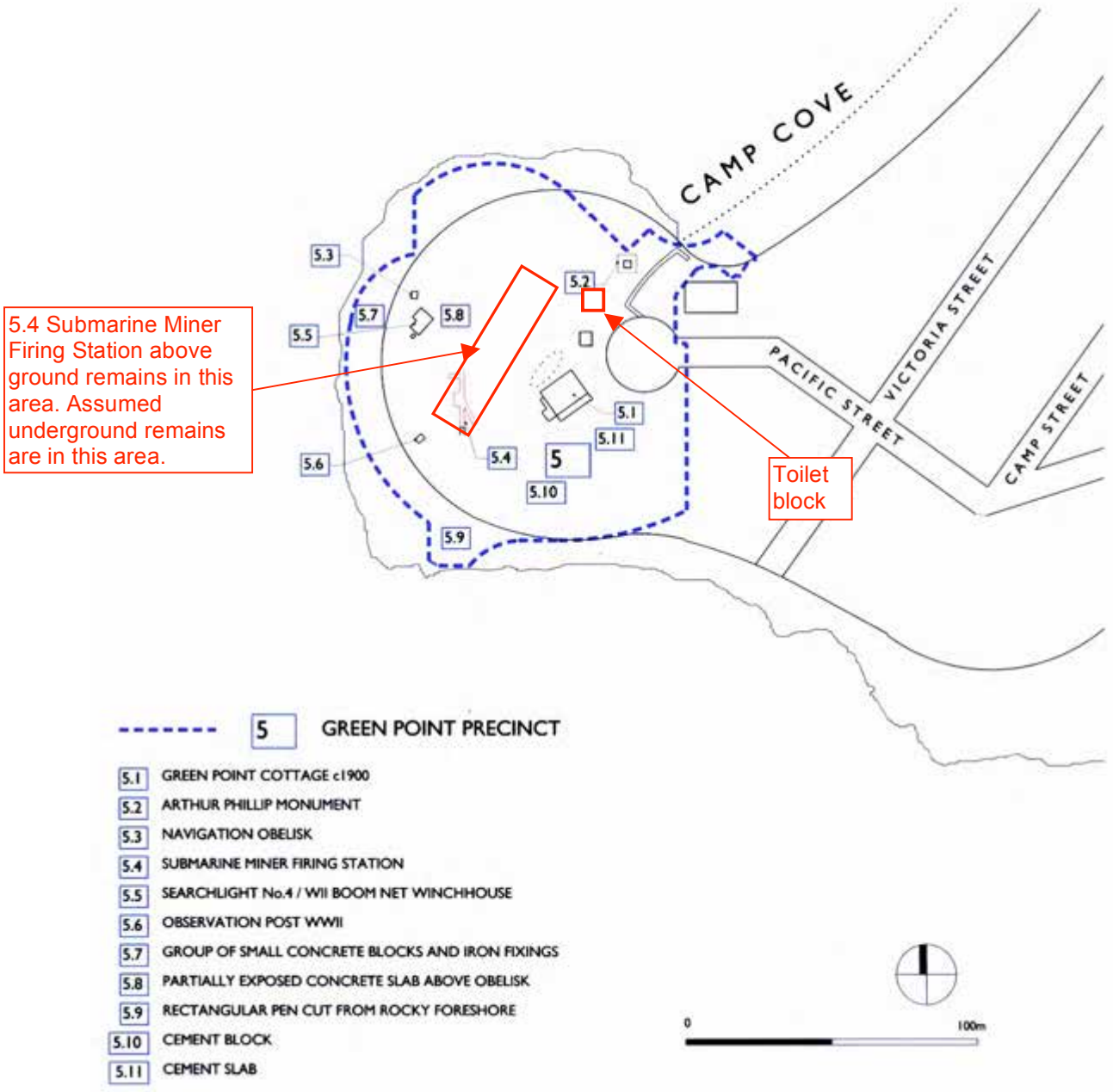
4B.2 PRACTICE BATTERY SCHOOL OF GUNNERY
4B.3 CONCRETE PAD WITH METAL FIXINGS
4B.4 L-SHAPED SHELTER WALL
4B.5 SMALL CONCRETE PLINTH WITH METAL FIXINGS
4B.6 LARGE DUMP OF DEMOLITION RUBBLE AND OTHER DEBRIS
4B.7 VARIOUS RINGS AND BOLTS IN BEDROCK
4B.8 L-SHAPED SHELTER WALL
4B.9 SMALL CEMENT SLAB
4B.10 SMALL CEMENT SLAB - 2 ROOMED STRUCTURE
4B.11 CURVED CEMENT SLAB
4B.12 CEMENT SLAB
4B.13 TERRACE GARDEN, VARIOUS FEATURES
4B.14 POSSIBLE DUMP
4B.15 SMALL BRICK BUILDING
4B.16 STEPS AND SECTION OF PATHWAY
4B.17 SMALL TELEPHONE OR TELEGRAPH POLE
CLIFF STREET
COVE STREET
SHORT STREET
SUBSTATION
FOUNTAIN
ENTRANCE PIERS
MILITARY ROAD
WATSONS BAY

The sketch plan was prepared as part of the Stage 1 CMP. Some items are not mapped accurately. The red item numbers and arrows indicate their locations more accurately.



4 HISTORICAL ARCHAEOLOGY (FROM STAGE 1 CMP)

4.1 Historical Archaeology - Summary

This discussion provides a basic analysis of the potential range of historical archaeological evidence based on available historical analysis, plans and photographs. A brief site inspection was undertaken on 3rd March, 2007 to build an understanding of the study area generally and processes that may have impacted on the survival of archaeological evidence. The table following this discussion indicates items visible during the field survey. Heavy vegetation cover restricted access to much of the study area, particularly the former Artillery/Gunnery School at Gap Bluff. Additional archaeological survey work will be required in the future if a more precise understanding of potential features is required.

The bedrock at South Head is at or very close to the surface, with little or no topsoil in many areas. This has influenced the pattern of building at South Head. The rock has been used as a building material, foundation support and in many cases has been excavated to form part of built features such as gun pits, tunnels and walls. Rock-cut features such as pits, footing platforms and trenches, drains, wells, tunnels, postholes, steps, walls and pathways extend across the headland. These modifications to the natural bedrock are still visible in many places, but will also be found under vegetation, demolition debris, existing buildings and areas of soil deposits. There is high potential for rock-cut features from all phases of occupation to be found across the study area.

It is unlikely that natural soil profiles will have survived in many places as they would have been shallow and patchy to begin with and the plateau has undergone such substantial change particularly in the early twentieth century. It is recognised however, that Aboriginal middens have been identified in some areas, particularly around the edges of the headland. Existing soil deposits across the top of the plateau are likely to have been highly disturbed and redeposited or imported from other areas, particularly in areas of former gardens such as the one near the former Officer's Quarters at Gap Bluff. Because of this high level of disturbance it is very unlikely that there will be any evidence remaining associated with the first camps of non-Aboriginal settlement at Camp Cove and Signal Hill.

Apart from rock-cut features, a number of other features visible on the site do not appear in the available historic plans and images. These include drainage, retaining walls, footings of unidentified buildings, equipment platforms and construction terraces, pathways, paving, roadways and other landscaping features including gardens. There are also likely to be some domestic and defence related artefact deposits associated with existing buildings and sites of former buildings. Potential areas of concentrated archaeological evidence are:

- *the former groups of buildings and works at Gap Bluff, particularly the accommodation areas for the Artillery School;*
- *evidence of fixings for equipment, particularly those related to operation of the Artillery/Gunnery School at Gap Bluff and the defensive positions around the headland;*
- *the walk between the former Water Police station and the Hornby Lighthouse, where a number of features including concrete platforms and metal fixings are scattered along the rocky edges of the headland;*
- *the shoreline around Green Point, particularly the sites of the former searchlight station and WWII observation posts;*
- *the areas around the living quarters at Hornby Lighthouse and the former Water Police Station;*
- *the Hornby Battery and WWII searchlight facility, including the former parade ground.*

Contamination issues are unknown although there is bonded asbestos sheeting fragments throughout the Gap Bluff precinct from buildings that have been demolished on site rather than relocated and reused.

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
Precinct 1	**Inner South Head**		**Datum WGS84 UTM Zone 55**	
1.6	*Searchlight emplacement Number 2*, 1890s.	N7	340 853.17E 6255 037.33N	 
1.8	*Possible dump* for lighthouse keepers' cottages. May also include demolition rubble from the stables.			
1.9	*9-inch Battery, northern DRF* (Direction Range Finder). c1899–1903. Semicircular rough aggregate concrete structure with conical cement DRF mount.	N5	340 951.94E 6254 953.19N	

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
1.10	*Drain from Engine Room.* Large sandstone built drain with concrete and stone capping. Associated with element 1.3B.		340 875.99E 6254 840.47N	 
Other potential evidence*	Footings and/or artefact deposits associated with small buildings in the area later occupied by the Parade Ground. Services (including drains and electricity conduits) associated with the Hornby Battery, Engine Room and lighthouse complex. The 'moat' associated with the Hornby Battery. See also inventory sheets for elements in this precinct.			
Precinct 2	**Lady Bay Precinct**			
	NB: Items 2.4 – 2.8 appear to be parts of a long complex of walkways, viewing areas and searchlight emplacements along the cliffs.			
2.3	*Defensive Structure* Structure very similar to element 2.2 (No. 3 searchlight). Likely to be part of same complex. Possible emplacement/store/control room? Cement tank at ground level on northern side. Large number of copper and iron pipes protruding from the cliff below the structure.	N9	340 820.96E 6254 834.14N	

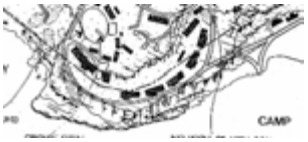
4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
2.4	*Platform Path & Step Remains* Group of remains including a rock-cut arrow survey mark, a sandstone retaining wall, concrete steps, two small concrete slabs and a cement path running n/w around the cliff face to item 2.5. Angular notches noted in the sandstone at sea level below the wall, similar to those below element 2.6.		340 727.95E 6254 477.72N	 
2.5	*Former bridge and walkway* Small concrete slabs on bedrock with adjacent timber planking remnants and concrete pier in between. This appears to be the remnants of a small bridge between two rock outcrops. It is one of a number forming part of the path and bridge system running around the cliff face.		340 718.53E 6254 511.73N	 

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
2.6	*Stone walling* with cement mortar. Possibly 60–70m long. Running n/w around the cliff face from the remains of a second bridge structure similar to 2.5. The wall has evidence of a ring and chain (possibly for hauling people or equipment up and down the cliff face) and insulators and fixings associated with electricity conduits. Angular notches noted in the sandstone at sea level below the wall, similar to those below element 2.4.		340 706.36E 6254 533.97N	  
2.7	*L-Shaped (rifle?) walling* with cement mortar. Appears to be a rifle gallery or similar. Slots evident. The wall is up to 6ft tall in places and the ends abut the cliff face. A concrete path continues on either side of this element. On the northern side the path leads to element 2.8.		340 699.53E 6254 574.33N	
2.8	*1890s Searchlight Observation Station* Thick walled concrete structure with a flat concrete roof and curved entry wall. A colonial bond brick wall appears to have been added later. Further described in Mider 1998.	N11	340 696.89E 6254 606.86N	

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
2.9	*Store & sheltered walkway* Possible emplacement or store built in behind the Lady Bay retaining wall (element 2.11). Possible sheltered walk and below ground store with concrete roof. Sheltered walk completely filled in and underground room partly filled in. This is adjacent to the large dish drain leading to the beach from HMAS Watson.		340 814.73E 6254 739.59N	
2.10	*Pit with cement cover.*			
2.11	*Wall behind Lady Bay Beach.*		340 814.73E 6254 739.59N	
Other potential evidence*	Footings and/or artefact deposits associated with 4 buildings (possibly barracks?) in the grass area between the bitumen road and the HMAS Watson fenceline.			 Buildings shown on post WWII plan (Gojak 1984).
Precinct 3	**Camp Cove**			
	No additional archaeological items were recorded in this precinct. Relevant archaeological notes added to inventory sheets.			
Precinct 4				
	Lower Gap Bluff			
4A.5	*Footings of 1912 Barracks Building* Large grassed area, site of former building. Possible officers' quarters. Sandstone footings visible in areas. Concrete retaining wall survives in tact to the rear. Remnant cement paths.		341 120.58E 6254 092.38N	

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
4A.6	*Footings of 1912 Barracks Building* Large grassed area, site of former building. Possible officers' quarters. Sandstone footings visible in areas. Concrete retaining wall survives in tact to the rear. Remnant cement paths.		341 094.61E 6254 119.99N	
4A.7	*Small fibro screening wall* with water tank behind "Goodrid" brand.		341 041.82E 6254 170.76N	
4A.8	*Cement slab* with ceramic pipe and iron pipe sections. Possible toilet draining directly to the ocean down the cliff face.		341 262.29E 6254 915.23N	
Other potential evidence*	Footings, services and artefact deposits associated with former buildings beneath carpark adjacent to and under driveway around, the Officer's Mess.			
	Upper Gap Bluff			
4B.2	*Practice Battery* – see main report for description. Photos show the way the races have been partially covered with cement and various items immediately adjacent to the southern end of the battery. 	W6	341 249.06E 6254 179.15N 	 

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
4B.3	*Square, rough concrete pad* with 12 threaded iron bolts, possibly an engine bed footing.		341 303.66E 6254 039.06N	
4B.4	*Rough concrete L-shaped wall*, approximately 13m long. Possibly shelter wall. Small niche possibly ammunition store at one end. Appears to have been built quickly for a temporary purpose. Possibly part of long feature numbered D1 on c.1905 developmental plan in Gojak's research notes. Same as 4B.7 in reverse.		341 308.47E 6254 047.10N	
4B.5	*Small concrete plinth*, 80cm tall and 1.1m square. 2 concrete steps on northern side. Possible base for a rangefinder, telescope or other viewing function. Likely WWII period.		341 310.80E 6254 086.20N	
4B.6	*Large area of heavily overgrown demolition rubble*. Likely to relate to large building shown in this area on the 1969 site survey. Includes Charcoal, fragments of fibro, fragments of brick, terracotta pipe, wood, iron. Visible areas of cement paving/paths and possible concrete footings.		Centroid point 341 292.13E 6254 085.09N	
4B.7	*Area of bedrock with various iron rings and hoops*. Two types of fixings visible. Large clinch bolts and thinner hoops with concrete support. Anchor points, possibly for antennae guy ropes, camouflage nets and cliff winch or rappelling system. Various rock-cut features also exist within this area and along the cliff edge. A number of small and shallow rectangular cut features appear to be anchor points with the concrete support and loop missing.		Centroid point 341 312.12E 6254 127.15N 	 

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
4B.8	*Rough concrete L-shaped wall,* approximately 13m long. Possibly shelter wall. Small niche possibly ammunition store at one end. Appears to have been built quickly for a temporary purpose. Likely WWII period. Heavily overgrown. Same as 4B.3 in reverse.		341 303.10E 6254 147.42N	
4B.9	*Small cement slab*. Likely paving rather than footing. Possible flagpole base? Small brick base in the middle and iron pin stubs around edges. Remnant iron drainage pipes nearby.		341 283.32E 6254 152.36N	
4B.10	*Small cement slab*. Appears to be floor of 2-room structure. Likely to have been lightweight shed or lean-to type of structure. 4 iron pins with small rectangular shadows around them, possibly evidence of a fixed table.		341 283.98E 6254 148.30N	
4B.11	*Curved, thin cement slab*. Paving between practice battery and site of large, rectangular building. Visible on 1969 survey.		341 258.88E 6254 172.06N	
4B.12	*Cement slab*, probably from large, rectangular building to the south of the practice battery.		341 265.39E 6254 172.51N	

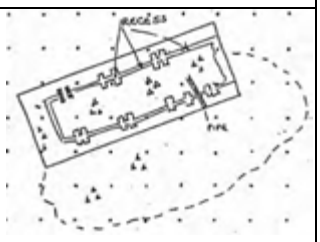
4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
4B.13	*Garden features, from terraced garden* shown on 1969 survey plan and visible in 1951 image of the Artillery School. Features include rough sandstone steps with metal railing on the eastern side, cement and stone raised garden bed with anchor pattern, dry stone retaining walls.		Centroid 341 209.57E 6254 193.72N	 
4B.14	*Possible dump* – 1960s cordial bottles, fibro sheeting fragments, ceramic and brick fragments, ring pull beer cans, fly screening, exotic plants. Wooden post and rail fence.		Centroid 341 275.39E 6254 037.63N	
4B.15	*Small standing brick building.*	N25	341 211.86E 6254 176.38N	
4B.16	*3 steps and section of pathway from Artillery/Gunnery School period,* now part of walking track to lower Gap Bluff. Former steps from former large L-shaped building running around the edge of the Parade Ground. Steps marked on 1969 survey plan. Evidence of garden beds and path at entrances to barracks on northern side of the path also visible. Barracks sites heavily vegetated.		341 179.98E 6254 139.73N	

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
4B.17	*Telephone or telegraph pole*			
Other potential evidence*	Footings, services, artefact deposits, demolition rubble, garden features, equipment platforms, fixings, rock-cut features, evidence of fencelines, terraces and walls. Remains of Engine Room shown on 1890 Telephone System Chart (reproduced in Mider 1998).			
Precinct 5	**Green Point**			
5.6	*WWII observation post*. Small brick structure with cement roof.			
5.7	*Group of small concrete blocks and iron fixings* (possibly related to WWII boom net)  		340 551.80E 6254 163.64N	 
5.8	*Partially exposed concrete slab* above obelisk.	GP10	340 566.66E 6254 174.14N	

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
5.9	*Rectangular pen* cut from rocky foreshore.			 
5.10	*Cement block*			
5.11	*Cement slab*		340 599.84E 6254 125.92N	 

4.2 Historical Archaeology – Inventory Table

Element Number	Element Name/Description	Previous No.	GPS Position	Image
Other potential evidence*	A number of elements are known to have existed historically in this area, particularly during WWII. Evidence may be obscured by vegetation, buried or removed. Elements include: ▪ WWII 6-inch twin gun battery control station on rocky outcrop (at north side of house)? 3-storey square tower, c1944–45. (Noted by Gojak as item GP12.) ▪ Searchlight No. 17. (Noted by Gojak as item number GP7.) ▪ Battery of 6-pounder QF guns c1944. (Noted by Gojak as item GP 3.) ▪ 3 Noordenfeldt emplacements c.1894. (Noted by Gojak as item GP2.) ▪ Battery proposed in 1874. (Noted by Gojak as item number GP1 although he suggests it was never built.)			

* Other potential evidence: features known to have existed historically, but evidence was not visible during the site inspection. This may be because the area is heavily overgrown or the evidence is likely to be underground. Potential features are only listed if there is potential for them to still be present in some form.

Archaeological elements or potential features associated with elements having inventory sheets (such as buildings) are noted on the sheets themselves.

5 INVENTORY SHEETS

1.0	**Inner South Head Precinct**	
1A.1	Hornby Head Lightkeeper's Cottage	Building and Garden
1A.2	Hornby Assistant Lightkeepers' Cottages	Building and Garden
1.3	Hornby Battery, gun emplacements, passages, magazines and Directional Range Finder	Structure - Defence
1.3A	Hornby Battery Shell Store & Collection	Structure / Movable - Defence
1.3B	Hornby Battery Engine Room & Collection	Structure / Movable - Defence
1.4	1854/5 gun emplacement	Structure - Defence
1.5	World War II Searchlight Shelter, 1931–1941	Structure - Defence
2.0	**Lady Bay Precinct**	
2.0	Lady Bay Precinct	Precinct
2.2	Searchlight No. 3, 1891	Structure - Defence
3.0	**Camp Cove Precinct**	
3.1	Constables Cottage (32 Cliff St)	Building and Garden
3.2	33 Cliff Street	Building and Garden
3.3	Camp Cove gun emplacement and rifle walls	Structure - Defence
3.4	Cobblestone Road	Structure - Defence
3.5	Camp Cove Slipway	Structure - Defence
4.0	**Gap Bluff Precinct**	
4.0	Gap Bluff Precinct	Precinct
4A.1	Officers' Mess & Garden	Building
4A.2	Armoury	Building
4A.3	Cottage/former Workshop	Building
4A.4	Site of the former 1912 barracks	Archaeology Site & Building
4B.1	National Park Lookouts	Structures - Landscape
5.0	**Green Point Precinct**	
5.1	Green Point Cottage (33 Pacific St)	Building and Garden
5.2	Arthur Phillip monument	Structure - Monument
5.3	1850s navigation obelisk	Structure - Defence
5.4	Submarine Miner Firing Station	Structure - Defence
5.5	Remains of Searchlight No 4 / Boom Net Winch House	Structure - Defence

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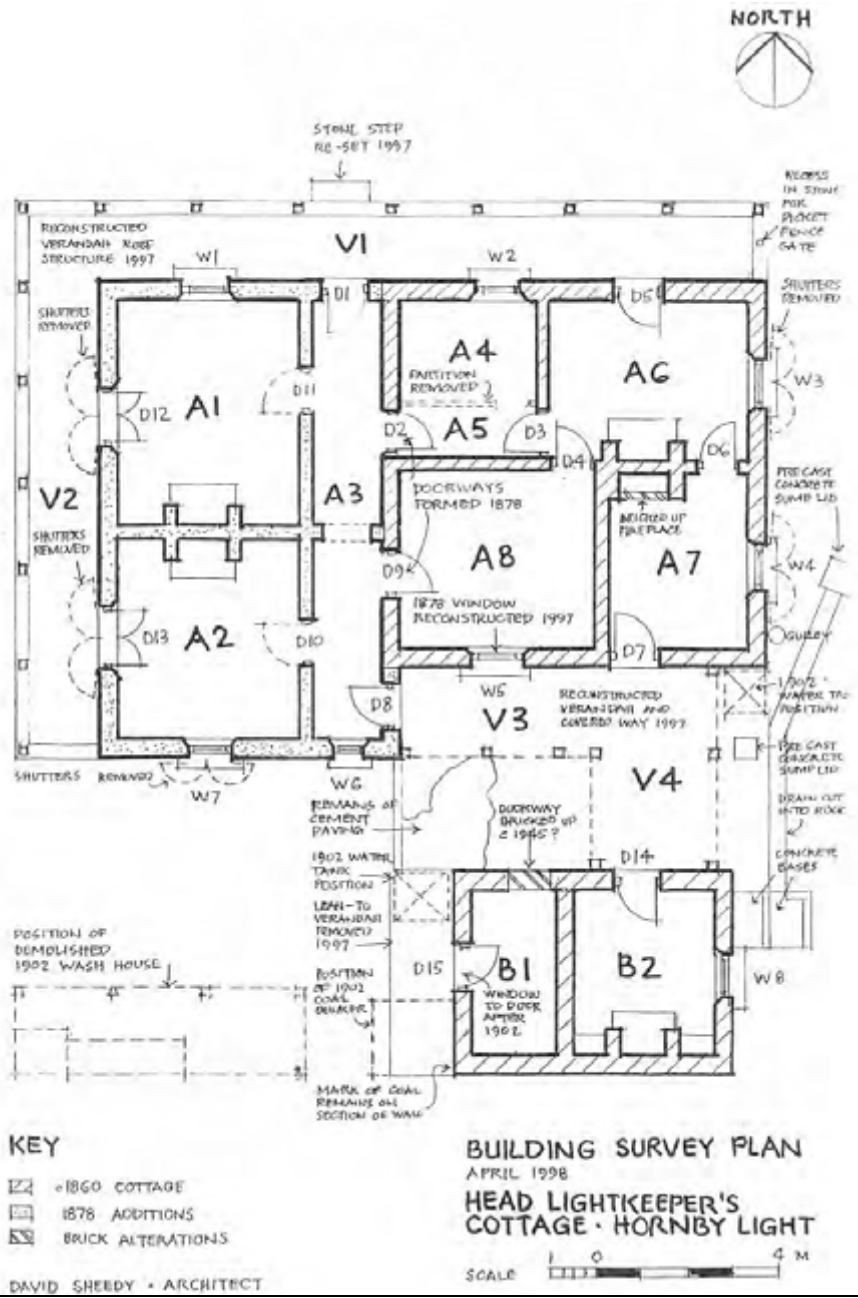
Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Head Lightkeeper's Cottage - Ref 1A.1		**LOCATION**: Inner South Head	
HHIMS ID: 11031	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Unoccupied		**FORMER USE:** Head Lightkeeper's Cottage from 1861 to 1939, then occupied by the Army from 1939 to 1977. Unoccupied after 1977.	

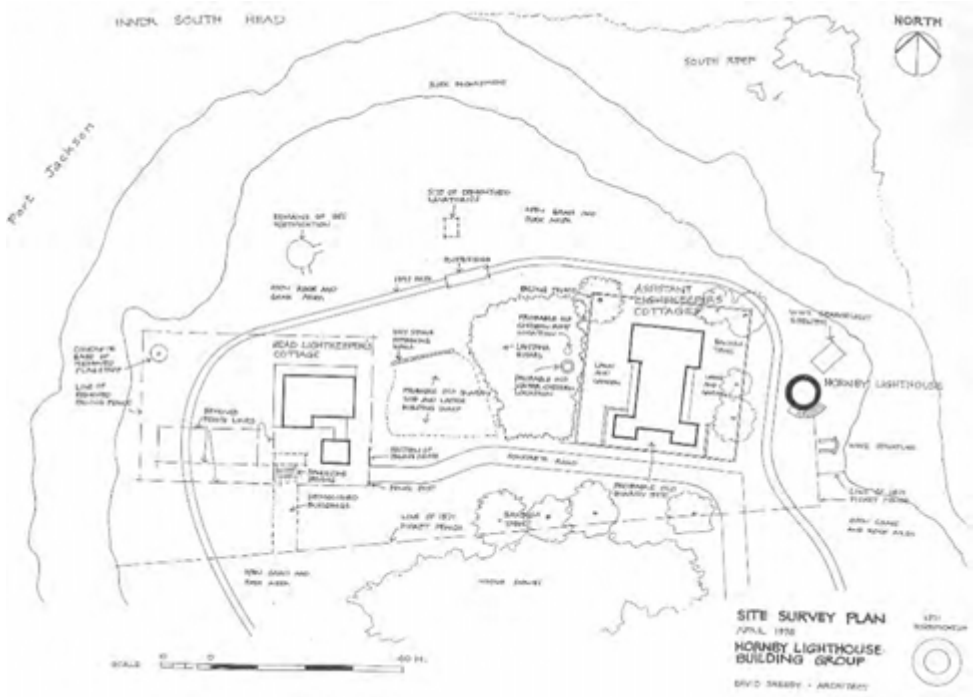
Plan



Sketch plan of the cottage drawn by David Sheedy, showing the historical development of the cottage and its current layout following the 1997 work.

Photograph

The Head Lightkeeper's Cottage from the northwest. October 2006.



Site Plan by David Sheedy showing relationship to missing garden features and adjacent Lightstation structures.

HISTORICAL SUMMARY (STAGE 1 CMP)

The Hornby Light was erected in early 1858 as an additional navigation aid to the earlier Macquarie Lighthouse (1818). The Assistant Light Keeper's Cottages were built first. The Head Light Keeper's Cottage was constructed in c1860, following the completion of the neighbouring semi-detached Assistant Light Keepers' Cottages. "Additional outbuildings" tendered for in 1860 show that considerable cost had been outlaid after the construction of the first cottages in 1857. Conrad Marten's 1859 painting strengthens the theory that these "outbuildings" were in fact the Head Light Keeper's cottage, service wing and possibly small stable and shed. Other returns and records can be said to confirm that the Head Light Keeper's cottage was constructed three years after the Assistant Light Keepers' quarters.

The first stage of the Head Light Keeper's cottage was a four-roomed building with a kitchen and possibly a small stable. The work was undertaken by the Colonial Architect's Department, which was then under the stewardship of Alexander Dawson. An underground water tank and several iron tanks were provided for the storage of water for general use. Water from city mains was not connected until 1897.

Extensive additions were made to the cottage in 1877, including two substantial rooms and an entrance corridor. The additions were designed and built under the supervision of the then Colonial Architect James Barnet and were most likely the result of the 1873 Conference of the Principal Officers of the Marine Department of the Australian Colonies. A number of repairs and alterations followed during the 1880s. In 1895 new eaves, gutters and downpipes were apparently added to the quarters.

At the turn of the twentieth century a number of improvements to the cottages appear to be due to the administration of the Sydney Harbour Trust who assumed responsibility for the Lighthouses after 1900. The Trust was particularly concerned about public health after the ravages of the plague. The flagstaff emplacement to the east of the cottage but then within its garden fencing is thought to have been erected at this time (Sheedy 1998).

From 1911 onwards, Commonwealth officers carried out annual tours of inspections of lighthouse complexes. The main cottage requirements were listed and included a new wash house with tubs, new bath, four ventilator gratings, two new traps for drains, locks and sash cords. The 1913 report by C. R. W. Brewis described the Hornby light as 'old and obsolete' and referred to land slips which had affected the footing of the light. It reported that two keepers manned the light with an assistant keeper for relieving duties. The report also stated that the Hornby light had lost its importance due to the light located at Grotto Point; however Hornby was still in use as a Harbour light guiding vessels close to shore.

The Hornby Light was connected to electricity in 1933 and as a consequence, the Head Lightkeeper's Cottage, as well as the Assistant's Cottages, became redundant in the same year. Immediately after the withdrawal of lighthouse staff in 1933, the Army asked that the cottages and surrounding land be transferred to their ownership in exchange for defence land at Fort Scratchley. The State Government rejected the offer. Army documents record that the cottages were let to private tenants from 1933 to 1939. In 1939 it appears the Army took temporary possession of the buildings for defence purposes.

By 1938, the Head Lightkeeper's Cottage was in poor state of repair and was almost demolished. However, the need for additional Army accommodation saved it. Works were carried out in the 1940s to improve all of the residences used by the Army for married personnel including the Head Keepers Cottage. In 1975 the National Trust of Australia (NSW)

classified the site. The Army vacated the cottage in 1977 and it was transferred to the National Park.

The asbestos cement roofing, which had replaced the earlier slates, was replaced with corrugated steel in 1984, under National Parks ownership. The high timber paling fence that surrounded the Head Lightkeeper's Cottage was removed in the early 1990s. It was located very close to the cliff top to the west of the cottage and was posing a danger to pedestrians. In 1997 the exterior of the Head Keepers Cottage was repaired, including conservation of the face stonework, the replacement of the corrugated steel with slates and reconstruction of the verandahs. All external joinery was repaired. As at December 2008, the interior has not been repaired.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Communication - Activities relating to the creation and conveyance of information - Communicating by signals
3. Economy - Developing local, regional and national economies	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements - Building and maintaining public light houses and stations
4. Building settlements, towns and cities	Accommodation - Domestic life - Activities associated with creating, maintaining, living in and working around houses and institutions - living and working at a public lighthouse station
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups - Associations with Alexander Dawson & James Barnet, Government Architects

DESCRIPTION

The Head Lightkeeper's Cottage is a domestic scale single storey "L" shaped mid-nineteenth century cottage. The building is located on the more exposed western side of the headland and its formal front is finished with a posted timber verandah facing north to the dramatic view of the harbour entrance and North Head. Heathland bush regenerated on the shallow slope provides some sense of enclosure and protection on the east side of the cottage. This contrasts with nineteenth century images of the site, which show an open exposed landscape mostly cleared of vegetation. A weathered length of (most likely late twentieth century) paling fence and a single gatepost are aligned with part of the cottage's eastern boundary.

To the east of the cottage and originally within its garden fencing is the remains of a flagstaff emplacement thought to date to around 1902 (Sheedy 1998). The circular concrete base has a rectangular housing for the timber staff. There is evidence of guy rope fixing points around the emplacement.

The building is low and modest in scale, accentuated by the shuttered small windows with deep reveals, a low-pitched roof and squat stone chimneys. The cottage's exterior walls are constructed of large dressed coursed sandstone blocks (one foot quarry blocks) with a mostly rough picked surface. The roof is sheeted with slate and flashed with lead sheet over circular ridge and hip rolls. Copper ogee perimeter gutters edge the roof, draining into circular downpipes. The cottage features sills and window lintels of dressed sandstone blocks with a finer picked surface. The mortar joints are slightly recessed and weathered, particularly on the wetter east and south elevations. Visual inspection indicates that the joints which would have been filled with lime mortar are now filled or have been repaired with compo mortar. The building has painted timber external joinery, including verandah details, eaves boarding, doors and double hung window sashes and a timber framed and sheeted rear covered way.

The original four-roomed cottage was fronted by a verandah to the north and featured a smaller service verandah on the south elevation. The cottage was serviced by its small detached kitchen building and a small stable (now demolished). The small cottage was extended in c1878 (by the Colonial Architect, then James Barnet) to include two additional rooms and a hall on the west side. David Sheedy (1998) states that the extensions were respectful of the original design with added sophistication of French doors and an arch in the hall. The 1878 work also included outbuilding and yards, which have since been removed. Additions to the cottage from the improvement works of c1902 included a washhouse – now removed but still evidenced by stone platforms and footings. The floor of the front verandah has a concrete screed over what appear to be deteriorated sandstone stone flags.

The exterior of the cottage was comprehensively repaired and conserved by DEC in 1997 (the work included new slates and roof framing as well as the reconstruction of the verandah and the erection of the rear covered way) and is now in excellent condition. The work did not include the interior, which is in poor condition and appears to be deteriorating still. The interiors of both the 1860s cottage and the 1878 extension feature suspended timber framed and boarded floors above a very low underfloor space. The walls are finished with lime plaster in both parts of the cottage.

The 1860s section of the cottage features timber boarded ceilings, which are fairly utilitarian, whereas the ceilings in the 1878 additions were finished with more generous lath and plaster. The timber boarded ceilings have survived fairly well, in contrast to the plaster where large sections have dropped. The 1860s cottage was finished with rendered skirting while the 1878 additions feature timber skirtings. Much of the significant internal joinery survives with its hardware, although some architrave sections are missing. The 1878 additions still retain their fine severe slate fireplace surrounds, mantles and cast iron coal grates. The Head Lightkeeper's Cottage has no live services, but has evidence of earlier redundant gas and electric fittings.

The Head Lightkeeper's Cottage was recorded as site N3 by NPWS archaeologist, Denis Gojak in c1985.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low Concrete flagstaff emplacement to east of cottage and associated flagstaff fixing points. Stone footings of a small structure in the grassy area to the rear of this building. Possible artefact deposits and domestic dump to the rear. Evidence of a former fenceline cut into the rock next to the flagpole base. Potential within the building (eg underfloor artefacts) is moderate as the interiors of head lightkeepers have been stabilised rather than conserved.

SUMMARY STATEMENT OF SIGNIFICANCE

The Head Lightkeeper's cottage is an integral part of the significant cultural landscape of the Hornby Lightstation, which in turn is an integral part of the rich cultural landscape of Sydney Harbour National Park at South Head.

The Hornby Lightstation, comprising the Hornby Light (1858), Head Keeper's Cottage (1860 & 1878), Assistant Lightkeeper's Cottages (1858 & 1878) and surrounding cultural and archaeological landscape, is of heritage significance to the State of NSW. It was the third lightstation after Macquarie Lighthouse (1818) and Nobbys Head Lightstation (also completed in c1858). Of these it is the only one to retain the whole lightstation collection of light and adjacent cottages intact to the late nineteenth century arrangement, with only the landscape setting being somewhat eroded by loss of above ground garden details (eg original cottage and lightstation boundary fencing and ancillary structures), and with a late twentieth century native landscape partly replacing the more open nineteenth century lightstation character.

The Hornby Lightstation is historically important in demonstrating European Sydney's reliance on sea navigation and on communication. The Hornby Lightstation was constructed in response to the tragic wreck of the *Dunbar* on the night of 20 August 1857, when 63 passengers and 58 crew members lost their lives. Construction was probably expedited by the subsequent wreck of the *Catherine Adamson* on 23 October 1857. The Hornby Lightstation has landmark qualities marking the entrance through the Sydney Harbour 'Heads'.

The history of the overall Hornby Lightstation is intertwined with the use of South Head for military purposes. The use of the Lightstation cottages by the Defence forces (1939–1977) strengthens the importance of the whole of South Head in NSW and Australian Defence history.

The Head Lightkeeper's Cottage is remarkably intact externally and internally to the late nineteenth century and is a fine example of a 1860s Victorian Georgian cottage with seamless 1878 additions. Significant interior detailing includes remnant plaster ceilings, more intact boarded ceilings, internal joinery with hardware, slate fireplace surrounds and cast iron coal grates. There are also significant associated structures such as fencing remnants and the c1902 flagstaff emplacement. The nineteenth century character of the cottage, and its allotment, has withstood the twentieth century upgrading that has been applied to similar Government residences and their gardens of this period.

The cottage shows the character of such public residences arising out of the Government Architect's Office under Alexander Dawson in the 1850s and 1860s and under James Barnet in the 1870s. The earlier sections of the Head and Assistant Lightkeeper's cottages are rare survivors of domestic work to the design of Alexander Dawson, who also designed the tomb over those who died in the *Dunbar* in St Stephen's Church, Newtown. The later 1878 additions to the Head Lightkeeper's Cottage are fine examples of Barnet's skill in adding elegant additions to humble residences.

The Head Lightkeeper's Cottage and surrounds have high archaeological potential. The building layout, early fabric and detailing (and potentially the site and its archaeology) demonstrate the character of such public residences and can contribute to our understanding of the life of the head lighthouse keeper and his family. The Sydney Harbour National Park creates a buffer zone around the Hornby Lightstation protecting its ability to be interpreted for its nineteenth century landscape character as a navigational gateway to Sydney Harbour.

High Moderate Low None Individually and as part of the Hornby Lightstation Precinct	**State**	Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve building. Stabilise and protect in the short term. Conserve in long term and use as long term occupation residence (ie not holiday letting) or for interpretation.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Inner South Head and Keepers Quarters Generally

The location and the limited access to it make this area unsuitable for many uses. Vehicle access is only available through HMAS Watson and is limited for security reasons. It would not be available for say daily servicing of residential accommodation or an education centre or other rental use. Visitor access is only by foot and via the Lady Bay nude beach making difficulties for school groups. Visitor use as a "museum" would require staffing due to vandalism risks and the needs to lock and unlock. Liaison is needed with HMAS Watson re access for users and to determine limitations. Longer term residential use is likely to be the most appropriate use such as by NPWS staff or for programs such as annual or six monthly occupation for a use associated with the site may be possible. For example by an artist or an archaeologist or historian interested in the defence structures or the natural features.

Revegetation has obscured the link between the quarters and lighthouse and vegetation should be managed to be lower between the three buildings while maintaining privacy. The pine wilding should be removed from between the two quarters buildings.

General policies for area around the quarters are:

- *manage vegetation between houses, to lighthouse and south to the line of the original fence to maintain views between and of these elements*
- *improve drainage of houses and maintain as a priority*
- *investigate cistern location (Sheedy plan) & stormwater lines, repair & maintain*

Policies for use are:

Restore and use houses and

- *maintain long term residential use such as staff residences*
- *consider annual or half annual artist-in-residence at HLKC or similar*
- *inspect on occasional tours, liaise with Ports re combined lighthouse events, tours*
- *inspect HLQC interior on occasional tours when it is safe to do so*

The Head Light Keepers Quarters

The quarters are built of stone, plastered internally, the roofs are timber framed and clad in slate, they have timber floors joinery, windows and doors and verandahs. The head keeper's cottage has been restored externally but the interior needs work with water damaged and partly collapsing plaster ceilings and is unoccupied. These buildings were intended to be utilitarian and this is reflected in their restrained and austere detailing. Internally the buildings are substantially devoid of decoration though there is evidence of simple dados in the head keeper's quarters. The head keepers quarters retains early painted finishes and has not had modern paints used on the interiors. Traditional formula paints should be used in the interiors of this building.

The buildings have suffered from damage from leaking roofs in the past and both still suffer from defects associated with rising damp. Water draining from up hill affects the buildings. A leaking tap southeast of the quarters needs to be relocated or have a drain provided underneath. The route of disposal of roof drainage is not known. The downpipes may originally discharged into an underground cistern which David Sheedy's plan suggests is between the houses. Later plans show square water tanks being added to the laundry (now demolished). The drains need to be investigated to ensure they discharge away from the buildings. The cistern should be located and if serviceable cleared and drains to it cleared or new drainage needs to be installed. Footings of the former toilet block may survive below and to the north of the houses.

Detailed policies for the Head Light Keepers Quarters are:

Retain the authentic fabric of the former quarters and associated structures. Maximise the retention of original fabric by patching, repairing or splicing in preference to replacement.

Retain the configuration and character of the buildings with no further additions except as noted below.

Improve surface drainage by diverting ground water from above around the buildings and adjusting ground levels so water is directed away. Relocate tap above kitchen block or add a drain under it.

Investigate, stormwater drainage and confirm it is piped away from buildings. Clear and repair or replace stormwater drains and maintain regularly. Improve the underfloor ventilation by clearing underfloor spaces (under archaeological supervision), introducing floor access hatches and additional vents or similar and monitor and maintain.

Remove birds and birds nests and other debris but retain removed building materials including early fence panel.

Stabilise plaster ceilings in interior of head keepers quarters in the short term by propping, screwing laths to joists where loose and flooding plaster with adhesive such as RAP primer or similar purpose designed material. In the long term replace missing laths and plaster to match or undersheet with plasterboard maintaining set detail at wall junction

Replace rusting steel lintels where present or treat with tannic acid and epoxy paint.

Apply sacrificial render to areas of rising damp to protect significant fabric especially in the rear wing. Remove when salts are reduced in accord with professional advice.

Repair interior plaster to the quarters walls with matching traditional lime plaster (after removal of salts with poultice or sacrificial render.)

Repoint masonry joints where deteriorated with lime mortar. Use slaked lime.

Use VAPOUR PERMEABLE paints on the interior and oil based paints to exterior joinery. Use traditional formula paints.

Paint colours should preferably be based on research on site, or on typical colours of the period. Research colours of interior before repainting. Interior joinery should be researched to determine whether it was painted or clear finished.

Subject to policy above and as a guide: external timber colours generally stone colours or very dark reds or greens or black and underside of verandahs light manilla or eau-de-nil. Interior colours: generally matt and off-white or light manilla for ceilings and for walls light colours with red or yellow ochre based pigments or pale greys, greens and blues. Dados generally darker.

Building and maintenance materials stored in the quarters should be tagged as to origin and in the long term stored elsewhere in a purpose built store (possibly in the location of a former outbuilding).

Rooms may be adapted to provide a modern kitchen and bathroom but works must be easily reversible and designed and supervised by an experienced heritage architect.

Use slate roofing for light keepers' quarters.

Manage the use of adjacent spaces, eg turning and parking areas, associated with the residential use.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake stabilisation works:
- direct water away from the kitchen block,
- apply sacrificial render,
- remove birds, nests and rubbish and
- stabilise ceilings.

Remove the pine wilding to the northeast.
Arrange vents and windows eg fixed partly open, to provide ventilation.

Medium Term (1-5 years)
Undertake conservation works:
- improve surface drainage around buildings,
- clear underfloor spaces (under archaeological supervision) and provide underfloor ventilation,
- tag building materials stored in building and catalogue,
- repair plaster walls and ceilings,
- repair timber floor and joinery,
- replace or repair rusted steel elements and apply preservative treatment and
- paint interior and exterior (previously painted elements only).

Long term
Undertake adaptive reuse and conservation works:
- repoint stonework,
- install bathroom and kitchen if required for use and
- build or set aside place for materials store.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- vandalism and forced entry,
- fire hazards,
- broken glass, rubbish accumulation,
- vermin entry and nesting,
- damage to roof slate or loose or missing slate or lead flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes are clean and functioning,
- condition of paint,
- termite damage or infestation,
- open mortar joints or fretting or cracks in stonework,
- door and windows close and
- operation of services such as fire protection, lighting and power, water, and
- open up occasionally for ventilation.

INTERPRETATION (CMP STAGE 2)

In short term maintain building locked with interpretive sign on path adjacent. Consider opening for occasional guided tours. Considered providing additional interpretive material electronically or in a brochure.

In long term provide additional interpretation on site and regular tours or other supervised access. Consider adapting for partial residential occupation incorporating interpretive activities, or occupation associated with park management or research or other compatible activity.

CURRENT PHOTOGRAPHS

The Head Lightkeeper's Cottage and the rear service wing from the north. October 2006.

View of the rear (south) of the Cottage with the main 1860s block in front and the kitchen wing at the rear. October 2006.

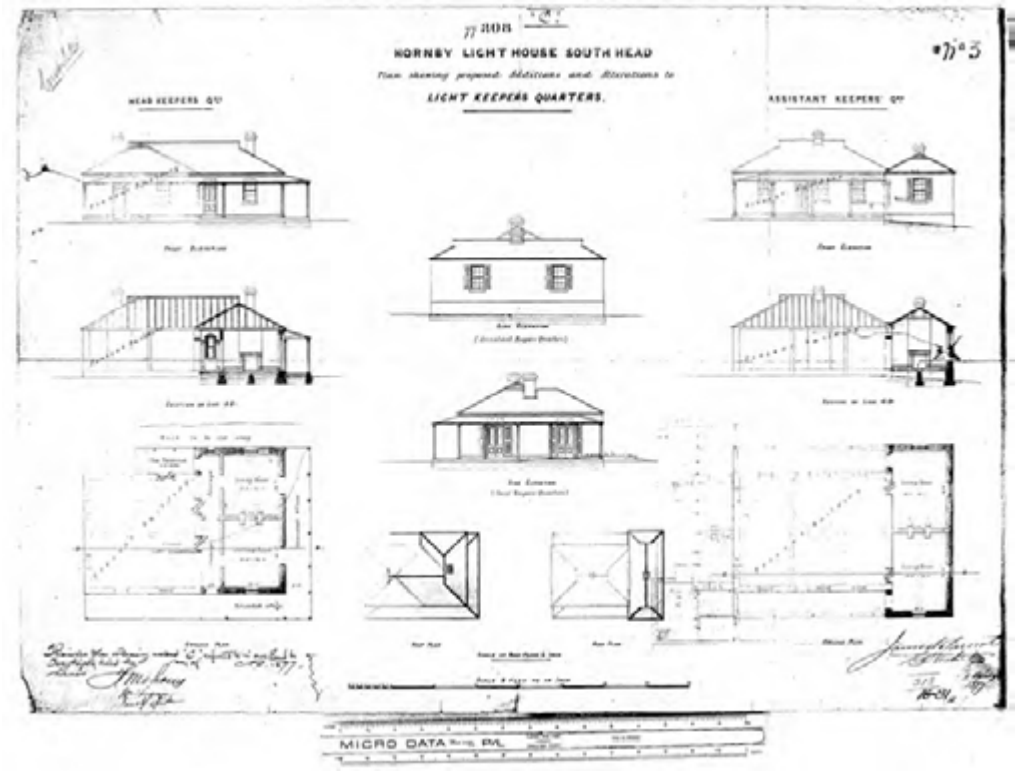
View of the hall looking south with the 1860s cottage on the left and the 1870s additions, including the hall, on the right. The poor condition of the interior is apparent. October 2006

View of the interior of the Kitchen wing showing the large hearth on the south wall and the timber boarded ceiling. October 2006

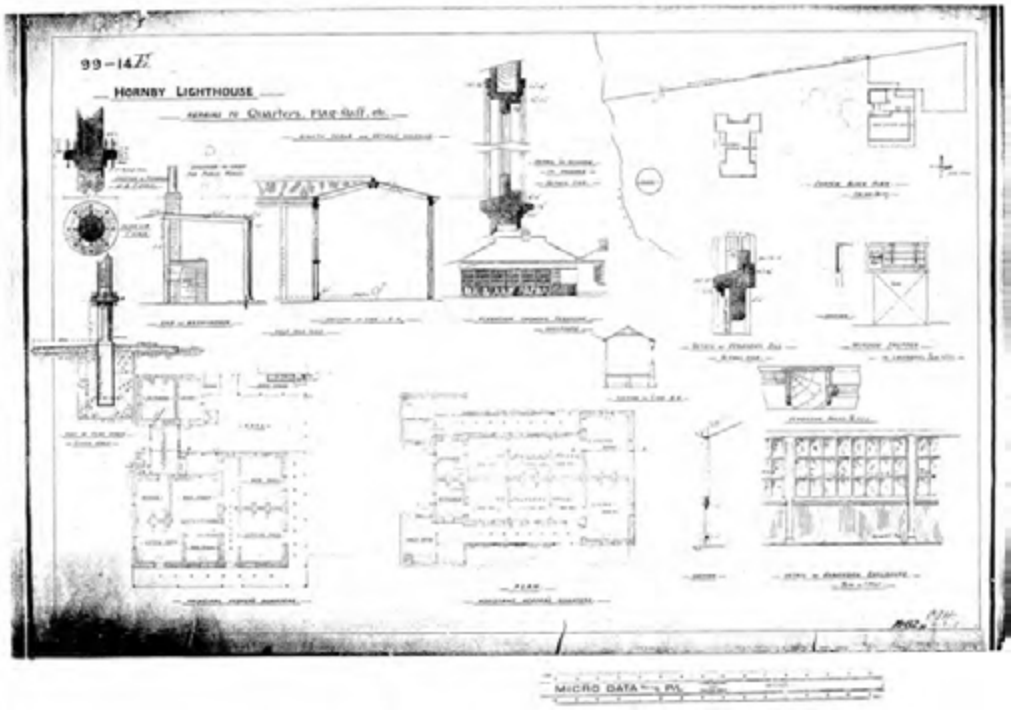
SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2007 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe	**Date:** December – April 2006
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL IMAGES (CMP STAGE 2)



View of the 1877 set of plans showing proposed additions and alterations to the Head Light Keepers Cottage (left side of the drawing). The original configuration of the building can be deduced from this plan. Source: Plan cabinet at Greycliffe House.



View of set of plans showing proposed additions and alterations to the Head Light Keepers Cottage (left side of the plan). The proposed additions were a washhouse and enclosed passage. Source: Plan cabinet at Greycliffe House.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the interior of the kitchen showing salt affected stonework.

View of the interior of the kitchen showing salt affected stonework Salt laden sand lies on the floor adjacent to the wall.

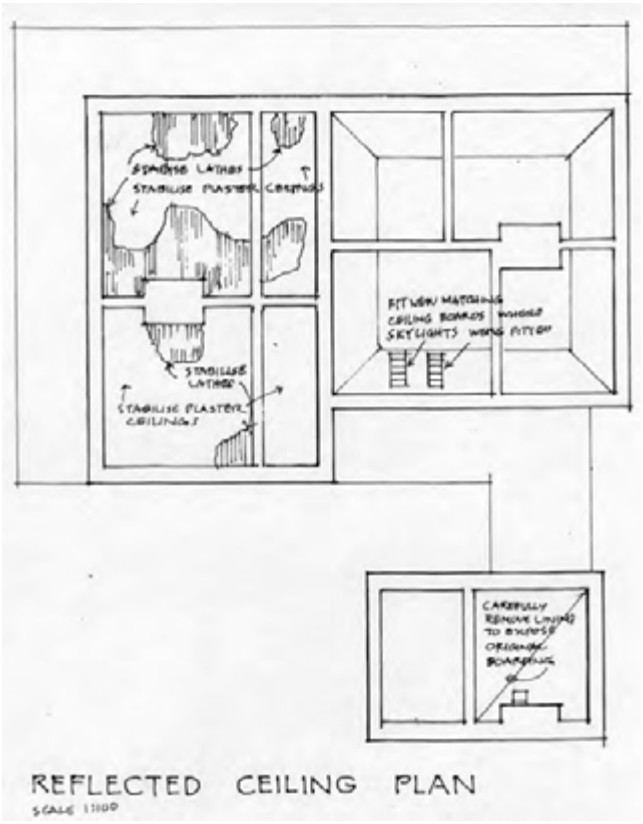
View of the exterior of kitchen walls with tap in the foreground and rock directing water to the building.

Original pickets from fence stored in building.

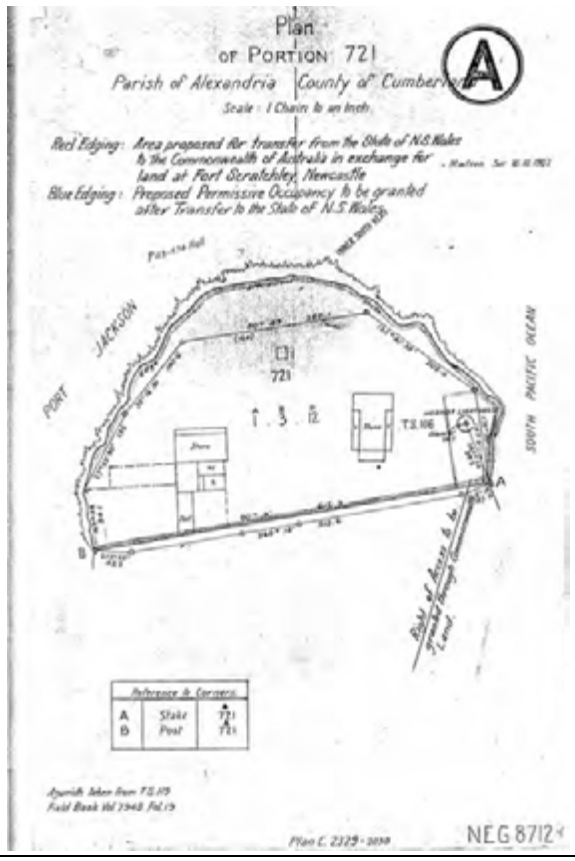
View of the plaster ceiling damaged by water entering prior to the repair of the roof over.

View of the plaster ceiling damaged by water entering prior to the repair of the roof over.

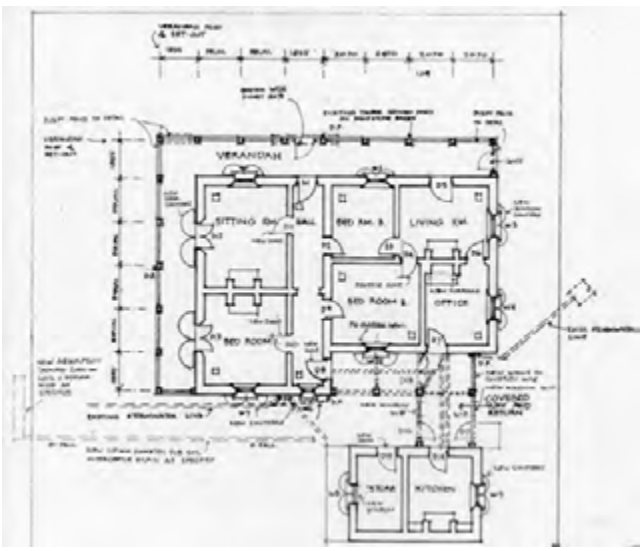
ADDITIONAL IMAGES (CMP STAGE 2) Added to the inventory by OCP December 2009



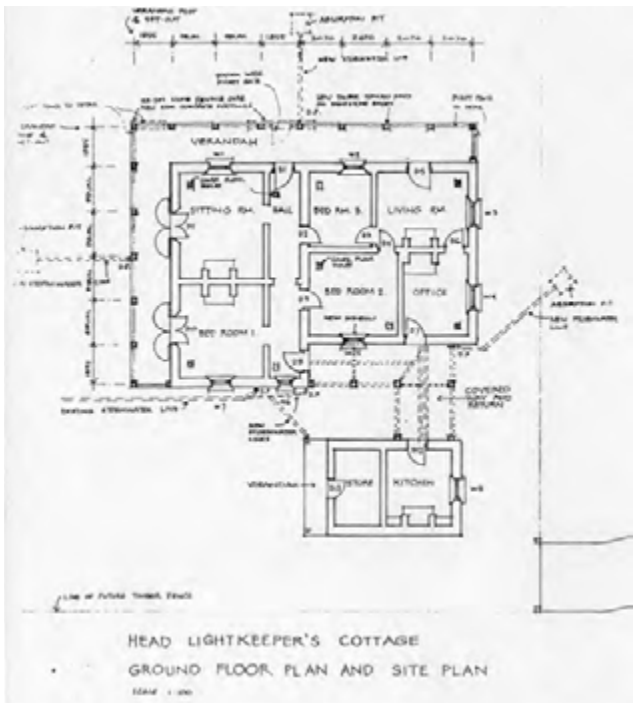
Sketch of reflected ceiling plan showing works to the ceilings. It is not known if this work was carried out. Source: NPWS files and plan cabinet Greycliffe House.



1902 survey of portion 721. Survey shows outbuildings and fences including the location of the toilet block to the north. Source: NPWS files and plan cabinet Greycliffe House.



Dimensioned plan showing stormwater disposal details. Source: NPWS files and plan cabinet Greycliffe House.



Similar plan as left showing alternate stormwater disposal details. Source: NPWS files and plan cabinet Greycliffe House.

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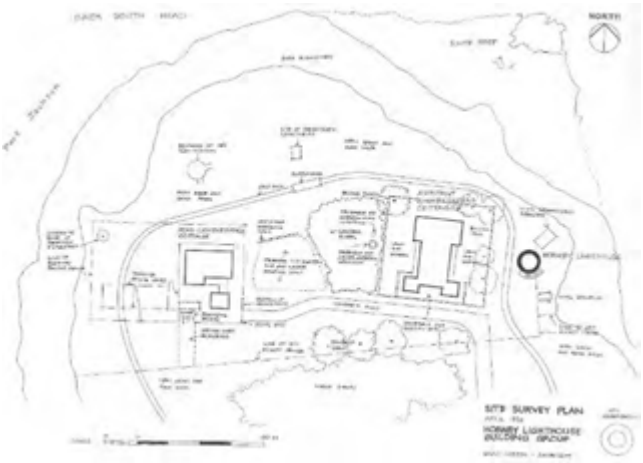
Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Assistant Lightkeepers' Cottages – Ref: 1A.2		**LOCATION**: Inner South Head	
HHIMS ID:11089	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: The residence occupied by NSW Parks and Wildlife Division staff		**FORMER USE:** Assistant Light Keepers Cottage from 1861 to 1939, occupied by the Army from 1939 to 1977. Occupied after 1977 by NPWS.	

Plan



Site Plan by David Sheedy showing relationship between Assistant Lightkeepers' Cottage and adjacent Lightstation structures. Note that there is no available sketch plan of the cottages at this time.

Photograph

A view from the walking loop path looking south west of the Assistant Lightkeepers' Cottages behind the fence and screen of trees. October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

The Hornby Light was erected in early 1858 as an additional navigation aid to the earlier Macquarie Lighthouse. The Assistant Light Keeper's Cottages were built first. These two semi-detached cottages were constructed to the west of the Hornby Light in c1857 by the Colonial Architect's Office under the stewardship of Alexander Dawson. A painting by Conrad Martens dated 1859 shows only the Assistant Light Keeper's Cottage adjacent to the Hornby Light.

The Assistant Lightkeepers' Cottages were originally constructed in two stages. Initially there were two three-roomed cottages symmetrically placed either side of a party wall. The original cottages were fronted by verandahs on their east and west elevations sheltered under the main roof. They also may have had verandahs to the north and were serviced by a small, attached kitchen against the south wall. The hipped roof formerly sheeted over but (now feature slates as a result of the 1997 conservation works). It has gablets at each end and low squat chimneys. As with the Head Lightkeeper's Cottage, the Assistant Lightkeepers' Cottages were extended in c1878. The work was undertaken by the Colonial Architect under James Barnet. The work included generous living rooms on the north and washrooms in both southern corners. The extensions were respectful of the original design with added sophistication in the new front living room, which was surmounted by a hipped roof. The connection of the original c1857 hipped roof and the c1878 roof created an awkward junction, flashed with a boxed gutter which still causes falling damp problems in the rooms below. Improvement works also occurred in c1911 including fibrous plaster ceiling linings replacing some of the timber boarded ceilings. Works were also undertaken by Defence in the 1940s which may have included enclosing the verandahs, partitioning of the wash area for bathrooms, extensive refinishing of the interior with cement and laying of a concrete slab in the verandahs.

At the turn of the nineteenth and twentieth centuries a number of improvements to the cottages appear to be due to the administration of the Sydney Harbour Trust who assumed responsibility for the Lighthouses after 1900. The Trust was particularly concerned about public health after the ravages of the plague.

1911 saw the introduction of the annual tour of inspections of lighthouse complexes by Commonwealth officers. The main cottage requirements were listed and works were undertaken.

The 1913 report by C. R. W. Brewis described the Hornby light as "old and obsolete" and referred to land slips which had affected the footing of the light. It also reported that at this time two keepers manned the light with an assistant keeper for relieving duties. The report also stated that the Hornby light had lost its importance due to the light located at Grotto Point, however was still in use as a Harbour light guiding vessels close to shore.

The light was connected to electricity in 1933 and the Assistant Lightkeepers' Cottage as well as the Head Lightkeeper's Cottage were withdrawn in the same year. Immediately after the withdrawal of Lighthouse staff in 1933, the Army asked that the cottages and surrounding land be transferred to their ownership in exchange for defence land at Fort Scratchley. The State Government rejected the offer. Army documents record that the cottages were let to private tenants from 1933

to 1939. In 1939 it appears the Army took temporary possession of the buildings for defence purposes.

By 1938, the Cottages were in poor state of repair. Works were carried out in the 1940s to improve all of the residences used by the Army for married personnel including the Assistant Lightkeepers' Cottages. In 1975 the National Trust of Australia (NSW) classified the site. The Army vacated the cottages in 1977 and they were transferred to the National Park.

Under National Parks ownership, the asbestos cement roofing that had replaced the earlier slates was replaced with corrugated steel in 1984. A high timber paling fence was erected around the cottages in the early 1990s. In 1997 the exterior of the Head Lightkeeper's Cottage was repaired, including revealing the face stonework, the replacement of the corrugated steel with slates and reconstruction of the verandahs. All external joinery was repaired. As at December 2006, the interior has not been repaired.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Communication - Activities relating to the creation and conveyance of information - Communicating by signals
3. Economy - Developing local, regional and national economies	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements - Building and maintaining public light houses and stations
4. Building settlements, towns and cities	Accommodation - Domestic life - Activities associated with creating, maintaining, living in and working around houses and institutions – living and working at a public lighthouse station
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups - Associations with Alexander Dawson & James Barnet, Government Architects

DESCRIPTION

The Assistant Lightkeepers' Cottages are a pair of domestic scale single storey mid-nineteenth century semi detached cottages. The buildings are located on the more sheltered centre of the headland. Their low scale is accentuated by the fact that the rear of the cottages are benched into the stone and constructed well into the southern slope which protect the buildings from the worst of the southern weather. The face of the sandstone excavation is still obvious in the rear service way which links the two rear laundries. The rear wall of the laundry of the east cottage is simply built against the rock face resulting in severe damp and drainage problems. Each cottage has an enclosed timber posted verandah faces east and west away from dramatic view of the harbour entrance and North Head into intimate domestic scale gardens screened and protected on all sides by a five foot timber paling fence and good size regenerated heathland bush. This is a dramatic contrast to nineteenth century images of the site, which show an open exposed landscape mostly cleared of vegetation. The Assistant Lightkeepers' Cottages have a sheltered domestic quality in contrast to the Head Lightkeeper's Cottage, which is more exposed. Most of the difference arises from the fact that the Assistant Lightkeepers' Cottages are home to DEC staff while the Head Lightkeeper's Cottage has been unoccupied since 1977.

The exterior of the cottages were repaired and conserved by DEC in 1997 (the work included new slates and roof framing. The exterior of the cottages features painted sandstone with face stone lintels and sills, (the stone finish is now somewhat hidden but appears to match the Head Lightkeeper's Cottage), painted timber joinery, roof slates and lead flashings. The buildings retain some asbestos sheeting from the 1940s work. The rear laundries are finished with painted bricks.

The interiors of the cottages are in reasonable condition but have been altered since the nineteenth century work. Most of the interiors have been painted numerous times, including the floor boards. The floors are finished with a range of different types of timber boards all on timber framing. The verandah and service areas have concrete slabs that are at least two steps below the level of the interior floors. The walls are mostly finished with surviving nineteenth century lime plaster over bricks but with some areas of cement render. Some of the walls in the service areas are painted bricks. The ceilings are mostly sheeted with cover battens. Most of the early joinery in the c1857 cottages survives and the window and door surrounds have just plain timber reveal linings with beaded edge and no architraves. Both ledged, braced and boarded door leaves are interspersed with four-panelled door leaves and some flush door leaves. The windows are mostly double hung vertical sliding sashes. The earlier windows are identifiable as they have slim sections and do not have horns. Later windows are chunkier and have horns on both sashes. The centre rooms of the c1857 cottages feature painted timber fireplace surrounds and mantle (which may not be original) supporting the mantle shelf. Part of the verandah structure (including posts and beams) is evident through the later sheeting and the now enclosed rooms still retain most of the boarded verandah ceilings.

Parts of the laundries at the rear of the cottages are damp affected, particularly in the east cottage. Its brick wall is against the rear rock wall and may not have a self-draining cavity.

The gardens that surround the Assistant Lightkeepers' Cottages are domestic, busy and intimate in character. The gardens for both cottages are made up of a jumble of low beds with brick, stone and other edging, areas of concrete slabs, brick paving, grassed areas, with a fecund mixture of low and tall native bushes and shrubs. The west garden has a painted low picket fence which edges the drop off against the wash room retaining wall. Both gardens are surrounded by a five foot unpainted timber paling fences. Paired driveway gates allow for vehicular access through the south fence. The

fence and the larger bushes and trees on the perimeter block views out of the gardens except for the northern view. On the north boundary the fence drops into a gully and good views can be gained of the dramatic panorama over the harbour entrance to North Head.

The Assistant Lightkeepers' Cottages were recorded as site N2 by Denis Gojak in c1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** Extensive renovations are likely to have removed artefact deposits and evidence for former outbuildings. Deeper features such as wells and privies are likely to have survived.

SUMMARY STATEMENT OF SIGNIFICANCE

The Hornby Lightstation, comprising the Hornby Light (1858), Head Keeper's Cottage (1860 & 1878), Assistant Lightkeeper's Cottages (1858 & 1878) and surrounding cultural and archaeological landscape, is considered to be of outstanding significance to the State of NSW. It was the third Lightstation after Macquarie Lighthouse (1818) and Nobbys Head Lightstation (also completed in c1858). Of these it is the only one to retain the whole lightstation collection of light and adjacent cottages intact to the late nineteenth century arrangement, with only the landscape setting being somewhat eroded by loss of above ground garden details (eg original cottage and lightstation boundary fencing and ancillary structures), and with a late twentieth century native landscape replacing the more open nineteenth century lightstation character.

The Lightstation is historically important in demonstrating European Sydney's reliance on sea navigation and on communication. The Hornby Lightstation was constructed in response to the tragic wreck of the *Dunbar* on the night of 20 August 1857, when 63 passengers and 58 crew lost their lives. Construction was probably expedited by the subsequent wrecking of the *Catherine Adamson* on 23 October 1857.

The history of the overall Hornby Lightstation is intertwined with the use of South Head for military purposes. The use of the Lightstation cottages by the Defence forces (1939 – 1977) strengthens the importance of the whole of South Head in NSW and Australian Defence history.

The Assistant Lightkeeper's Cottages demonstrate continuous adaptations to a Government residence over time. The overall character of the cottages as they would have been in the late nineteenth century is still discernable including some characteristic interior detailing.

The cottages demonstrate the attributes of public residences arising out of the Government Architect's Office under Alexander Dawson in the 1850s and 1860s and under James Barnet in the 1870s. The earlier sections of the Head and Assistant Lightkeeper's cottages are rare survivors of domestic work to the design of Government Architect, Alexander Dawson, who also designed the tomb over those who died in the *Dunbar* in St Stephen's Church, Newtown. The later 1878 additions are fine examples of Barnet's skill in adding sympathetic elegant additions to such humble residences.

The surrounds of the Assistant Lightkeeper's Cottage have some archaeological potential (including garden layouts and outbuildings), although the probability of internal archaeological artefacts is decreased by the amount of internal fabric alteration. The layout of the cottages, remaining early fabric and detailing (and potentially the site and its archaeology) demonstrate the character of such public residences and can contribute to our understanding of the life of the Assistant lighthouse keepers and their families.

The Lightstation has landmark qualities marking the entrance through the Sydney Harbour 'Heads'. The Assistant Lightkeeper's residences are an integral part of the significant cultural landscape of the Hornby Lightstation, which in turn is an integral part of the rich cultural landscape of Inner South Head. The Sydney Harbour National Park creates a buffer zone around the Hornby Lightstation protecting the ability for its nineteenth century landscape values as a gateway to inner Sydney Harbour to be interpreted.

High Moderate Low None	**State**	Local	Not Assessed

RISK ASSESSMENT		
Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve building and continue to use as residence associated with park management in the immediate future. Maintain and improve drainage in the short term. In long term remove paint from external stonework and provide additional interpretation including occasional guided tours to main spaces.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Inner South Head and Keepers Quarters Generally

The location and the limited access to it make this area unsuitable for many uses. Vehicle access is only available through HMAS Watson and is limited for security reasons. It would not be available for say daily servicing of residential accommodation or an education centre or other rental use. Visitor access is only by foot and via the Lady Bay nude beach. Liaison is needed with HMAS Watson re access for users and to determine limitations. Longer term residential use is likely to be the most appropriate use such as by NPWS staff as at present. Staff presence is considered necessary at nights for security reasons and the staff provide an important supervisory and monitoring role. At least one of the quarters buildings should remain as a NPWS residence.

Revegetation has obscured the link between the quarters and lighthouse and vegetation should be managed to be lower between the three buildings. The pine wilding should be removed from between the two quarters buildings.

General policies for area around the quarters are:

- *manage vegetation between houses, to lighthouse and south to the line of the original fence to maintain views between and of these elements*
- *improve drainage of houses and maintain as a priority*
- *investigate cistern location (Sheedy plan) & stormwater lines, repair & maintain*

Policies for use are:

Restore and use houses and

- *maintain long term residential use such as staff residences*
- *inspect on occasional tours, liaise with Ports re combined lighthouse events, tours*

The Assistant Light Keepers Quarters

Historically this building has been added to in stages and each stage has worsened the drainage and cross ventilation of previous stages. The location in a cutting creates serious damp problems and review of the drainage is important for conservation. This may require changes to the rear boundary fences, plantings and the road to improve drainage while still providing some privacy.

The quarters are built of stone, plastered internally, the roofs are timber framed and clad in slate, they have timber floors joinery, windows and doors and verandahs. There were minor alterations and additions. The semi-detached cottage is cut into the stone bedrock at the rear and the external stonework has been painted. It has been repaired and is occupied by staff some of whom have carried out repair works themselves. These buildings were intended to be utilitarian and this is reflected in their restrained and austere detailing. Internally also the buildings are substantially devoid of decoration.

Both portions of the semi detached building have suffered from damage from leaking roofs in the past and both still suffer from defects associated with rising damp. Water draining from up hill affects the buildings with planting and garden beds south of the building exacerbating the problem. There is also poor disposal of roof drainage. The downpipes probably originally discharged into an underground cistern which David Sheedy's plan suggests is between the houses. The drains need to be rectified. The cistern should be located and if serviceable cleared and drains to it cleared or new drainage needs to be installed. Footings of the former toilet block may survive below and to the north of the houses.

Detailed policies for the Assistant Light Keepers Quarters are:

Retain the authentic fabric of the former lighthouse keepers quarters and associated structures. Maximise the retention of original fabric in structures by patching, repairing or splicing in preference to replacement.

Retain the configuration and character of the buildings with no further additions except as noted below.

Retain the original building, early addition to the north and verandah enclosure to the west. The verandah enclosure to the east may be retained or removed. The rear skillion roofed service additions may be retained or altered to facilitate

conservation and adaptive reuse but the early elements within these additions should be identified and retained.

Rear rooms may be adapted or altered to continue to provide modern kitchens and bathrooms but works must be easily reversible and designed and supervised by an experienced heritage architect.

Improve surface drainage by diverting ground water from above around the buildings and adjusting ground levels (under archaeological supervision) so water is directed away. Remove the gardens beds and screen planting from the south of the assistants' quarters and rework the road and fencing to provide privacy.

Continue to maintain and repair existing stormwater drains regularly. Remove vegetation encroaching on drains. Improve the underfloor ventilation by clearing underfloor spaces (under archaeological supervision), introducing floor access hatches and keeping existing vents clear.

Investigate stormwater drainage in detail and document repairs and new drainage and cross ventilation. This needs to be carefully designed to overcome the inherent design faults in the original building and its additions. Consider pumping out stormwater from the rear courtyard via the east side.

Replace rusting steel lintels where present or treat with tannic acid and epoxy paint.

Apply sacrificial render to areas of rising damp to protect significant fabric especially in the rear wings. Remove when salts are reduced.

Repoint masonry joints where deteriorated with lime mortar. Use slaked lime.

Use VAPOUR PERMEABLE paints on the interior and oil based paints to exterior joinery. Modern or traditional formula paints may be used but paint systems should be compatible.

Paint colours should preferably be based on research on site, or on typical colours of the period. Interior joinery should be researched to determine whether it was painted or clear finished.

Subject to policy above and as a guide external timber colours generally stone colours or very dark reds or greens or black and underside of verandahs light manilla or eau-de-nil. Interior colours generally matt and off-white or light manilla for ceilings and for walls light colours with red or yellow ochre based pigments or pale greys, greens and blues. Dados generally darker.

In the long term remove the exterior paint from the exterior stonework using stripping blanket or extremely fine abrasion such as "Gommage".

Use slate roofing for light keepers' quarters.

Manage the use of adjacent spaces, eg turning and parking areas, associated with the residential use.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works to minimise deterioration:
- Remove vegetation encroaching on stormwater drains and building at rear and sides,
- direct storm water and ground water away,
- trace stormwater drains to outlets, clean and repair,
- reconnect downpipes to drains,
- install floor access hatches and clear all underfloor vents and underfloor space (under archaeological supervision),
- scrape off peeling paint (trapping water, mould growth behind) and allow to dry out,
- ensure asbestos cement sheeting is encapsulated.

Remove the pine wilding to the northwest.

Medium Term (1-5 years)
Undertake conservation works:
- Improve stormwater drainage and cross ventilation, design system, may include pumps,
- improve surface drainage especially from road above (road and fence may need relocation) and adjust ground levels (under archaeological supervision) around building so water drains away from building,
- remove some plantings where affecting drainage, install privacy fencing as needed,
- apply sacrificial render as necessary to stone and render / plaster walls then repair plaster,
- repair timber and plaster ceilings, timber floor and joinery (especially in east residence),
- replace or repair rusted steel elements and apply preservative treatment and
- paint interior and exterior (joinery)
- upgrade services including electricity and water.

Long term
Undertake adaptive reuse and conservation works:
- remove paint from exterior stonework,
- repoint stonework,
- upgrade bathrooms, kitchens and laundries if required for use (alter configuration or partly remove bathroom wings if needed to improve drainage).

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- fire hazards,
- vermin entry and nesting,
- damage to roof slate or loose or missing slate or lead flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes clean and functioning,
- rear courtyard drain function (and pump if installed),
- damp in rooms,
- condition of paint,
- termite damage or infestation,
- open mortar joints or fretting or cracks in stonework,
- door and windows close, glass intact and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Retain building as residence in private yard with viewing from walkway outside fence. Consider opening for occasional guided tours. Considered providing additional interpretive material electronically or in a brochure.

In long term consider reducing vegetation height between residences and Hornby Light so the relationship between the buildings is evident, while ensuring privacy to residences.

ADDITIONAL IMAGES (CMP STAGE 2)

"Hornby Lighthouse entrance to Sydney Heads". Shows Assistant Light Keepers Quartes before skillion roofed addition at rear. Source: Mitchell Library Home and Away Collection, No. 40184

"Hornby Lighthouse from between heads". Shows open ground between houses and location of toilet block between. Source: Mitchell Library GPO1 No. 25100

CURRENT PHOTOGRAPHS

The east Assistant Light Keepers Cottage looking from the south east with the 1857 work with its filled in verandah on the left and the hipped roof 1878 extension on the right. October 2006.

View of the east cottage form the south east looking over the main 1857 block which was re-roofed in slates by National Parks in 1997. October 2006.

The west Assistant Light Keepers Cottage looking from the south east with the 1857 work with its filled in verandah on the right and the hipped roof 1878 extension on the left. October 2006.

View of the enclosed verandah of the east cottage looking north towards the 1878 front room. October 2006.

View of the 1878 front room in the east cottage looking south east towards the verandah. October 2006.

View of the door from the laundry to the rear area in the east cottage looking west. October 2006.

View of the rear area at the south and between the semi-detached cottages looking towards the east cottage. October 2006.

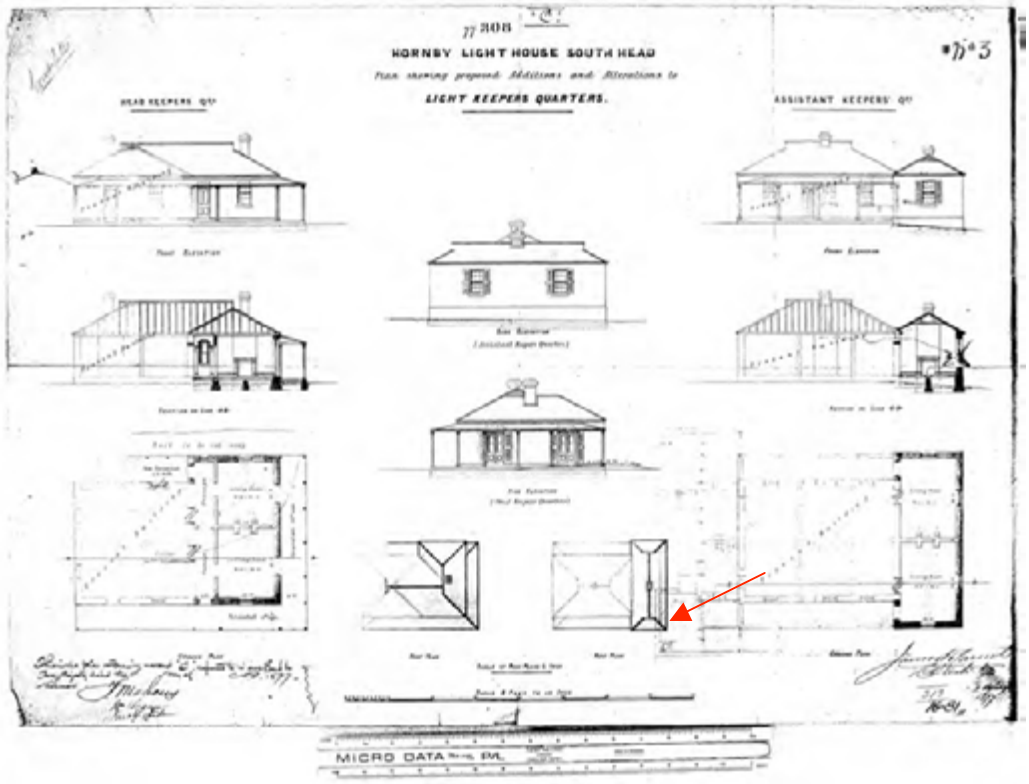
View of the enclosed verandah of the west cottage looking south towards the service areas. October 2006.

View of the 1878 front room in the west cottage looking south west towards the verandah. October 2006.

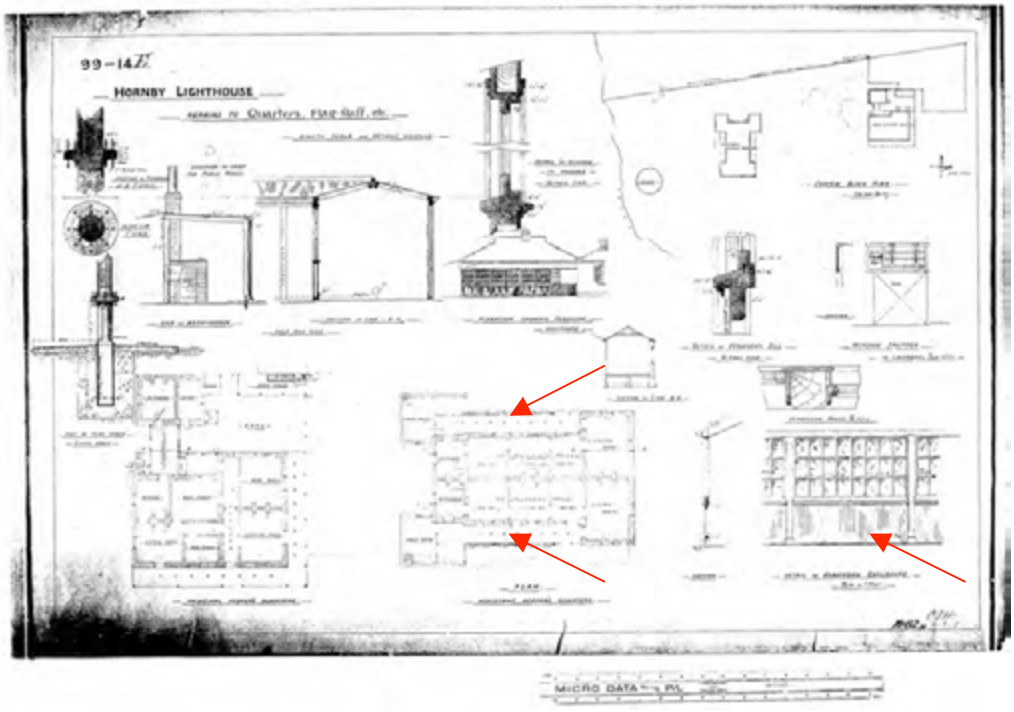
View of the garden for the east cottage looking south. October 2006.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan	**Year of Study/Report:** 2008 & 2009	
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL IMAGES (CMP STAGE 2)



View of the 1877 set of plans showing proposed additions and alterations to the Assistant Lightkeeper's Cottage (right side of the plan). The original configuration of the building can be deduced (six rooms, either side of a party wall all opening onto verandahs). This plan shows additions proposed to the original building in two stages with one being draw over previous drawing (arrowed). The first addition is the front living rooms and the second the rear kitchens and washhouses. Source: Plan cabinet at Greycliffe House.



View of a later undated set of plans showing proposed additions and alterations to the Assistant Lightkeeper's Cottage. This plan shows additions proposed to the building after the first two additions. The enclosure of the verandahs is the main work shown (arrowed). Source: Plan cabinet at Greycliffe House.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of one of the original rooms showing coffered ceiling which was originally timber boards.

View of the original verandah ceiling. The diagonal line is the location of original hip.

View of the enclosed verandah with sliding timber frame windows that may be original.

View of original verandah post that appears to be repaired at base.

View of underfloor vent in verandah space.

View of window sill, once external, inside the enclosed verandah.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the rear addition, west portion, showing awkward roof junction and stepped downpipe.

View of the rear addition, west portion, showing ground drain adjacent to building with plants encroaching.

Stepped configuration of the wall makes it vulnerable to water entry.

View of the east rear addition set in the cutting in the hillside with plants encroaching on the space between cut and building.

View of the east verandah showing altered enclosure.

View of the rear plumbing to divert water from rear of building. Noted pipe is propped (arrowed).

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the downpipe disconnected. This has been repaired since.

View of the missing downpipe (1.) and spreader (2.).

View of ground drain filled with leaves.

Composition indicates original mortar now covered with soil and plants. Needs investigation and clearing.

View of base of wall re-rendered with salt damp above new render.

View of base of wall re-rendered with salt damp above new render.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of rear wall with damp and mould behind impervious paint.

View of the salt damp in doorway.

View of building services, power board and electrical services.

View of gas bottle, note area is only accessible through the building.

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Hornby Battery, gun emplacements, passages, magazines and Directional Range Finder – Ref: 1.3		**LOCATION**: Inner South Head	
HHIMS ID: 3304	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: No use		**FORMER USE:** Fortification and defence	

Photograph

View of part of the battery. February 2007

Historic photograph

View of the South Head Fort c. 1900 – 1910, probably taken from inside the Hornby Light Tower, showing the two 1876/7 gun emplacements (Source: State Library of NSW, Star Photo Co. - Unmounted views of New South Wales, [chiefly 1900-1910] ML PXE 711/23)

HISTORICAL SUMMARY (STAGE 1 CMP)

Hornby Battery is one of a range of redundant defence fortifications and equipment, which encircle Inner South Head and Green Point dating from the 1850s to the mid-1940s. This 'defence heritage' was constructed over a number of phases in response to perceived external threats and overseas wars, including the Crimean War (1854–56), fears of Russian invasion in the 1870s and WW II (1939–45).

There are a number of surviving military features including gun emplacements and fortifications located around Inner South Head. These military features were positioned on the perimeter of the headland to take advantage of the height of the headland, its precipitous cliff edge (over 50m to the east) and the fact that, out of all the harbour headlands, it projects the greatest distance into the harbour entrance. The military features that are now sited within the Sydney Harbour National Park at South Head are part of a wider collection of emplacements that were constructed for the defence of Sydney from the mid-1850s until the close of World War II. They share a history with fortifications now within HMAS Watson, but which are now visually disconnected and separately managed.

In 1876 work commenced on a complex of five pits, with two pits for 9-inch RML (rifled muzzle loaders) guns in the north and two pits for 10-inch RML guns further south. A year later a further pit for a 10-inch RML gun was constructed further south.

In 1889 the gun emplacement closest HMAS Watson (No. 2 gun) was substantially modified to replace the fixed gun with a disappearing gun. Oppenheim notes that there was a BL 5-inch gun on an iron sliding en barbette EOC on traversing slide at South head from 1887 to 1907. It is not clear if this can be called a 'disappearing gun'.

The gun pit was moved to the west and the redundant part of the pit filled with concrete. The new pit was to take a 6-inch breech loading (BL) Mk.EOC/V on a hydro pneumatic (HP) mounting. The 6-inch gun was later replaced by 6-inch Mk VII. As part of the work the northern magazine complex was added including the cartridge store, shell store, lamp store, recess for tubes and fuses, artillery and pump store, recess for small stores and casemate. A concrete command post and directional finding station were also added, together with a passage connecting the 1890s Engine Room to the west of the Battery.

In 1938/9 the infrastructure was again modified and the facilities were updated. The southern pit was modified again as its 6-inch gun was replaced with 6-inch Mk VII. Internally, the work included widening of the northern passages, installing new reinforced concrete ceilings and covering some of the 1878 stone floors with concrete. The magazine and shell store in the northern section were enlarged and a timber floor was added to the widened central passage for a staff room. The passage which originally connected the two gun pits was blocked by the brick magazine and shell store.

A shell hoist was added and artillery/pump store converted to passageway. Parts of the northern section still retain their nineteenth century work and the 1939 work did not affect the southern magazine, which retains its 1870s appearance.

National Theme/s:	State Theme/s:
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The largest and most impressive of the military features at Inner South Head is the Hornby Gun Emplacements, with their passages and magazines. The pits were associated with entrenchments, buildings and accommodation. However, the whole complex is now separated between the National Park and HMAS Watson with only the two northern pits some passages and magazines within the National Park.

The complex visible above ground includes two circular gun batteries which were originally excavated out of the rock in 1876. The pits are connected by a cranked underground passage leading to magazines and shell stores. The largest part of the complex is underground with only two emplacements and some open-air passages in evidence above ground. Most of the 1870s work features level sandstone floors. The northern pit still features a central gun pivot. The earliest work was undertaken by the Colonial Architect under the stewardship of James Barnet and his hand is evident in the quality of the construction and design.

The walls, banquettes and parapets in the 1876 work consist of both excavated stone and dressed stone blocks with rounded corners and chamfered corners to the passages. The surviving 1870s sandstone is mostly dressed (picked) and in good condition. Distinctive features in the pit include recesses for iron ring bolts, carved datum level 80 and a carved VR 1876 insignia in the northern pit (which has been damaged by 1903 modifications to install a searchlight).

The 1878 work included the two gun pits and a magazine in the south down a steep flight of stairs all cut from the rock. Gojak (Site Notes 1985) suggests that the shallow passages would have been originally roofed with stone blocks which would have sat in the surviving stone rebates. The deeper internal passages in the south featured vaulted ceilings finished with lime wash. The walls had a rough sparrow pecked tooled surface with chamfered corners. The southern magazine was constructed within the rock cavity in brickwork and rendered. Shallow spoon drains were cut into the passage floors to drain seepage and waste water to sumps from which it is piped away to cliff face outlets. The 1878 walls have terracotta vents, which may vent to an airspace or cavity behind and have a lamp store and a number of lamp recesses through out the passages. Rebates in the stone walls originally housed timber framing for doors, which have been lost in the open-air sections. A section of the 1878 passage from the northern pit is roofed with steel (Barlow) rails and mass concrete installed in 1889 (Gojak Site Notes 1985) and has been recently propped and stabilised with steelwork and mass concrete. The 1889 work was executed in concrete, in contrast to the fine Barnet era stonework. The 1903 modifications disfigured the east of the 1870s pit with the forming of a circular concrete plinth and excavations into the parapet wall.

The whole complex is in reasonable condition, even considering its age and location. The above ground features are stable and early features are still discernable. Surprisingly there is little evidence of vandalism and graffiti. The northern pit still retains most of its carved work in the stone. The underground passages and magazines are locked and secured by a reconstructed timber entrance door at the surface. The underground passages and magazines were filled with water and silt until they were cleaned out when the stormwater drainage was unblocked and allowed to work. The 1870s century stonework survives particularly well in the southern magazine and passages with evidence of the different tooled surfaces. The northern sections mostly display the 1930s modifications. There is still remnant timber work with some surviving door jambs and a World War II dispatch bench (new interpretative timberwork has been added). The Shell store is currently being used to house internal timberwork salvaged from when the interior was drained and cleared. The southern magazine is particularly intact and evocative as it still displays its vaulted ceiling, the floors display their in situ dish drains and walls feature their chamfered corners and lamp recesses.

The site of the Hornby Battery, gun emplacements, passages, magazines and Directional Range Finder were recorded as site N4 by Denis Gojack in c.1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low Markings, imprints or fixings inside the battery may indicate the placement of equipment during its operation.

SUMMARY STATEMENT OF SIGNIFICANCE

The 1870s defence works at South Head are important in illustrating the implementation of an outer line of defences to Sydney Harbour as recommended by the Defence Committee of 1870, following the departure of the Imperial British forces; they are evidence of the British Government's resolve that colonies with responsible government should bear the cost of their own defence.

The Hornby Battery (partly within HMAS Watson land) is a good example of a quarried battery with extensive connecting passageways and underground magazines and stores. Evidence of the changes to the Battery to take larger ordinance in the 1890s is also of technological importance. There are also remnants of fine carpentry work within the Hornby Battery.

The Hornby battery contains evidence of four different phases of artillery technology in one fortification site (Mider 1998).

The 1890s Engine Room attached to the Hornby Battery (inventory item 1.3B) together with its moveable contents and the searchlight emplacements and Observation Station are of particular technological heritage value.

The Battery is important for its association with the office of the Colonial Architect, James Barnet. Barnet's office was responsible for the design and construction of defences in the colony in conjunction with the Corps of Engineers, which was established in 1872.

High	Moderate	Low	None	**State**	Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary** The CMP Stage 2 authors consider there are structural risks to the underground structures through deterioration of concrete ceilings (concrete cancer). The rusting of ferrous metal reinforcing is accelerated because of poor ventilation. There are long term collapse risks.
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Medium**	
Other		

INFORMATION

REFERENCES:

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p.

Graham Brooks and Associations et al, NPWS Lighthouses Conservation Management Cultural Tourism Plan Vol 1 and Vol 2 (Greycliffe Library No. 623), Prepared for NPWS, Nov 2001.

Harvey, Roy, Sydney Harbour Fortifications Archival Study Final Report – Part 2, Prepared for NPWS, Jan 1985.

Mider, Dana, Assessment and Conservation Analysis of Three Military Structures, Prepared for NPWS, May 1998.

Oppenheimer, Peter. The Fragile Forts. The Fixed Defences of Sydney Harbour, 1788 - 1963, Army History Unit, Department of Defence, Canberra, 2004.

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Wilson, G.C., Sydney Harbour Fortifications Archival Study Part One, Prepared for NPWS, March 1985.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Stabilise the structures in the short term, use for occasional small group guided tours and interpret. Stabilisation work should prioritise structural support, drainage and ventilation. In the medium term conserve the fabric including treating "concrete cancer" and desalinating masonry. In the long term reopen doorways and passages to provide access and provide additional interpretation including regular guided tours to main spaces, temporary art or other installations in main spaces and occasional events.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The Hornby Battery Generally

The Hornby Battery is a complex of above and below ground features of significance and interest. Part of the battery is occasionally open to guided tours and has some lighting. There has been some good conservation work done here and major work draining the underground magazine. Many features are not well conserved (especially the Engine Room, see inventory sheet). Though there is public interest and occasional tours are run, considerably more work is required before it can be regularly opened or other uses considered. The remote location means it is not a regional priority for NPWS so in the short term efforts should concentrate on stabilisation. This is primarily drainage, control of water entry and ventilation.

It is understood that the battery has been measured and drawn by NPWS professional staff. These drawings could not be found during this study and should be found and used to plan and guide works. Measurements of the Engine Room where taken during this study and will be given to NPWS to add to the battery base drawing.

Future conservation and use will depend on an understanding of the arrangement of spaces and entrances and exits. For example is appears that there was an entrance from the exterior to the Engine Room on the south side. If this could be reopened it would provide easier access for conservation and maintenance. It also gives the possibility of a through walk for visitors if the passage between this room and the other part of the battery is reopened.

It is possible that exposed areas of the headland were originally *Themeda* grassland. In some locations endemic grass species remain. They should be used in preference to introduced grasses in the cleared areas.

General policies for the Hornby Battery area are:

Conserve & interpret the batteries and associated items across tenure in partnership with HMAS Watson.

Liaise with HMAS Watson re emplacements interpretation and conservation.

Keep vegetation low or grass around and on the sea side of defensive features.

Re-establish Themeda grasslands on the headland especially on the outer edge of the walking trail and use endemic grass species in the cleared areas of Inner South Head.

Stabilise and maintain east and north gun emplacements
- *provide low key safety barrier*
- *conduct small group guided tours & facilitate self guided tours*
- *remove vegetation from structures and where interfering with views*
- *clear drains and keep clear (including that around Hornby light)*

Military Installations and Ruins Generally

General policies for these structures as they apply to the Hornby Battery are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel).

Preservation treatment should be according to the fabric to be preserved and may include roofing, fencing, stabilisation treatments, propping etc.

When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms and major public events.

Adjust ground levels around pits and underground structures so that water drains away from them.

Remove large trees and shrubs from the vicinity and protect from physical damage from erosion, vehicles and visitors, etc.

Kill plants growing in ruins by cutting and poisoning or treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Seek detailed engineering and architectural advice and document stabilisation of underground structures. Partially remove overburden, reinstate ventilation, clear drains, regrade so overland waterflow is away from structures, install "Stripdrain" or similar groundwater drainage and protect drying masonry from salt activity all as advised by the engineer and architect.

Monitor rusted metal elements and continue to treat to minimise corrosion and associated damage. If structure is endangered cut metal elements back and cover with mortar or remove. Re-support if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Do not completely fence pits but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study. Provide a low key safety barrier at the East and North gun emplacements and the Range Finder (DRF).

In long term conserve underground structures including reducing water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the main rooms probably had waterproof membranes originally that have deteriorated.

Interpret underground structures in short term using signage and brochures with photos or periscope style viewers or on occasional guided tours. When stabilised allow access on regular guided tours.

When stabilised consider whether any alternate uses are feasible such as for events, installations or other use.

Interpret military structures (primarily at the easily accessible Camp Cove Battery) and with signage, self guided tours and occasional guided tours to Inner South Head batteries and in accordance with an interpretation plan.

Identify and list moveable items within the underground structures, conserve them. Review their suitability for display or storage. If possible, interpret them. (see separate inventory sheets 1.3A & 1.3B)

Catalogue collected building components. Identify fragile elements, items which can be returned to their original location, be re-used, items which no longer require retention and items which could form part of an interpretive display or museum exhibit. (see separate inventory sheets 1.3A & 1.3B)

The Hornby Battery

Additional policies for the battery are:

Find the measured drawings for the battery, add the engine room and prepare a drawing of the complex relating the underground structures to the above ground structures including locating vents.

As a priority clear drains and vents and maintain them clear.

Develop an approach to provide ventilation in the original locations now covered by concrete covers. This will have to carefully designed to resist vandals and may incorporate seating.

Remove vegetation close to the structures and arrange ground levels to drain away, having particular regard for the underground structures. Clear growth and waste from base of trenches regularly.

Treat "concrete cancer" initially by knocking off loose concrete (safety Issue) and treating rusted ferrous metal reinforcing to limit further deterioration. Treat exposed ferrous metal elements for rust and desalinate areas affected by salt damp.

See other inventory sheets for more detail.

RECOMMENDED WORKS (CMP STAGE 2) *(see also separate inventory sheets 1.3A & 1.3B)*

Immediate

Undertake works to stabilise structures and minimise deterioration:

- Remove vegetation encroaching on structures and drains,
- direct storm / ground water away, for example so water does not run from grassed areas down entry stairs and into the Range Finder (DRF),
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- investigate outlets to and clear vents, especially to the underground 1880s magazine,
- clear growth and waste from base of trenches
- knock off loose concrete from ceilings ("concrete cancer") to minimise risk to people in spaces and
- ensure all entry doors and concrete covers are secure against unauthorised entry.

Medium Term (1-5 years)

Undertake fabric conservation works:

- Design system to improve stormwater drainage and cross ventilation,
- improve surface drainage especially between Engine Room (see separate inventory sheet) and remainder of Battery. Consider installing "Stripdrain" or similar between and changing ground levels to create a swale discharging surface water clear of the underground structures,
- reinstate ventilation in the original locations now covered by concrete covers. Design to resist vandals, prevent water entry and may incorporate seating.
- treat "concrete cancer" by treating rusted ferrous reinforcing to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular the Barlow rails, gun mounts, handrails and other original or early metal elements such as doors,
- in north gun emplacement remove soil built up over stone surround to pit, fill top of VC pipe in pit with mortar to prevent water entry, fill open area at centre with mortar so it sheds water
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, then repair masonry,
- repoint stonework to exterior and interior stonework using lime mortar
- fill cracks in concrete with grout according to engineers advice,
- repair timber elements including floor to Staff Room and door,
- conserve remains of original timber elements of 1880s magazine including shelf adjacent and doorway linings, retain original paint,

- conserve painted decoration in former staff room with Paraloid or similar treatment,
- remove modern graffiti,
- fill top of walls of the Range Finder (DRF) with mortar arranging to discharge water to the exterior and
- install safety fencing or other surface treatment at pits, Range Finder (DRF) and replacing temporary fencing between DRF and battery (refer Forts Study)

Long term
Undertake complex conservation works:
- Upgrade services including electricity and lighting,
- reopen passage to Engine Room and develop access, lighting etc. for interpretation,
- remove overburden from top of roofs of underground structures and repair or install new water proof membrane and
- consider installing climate monitoring in key underground spaces.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage to entry gates and covers,
- water entry,
- storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces,
- termite damage or infestation, rot in timbers,
- progressive rust in ferrous metals,
- open mortar joints or fretting or cracks in stonework or other masonry, and
- operation of services such as lighting and power.

INTERPRETATION (CMP STAGE 2)

Retain structures as remains of a military installation with viewing from exterior and open pits and interpretive signage on adjacent walkway for self guided tours. Open for occasional guided tours. Considered providing additional interpretive material electronically or in a brochure, particularly about underground structures utilising photos of inaccessible spaces.

In medium term consider periscope style or video viewers. When stabilised and conserved allow access on regular guided tours.

In long term consider if alternate uses are feasible such as for interpretative displays, events, art or other installations. Review suitability of movable items for display or storage and if possible, interpret them. (see separate inventory sheets 1.3A & 1.3B)

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

CURRENT PHOTOGRAPHS

View of the northernmost gun emplacement (1876) and the commencement of the passage that connected to the next emplacement which was originally roofed with stone blocks. October 2006

View southeast along the same 1876 passage which connected the northernmost gun emplacement to the magazines, shell stores and the next emplacement. The passage was originally roofed with stone blocks. Source: DECC 2004.

The second gun emplacement (1876 altered in 1889 and 1930s) within the National Park looking northeast. October 2006

Looking south along the 1880s passage leading from the emplacement and magazines within the National Park connecting to the emplacements now within HMAS Watson. The passage is blocked at the boundary. October 2006

The current entrance to the battery's underground passages at the northern end of the 1880s passage leading from the emplacement and magazines within the National Park connecting to the emplacements now within HMAS Watson. October 2006

View back to the interior of the current entrance (in the background) to the battery's underground passages showing mostly 1930s work. October 2006

Looking down the stairs that connect the current entrance to the southern (1880s) magazine. October 2006

Looking along the perimeter passage that encircles the 1880s magazine (on left). October 2006

Looking roughly north into the Staff Room which was adapted out of 1880s passage which was widened in the 1930s and roofed with reinforced concrete. October 2006

View looking north towards the 1930s magazine store. October 2006

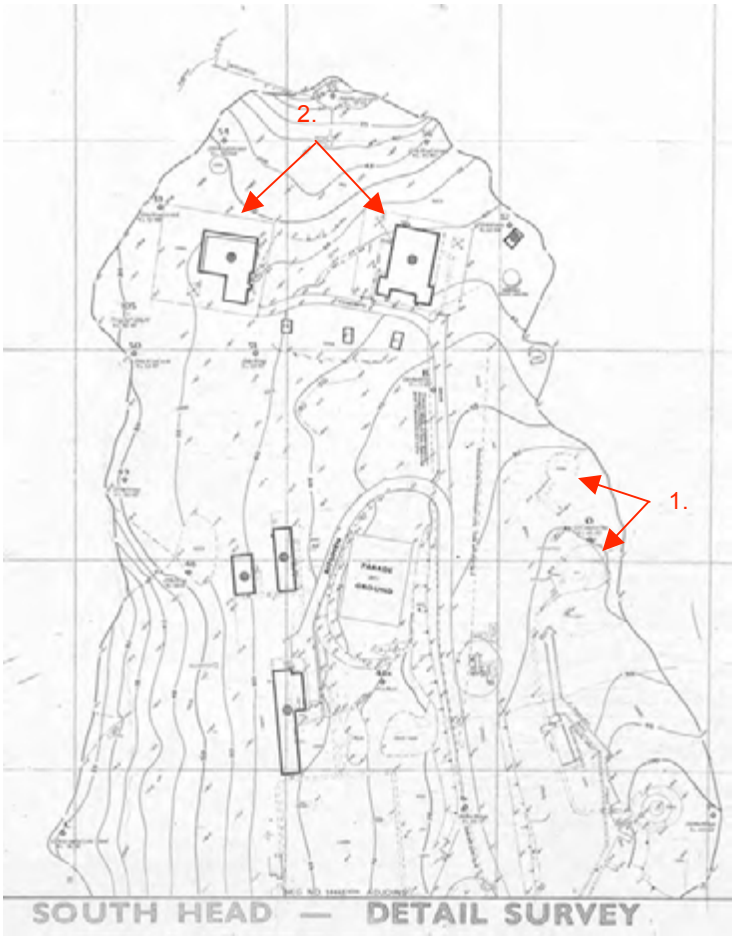
Photograph

View of the corner of the perimeter passage that encircles the 1880s magazine showing vaulted ceiling and the chamfered corners that typify the 1880s work. October 2006

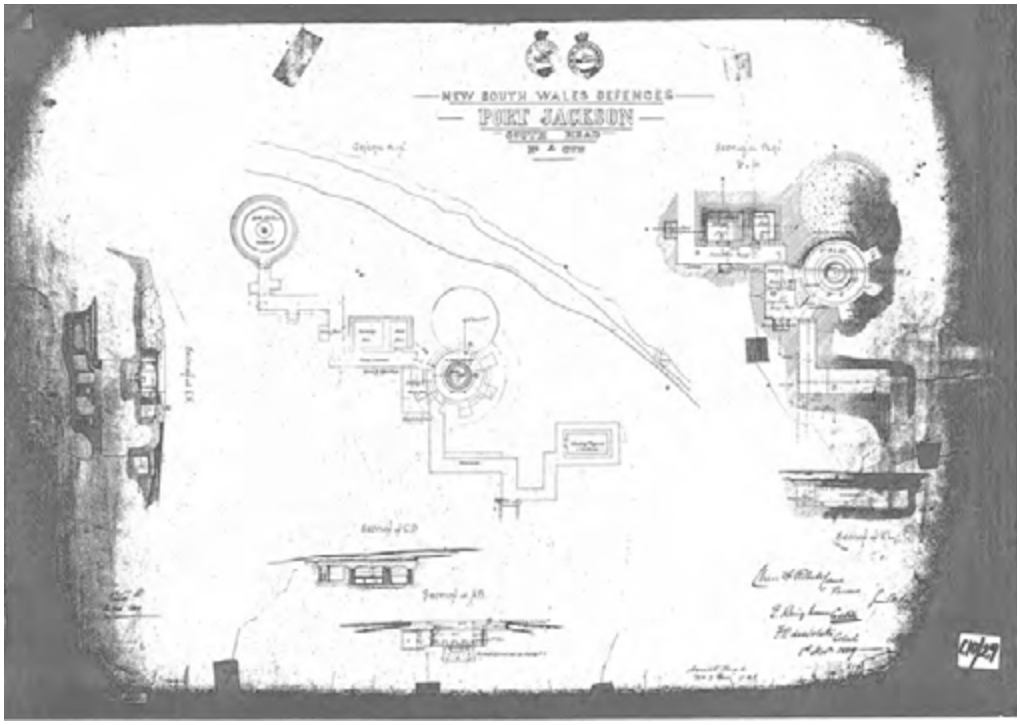
Photograph

Interior of the 1880s magazine looking towards the entrance door. October 2006

ADDITIONAL IMAGES (CMP STAGE 2)

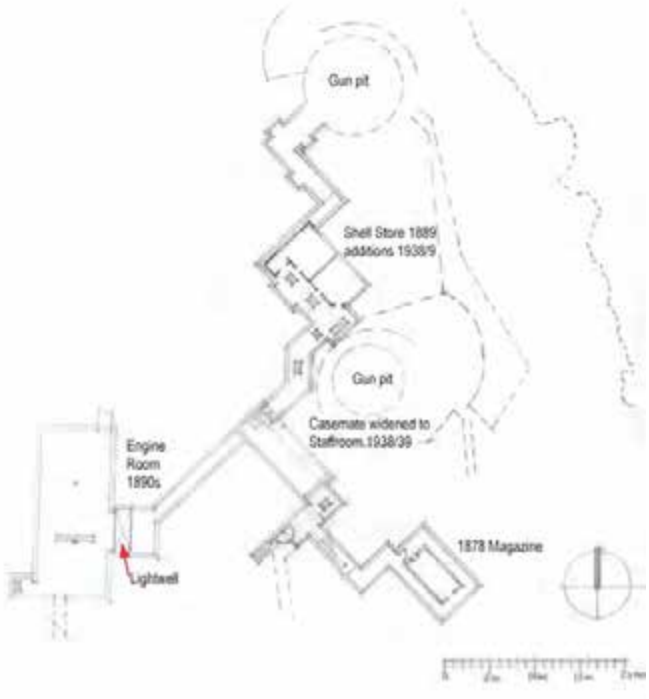


Detail Survey c.1970, showing the location of the Hornby Battery (arrowed 1), the Quarters (arrowed 2) and other features. Source: Plan cabinet, Greycliffe House.



Plans showing alterations to the No.2 gun at the Hornby Battery, 1889. Note that these works were either not carried out exactly as shown in this plan or there were later modifications. Source: Plan cabinet, Greycliffe House.

ADDITIONAL IMAGES (CMP STAGE 2)



Sketch layout of Hornby Battery. Engine Room based in measurements, other features approx. dimensions. Source: OCP April 2008

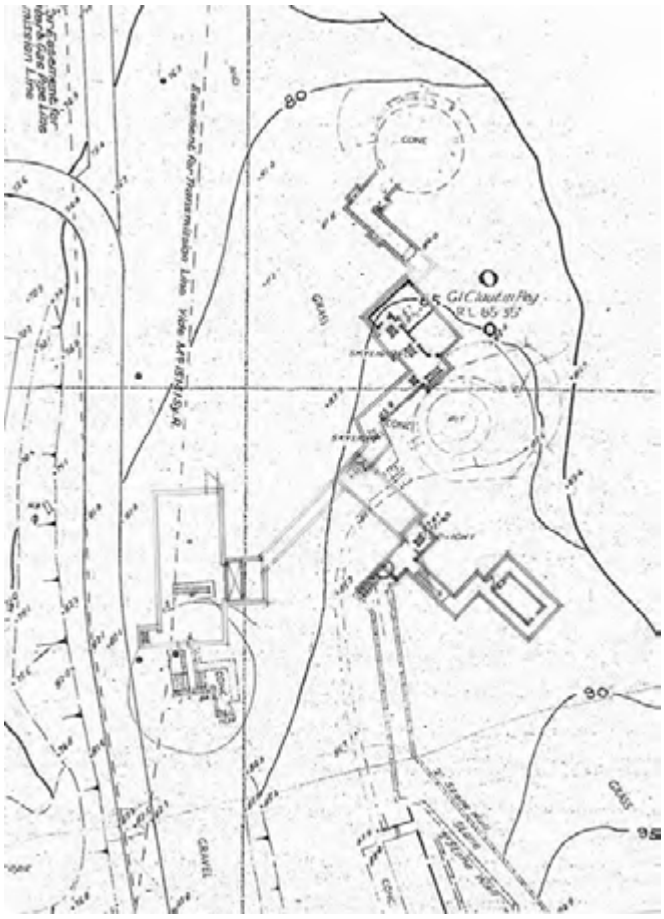


Diagram showing approximate relationship of Engine Room to Hornby Battery overlaid with the 1968 survey. The diagram has been adjusted and it is not exactly correct but the location in relation to other features is indicated. Source: OCP April 2008

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of Battery from a similar location to the historical (c.1900-1910) photograph on the first page of this inventory.

View of the original stonework, mid 1870s, of northernmost gun emplacement.

View of the approx. location of the trench shown in historical c.1900-1910 photograph.

View of part of the concrete embankment forming edge of gun emplacement.

View of the Range Finder (DRF). Note that water has been channelled into the structure.

View looking out from Range Finder (DRF) showing water has been channelled into the structure.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

Passage near north most gun emplacement showing weathering from salt and damp and wind.

View of the rusted original Barlow rails supporting the concrete slab.

End view of Barlow rails supported by a new steel structure and new concrete slab over (arrowed).

View of "concrete cancer" to a ceiling in some of 1930s sections of the structure.

View of the door from Staff Room to the south most gun emplacement. It is now bricked up externally.

Exterior of door to door to Staff Room bricked up on exterior.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

Concrete "cancer" to the ceiling in the 1930s works, adjacent to skylight (vent) in corridor between Staff Room and the Shell Store.

Steel doors from Staff Room to passage.

Original 1870s underground magazine, looking at the west passage. Noted a drop down bench used to issue items from the magazine, with the original timber being held vertically by the sewage pipe on the wall. The horizontal timber is a replica.

View of the north passage and it's stone floor with channels cut diagonally so water runs to the drain, at left, also cut in stone

Replica of original gate at the entry of east passage.

View of the south passage and the stone floor with channels cut diagonally so water runs to the drain, at left, also cut in stone. Note the sewage pipe at wall.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

One of four vents to the exterior (at ceiling).

View of the ground drain to southeast.

View of the entry to the Magazine from the south passage.

Remaining joinery from door surround at Magazine entry.

View of Magazine interior looking north to the window. Note the vents in the wall at the ceiling, left and right side, the marks on the thick bituminous floor and on the ceiling are of structure for earlier shelfs. The marks on wall are the former water level when the area was flooded, it is not paint.

View of Magazine interior looking south to the door. Note the vents in the wall at the ceiling, left and right side, the marks on the thick bituminous floor and on the ceiling are of structure for earlier shelfs. The marks on wall are the former water level when the area was flooded, it is not paint.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2)

View of the Hornby light showing the Hornby Battery on the foreground, left. The photo shows the two gun emplacements now in NPWS ownership. Source: ML Album at PXE 618

View of the Hornby light. On the left is stonework of one of the gun emplacements of the Hornby Battery. Source: ML GPO1 05338.

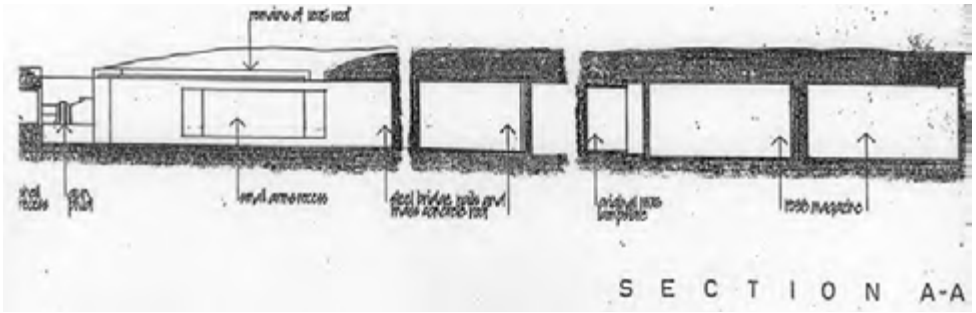
Captioned Battery command post of the Hornby battery but is actually a view of one of the guns. It is not known which battery this photograph is of. Note the camouflage nets on the ground. Source: AWM 066878

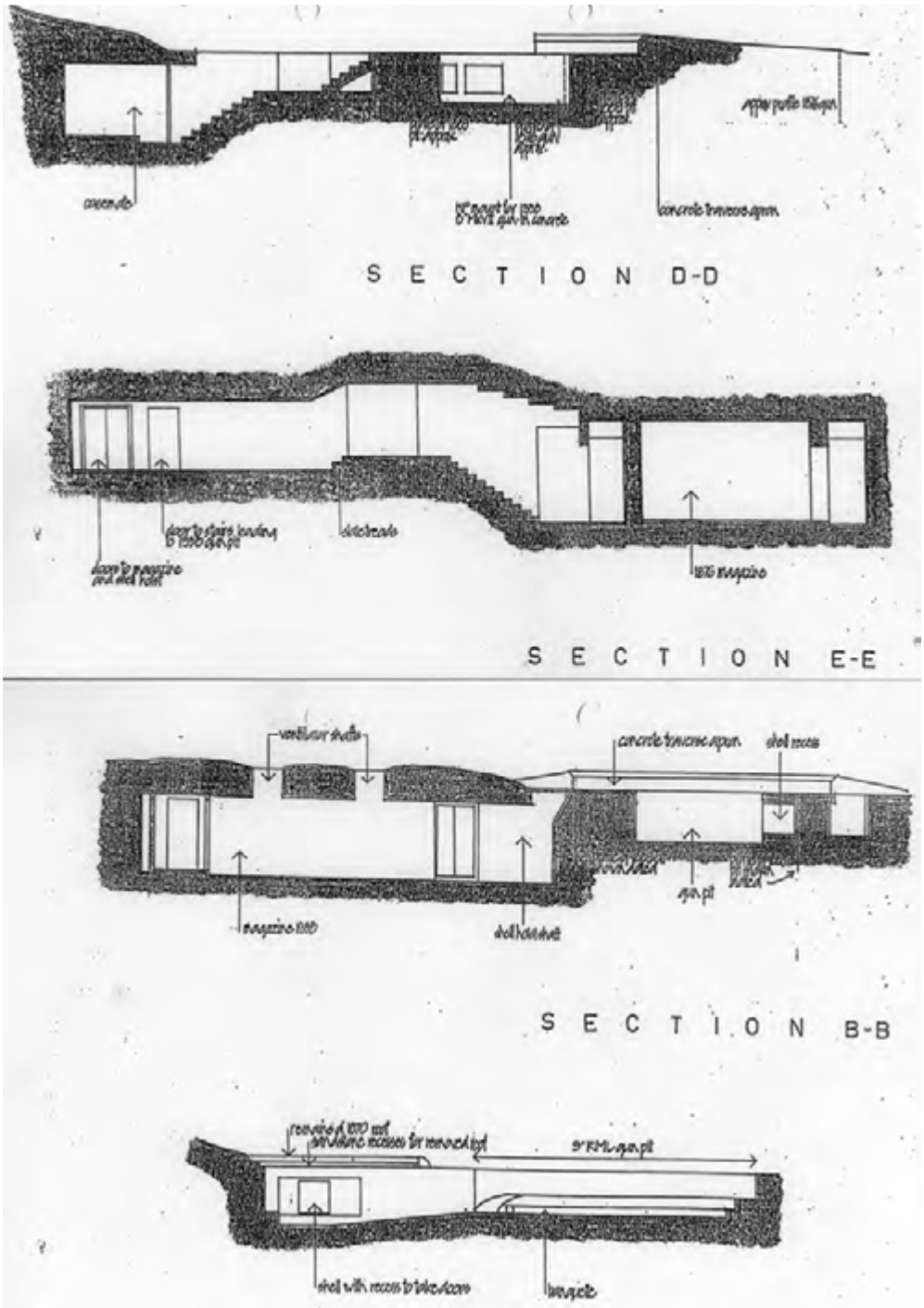
MK VII coastal defence gun mounted on South Head. It is not known which battery this photograph is of.
Note the pipe handrail. Source: AWM A04445

Firing practice on 6 inch gun at South Head, Sydney. It is not known which batteries this photograph is of. Source: AWM an00495 & SL Victoria H99.201/3178

Firing practice on 6 inch gun at South Head, Sydney It is not known which battery this photograph is of but it is believed to be in HMAS Watson. Source: AWM an004950 & SL Victoria H99.201/3177.

ADDITIONAL IMAGES (CMP STAGE 2)





Drawings showing sections of the Hornby Battery. These sections were found but the drawing that would locate the section and show the battery in plan was not found. Source: Plan cabinet, Greycliffe House.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Hornby Battery Shell Store & Collection – Ref: 1.3A		**LOCATION**: Inner South Head	
HHIMS ID:3309	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE:		**FORMER USE:**	

The entrance doorway to the 1930s No. 2 Shell Store which houses the battery's timber work which was salvaged during the clean up works. October 2006

The salvaged timberwork stored in the 1930s No. 2 Shell Store. October 2006

HISTORICAL SUMMARY (STAGE 1 CMP)

There are a number of surviving military features including gun emplacements and fortifications ringing Inner South Head. The military features were positioned on the perimeter of the headland to take the most advantage of the headlands height, its precipitous cliff edge (over 50m to the east) and the fact that, out of all the harbour's headlands, it projects the greatest distance into the harbour entrance. The features that are now sited within the Sydney Harbour National Park are part of a wider collection of emplacements that were constructed for the defence of Sydney from the mid 1850s until WWII. They share a history with fortifications now within HMAS Watson, but which are now visually disconnected and separately managed.

The largest and most impressive of the military features at Inner South Head is Hornby Battery. In 1876 work commenced on the complex of five pits, under the stewardship of Colonial Architect James Barnet, which were associated with a range of entrenchments, buildings and accommodation. The whole complex is now separated between the National Park and HMAS Watson, with only the two northern pits some passages and magazines within the National Park. The complex visible above ground includes two circular gun batteries, which were originally excavated out of the rock in 1876. The walls, banquettes and parapets in the 1876 work consisted of both excavated stone and dressed stone blocks with rounded corners and chamfered corners to the passages. The pits are connected by a cranked underground passage leading to magazines and shell stores.

In 1889 the gun emplacement (now closest to HMAS Watson) was substantially modified to replace the fixed gun with a disappearing gun. Oppenheim notes that there was a BL 5-inch gun on an iron sliding en barbette EOC on traversing slide at South head from 1887 to 1907. It is not clear if this can be called a 'disappearing gun'.

The 1889 work was executed in concrete, in contrast to the fine Barnet era stonework. As part of the work, the northern magazine complex was added together with a nearby command post and DRF station. A passage was constructed connecting the 1890s Engine Room to the west of the Battery. The Engine Room provided electricity to the DRFs, searchlights, barracks and the Submarine Mining Observing Station overground conduits from the 1890s until the site was connected to the electrical grid in 1931. The Hornby Battery complex was again altered in 1903 and in 1938/9.

In 1978 the Army vacated South Head and NPWS began to acquire the decommissioned areas of South Head. The Engine Room, and the excavated passages and magazines associated with the 1876 emplacements at Inner South Head, have subsequently been closed up or covered over to allow safe public access.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Australia

DESCRIPTION

The authors of this inventory sheet did not inspect the Shell Store.

The visible above ground evidence of the Hornby Battery complex includes two circular gun batteries, which were originally excavated out of the rock in 1876. This work was undertaken by the Colonial Architect's Department under the stewardship of James Barnet. The walls, banquettes and parapets dating from 1876 consist of both excavated stone and dressed stone blocks with rounded corners and chamfered corners to the passages. The pits are connected by a cranked underground passage leading to magazines and shell stores. The complex was altered in parts in 1903 and substantially altered again in 1938–39.

Most of the 1870s work has level sandstone floors. The northern pit still features a central gun pivot. The shallow passages would have been originally roofed with stone blocks, which would have sat in the surviving stone rebates. The deeper internal passages in the south featured vaulted ceilings finished with lime wash. Spoon drains are cut into the passage floors to drain seepage and wastewater. In 1889 the gun emplacement (now closest to HMAS Watson) was substantially modified to replace the fixed gun with a disappearing gun. The 1889 work was executed in concrete, in contrast to the fine Barnet-era stonework. As part of the work the northern magazine complex was added together with a nearby command post and directional finding station. A passage was constructed connecting the 1890s Engine Room to the west of the Battery.

In 1938–39, the infrastructure was again modified and the facilities were updated. The southern pit was modified again, the northern passages were widened and roofed with reinforced concrete ceilings, the magazine and shell store in the northern section were enlarged and blocked the passage connecting the two gun pits. The whole complex is in reasonable condition, even considering its age and location. Its condition is reasonably stable and early features are still discernable. Surprisingly there is little evidence of vandalism and graffiti.

The Hornby Battery Shell Store was recorded as site N4 by Denis Gojak in c1985.

CONDITION: Unknown	
INTEGRITY: Unknown	**ARCHAEOLOGICAL POTENTIAL:** n/a

SUMMARY STATEMENT OF SIGNIFICANCE

The defence works at South Head are important in illustrating the implementation of an outer line of defences to Sydney Harbour from 1870, following the departure of Imperial British forces. They are evidence of the British Government's resolve that colonies with responsible government should bear the cost of their own defence.

The Hornby Battery (partly within HMAS Watson land) is a good example of a quarried battery with extensive connecting passageways and underground magazines and stores. Evidence of changes to the Battery to take larger ordinance in the 1890s, including the Shell Store and associated artefacts, is of technological importance.

The Hornby battery contains evidence of four different phases of artillery technology in one fortification site (Mider 1998).

High Moderate Low None Further research required.	**State**	**Local**	**Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Mider, Dana, Assessment and Conservation Analysis of Three Military Structures, Prepared for NPWS, May 1998

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

NOTES

There was some confusion in the Stage 1 version of this inventory between the Shell Store and the Underground Magazine. Stage 2 authors have moved the illustrations to the correct inventory sheet and added a map added identifying and locating the spaces.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Stabilise the overall structure in the short term (see inventory Item 1.3), use for occasional small group guided tours but do not allow entry to Shell Store where collection is stored. In the medium term conserve the fabric of the room (see inventory item 1.3) and catalogue and conserve the collection. In the long term display the collection and interpret including regular guided tours, temporary art or other installations and occasional events.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2) See also inventory sheets 1.3 & 1.3B.

The Hornby Battery Generally

This part of the battery is currently occasionally open to guided tours and has some lighting. There has been some good conservation work done here including to parts of the Shell store area. However in the corridor water is still entering and pooling on the floor and there is spalling concrete on the ceiling, the result of concrete cancer. Further drainage and stabilisation works need to be done as a priority in the short term to minimise deterioration and in the longer term conservation of the fabric including waterproofing.

General policies for the Hornby Battery underground structures relevant to the Shell Store are:

Conserve & interpret the batteries and associated items across tenure in partnership with HMAS Watson.

Keep vegetation low or grass around and on the sea side of defensive features. Re-establish Themeda grasslands on the headland especially on the outer edge of the walking trail and use endemic grass species in the cleared areas.

Stabilise then conserve underground structures
- *research to find plans and record moveable heritage*
- *develop strategy for tours/access and/or camera or periscope to view underground spaces*
- *remove overburden and vegetation near, clean, drain and ventilate, conserve, reduce water ingress*

Military Installations and Ruins Generally

For general policies for these structures see Inventory item 1.3. The following policies are general policies that apply to the Shell Store:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). The treatment should be according to the fabric to be preserved and may include stabilisation, etc. When deciding on preservation treatment consider the purpose of the retention of each item and adjust the approach accordingly.

Seek detailed engineering and architectural advice and document stabilisation of underground structures. Partially remove overburden, reinstate ventilation, clear drains, regrade so overland waterflow is away from structures, install "Stripdrain" or similar groundwater drainage and protect drying masonry from salt activity all as advised by the engineer and architect.

Stabilise cracks in concrete using helical ties and cementitous grout.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the main rooms probably had waterproof membranes originally that have deteriorated.

Interpret underground structures in short term using signage and brochures with photos or periscope style viewers or on guided tours. When stabilised allow access on guided tours and consider whether any alternate uses are feasible such as for events, installations or other use.

The Shell Store and Collection

Additional policies for the Shell Store and collection are:

Find the measured drawings for this area and confirm room and vent locations in relation to the above ground features.

As a priority clear drains and vents and maintain them clear.

Arrange ground levels to drain away so water does not enter through former vents and shell hoist. Clear growth and waste from around vents and shell hoist and base adjacent trenches and emplacements.

Treat "concrete cancer" initially by knocking off loose concrete (safety Issue) and treating rusted ferrous reinforcing to limit further deterioration. Repair in medium term. Treat exposed metal elements for rust and desalinate areas affected by salt damp.

Develop an approach to provide ventilation in the original locations now sealed by concrete covers. This will have to carefully designed to resist vandals, prevent water entry but allow air flow and may incorporate seating.

Monitor that items in the collection in Shell Store are raised from the floor on pallets and are not lying in water or suffering from accelerated deterioration.

Catalogue the items in the shell store collection, determine what they are, tag them and make recommendations for each item. Identify fragile elements, items which can be returned to their original location, be re-used, items which no longer require retention and items which could form part of an interpretive display or museum exhibit. (see separate inventory sheets 1.3 & 1.3B). Consider whether items should remain in this location.

Conserve moveable items (see separate inventory sheets 1.3 & 1.3B) and review there suitability for display or storage. If suitable display and interpret them.

Retain perspex cover to historic display board and monitor for condensation or deterioration behind. If necessary conserve items on board by stabilisation treatment.

RECOMMENDED WORKS (CMP STAGE 2) (see also inventory sheets 1.3 & 1.3B)

Immediate
Undertake works to stabilise structures and minimise deterioration:
- Remove vegetation encroaching on vents, hoist and drains and waste,
- direct storm / ground water away so water does not run from grassed areas into vents,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- knock off loose concrete from ceilings ("concrete cancer") to minimise risk to people in spaces,
- ensure all entry doors and concrete covers are secure against unauthorised entry and
- check collection is stored off ground.

Medium Term (1-5 years)
Undertake cataloguing and fabric conservation works:
- Design system to improve stormwater drainage and cross ventilation,
- improve surface drainage especially between Engine Room (see separate inventory sheet) and remainder of Battery. Consider installing "Stripdrain" or similar between and changing ground levels to create a swale discharging surface water clear of the underground structures,
- reinstate ventilation in the original locations now covered by concrete covers. Design to resist vandals, prevent water entry and may incorporate seating.
- treat "concrete cancer" by treating rusted ferrous reinforcing to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular the ventilation grilles and hoist components,
- fill cracks in concrete with grout according to engineers advice,
- Catalogue and assess the items in the shell store collection. Decide whether collection should remain in this location and could form part of an interpretive display.
- Conserve moveable items. If suitable display and interpret them.

Long term
Undertake complex conservation works:
- Upgrade services including electricity and lighting,
- remove overburden from top of roof and repair or install new water proof membrane and
- consider installing climate monitoring in room where collection is stored and displayed.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage to entry gates and covers,
- water entry, storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces, termite damage or infestation, rot in timbers, progressive rust in ferrous metals,
- open mortar joints or fretting or cracks in stonework or other masonry,
- deterioration of collection and safe storage and
- operation of services such as lighting and power

INTERPRETATION (CMP STAGE 2)

Retain overall structure as remains of a military installation with main viewing from exterior and open pits and interpretive signage on adjacent walkway for self guided tours. Open underground rooms for occasional guided tours. Considered providing additional interpretive material electronically or in a brochure, particularly about underground structures, utilising photos of inaccessible spaces. Cordon off entry into room in which the collection is stored.

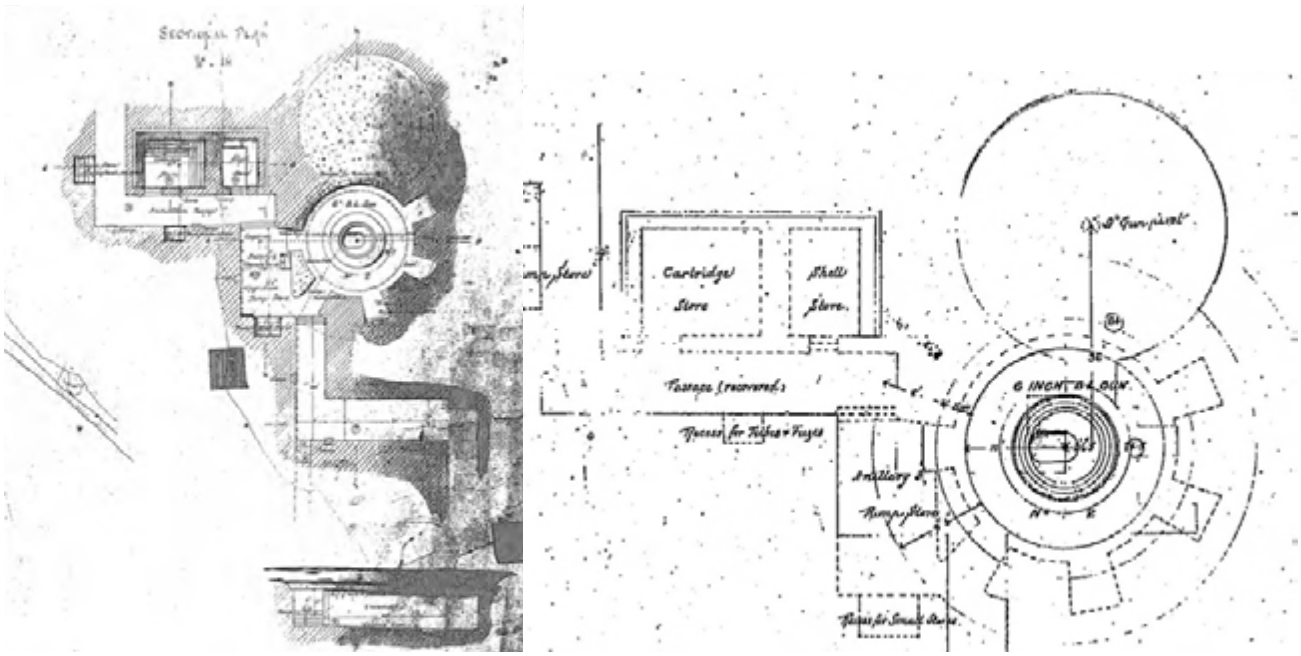
In medium term consider periscope style or video viewers. When stabilised and conserved allow access on regular guided tours. Interpret the space and its intended use for storage of shells adjacent to the gun and using historic photos to illustrate this. Develop collection into interpretive display.

In long term consider if alternate uses are feasible such as for additional interpretative displays, events, art or other installations. Review suitability of movable items for display or storage and if possible, interpret them. (see separate inventory sheets 1.3A & 1.3B).

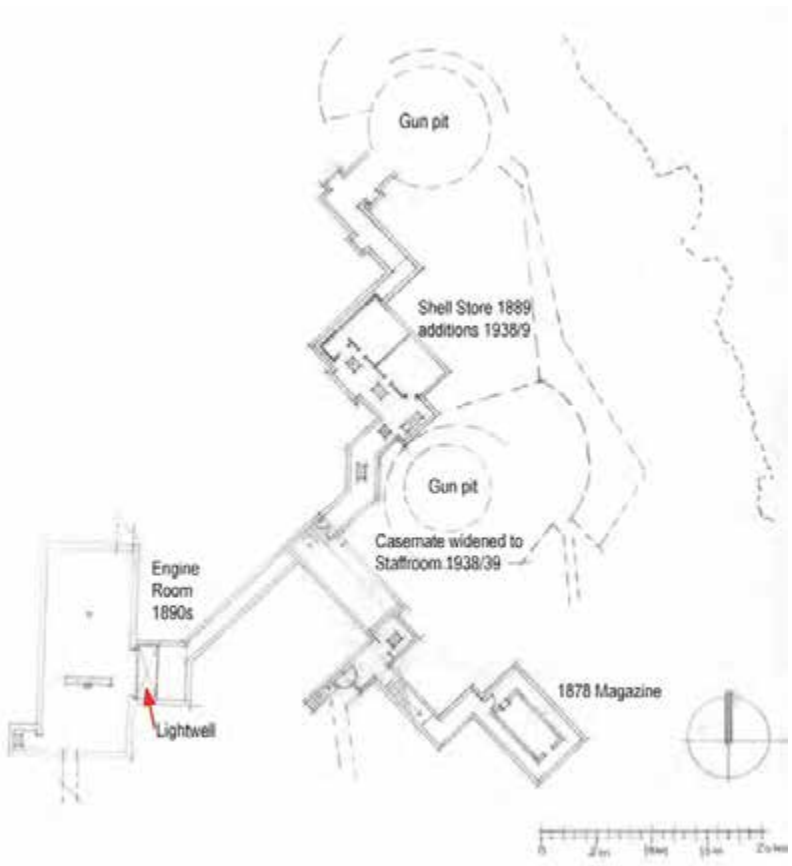
SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** March – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL IMAGES (CMP STAGE 2)



Plans showing alterations to the No.2 gun at the Hornby Battery, 1889. Note that these works were not carried out as the plan or there were later modifications. The Shell Store in its original configuration is shown. Source: Plan cabinet Greycliffe House.



Sketch layout of Hornby Battery. Engine Room based on measurements taken in 2008, other features approximate dimensions. Source: OCP September 2008

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

The entry of Shell Store. Looking from end of passage from the Staff Room.

View of the passage to west of shell store. At the far end are the 1930s additions.

View of vent to exterior in the passage west of Shell Store. Iron grill over remains. Note concrete deterioration.

View of the two vent covers over the passage west of Shell Store, looking northwest from above.

View of the shelf and opening into second room located north of the former Shell Store.

Former location of shell hoist, located at the south end of passage west of the Shell Store.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

View of the collection of items in the Shell Store retrieved when the underground structures were drained.

View of the 1930s noticeboard in passage west to the Shell Store, covered with perspex to protect it.

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Hornby Battery Engine Room & Collection – Ref: 1.3B		**LOCATION**: Inner South Head	
HHIMS ID:11090	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** Engine Room	

Photograph

The approximate location of the Engine Room below the level area adjacent to the loop walking track is shown by PWD staff. October 2006.

Photograph

View of the interior of the Engine Room (Source: Paul Davies 2006).

HISTORICAL SUMMARY (STAGE 1 CMP)

There are a number of surviving military features including gun emplacements and fortifications ringing Inner South Head. The military features were positioned on the perimeter of the headland to take the most advantage of the headlands height, its precipitous cliff edge (over 50m to the east) and the fact that, out of all the harbour's headlands, it projects the greatest distance into the harbour entrance. The features that are now sited within the Sydney Harbour National Park are part of a wider collection of emplacements that were constructed for the defence of Sydney from the mid 1850s until WW II. They share a history with fortifications now within HMAS Watson, but which are now visually disconnected and separately managed.

The largest and most impressive of the military features at Inner South Head is Hornby Battery, with its passages and magazines. In 1876 work commenced on a complex of five pits, under the stewardship of Colonial Architect James Barnet, which were associated with a range of entrenchments, buildings and accommodation. The whole complex is now separated between the National Park and HMAS Watson, with only the two northern pits some passages and magazines within the National Park. The complex visible above ground includes two circular gun batteries, which were originally excavated out of the rock in 1876. The walls, banquettes and parapets in the 1876 work consisted of both excavated stone and dressed stone blocks with rounded corners and chamfered corners to the passages. The pits are connected by a cranked underground passage leading to magazines and shell stores.

In 1889 the gun emplacement (now closest to HMAS Watson) was substantially modified to replace the fixed gun with a disappearing gun. The 1889 work was executed in concrete, in contrast to the fine Barnet era stonework. As part of the work, the northern magazine complex was added together with a nearby command post and DRF station. A passage was constructed connecting the 1890s Engine Room to the west of the Battery. The Engine Room provided electricity to the DRFs, searchlights, barracks and the Submarine Mining Observing Station overground conduits from the 1890s until the site was connected to the electrical grid in 1931. The Hornby Battery complex was again altered in 1903 and in 1938/9.

In 1978 the Army vacated South Head entirely except for Cliff House, and NPWS began to acquire the decommissioned areas of South Head. The Engine Room, and the excavated passages and magazines associated with the 1876 emplacements at Inner South Head, have subsequently been closed up or covered over to allow safe public access.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Australia

DESCRIPTION

The authors of this inventory sheet did not inspect the Engine Room. It is underground, and inaccessible. However, the Engine Room was inspected in November 2006 by NPWS staff and Paul Davies, heritage consultant, but has not been officially recorded. The Engine Room is a rectangular chamber with cast iron columns, brick walls and a wainscoting of glazed tiles in a diamond pattern. The main chamber is partnered with a ventilation shaft as well as a coal store and shaft. A narrow access passage runs from the ventilation shaft to the north-east and rises up to the Duty Room at the Hornby Battery. The machinery has been removed but the floor is littered with scattered artefacts.

To the west of the Hornby Battery, the north-south walking track passes through an elevated open grassed area just before it turns to the west. In the area bounded by the walking track and the road to Light Keepers Cottages is the location of the 1890s underground Engine Room. From the 1890s until the site was connected to the electrical grid in 1931, the Engine Room provided electricity to the DRFs, searchlights, barracks and the Submarine Mining Observing Station overground conduits (Gojak Site Notes 1985). The Engine Room and excavated passages and magazines associated with the 1876 emplacements at Hornby Battery have been closed up or covered over to allow safe public.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low There is high potential for covered in passages, drains and tunnels to remain. Markings, imprints or fixings inside the engine room may indicate the placement of equipment during its operation.

SUMMARY STATEMENT OF SIGNIFICANCE

The defence works at South Head are important in illustrating the implementation of an outer line of defences to Sydney Harbour from 1870, following the departure of Imperial British forces. They are evidence of the British Government's resolve that colonies with responsible government should bear the cost of their own defence.

The Hornby Battery (partly within HMAS Watson land) is a good example of a quarried battery with extensive connecting passageways and underground magazines and stores. Evidence of changes to the Battery to take larger ordinance in the 1890s, including the underground Engine Room in the 1890s and other remnants of associated electrical and communication installations, is of technological importance.

The Hornby battery contains evidence of four different phases of artillery technology in one fortification site (Mider 1998).

The 1890s Engine Room attached to the Hornby Battery (inventory item 1.3B) together with its movable contents and the searchlight emplacements and Observation Station are of particular technological heritage value.

High Moderate Low None	**State** Local Not Assessed

RISK ASSESSMENT

Structural	**Low**
Fire risk	**Low**
Wind Loading	**Low**
Visitor risk & safety	**High risk**
Other	

Risk Assessment Summary

The Stage 2 authors note that the contents and structure are severely affected by damp and the structural integrity and heritage values are at risk from accelerated deterioration due to poor drainage and ventilation.

INFORMATION

REFERENCES:

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Graham Brooks and Associations et al, NPWS Lighthouses Conservation Management Cultural Tourism Plan Vol 1 and Vol 2 (Greycliffe Library No. 623), Prepared for NPWS, Nov 2001.

Harvey, Roy, Sydney Harbour Fortifications Archival Study Final Report – Part 2, Prepared for NPWS, Jan 1985.

Mider, Dana, Assessment and Conservation Analysis of Three Military Structures, Prepared for NPWS, May 1998

Oppenheim, Peter. The Fragile Forts. The Fixed Defences of Sydney Harbour, 1788 - 1963, Army History Unit, Department of Defence, Canberra, 2004.

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Wilson, G.C., Sydney Harbour Fortifications Archival Study Part One, Prepared for NPWS, March 1985.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Investigate lightwell structure and limit access to area over. Stabilise the structure in the short term, by draining and ventilating. Open up lightwell and vents. Catalogue and store moveable items including building elements. In the medium term conserve the fabric including treating "concrete cancer" and rusted metal elements. In the long term install new waterproof membrane, conserve internal finishes, reopen and reinstate doorways and passages to provide access. Interpret initially with brochure and signage on walking track. When conserved interpret with guided tours and possibly temporary art or other installations and occasional events.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The Hornby Battery Generally

The Hornby Battery is a complex of above and below ground features of significance and interest. Part of the battery is occasionally open to guided tours and has some lighting. Many features are not well conserved. Though there is public interest and occasional tours are run, considerably more work is required before it can be regularly opened or other uses considered. The remote location means it is not a regional priority for NPWS so in the short term efforts should concentrate on stabilisation. This is primarily drainage, control of water entry and ventilation.

Future conservation and use will depend on an understanding of the arrangement of spaces and entrances and exits. For example is appears that there was an entrance from the exterior to the Engine Room on the south side. If this could be reopened it would provide easier access for conservation and maintenance. It also gives the possibility of a through walk for visitors if the passage between this room and the other part of the battery is reopened.

General policies for the Hornby Battery relevant to the Engine Room are:

Conserve & interpret across tenure the batteries and associated items in partnership with HMAS Watson.

Keep vegetation low or keep grass cover around and on sea side of defensive features.

Stabilise then conserve engine room:
- *research to find plans and record moveable heritage*
- *investigate engine room drainage and vents in detail (engineer & architect)*
- *develop strategy for tours/access and/or camera or periscope to view underground spaces*
- *remove overburden and vegetation near*
- *clean, drain and ventilate*
- *conserve, reduce water ingress*

Military Installations and Ruins Generally

For general policies for these structures see Inventory item 1.3. The following policies are general policies that apply to the Engine Room:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). The treatment should be according to the fabric to be preserved and may include stabilisation, propping, etc. When deciding on preservation treatment consider the purpose of the retention of each item and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Seek detailed engineering and architectural advice and document stabilisation of underground structures. Partially remove overburden, reinstate ventilation, clear drains, regrade so overland waterflow is away from structures, install "Stripdrain" or similar groundwater drainage and protect drying masonry from salt activity all as advised by the engineer and architect.

Stabilise cracks in concrete using helical ties and cementitous grout.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the main rooms probably had waterproof membranes originally that have deteriorated.

Interpret underground structures in short term using signage and brochures with photos or periscope style viewers or on guided tours. When stabilised allow access on guided tours and consider whether any alternate uses are feasible such as for events, installations or other use.

The Engine Room and Collection

The Engine Room is an inaccessible below ground feature and was not inspected during the Stage 1 CMP and is not generally open for inspection. A brief inspection was undertaken by the Stage 2 CMP authors on 15th April 2009 during which the space was measured. Entry is currently gained using a ladder via the former coal chute. There has been no conservation work done here and the space is very wet, though not flooded. Though there is public interest major work is required before this space could be opened for inspection or otherwise used. In the short term efforts should concentrate on stabilisation. This is primarily drainage, control of water entry and ventilation.

It is understood that the battery (not including the Engine Room) was previously measured and drawn by NPWS staff. These drawings could not be found during this study and should be found and used to plan and guide works. Measurements taken of the Engine Room were used to draw the plan in this document. The Engine Room should be added to the battery base drawing previously prepared. A sketch is included in this inventory sheet utilising a survey drawing and indicating the approximate relationship of the Engine Room and the battery.

The Engine Room originally had a lightwell and vents. They now have covers supporting fill over that appear to be structurally inadequate. It would be desirable to develop an approach that removed the fill from these areas and reinstated the vents and light well. An alternate approach would be needed as it is not desirable that the space be accessible at present nor that the light well be open to the sky. The cover could double as a visitor shelter or table or seat but the approach needs to be analysed and designed in detail. This would also prevent parking over vulnerable items by vehicles from HMAS Watson (this mostly happens at weddings). The remainder of the structure is in better structural condition than the vents and lightwell.

The drain that discharges from the Engine Room to the west needs to be conserved and cleared. It currently holds water and work will be needed downhill so the water can drain away. Roots breaching the walls and rusting Barlow rail roof supports of the drain need conservation.

Before any work proceeds in the room the collection, mainly carbon rods in canisters, needs to be professionally recorded, assessed and stored. Many items are scattered around the floor and would be broken or moved out of context by workers. Others items are the remains of the south door and these provide adequate detail to reconstruct this. The items could be stored on shelves in the space.

Conservation works in the longer term should include applying a membrane to the roof. This will involve excavation of the fill over. It is preferable that this area not be built up further nor any large vegetation be established over or in the vicinity as it will need to be removed.

Additional policies for the Engine Room and collection are:

Find the measured drawings for the battery, add the engine room and prepare a drawing of the complex relating the underground structures to the above ground structures including locating vents and light well.

Locate the former light well and fence it off to limit vehicle and pedestrian access.

As a priority clear drains and maintain them clear. Remove vegetation close to the main drain and roots encroaching on the drain. It may be necessary to kill plants whose roots are damaging the drain by cutting and poisoning, treating with biocide or hot water. Reduce raised ground levels below the drain and remove accumulated materials from base so water drains away.

Professionally record, assess and store the items in the Engine Room and associated spaces as soon as possible. This should include building components whose current location should be recorded before they are moved. Determine what items are, tag them and make recommendations for each item. Identify fragile elements, items which can be returned to their original location, be re-used, items that are models for conservation works, items which no longer require retention and items which could form part of an interpretive display or museum exhibit. Store the items on shelves in the space.

In the medium term conserve items identified for retention. Review their suitability for display or storage. In the long term, interpret them.

Further investigate the collapsing roof over the light well, in particular the depth of soil cover over, whether there is any other structure over and identify measures to ensure structural integrity and public safety.

Develop an approach to provide ventilation in the original locations now covered by roofs and fill (and that are failing structurally). Design to provide ventilation, prevent water entry and resist vandals.

Treat "concrete cancer", initially by knocking off loose concrete (safety issue) then in the medium term treating rusting ferrous metal reinforcing and supports to limit deterioration. Treat exposed ferrous metal elements for rust and desalinate areas affected by salt damp. Repair render and concrete.

Adjust ground levels so that water drains away from the Engine Room and add sub-soil drains to collect and discharge groundwater away from the building. See above general policies re waterproofing.

Remove large trees and shrubs from the vicinity, particularly any with invasive root systems.

In the medium term clear the cavity drains behind the internal skin of the masonry walls. This will require removal of bricks at the base of the wall and clearing the drain.

Monitor rusted metal structural elements. Resupport if necessary at end supports and/or centre span.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works for public safety, to stabilise structure and minimise deterioration:

- Fence off lightwell area,
- remove vegetation encroaching on drains,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- investigate and stabilise lightwell roof,
- knock off loose concrete from ceilings ("concrete cancer") to minimise risk to people in spaces
- ensure all concrete covers are secure against unauthorised entry and
- catalogue and store moveable items / collection including building materials.

Medium Term (1-5 years)

Undertake fabric conservation works:

- Direct storm / ground water away,

- improve surface drainage especially between Engine Room and remainder of Battery (see separate inventory sheet). Consider installing "Stripdrain" or similar between and changing ground levels to create a swale discharging surface water clear of the underground structures,
- investigate vents and design system to improve cross ventilation,
- reinstate ventilation in the original locations now covered by concrete covers. Design to resist vandals, prevent water entry and may incorporate seating.
- treat "concrete cancer" by treating rusted ferrous rails and beams to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular the Barlow rails, sliding door track, beams and columns and other original or early metal elements,
- undertake any structural repairs found necessary and
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, particularly during drying out period, then repair masonry.

Long term
Undertake complex conservation works:
- Remove overburden from top of roof and install new water proof membrane,
- reopen passage to Engine Room and develop access, lighting etc. for interpretation,
- consider reopening southern door (depending on previous investigation),
- repair timber elements including south door,
- remove paint from tiles,
- upgrade services including electricity and lighting and
- consider installing climate monitoring.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage to entry gates and covers,
- water entry,
- storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces,
- termite damage or infestation, rot in timbers,
- progressive rust in ferrous metals,
- open mortar joints or fretting or cracks in stonework or other masonry, and
- operation of services such as lighting and power.

INTERPRETATION (CMP STAGE 2)

Retain structure generally as part of the remains of a military installation with viewing from exterior and open pits and interpretive signage on adjacent walkway for self guided tours. Considered providing additional interpretive material electronically or in a brochure, utilising photos of the Engine Room. Interpret that this Engine Room is rare as one of the oldest surviving and with unusual details such as the tiled dado.

In medium term consider periscope style or video viewers. Interpret any conservation work being undertaken.

In long term, when stabilised and conserved, allow access on regular guided tours. Consider if alternate uses are feasible such as for interpretative displays, events, art or other installations. Review suitability of movable items for display or storage and if possible, interpret them. (See separate inventory sheets 1.3A & 1.3).

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan	**Year of Study/Report:** 2008 & 2009	
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** March – April 2007
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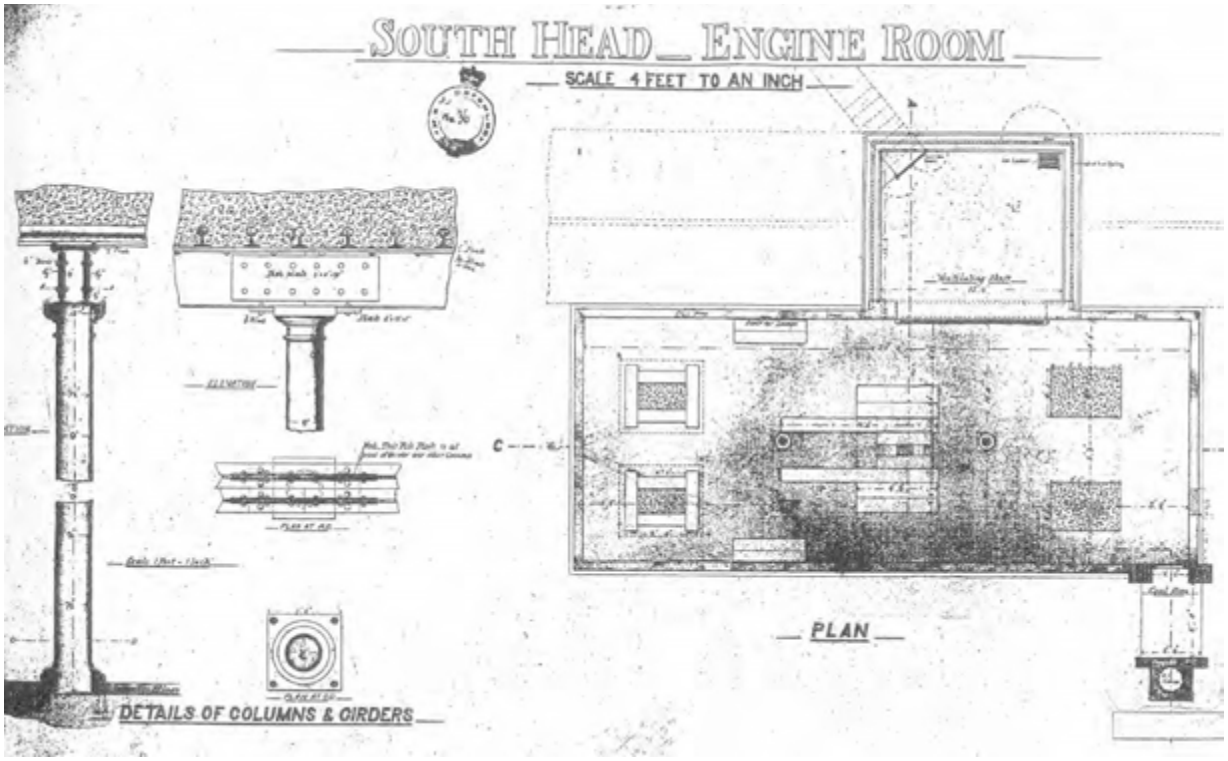
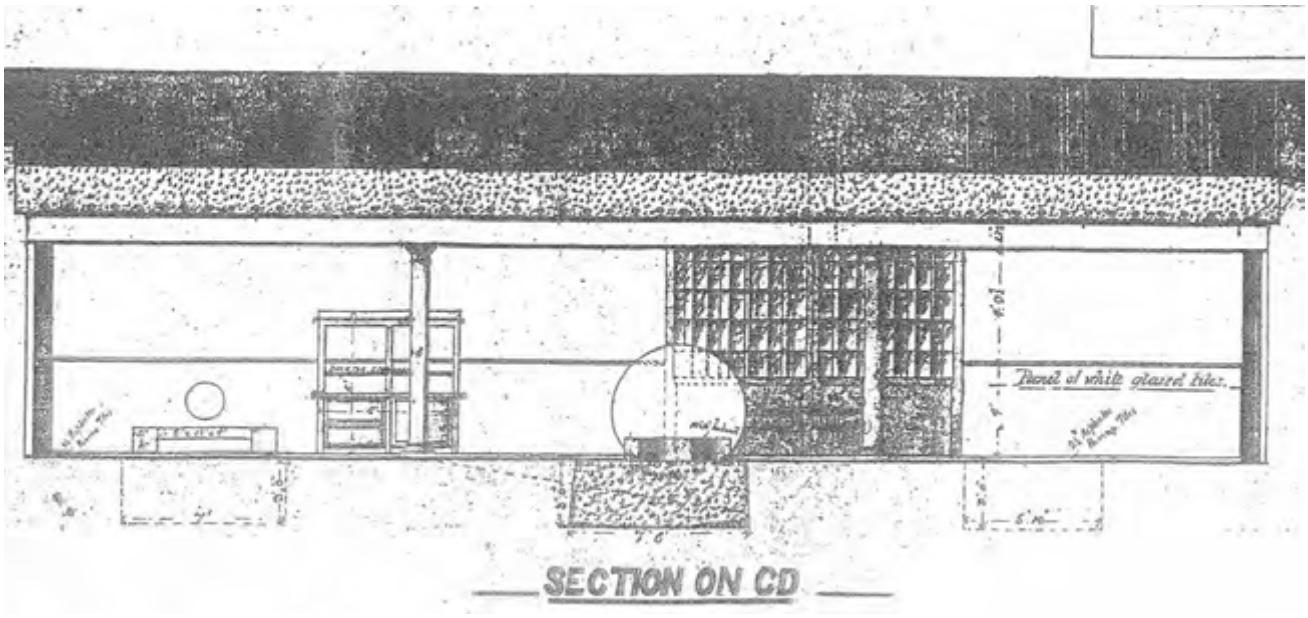
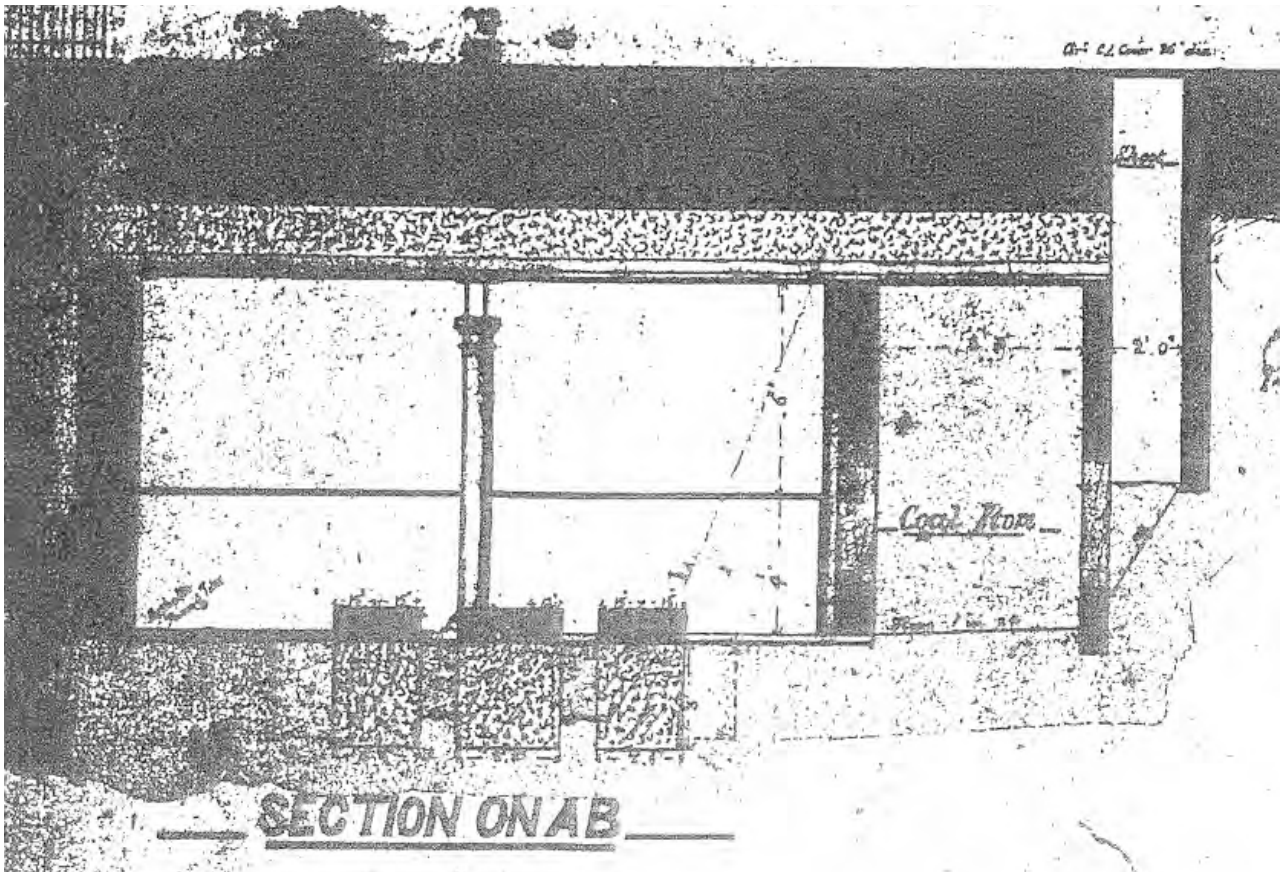


Detail from Original Engine Room Construction Drawing C10/28. Source: DECC

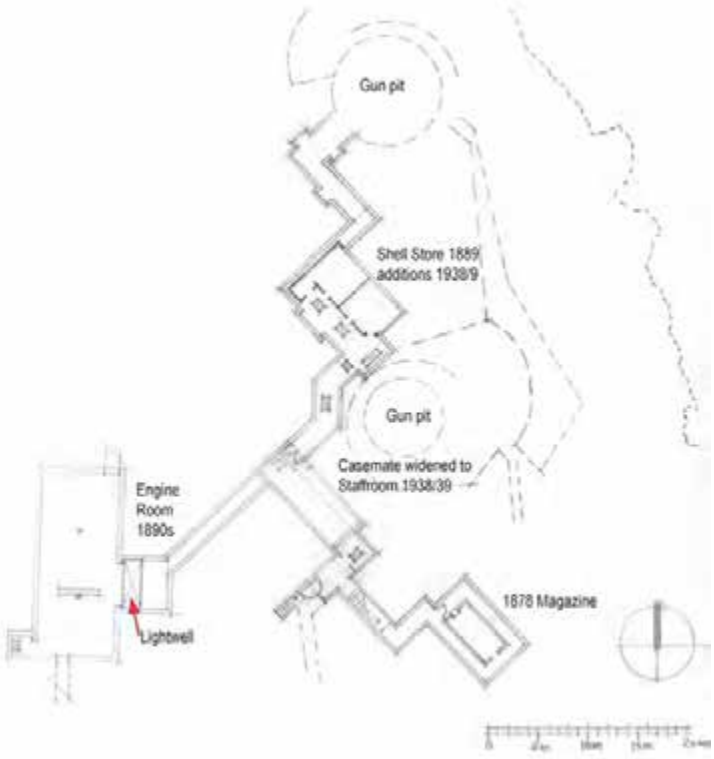


Detail from Original Engine Room Construction Drawing C10/28. Source: DECC



Detail from Original Engine Room Construction Drawing C10/28. Source: DECC

ADDITIONAL IMAGES (CMP STAGE 2)



Sketch layout of Hornby Battery. Engine Room based on measurements, other features approximate. Source: OCP 2009

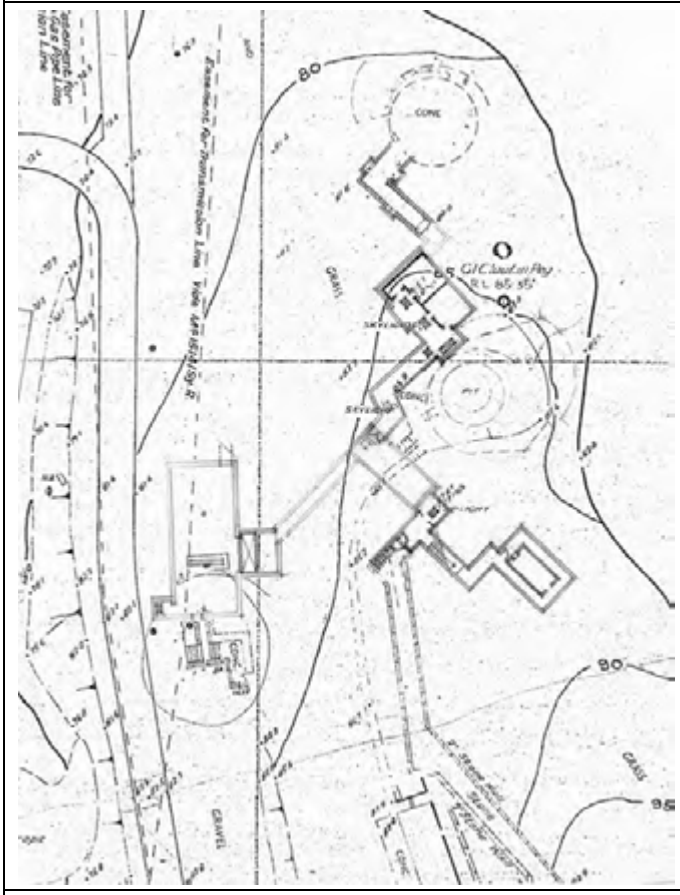


Diagram showing approximate relationship of Engine Room to Hornby Battery overlaid with the 1968 survey. The diagram has been adjusted and it is not exactly correct but the location in relation to other features is indicated. Source: OCP 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

Looking north to Engine Room space. The room has two central columns under a beam running the full length of the space.

Looking south to Engine Room space. The space is rectangular the walls are brickwork with a tiled dado and have been pained.

The east wall of the Engine Room showing the original white tiled dado, later painted green. At the top right corner of the picture is the left sliding door track for the former door to the lightwell.

The north wall of the Engine Room showing the original white tiled dado, later painted green. Note the two vents (arrowed). At the right side of the beam are remains of machinery and ducts and at the right end of the wall a window that was bricked up.

The south wall of the Engine Room. At centre right is the original entry door that was bricked up.

The west wall of the Engine Room. There are recesses in the brickwork for lamps (arrowed) and at the left side is the entry to the coal chute.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

The east wall of the Engine Room to the right of the opening to the lightwell. The right sliding door track is arrowed.

View of the opening to the lightwell in the east wall of the Engine Room. A passage, possibly connecting to the Staff Room, is shown at the centre of the photograph, arrowed.

View of the opening to the lightwell with the passage, possibly connecting to the Staff Room, located the left side of the lightwell. Noted debris on the floor, mainly timber and cgi sheets.

View of the steel beam over opening to the lightwell. The sliding door track crosses in front of the beam.

Former roofing sheets with skylight in the lightwell.

View of the current roof of the lightwell. Note that timber joists are collapsing. The area over is covered with soil. Is not known if there is any other structure above the "roof".

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

View of the skylight and roof. Note brickwork above original skylight walls. The slab to the right is supported by rail tracks which are visible.

View of stone steps to passage possibly connecting to the Staff Room.

View of the ceiling of the passage showing rusted Barlow rails.

Remains of the door, now bricked up, in the south wall.

Remains of former door in the south wall showing detail of frame for louvres over the door.

Former door opening in the south wall door showing frame with evidence of former louvres over door.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

Opening to coal chute currently use to gain entry to Engine Room, located at south end of west wall.

View of the coal chute cover above ground, located at east side of the Inner South Head loop walking trail.

Detail of coal chute showing cgi lining, which is loose, and debris on the ground.

View of the skylight located next to the southmost central column. Noted original metal grill.

View of the skylight located next to the south column. Noted grill is damaged with brick fill over falling through.

Detail of floor space under Engine Room skylight showing bricks that have fallen through the grill.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

View of the drain cover located in the lightwell floor.

View of drain interior, looking east from the exit on south side of inner South Head loop walking trail. Noted the rusted Barlow rails and roots inside.

View of Engine Room drain exit located on the south side of Inner South Head loop trail.

Carbon rods (for arc lights) stored in canisters in lightwell.

Detail of an open canister showing the carbon rods in sawdust.

Items stored in the end of passage from the lightwell, including box with long carbon rods and steel items.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP September 2008*

View of the Engine Room's north wall at the bricked up window, showing missing bricks.

View through the hole in the bricked up window showing there is a void and the underside of the cover is visible.

View of the Engine Room south wall showing details of services power boards.

Termite trails on west wall entering through vent. No active termites were seen during inspection

View of machinery base on Engine Room floor.

View of the Engine Room ceiling. Note the pattern in the ceiling coincides with the lines of rusted rail track reinforcing. The render is loose under the tracks.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: 1854/5 Gun Emplacement – Ref: 1.4		**LOCATION**: Inner South Head	
HHIMS ID:3308	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** Gun emplacement	

Photograph

The 1854-55 gun pit in the foreground with the Head Lightkeeper's Cottage in the background. October 2006.

Photograph

View of the 1854-55 gun emplacement. February 2007.

HISTORICAL SUMMARY (STAGE 1 CMP)

The 1854/5 Gun Emplacement is one of a range of redundant defence fortifications and equipment, which encircle Inner South Head and Green Point dating from the 1850s to the mid-1940s. This 'defence heritage' was constructed over a number of phases in response to perceived external threats and overseas wars, including the Crimean War (1854–56), fears of Russian invasion in the 1870s and WWII (1939–45).

There are a number of surviving military features including gun emplacements and fortifications located around Inner South Head. These military features were positioned on the perimeter of the headland to take advantage of the height of the headland, its precipitous cliff edge (over 50m to the east) and the fact that, out of all the harbour headlands, it projects the greatest distance into the harbour entrance. The military features that are now sited within the Sydney Harbour National Park at South Head are part of a wider collection of emplacements that were constructed for the defence of Sydney from the mid-1850s until the close of World War II. They share a history with fortifications now within HMAS Watson, but which are now visually disconnected and separately managed.

The earliest military feature on the South Head peninsula is the remains of a gun pit for a single gun, to the north of the Head Lightkeeper's Cottage and close to the cliff edge. Although Inner South Head and Gap Bluff were formally reserved for defence use in 1877, they had been earmarked for defence use from the 1850s. Work was commenced on South Head in October 1854. The tip of South Head was first cleared of vegetation, and construction of the battery began. The gun emplacement was cut from a bluff in the rock in 1854–55, prompted by the Crimean War, to provide a defence for the harbour. The Crimean War had accelerated the selection of sites for defensive purposes. Sites selected at Middle Head and Inner South Head were designed to command the entrance to the harbour, the shipping channels and the area seaward of the Heads.

These outer works ceased in 1855 with the arrival of Sir William Denison, the new Governor of NSW. Denison submitted a report In 1855, which stressed that the inner defences were more important and works were concentrated in the inner harbour when Fort Denison was completed.

The battery at South Head was designed as a rampart on which guns were to be mounted, flanked on either side by four circular bastions each mounting one gun carriage. This was to form part of a larger enclosed work mounting six guns. Circular bastions had been in use for some time in Britain, but their use on South Head in the 1850s was the first time they appeared in NSW. The gun pit at the tip of South Head (1854–55) was originally partnered with another gun pit in which the Hornby Light sits. No physical evidence of the rampart has been found.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing – Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The 1854–55 Gun Emplacement is located close to the cliff edge, to the north of the Head Lightkeeper's Cottage. The gun pit has an unfinished appearance and was never armed. It still is in good condition if a little weathered. It features a banquette, a distinctive rock apron and a flared opening with a short passage entering the pit from the south. A trench is cut on the northern side of the pit, which Gojak suggests was cut at a later date for an unknown purpose. The pit wall still has vestiges of its picked stone finish. The 1854/55 Gun Emplacement was recorded as site N8 by Denis Gojak in c1985 (Gojak Site Notes 1985).

CONDITION: Good Poor Fair **Ruinous** Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low**

SUMMARY STATEMENT OF SIGNIFICANCE

The relic of the 1854–55 Gun Emplacement has historic and technological significance as the earliest surviving military feature on the South Head peninsula. It, along with a second gun emplacement at the Hornby Light, was built in direct response to the Crimean War of 1853–56.

The gun emplacement was intended to form part of a larger enclosed work mounting six guns. Circular bastions had been in use for some time in Britain, but their use on South Head in the 1850s was the first time they appeared in NSW. Although this scheme was never completed, the 1854–55 gun emplacement has significance as an integral piece of Sydney's defence infrastructure in the nineteenth century.

The 1854–55 Gun Emplacement has significance as part of a group of defence installations on South Head, which demonstrates changes in defence technology over the period 1854 to 1939 including changes in construction materials and the introduction of new technologies.

The 1854–55 Gun Emplacement is a good representative example of nineteenth century fortifications quarried into the natural sandstone.

High Moderate Low None	**State**	Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

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

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

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Openheimer, Peter, The Fragile Forts: The Fixed Defences of Sydney Harbour 1788–1963, Army History Unit, Department of Defence, Canberra ACT, 2004

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Conserve by clearing drain to exterior, adjusting ground levels and drainage so water does not flow into gun pit. Clear silt and grass from base of pit. Use as part of self guided walking track interpretation.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The Hornby Battery Generally

The Hornby Battery is a complex of above and below ground features of significance and interest. See inventory sheets 1.3, 1.3A & 1.3B for additional information about the battery.

General policies for the ISH Batteries which a relevant to the 1854 gun emplacement are:

Conserve & interpret the batteries and associated items across tenure in partnership with HMAS Watson.

Keep vegetation low or grass around and on the sea side of defensive features

Re-establish Themeda grasslands on the headland especially on the outer edge of the walking trail and use endemic grass species in the cleared areas of Inner South Head.

Stabilise and maintain north gun emplacements:
- *provide low key safety barrier*
- *conduct small group guided tours & facilitate self guided tours*
- *remove vegetation from structures and where interfering with views*
- *clear drains and keep clear and reduce water ingress*

Military Installations and Ruins Generally

General policies for these structures as they apply to the 1854 gun emplacement are:

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms and major public events. This includes the drain cut in the bedrock running north from the 1854 gun pit.

Adjust ground levels around pits so that water drains away from them.

Remove large shrubs from the vicinity and protect pit from physical damage from erosion, vehicles and visitors, etc.

Kill plants growing in ruin by cutting and poisoning, treating with biocide or hot water before removing them.

Do not completely fence pits but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study. Provide low key safety barrier at N gun emplacement.

Preserve the original fabric and repair using matching materials or tested modern materials. The treatment should be according to the fabric to be preserved and may include stabilisation, propping, etc.

Interpret using signage and brochures. Allow access for self-guided tours.

The 1854 Gun Emplacement

This is the oldest of the batteries on South Head and is of added significance because of this. Evidence of the sequence of earlier batteries also survives in Sydney Harbour including the Dawes Point Battery and a gun emplacement above Obelisk Bay near Middle Head, the latter is within Sydney Harbour NP. The early gun emplacements were all cut into the sandstone bedrock. The site is adjacent to the main walking track and is easily accessible to walkers and for interpretation from the walking track as at present.

It is interpreted but not conserved and plants growing near it interrupt the view from it and make understanding it more difficult. Water is also accumulating in the base. Some simple works can conserve the emplacement; removing the tree blocking the drain, removing silt from the base, ensuring the drain functions correctly and adjusting ground levels around to minimise water entering the structure.

This Specific recommendations are:

Remove the shrub blocking the drain to clear the drain and open the view. (cut and poison before removing roots).

Clear silt and grass from the base of the emplacement.

Adjust ground levels around to minimise water entry.

Ensure water drains away from the base of the pit (patching with mortar may be required).

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration:
- Remove vegetation encroaching drain,
- direct storm / ground water away, so water does not run from grassed areas into pit,
- clear and repair stormwater drain and
- clear growth and waste from base of pit.

Medium Term (1-5 years) Undertake fabric conservation works: • Improve surface drainage, create a swale discharging surface water clear of the pit, • fill fissures in rock lime mortar and • install safety fencing or other surface treatment at pit. (refer Forts Study)
MAINTENANCE (CMP STAGE 2)
Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check: • Vandalism, • storm water flow away from pit and encroaching vegetation, • drain to north clean and functioning, • open joints or fretting or cracks in rock.
INTERPRETATION (CMP STAGE 2)
Retain structure as one of the earliest parts of the remains of a military installation with viewing from exterior and open pits and interpretive signage on adjacent walkway for self guided tours. (see separate inventory sheets 1.3, 1.3A & 1.3B)

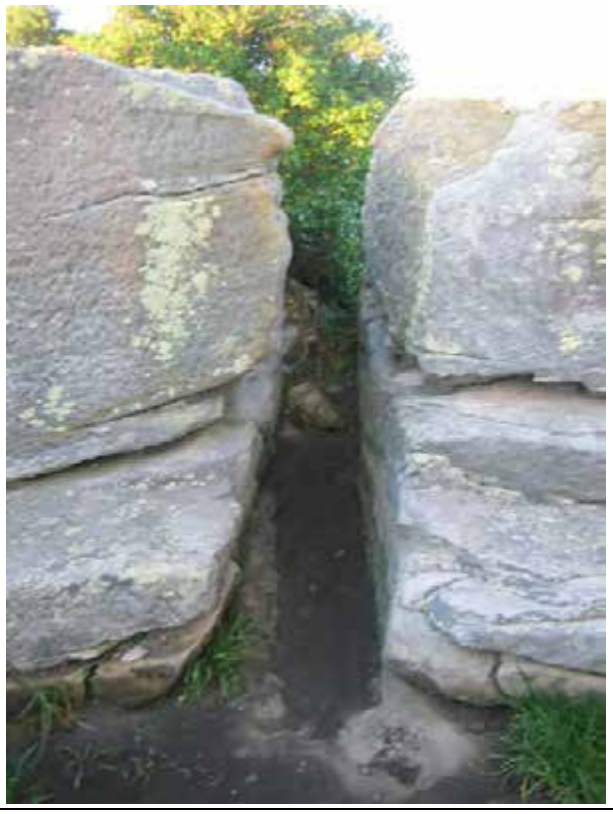
SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Added December 2009*

Detail from a 1951 aerial of South Head showing the gun emplacement to the north west of the Lightkeeper's and Assistant Lightkeeper's residences. Source: SHFT aerials North Head (which includes part of South Head) 1951_r11_2

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the Gun Emplacement pit. Noted that silt with grass is accumulated at base of pit.



Drain from pit filled with silt and blocked by plant and roots.

View of Gun Emplacement drain with roots blocking it.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: WWII Searchlight Shelter – Ref 1.5		**LOCATION**: Inner South Head	
HHIMS ID:11091	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** searchlight shelter during World War 2	

Photograph

The WWII Searchlight with the Hornby Lighthouse in the background. Source: Author February 2007.

Photograph

View of the Searchlight taken in 2005. Source: NPWS, February 2005.

HISTORICAL SUMMARY (STAGE 1 CMP)

Sydney's earliest permanent defence installations were located at Dawes Point and Bradleys Head, both promontories close to Sydney Cove by water. South Head (along with Middle Head and Georges Head) was important whenever the defence policy was to keep the enemy out of the Harbour altogether, a philosophy that dominated defence planning from the 1870s.

South Head remained an essential element in Sydney's topography of defence until the conclusion of World War Two. A complex system of batteries, searchlight emplacements, magazines, trenches and rifle walls, thoroughfares, and accommodation and administration buildings were constructed on South Head from the middle of the nineteenth century. Remains of some of these structures and parts thereof fall within the study area, while others are within the present HMAS Watson reserve, which continues the military use of the headland. Defence training also became an important aspect of military activities on South Head with the establishment of the School of Gunnery (also the Radar Training School), which operated at Gap Bluff from 1895 to the beginning of World War Two (and later the Radar School on the same site).

Australia officially declared war on Germany in September 1939. This war was to come much closer to Sydney than the 1914-1918 war and activities at South Head reflected this. For example, coastal artillery was given code names, and defensive preparations continued. The three-pounder guns at Green Point were code named Laing Battery, and the 6-pounder gun at Green Point was known as Laing. The Hornby Battery was also earmarked as a defensive site. A secret memo of October 1939 determined two sites for Directional Electric Lights (DELs) near to Hornby Battery. One of these sites is now located within the HMAS Watson, and is outside the study area. The other site is the existing reinforced concrete shelter adjacent to the Hornby Light.

The site for the proposed DEL next to the Hornby Light was described as: 'a position on solid rock with plenty of room, about 20 yards north of Hornby Lighthouse and about 150 yards north of No. 2 Gun. This site is about 30 to 40 ft. below the guns. A 270 degrees arc could be obtained if desired. It is an excellent position and there would be no further expense than the cost of emplacement. This site is recommended for the second light.' The works to build the structure were estimated at 250 pounds. (Oppenheim, Peter. *The Fragile Forts,* 2004, p. 239).

The DEL at Hornby Light was decommissioned after the end of the war. The DEL fittings were stripped from the structure sometime between the end of the war and the 1970s/80s when NPWS took control of Inner South Head. All that remains of the structure is the reinforced shell, which was remediated in 2005 by NPWS.

National Theme/s:	**State Theme/s:**
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Involvement with the Second World War

DESCRIPTION

To the north of the Hornby Light is a reinforced concrete blockhouse, which is the shell of a World War II Searchlight Emplacement that originally housed a carbon arc searchlight (also known as a DEL). No original fittings and fixtures survive. The blockhouse has a flat concrete roof with a large rectangular aperture for the searchlight taking up most of the front (north) seaward wall and part of the side (east and west) walls. Two brick piers support the concrete roof just inside the aperture. The block has a door opening in its east wall. A concrete slab and steel fixings to the east of the block may have been the base of a storage building (Gojak Site Notes 1985). Concrete remediation works were undertaken by NPWS in 2005.

The World War II Searchlight Shelter was recorded as site N6 by Denis Gojak in c1985.

There are also the remains of two 1890s searchlight emplacements at South Head – South Head Stage 1 CMP 2008 Inventory items 1.6 (no inventory sheet at this time) and item 2.3 (this inventory sheet). There was also a 1890s searchlight observation post – item 2.4 (see separate 2008 CMP inventory sheet).

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low**

SUMMARY STATEMENT OF SIGNIFICANCE

This searchlight shelter is of high historical and technical significance as part of the collection of WWII defensive structures erected at South Head in WWII.

The WWII Searchlight Shelter has significance as part of a group of defence structures on South Head, which demonstrates changes in defence technology over the period 1854 to 1939 including changes in construction materials and the introduction of new technologies.

High **Moderate** Low None	**State** As part of the collection of WWII Defence sites at South Head.	Local Not Assessed

RISK ASSESSMENT		
Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, Dennis, Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

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

Oppenheimer, Peter, The Fragile Forts: The Fixed Defences of Sydney Harbour 1788–1963, Army History Unit, Department of Defence, Canberra ACT, 2004

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Continue to maintain and interpret as a stabilised ruin, which is part of the remains of the defence structures on South Head and as part of a network of searchlights.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The Defensive Structures Generally

There is a complex of above and below ground defensive features of significance and interest at Inner South Head. The area generally is open to visitors on foot. There was once a network of permanent searchlights associated with the coastal batteries in Port Kembla, Cape Banks, North and South Head and at Newcastle. There is only limited physical evidence of these structures surviving today, and the example on South Head is one of the most intact examples. Many of the searchlights were located in what is now National Park. File names at the National Archives indicate that the abbreviation DEL was defence emplacement [search]light (a different abbreviation to that given earlier in this inventory).

The adjacent building remnants may have been part off the engine room. The searchlights were camouflaged with netting and imitation vegetation (shown in the AWM photographs of the searchlights at the Kembla Fortress, AWM photos 081441 &42) or disguised as rocks (as at Cape Banks AWM 129995). A series of moveable searchlights were erected on ovals such as the Brookvale Oval. A number of the searchlight installations were 'manned' by the AWAS.

This structure has been recently "remediated". This included repair of spalling concrete and rusted reinforcing and the replacement of metal elements with masonry. In this case this is appropriate because of the highly corrosive marine environment. The repaired "concrete cancer" will need continued monitoring as it usually recurs in the long term. Depending on the rate of decay it may be appropriate to add a waterproof membrane to the roof of the searchlight shelter.

General policies for Inner South Head applicable to the searchlight are:

Conserve & interpret the batteries and associated items across tenure in partnership with HMAS Watson.

Keep vegetation low or grass around and on the sea side of defensive features

Re-establish Themeda grasslands on the headland especially on the outer edge of the walking trail and use endemic grass species in the cleared areas of Inner South Head.

Stabilise and maintain structures:
- *provide low key safety barriers*
- *conduct small group guided tours & facilitate self guided tours*
- *remove vegetation from structures and where interfering with views*
- *clear drains and keep clear*
- *conserve / make watertight*

Military Installations and Ruins Generally

General policies for these structures as they apply to the Searchlight Shelter are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). The treatment should be according to the fabric to be preserved and may include fencing, stabilisation, propping, etc. When deciding on preservation treatment consider the purpose of the retention of each item and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Remove large trees, shrubs and garden beds from the vicinity and protect from physical damage from erosion and visitors.

Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms and major public events.

Monitor rusted metal elements and continue to treat to minimise damage. If structure is endangered cut metal elements back and cover with mortar or remove. Re-support if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures.

Do not completely fence pits or other hazards but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study.

Interpret using signage and brochures and on self-guided and guided tours.

The WW2 Searchlight Shelter

Specific policies for the WW2 searchlight shelter are:

Monitor the repairs to the "concrete cancer" and follow up where required in the long term.

Clear drain regularly.

Interpret the original construction and use of the structure.

Discourage access over the adjacent remains of Aboriginal engravings.

RECOMMENDED WORKS (CMP STAGE 2)
Immediate Undertake works to minimise deterioration: • Remove vegetation encroaching on structure and drain, • direct storm / ground water away, for example so water is not directed against south wall and • clear stormwater drain. Medium Term (1-5 years) Undertake fabric conservation works: • Continue to treat "concrete cancer" by treating rusted ferrous reinforcing to limit further deterioration and patching masonry, • Fill cracks in concrete with grout according to engineers advice, • Install landscaping, fencing or other surface treatment to limit access to area of Aboriginal engraving if patterns of visitor use and wear indicates this is necessary. Long term Undertake further conservation works: • Add waterproof membrane to roof.
MAINTENANCE (CMP STAGE 2)
Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check: • Vandalism, graffiti and damage to structure, • water entry through roof or walls, • storm water flow away from structure and encroaching vegetation, • drain clear and functioning, • progressive rust in ferrous metals and • spalling or cracks in concrete.
INTERPRETATION (CMP STAGE 2)
Retain and interpret the structure as ruined WW2 defensive structure with viewing from walkway and unrestricted access. Interpret the former configuration of the building, its function and relationship to other searchlights. Consider providing additional interpretive material electronically or in a brochure.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** February – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View WWII Searchlight Shelter, showing "remediation" work completed.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Added December 2009*

View of a camouflaged coastal artillery searchlight at the Illowra Battery, Port Kembla taken in 1944. Illowra Battery now falls within Hill 60 Park south of Port Kembla. A number of the above and below ground structures that comprise the battery survive.
Source: AWM 081442

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Lady Bay Precinct – Ref: 2.0		**LOCATION**: Lady Bay	
HHIMS ID:11095	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Nudist beach		**FORMER USE:** Department of Defence land	

Photograph

View of the structure on Lady Bay Beach [2.1], uncovered by wave action in the intertidal zone (Source: DECC 2004).

Photograph

View of Lady Bay Beach. February 2007.

HISTORICAL SUMMARY (STAGE 1 CMP)

South Head was recognised early in the nineteenth century as a strategic location for harbour defence, when the Colony's tactical minds began to imagine gun emplacements wreathing the headland. It was only in the second half of the nineteenth century that the means and the political will were found to commence the first construction project. With the harbour defence strategy vacillating between an inner and outer line of harbour defence, however, this project was not completed.

By the 1870s, the outer line of defence had won out. The construction of batteries and the associated military accommodation and administration buildings ensured a permanent military presence at South Head, which intensified over the following decades and peaked at the turn of the century. The harbour defences did not play an important role in WWI, and defence spending ground to a halt in the interwar period. Activities re-intensified with WWII, as it became apparent that Sydney Harbour was this time under direct threat. Following WWII, a greater emphasis was placed on military accommodation and training at South Head. The fixed batteries were decommissioned, being no longer an effective form of defence. There are a number of surviving military features including gun emplacements and fortifications located on the South Head peninsula and Green Point.

These military features were positioned on the perimeter of the headland to take advantage of its height, its precipitous cliff edge (over 50m to the east) and the fact that, out of all the harbour headlands, it projects the greatest distance into the harbour entrance. The military features now sited within Sydney Harbour National Park at South Head are part of a wider collection of emplacements constructed for the defence of Sydney from the mid-1850s until the close of WWII. They share a history with fortifications now within HMAS Watson, but which are now visually disconnected and separately managed.

Lady Bay Beach was not accessible to the public for much of the nineteenth and twentieth centuries, due to the military presence on the South Head peninsula. In the 1970s, Lady Bay and surrounds were handed over to the National Parks and Wildlife Service, and the beach was opened to the public. In 1976, the NSW Premier Neville Wran proclaimed Lady Bay Beach a nudist beach. It was one of the first nude bathing beaches in the State. The beach continues to be valued as a haven by Sydney's nude bathing population as the steep cliffs enclose the beach, affording privacy.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Environment – cultural landscape - Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings
8. Culture - Developing cultural institutions and ways of life	Leisure - Activities associated with recreation and relaxation

DESCRIPTION

This narrow strip of land, cliffs and rocky foreshore once formed part of the military precinct that stretched across the headland and was once used for artillery training and coastal defence. Most of the archaeological and built evidence within this precinct, therefore, relates directly to the adjacent HMAS Watson and Inner South Head precincts.

The area has been heavily revegetated and a number of buildings removed. Currently, the path widens to a road and bitumen turning bay that services a toilet block and rubbish area. The area is semi-enclosed by a tall stand of Banksia integrifolia, Melaleuca armillaris and Casuarina. A fenced bush regeneration area occurs on the cliff edge. At Lady Bay itself, a shady track cuts across the steep slope allowing glimpses to the water. The study area is at its narrowest here, up against the wire fence boundary of HMAS Watson. The dominant canopy species is Banksia integrifolia with a Lomandra understorey.

There have been at least 5 Aboriginal sites recorded in the precinct in the past including rock engravings and middens. Many rock engravings have been heavily eroded.

A walking concrete path runs above Lady Bay on the cliff edge, allowing glimpses to the water below. Stone steps, cut out of the rock and with dressed stone blocks, drops precipitously to provide access to the southern end of the bay. The concrete path travels south of Lady Bay and terminates at the northern end of the access road, which originally linked along the western end of the headland but now is severed by the boundary between the National Park and HMAS Watson.

There are a number of archaeological elements along Lady Bay Beach. Wave action in the intertidal zone has shifted the beach sands and uncovered further artefacts. There appears to have been a series of walkways and small bridges along the cliff edge connecting various features including rifle walls, viewing areas and a Searchlight Observation Station, which is just below the recently constructed amenities block on the walking track (and former access road). The searchlight remains are partially excavated out of the rock and consist of reinforced concrete room built onto the adjacent defence wall.

The grassy area behind the cliff top-walking trail is likely to contain remains of four buildings, possible barracks or work rooms shown on a post WWII plan of the area (Longworth and McKenzie, Figure no 6, reproduced in Gojak 1985 research notes). Sandstone edging between the walking trail and the cliff edge may be the remains of small narrow garden beds associated with the buildings. Immediately behind Lady Bay Beach itself is a retaining wall associated with the School of Gunnery.

There are a number of historical structures or archaeological elements in the Lady Bay Precinct. These are (moving south to north):

- Platform, path and step remains [2.4]
- Former bridge and walkway [2.5]
- Stone walling [2.6]
- L-shaped (Rifle?) walling [2.7]
- Searchlight observation station [2.8]
- Possible former store and sheltered walkway [2.9]
- Artefact on beach [2.1]
- Retaining wall behind beach [2.11]
- Pit with concrete cover [2.10]
- Searchlight No 3 [IS 2.2]
- Defensive structure [2.3]

The artefact partly buried in sand on Camp Cove Beach [2.1] is referred to in the text below and in the Precinct Inventory Sheet [IS 2.0] Searchlight No 3 [Item IS 2.2] has its own Inventory Sheet in Volume 2. The remaining items are given a brief description in the Archaeology Table in Volume 2.

The notable views and vistas for the Lady Bay Precinct are:

1. Glimpses out to Sydney Harbour framed by native vegetation (See Figure 3.27)
2. View down to the Beach from the current walkway
3. Views to the retaining wall behind the Beach (although somewhat obscured by overgrowth)
4. The views out from the defensive structures (particularly the searchlight emplacements and rifle walls) out to the Harbour are important for their interpretation but are currently overgrown.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low The area immediately behind the retaining wall contains evidence of a former sheltered walk and underground chamber as well as drains and services.

SUMMARY STATEMENT OF SIGNIFICANCE

Lady Bay Beach has social significance as one of the first nude bathing beaches in NSW. In 1976, then Premier Neville Wran established Lady Bay Beach as a nudist beach, and the beach continues to be valued as a haven by Sydney's nude bathing population.

Lady Bay Beach is relatively inaccessible, bounded by steep cliffs to the east. The enclosed nature of the beach has afforded privacy in both phases of use: defence in the nineteenth century, and nude bathers from the 1970s onwards. Lady Bay was in the control of the military for most of the nineteenth and twentieth centuries, which means that it was closed to the public during this time.

High	**Moderate**	**Low**	**None**		**State**		**Local**		**Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary** The Stage 2 assessment considers the condition of several ruins in the area and the leaning retaining walls behind the beach pose a structural risk.
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Wilson, G.C., Sydney Harbour Fortifications Archival Study Part One, Prepared for NPWS, March 1985.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Manage as a recreational area controlling vegetation to maintain views of harbour and views associated with defence structures. Retain and conserve the stone retaining walls, especially at Lady Bay Beach, including removing vegetation damaging stonework. Manage other structures as ruins (refer forts study) stabilise to limit collapse and for public safety. Maintain drainage in ruins and behind retaining walls. Interpret defence origin of stone walls and ruins.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

This precinct that is on the western side of the headland and provides the only public access to Inner South Head and to the Lady Bay nudist beach. An expansive bitumen road leading from Camp Cove to Lady Bay was formerly a main access road in HMAS Watson. It is now used only by maintenance vehicles servicing the toilet block and garbage bins and is incongruously formal in the national park. There are expansive views and open picnic areas in this locality that is also sited below a defensive battery in HMAS Watson. The area should not be planted so as views from the HMAS Watson battery are impeded. The toilet block at the north end of the bitumen road, is a modern discretely located and designed structure. The garbage bins in front of the toilet block are obtrusive but easily located for users. They may be able to be better sited. The fenced off revegetation area is also to limit anti-social activities in the area.

The bitumen road becomes a pedestrian path north of the toilet block leading to Lady Bay Beach and to Inner South Head, (looking north). The path is ramped and has small flights of steps at intervals. A steep stone stairway with pipe handrail provides access to Lady Bay Beach. Behind the beach and adjacent the access stair are significant stone retaining walls from the Gunnery period. Some portions are leaning out and at one a palm tree is affecting the structural safety of the wall and should be removed. The path continues via early steps partly cut in rock, north of the beach, to Inner South Head.

Item 2.3, north of Lady Bay Beach, is partly collapsed. It has a concrete water tank precariously balanced above partly collapsed structure and the concrete roof has collapsed. The stone access steps to the structure lead under a partly collapsed lintel that is unsupported on the east end and is dangerous.

Item 2.8, between Camp Cove and Lady Bay Beach, is the remains of an 1890s searchlight observation station. The structure is partly collapsed. The roof slab is supported by rusted rail tracks. Further corrosion could lead to collapse. The structure should be monitored for safety and stabilised.

An 1899 plan locates the searchlights. This plan was identified in Wilson's archival study: Chart of Telephone Systems Port Jackson Defences 11 December 1899 held at the Victoria Barracks Museum VBM 3184 290.63. The return of State Properties transferred to the Commonwealth (1903) (SRNSW 6/5544) includes further reference to the structures:

Beam Light Station excavated in rock
Search Light Station excavated in rock with concrete shell proof roof
Observing Station for Searchlight.

One of the searchlight positions indicated on the 1899 plan may have been the observing station, as the 1903 report lists two lights and one observing station. See separate inventory entry for item 2.2 the Searchlight No. 3.

Lady Bay Precinct Generally
The following are general polices that apply to the Lady Bay Precinct:

Develop the Camp Cove and south part of the Lady Bay precincts to provide a visitor experience of harbour defence and first contact for those with limited mobility who cannot continue to Inner South Head and to concentrate visitor numbers in more easily serviced and accessible areas. In the Lady Bay precinct this includes:
• a picnic area (north of the old road)
• access from the current road above to battlements
• interpretation

Liaise with Defence about:
• management of weeds and revegetation
• path to Lady Bay and Inner South Head and the stone walls along it and 'rifle walls' [defensive wall with loop holes] on the boundary
• widening the path or moving the fence further back in the future
• controlling weeds and clearing drains upslope of the area

On the path along Lady Bay:
• manage actively to limit anti-social activities and small track formation,
• keep key areas open and visible and revegetate others using low growing heath species.

Maintain low key viewing areas in the Lady Bay Precinct and at the cliffs tops around the headland.

Military Installations and Ruins Generally
The following policies for these structures as they apply to the Lady Bay Precinct are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). The treatment should be according to the fabric to be preserved and may include roofing, fencing, stabilisation treatments, propping etc. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Seek detailed engineering and architectural advice on the stabilisation of structures.

Remove large trees and shrubs from the vicinity of structures and protect from physical damage from erosion, vehicles and visitors, etc.

Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms.

Adjust ground levels around pits and underground structures so that water drains away from them.

Monitor rusted metal elements and treat to minimise damage. If structure is endangered cut metal elements back and cover with mortar or remove. Re-support if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Do not completely fence pits but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the structures probably had waterproof membranes originally that have deteriorated.

Interpret structures using signage and brochures with photos. Do not encourage general access to features off the track and on the cliff edge.

Lady Bay Precinct
The following are specific polices for the Lady Bay Precinct:

Provide access to the upper side of the Camp Cove gun emplacement (see also inventory item 3.3).

Do not plant tall trees obscuring views from the HMAS Watson battery and liaise re this with HMAS Watson.

Stabilise structures from the defence period as a matter of public safety as well as conservation, in particular the stone retaining walls behind Lady Bay beach, and Items 2.3 and 2.8.

Remove palm causing stone wall adjacent to Lady Bay beach access stair to tip outwards.

Prop to prevent accidental collapse, or record and remove, dangerous elements of items 2.3 and 2.8.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works to minimise deterioration, support structures and for public safety:
- Prop unstable structures including 2.2, 2.3 and 2.8,
- Remove vegetation encroaching on structures and drains,
- remove palm above stone wall at entry stair to Lady Bay beach.
- direct storm / ground water away, for example so water does not run from grassed areas down entry stairs into Item 2.2,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- clear growth and waste from base of walls and floors and
- knock off loose concrete from ceilings ("concrete cancer") to minimise risk to people in spaces.

Medium Term (1-5 years)
Undertake stabilisation and basic conservation works:
- Improve surface stormwater drainage using swale drains or similar discharging surface water clear of walls and defensive structures,
- treat "concrete cancer" by treating rusted ferrous reinforcing to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular the rails supporting concrete roofs, searchlight mounts, handrails and other original or early metal elements,
- remove soil built up on upper side of stone walls and structures and grade so water is shed around item,
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, then repair masonry,
- use lime mortar when repointing stonework,
- fill cracks in concrete with grout according to engineers advice,
- fill exposed tops of walls with mortar arranging to discharge water to the downhill side and
- install safety fencing or other surface treatment as necessary (refer Forts Study)

Long term
Undertake conservation works:
- Remove overburden from top of roofs of underground structures (2.2) and install new water proof membrane and
- Conserve stone retaining walls to Lady Bay.

MAINTENANCE (CMP STAGE 2)

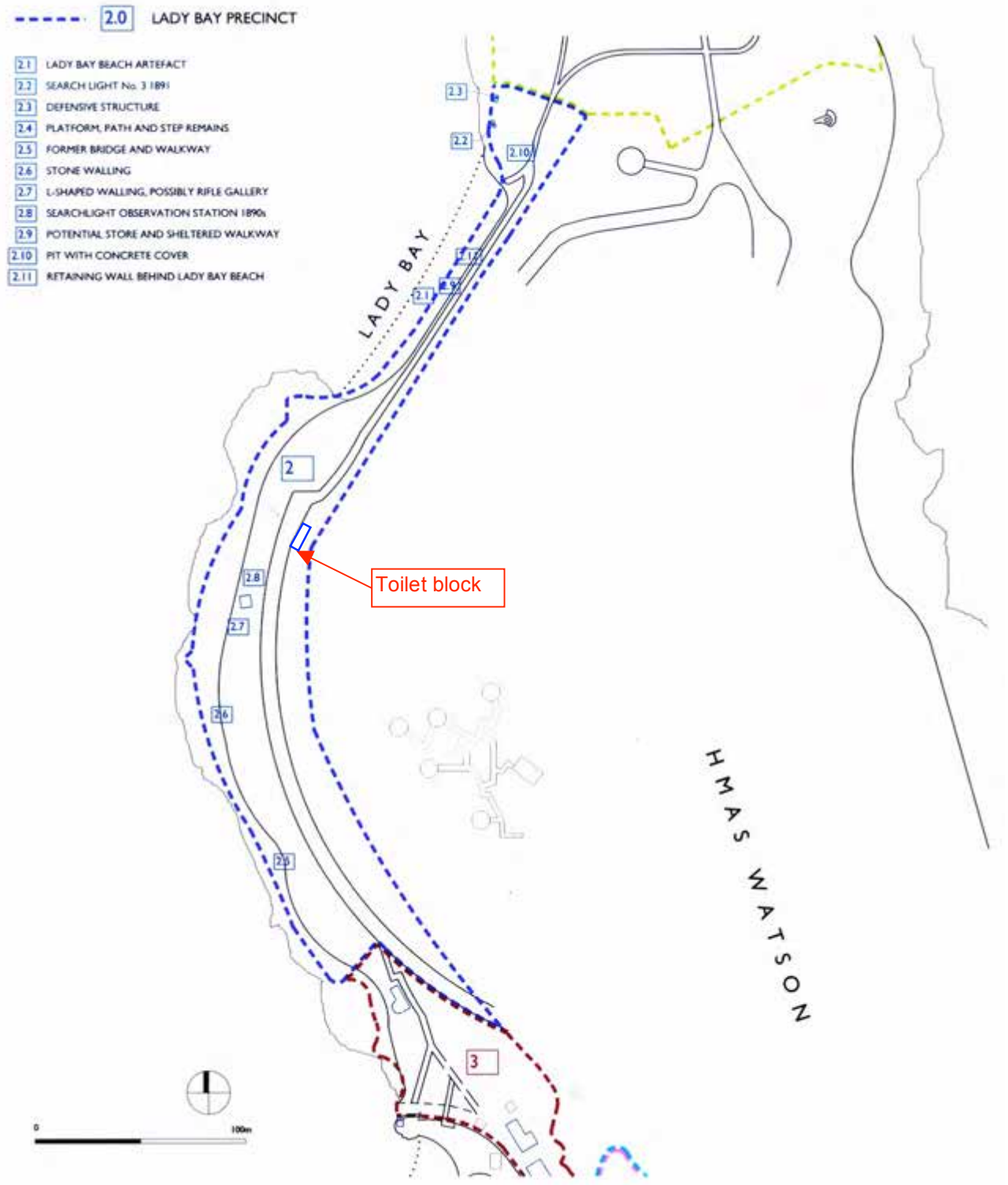
Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage,
- water entry,
- storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces,
- progressive rust in ferrous metals and
- open mortar joints or fretting or cracks in stonework or other masonry.

INTERPRETATION (CMP STAGE 2)

Interpret defence origin of stone walls and ruins. Provide access to top side of 'rifle wall' [defensive wall with loop holes] above Camp Cove gun emplacement. Consider providing additional interpretive material electronically or in a brochure, particularly about inaccessible structures utilising photos of them. Allow access on occasional guided tours to stabilised and conserved items.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** February – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

PRECINCT PLAN



Sketch Plan showing key features of the Lady Bay Precinct. Source: GAO Heritage Group

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the toilet block at end of the road, looking southwest.

View of the garbage bins in front of the toilet block.

View of the fenced off revegetation area and the pathway to Lady Bay Beach and to Inner South Head, looking north.

View of the early steps partly cut in rock, accessing the Lady Bay lookout, north of the beach, en route to Inner South Head.

View of the steep stairway and handrail at access to Lady Bay Beach.

View of portion of the Lady Bay Beach retaining walls. Note the palm tree affecting the structural stability of the wall.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of Item 2.3, North of Lady Bay Beach, the water tank is precariously balanced above partly collapsed structure.

View of Item 2.3, North of Lady Bay Beach, the concrete roof has collapsed.

View of the access steps to structure showing the partly collapsed lintel that is unsupported on the left and is dangerous.

View of Item 2.8, between Camp Cove & Lady Bay Beach, remains of the 1890s searchlight observation station. The structure is partly collapsed. The roof slab is supported by rusted rail tracks. Further corrosion could lead to collapse.

Using shear legs to lift a gun from the beach after rafting it to the beach, 1898. This image shows the low vegetation and the extensive stone walls. Source: AWM P00991.074.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Added December 2009*

Detail from a 1951 aerial of South Head showing Lady Bay

Source: SHFT aerials North Head (which includes part of South Head) 1951_r11_2

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Searchlight No. 3, 1891 – Ref: 2..2		**LOCATION**: Lady Bay	
HHIMS ID:11096	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: No use		**FORMER USE:** Searchlight No. 3	

Photograph

View of the stair leading to Searchlight No. 3. March 2007.

Photograph

View of part of Searchlight No. 3. March 2007.

HISTORICAL SUMMARY (STAGE 1 CMP)

On a bluff on the northern end of Lady Bay are the remains of a c.1890s searchlight emplacement referred to as No. 3 Searchlight on an 1899 plan. Gojak advises that searchlights appear to have been installed at South Head following the construction of the Engine Room and generator in 1890 and this searchlight was used to sweep the shipping channel from Middle Head to Chowder Bay (Site Notes 1985).

The searchlight was constructed during the 1890s as part of a general upgrade of defence sites around Sydney Harbour. New structures were required to house the new technologies employed in the upgrade such as telephones, electrically powered search and beam lights, depression range finders (DRFs) and Depression position finders (DPFs). Searchlights made it possible to locate and illuminate targets during the night-time.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

Searchlights were installed at South Head following the construction of the Hornby Battery Engine Room (CMP inventory item 1.3B) and generator in 1890 and this searchlight (Searchlight No. 3) at the northern end of Lady Bay beach was used to sweep the shipping channel from Middle Head to Chowder Bay.

The 1890s structure comprises a small flat roofed reinforced chamber accessed by a door and steps on the eastern side of the structure. The location of the pillar mount for the searchlight is still evidenced by a ring of bolts in the centre of the chamber. The structure is in reasonable condition but other than the bolts, no original fittings survive. The roof retains remnants of bitumen topping which in 1993 cracked and breaking away (Gojak Site Notes 1985).

The single room interior is brick lined (stretcher bond) and white washed. A recess is located in the north face with evidence for electrical conduits. (Mider 1998). . It appears that electrical services were carried to the emplacement from the Engine Room in square overground conduits. Evidence of these conduits is concealed by the adjacent bushland scrub.

There are the remains of two 1890s searchlight emplacements at South Head – South Head CMP 2008 Inventory items 1.6 (no inventory sheet at this time) and item 2 (this inventory sheet). There was also a 1890s searchlight observation post – item 2.8 (no inventory sheet at this time). A WWII 1939 searchlight emplacement is adjacent to the Hornby Light (CMP inventory sheet 1.5).

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low Markings, imprints or fixings inside the searchlight shelter may indicate the placement of equipment during its operation.

SUMMARY STATEMENT OF SIGNIFICANCE

The remains of the two c.1890 searchlight emplacements facing the inner harbour on South Head (CMP inventory items 1.6 and this item 2.2) are of considerable historical significance as part of Sydney's defence heritage dating from the late nineteenth century. The searchlight emplacements demonstrate the new technology of using electricity to improve the defences of NSW at that time and should be considered in conjunction with the construction searchlight observation post (item 2.8) and of the underground Engine Room at the Hornby Battery (Inventory Item 1.3B).

High **Moderate** Low None **State** Local Not Assessed

As part of a collection of Heritage Items

RISK ASSESSMENT

Structural	**Low**
Fire risk	**Low**
Wind Loading	**Low**
Visitor risk & safety	**High risk**
Other	

Risk Assessment Summary

The Stage 2 assessment considers that there is a risk of structural collapse of the roof of this item.

INFORMATION

REFERENCES:

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Manage the searchlight shelter as a stabilised ruin (refer forts study) stabilising to limit collapse and for public safety. Stabilisation work should prioritise structural support, drainage and removal of the fig tree. In the medium term conserve the fabric including treating "concrete cancer" and repairing deteriorated structural ferrous metal members. In the long term repair brickwork and repair / replace the waterproof membrane on the roof. Interpret the defence origin of the structure and its purpose.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Searchlight No. 3 at Lady Bay

This structure is located at the northern end of Lady Bay beach at the top of the cliff line. There is no formal access but there is a well worn pathway in the grass to the structure. The concrete roof of the structure is at ground level and the room is cut into the rock. The roof has a deteriorated applied render or similar waterproofing membrane. The space is entered by a stair set between rocks. The ferrous metal lintel over doorway is rusted. The room is partly lined with brick that has been partly removed. There is a large horizontal slit opening to the harbour, looking southwest. The opening provides a superb framed view of the harbour and the city skyline. The roof over this opening is partly cantilevered. The ferrous metal members supporting the concrete above opening are badly rusted. They are rail tracks or "permanent way" generally used for railways and are of a more modern profile than the Barlow rails used in some of the earlier structures, but are contemporary with the construction of the building. The north end of the slit opening is temporarily propped. This is deteriorated and needs to be monitored for safety. The north wall has a recess and remains of the insulators where electricity entered the structure. A fig tree is growing in the south wall and the roots are damaging the masonry.

It should be noted that the historical functions ascribed to this structure (searchlight) is based on the modern site notes held by NPWS and not from contemporary records such as the fort books. The 1899 plan mentioned in the historical outline is likely to be the plan indicated in Wilson's archival study: "Chart of Telephone Systems Port Jackson Defences 11 December 1899" held at the Victoria Barracks Museum VBM 3184 290.63. The position of searchlights No. 1, No. 2 and No. 3 are shown on this plan however it has not been sighted. The return of state properties transferred to the Commonwealth (1903) (SRNSW 6/5544) includes:

Beam Light Station excavated in rock

Search Light Station excavated in rock with concrete shell proof roof

Observing Station for searchlight.

One of the searchlight positions indicated on the 1899 plan may have been the observing station, as the 1903 report lists two lights and one observing station.

Lady Bay Precinct Generally

The following are general polices that apply to Searchlight Shelter No 3 in the Lady Bay Precinct:

On the path along Lady Bay:

- *manage actively to limit anti-social activities and small track formation,*
- *keep key areas open and visible and revegetate others using low growing heath species.*

Maintain low key viewing areas in the Lady Bay Precinct and at the cliffs tops around the headland.

Military Installations and Ruins Generally

The following policies for these structures as they apply to the Searchlight Shelter are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). The treatment should be according to the fabric to be preserved and may include roofing, fencing, stabilisation treatments, propping etc. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Seek detailed engineering and architectural advice on the stabilisation of structures.

Remove large trees and shrubs from the vicinity of structures and protect from physical damage from erosion, vehicles and visitors, etc.

Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms.

Adjust ground levels around pits and underground structures so that water drains away from them.

Monitor rusted metal elements and treat to minimise damage. If structure is endangered cut metal elements back and cover with mortar or remove. Re-support if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Do not completely fence pits or other hazards but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the structures had waterproof membranes originally that have deteriorated.

Interpret structures using signage and brochures with photos. Do not encourage general access to features off the track and on the cliff edge.

Searchlight Shelter No. 3

The specific polices for the Searchlight Shelter No. 3 are:

Prop the roof and unstable elements such as the lintel and monitor safety.

Clear the floor and drains.

Remove the fig growing in the structure and plants growing in steps.

Retain and conserve if funds allow by treating rusting steel to extend its life and repairing spalled concrete and in the long term repairing brickwork, the render on the roof and adding a waterproof membrane.

If the roof collapses prior to stabilisation and conservation retain the stair, floor and spandrel panel as a lookout and interpret the former configuration.

Retain remains of electrical system.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration, support structure and for public safety:

- Prop unstable structural elements including lintel over doorway and roof and check stability of handrail,
- remove vegetation encroaching on structure and drains,
- direct storm / ground water away so water does not run from grassed areas down the entry stair,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- clear growth and waste from base of walls and floor and
- knock off loose concrete from ceilings (“concrete cancer”) to minimise risk to people in spaces.

Medium Term (1-5 years)

Undertake stabilisation and basic conservation works:

- Improve surface stormwater drainage using swale drains or similar discharging surface water clear of structure,
- treat “concrete cancer” by treating rusted ferrous reinforcing to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular the rails supporting the concrete roof, handrails and other original or early metal elements,

• remove soil built up on upper side of stone walls and grade so water is shed around the walls, • fill cracks in concrete with grout according to engineers advice, • fill exposed tops of walls with mortar arranging to discharge water to the downhill side and • install safety fencing or other surface treatment to alert users as necessary (refer Forts Study) Long term Undertake conservation works: • Remove overburden from top of roof, repair topping and install new water proof membrane and • Repair brickwork.
MAINTENANCE (CMP STAGE 2)
Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check: • Structural movement or failure of props, • vandalism, graffiti and damage, • water entry, • storm water flow away from structures and encroaching vegetation, • drains clear and functioning, • progressive rust in ferrous metals and • fretting or cracks in masonry.
INTERPRETATION (CMP STAGE 2)
Interpret the structure as part of a network of defensive structures and its purpose as part of a network of searchlights and associated structures. Consider providing additional interpretive material electronically or in a brochure, particularly about inaccessible structures utilising photos of them. Allow access on occasional guided tours when stabilised.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan	**Year of Study/Report:** 2008 & 2009	
Item inspected by: Caitlin Allen & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** March – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the entry from above. The lintel over doorway is rusted. Note the brick lining has been partly removed.

View of the opening to the harbour, looking west. The steel members supporting the concrete above opening are badly rusted. The fig tree, to the left, is growing in the structure.

View looking down on the exterior at the fig tree has grown in the structure.

View of the north end of the opening with the temporarily propped structure. Needs to be monitored for safety.

View of the Searchlight interior, north wall, showing that the structure is cut out of the rock and then lined with brick. Some of the bricks have been removed.

View of the concrete slab with the rusted ferrous metal rail track reinforcing.

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Constables Cottage – Ref: 3.1		**LOCATION**: Camp Cove	
HHIMS ID:3603	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Leased as holiday accommodation		**FORMER USE:** Constructed 1895-1903 as residences for married military staff. Altered in the 1950s.	
Photograph			
		Constables Cottage from the front garden looking north east with the original work in the foreground and the later twentieth century northern extension at the end. October 2006.	

HISTORICAL SUMMARY (STAGE 1 CMP)

The north end of Camp Cove within the Sydney Harbour National Park is historically significant as the site of Sydney's second Water Police Station, which was in-situ from 1840 until the late 1800s. In the 1890s the NSW Military purchased the former Water Police site at Camp Cove.

The building at 32 Cliff Street, now known as 'Constable's Cottage', was constructed between 1895 and 1903 as semi-detached residences for married military staff from the adjacent School of Artillery. The architect was possibly R.E. Paselow. In the 1950s the two residences were combined with doors pushed through the party wall in the main building and rear service wings. The building came under the control of NPWS, in 1977. Other alterations have been made to the buildings and it is now used as holiday accommodation leased by DEC/PWD.

National Theme/s:	**State Theme/s:**
4. Building settlements, towns and cities	Accommodation - Domestic life - Activities associated with creating, maintaining, living in and working around houses and institutions – living and working for Colonial and Commonwealth defence forces

DESCRIPTION

Constables Cottage is nestled into the cliff in the southern part of the levelled Water Police area. The Cottage is a single storey timber framed hipped roofed cottage fronted with a simple posted skillion verandah. It is low set, with a concrete slab to the verandah and suspended timber floors over a low height underfloor space.

The cottage's details, linings, moulding and features, are modest and typical of a simple Federation era cottage. The rear of the cottage has lower skillion roofed service wings. The main and verandah roofs are sheeted with dark grey painted corrugated sheeting with colorbond gutters and painted steel downpipes. The external walls are clad with painted weatherboards. The cottage features a range of windows. The original windows are painted timber double hung sashes on the front elevation. The windows added in the later twentieth century northern extension are larger double hung sashes. The interior of the main part of the cottage's walls and ceilings are lined with the original fibrous plaster sheeting finished with cover battens. There are two main fireplaces and the original doors are four panelled.

The floor is timber boards on piered timber framing. Although the cottage is modestly presented, of interest are the entablature mouldings on the door and window surrounds the use of the cover battens to articulate the wall surfaces and the locations of the metal wall vents. The rear service wings have been refurbished with twentieth century additions. The twentieth century changes and additions are typical of the time and undistinguished except for the unusual pivoted wall vents in the rear glazed passage. Overall the cottage is in excellent condition and the c.1900 sections retain much of their original finishes and linings.

The rear area behind the cottage is covered by large concrete slabs with wide spoon drains at the foot of the rock face. Of interest is a pair of brick external WCs let into the rock face of the cliff at the rear of the cottage. The WCs are simply constructed with concrete slab floor, painted brick walls and timber roof with corrugated iron sheeting. The WCs are in good condition with remnants of earlier services and the southern WC now houses the hot water cylinder. The cottage has an undistinguished low set garage. The Constables Cottage was recorded as site N19 by Denis Gojak in c.1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** Potential within the building likely to be low due to level of conservation works undertaken. Stray domestic artefacts may be located in the garden from the use the house. Possible archaeology in the vicinity associated with the former Water Police Station from 1840 although likely disturbed.

SUMMARY STATEMENT OF SIGNIFICANCE

Constables Cottage is historically significant as the site of Sydney's second Water Police Station, which was in-situ from 1840 until the late 1800s. It is a good example of duplex accommodation for the military in the 1895–1903 period. There are no known similar Defence accommodation structures of this date, type and material remaining in the Sydney region.[1]

The cottage has important historical and stylistic relationships with a number of other buildings in the former HMAS Watson, and remains significant despite additions in the 1950s. The 'Constables' Cottage at Camp Cove has aesthetic value as a simple weatherboard Federation period seaside cottage and garden, a style that was once more prevalent in the Watsons Bay and Camp Cove areas.

The site has State Significance as part of the Camp Cove Precinct within Sydney Harbour National Park at South Head which includes evidence of Sydney's Second Water Police Station (1850 – late 1800s) and with coastal Defence use of the area.

High Moderate Low None **State** Local Not Assessed

As part of the Camp Cove Precinct.

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Ayre, Jodi, Statement of Heritage Impact, Proposed road reconstruction and drainage improvement works, prepared for Woollahra Council, March 2006

Jervis, James, The History of Woollahra. A Record of Events from 1788 to 1960, Municipal Council of Woollahra, Sydney, 1960-1965.

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

Wilson, G.C., Sydney Harbour Fortifications Archival Study Part One, Prepared for NPWS, March 1985.

SHI Listing, NSW Heritage Office website

[1] Woollahra Council information

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve building and continue to use as visitor accommodation or as a residence associated with park management. Maintain and improve drainage as soon as possible. In long term improve sub-floor ventilation, undertake major repairs to floors and repair rotted timber. Manage weeds above cottage and investigate and conserve stairs and rifle / retaining walls.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

Constables cottage (built as the Warrant Officers and Staff Sergeants Quarters) is relatively intact and is of high significance. Other examples of quarters built for warrant officers survive at other complexes that were built as artillery barracks in Australia in the nineteenth century. Evidence of the range in standard of the quarters survives within the former Schools of Artillery in Sydney, reflecting the hierarchy employed throughout the Army.

The external cladding is weatherboards with a splayed profile with the bottom edge chamfered. There is no join in the line of the 1950s addition suggesting the boards may have been replaced or carefully matched. Each semi originally had two rooms and there were fireplaces on the party wall, since altered and the chimney reduced. There was a front verandah and kitchen scullery at the rear and separate brick toilets in a recess cut in the rear rockface. It has a large but compatible 1950s addition at the north end comprising a room with a bay window and a rear and front verandah. The roof appears to be fairly old corrugated iron, possibly 1950s as it covers the whole roof, which is now painted with mineral silicate paint, dark grey. The interior walls are clad in fibrous plaster sheets finished with battens, date unknown. The original rooms have early joinery including well detailed architraves with an entablature. Various doors have been moved and walls opened and closed up again and this can be seen in the wall finishes. Original internal doors remain and one front door though it was probably not originally in this location. Windows are double hung timber framed.

The original wide pine floor boards remain in room, G2, and a (later?) wide board floor in G1. The remainder is 1950s cypress floor boards and has dropped in places and been patched. The rear lean-to rooms are grossly altered but the walls and roofs appear to be original. The 1950s addition has door sized double hung windows with external shutters and a glazed end bay. Internally it has fibrous plaster lining and cornices. The rear verandah has a tiled concrete floor slab at about the level of the timber floors and a novel detail to the picture windows with vents above and below. It is compatible with the original but not significant and the concrete slab exacerbates damp and termite problems.

The house is cut into the hillside at the rear, into bedrock. The drains at the base of the cut are blocked and the building is badly affected by dampness under the floor. Stormwater is not adequately drained and water from the adjoining Cliff Street site flows into the area. A pit in the concrete slab at the rear is blocked and full of slime, the house is musty, the underfloor space is damp, several areas of flooring have been replaced and there appears to have been termite damage. Clearing, repairing and enhancing drainage at this site are urgently required. The floors are haphazardly propped and inadequately supported.

A modern (1950s?) garage is to the north of the house and there are picket fences, which step up over raised paving. The stair from Cliff House, in HMAS Watson, is believed to arrive in this area but has not been located. The front lawn is edged with stone and the drive is modern gravel. None appear significant but are compatible. The hedge is appropriate but not the emerging shrub.

General policies for the Camp Cove area that apply to Constables cottage are:

Use Constables cottage as:
- *public accommodation & regulate re noise/cars etc*
- *or visitor centre/education centre/cafe*

In medium term improve entrance and access to park:
- *liaise with Council re improved entrance and access and with a view to removing kiosk*
- *consider relocating toilet block away from top of retaining wall*
- *reinstate pedestrian access along the top of retaining wall in front of the cottage*
- *install signage to identify entrance*

Constables cottage:
- *remove weeds and re-establish native vegetation or low maintenance gardens*
- *clear drains at base of cutting and under house rework drains to falls and maintain*
- *conserve heritage fabric of surrounds and Constables cottage*

Liaise with Defence re:
- *management of weeds and revegetation*
- *clearing drainage upslope of area*

Constables Cottage

Recommendations for the timber cottages that apply to Constable cottage are:

Research historic plans and other documents associated with this building to guide conservation work.

Retain the configuration and character, only minor additions noted below are appropriate.

Small scale pavilion additions may be made if required for use but should be distinct and separated from the original building or linked by walkways. The only suitable site is where the garage is located.

The 1950s addition may be retained or removed as required and may be altered if necessary for use.

Existing kitchens and bathrooms may be replaced as required and the opportunity used to improve building conservation. Works should be easily reversible and designed and supervised by an experienced heritage architect.

Retain the residential use. Manage the use of adjacent spaces, eg turning and parking areas, associated with this use. Parking for any more than one vehicle should be in the main car park.

Retain the authentic fabric and maximise the retention of original fabric in structures by patching, repairing or splicing in preference to replacement. The fabric of the building should be carefully assessed during works to identify the original fabric which should then be carefully conserved.

Investigate, clear and repair or replace stormwater drains and maintain regularly. Rectify the groundwater, stormwater and sewage drainage as a priority including drainage from the hillside above, drainage from the rear of the Cliff St cottage and stormwater and sewerage drainage from the cottage itself.

Improve the underfloor ventilation by clearing underfloor spaces, introducing floor access hatches and additional vents or similar and monitor and maintain. Floors will need to be lifted and new piers installed with ant caps and joists and floorboards relayed. Cypress boards may be replaced but not wide pine boards.

Retain and maintain the internal joinery. Repair early verandah posts by splicing in new timbers at the base. Monitor regularly for termite activity and rot and repair damaged sections of timber. If replacing weatherboards match the existing profiles.

If roof replacement is necessary investigate the roof space to determine original roofing materials or use galvanized steel.

If works expose the interior of walls or roof spaces take the opportunity to assess the structures in detail to ascertain more clearly the original configuration and fabric of the building. Record photographically and arrange for a heritage architect to assess areas in detail.

Ease and adjust windows and doors when painting. Use oil based paints to exterior joinery. Paint colours should preferably be based on research on site, or on typical colours of the period. Research colours prior to any stripping of paint from old joinery if stripping is necessary. Subject to policy above and as a guide external timber colours should generally light ochre or stone to the timber boards and dark colours to the joinery, particularly sashes and glazing bars.

Maintain the gardens as grassed with specimen plantings keeping plants away from building walls. Kitchen garden plantings are also appropriate. Maintain the hedge. Clear weeds from the area above and north of the cottage and below the boundary walls with HMAS Watson and investigate remaining historic feature. Revegetate with low growing species so views from the rifle walls above are not obscured.

Stabilise any retaining walls and historic features above and to the north of the cottage and stairs to Cliff House above if found.

RECOMMENDED WORKS (CMP STAGE 2)

Constables cottage is a significant building that has had a series of repairs over many years and is now in need of substantial conservation work. The cause of the deterioration is damp from the hillside above draining under the timber building that is set very close to the ground. It is recommended that the first step is to rectify the drainage. This is a major project requiring investigation of the existing drainage and possibly installation of a new system. The concrete slab at the rear may also need removal or adjustment as part of this. Once the area dries out repair and replacement of floors and other timber work and provision of underfloor ventilation is needed.

The use of the building for rental is appropriate as it was always a residence and the use gives the public an opportunity to experience the place as a residence. There have been complaints from neighbours about noise and regulations have been developed to limit late night noise. These should be enforced in preference to changing the use. It is recommended that parking be limited on site and users be directed to the Cliff St carpark.

The original configuration of the quarters is shown in an early plan. During this study the only copy of this sighted was illegible (see copy following). A good copy of this plan should be obtained from the collection at Victoria Barracks to guide conservation work. The plans of the 1950 addition are also likely to be held in archives (possibly NAA or GHD). Specification for additions and alterations to quarters at South Head are also held at NAA.

Immediate
Investigate, design and undertake works to minimise deterioration:
- Remove vegetation encroaching on stormwater drains and clear all above and below ground stormwater pipes,
- investigate origin of drains discharging into site from above,
- investigate route of stormwater drains from rear drain and pits in rear yard,
- investigate downpipes, their connections to drains and discharge,
- design new stormwater system that directs storm water away from building
- install new stormwater drainage system (this may require removal of rear concrete slab) and
- install floor access hatches and clear all underfloor vents,

Medium Term (1-5 years)
Undertake conservation works:
- When site has dried out investigate ground water levels and assess impact on building and assess condition of sewerage pipes,
- if groundwater is assessed as contributing to damp install drains to intercept and discharge clear of building,
- if sewer pipes are assessed as contributing to damp repair / replace sewerage pipes,

- improve cross ventilation (design system, may include fans),
- lift flooring and install new piers (with ant caps), if possible reduce ground levels, relay flooring
- repair deteriorated timber posts, studs, etc.,
- assess if concrete front verandah is contributing to damp and if ground levels have been raised in front of the building,
- if necessary remove concrete verandah floor and lower ground levels in front of the building to reduce damp deterioration in building,
- upgrade services including electricity and water.

Long term
Undertake further conservation and adaptive reuse works:
- Maintain and repair timber structure and cladding,
- upgrade bathrooms, kitchens and laundries if required for use and to reduce impact on significant fabric and
- control weeds in area above and revegetate, maintain stone walls and stairs.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check for:

- fire hazards,
- vermin entry and nesting,
- damage to roof or flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes are clean and functioning,
- rear courtyard drain function and pipes to street,
- damp in rooms and under floor,
- condition of paint,
- termite damage or infestation,
- door and windows close, glass intact and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Interpret building as a rare surviving, but once common, weatherboard military officers quarters. Retain building as residence in private yard with viewing from outside the fence. Prune the emergent shrub in the hedge to allow better views to and from the beach. Provide additional interpretive information in the building for building users. Consider opening for occasional guided tours. Consider providing additional interpretive material electronically or in a brochure.

In long term if new access to Inner South Head is opening up in the current driveway add interpretive signage in new access path.

CURRENT PHOTOGRAPHS

View of the rear of the Cottage looking south with the 1950s rear extension to the cottage on the right, the kitchen and bathroom extension beyond and brick external WCs let into the rock face of the cliff seen on the left. October 2006.

The living room of the former south residence looking north showing the (altered) fireplace, its timber surrounds, timber floor and the wall linings and cover strips. October 2006.

The cottage's kitchen. October 2006.

The 1950s glazed passage looking north with the unusual pivoted wall vents above and below the fixed glass windows. October 2006.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the Cottage gate, at the end of Cliff Street looking north. The brick building at left is the beach kiosk and the entry to the National Park is located past the kiosk across the sand (arrowed).

View of the Cottage driveway, looking west to Green Point from the front yard. The emergent shrub in the hedge should be removed, it interrupts the hedge and view of Camp Cove beach.

View of the unsightly bins at the end of the driveway.

View of the front yard with major water supply installation. It is not known what this service is and where the pipes go.

View of the garage with picket fencing adjacent. The end of stairway from Cliff House to the beach is in this vicinity. The stair is mentioned in the heritage listing for Cliff House, HMAS Watson.

Location of former gate in picket fence. The fencing does note appear to be original but must relate to a previous functional arrangement.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the building looking south. The bay window and full length windows are the 1950's addition.

View of bedroom with partially replaced floor.

View of the underfloor space showing rocks used as footings. Note signs of damp and salts on rocks and minimal space under floor.

View of inappropriate footings with stumps glued over fibre cement sheets laid in bare ground and wedge at top.

Exterior view showing rotted timber post base.

View of driveway retaining wall, at end of Camp Cove beach. Note stormwater pipe and that the stone lintel has a large crack.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the rear space, with cemented paving, the down pipes discharging onto the paving on left side. The structure let into the cliff is the former WC's. There is a drain on the right.

View of the drain at the cliff's base. Note that there are leaves inside the ditch and the drain is bridged at the former WCs.

The drain is blocked by vegetation.

View of the drain / sump with slime and evidence of damp.

View of the stormwater pipe from adjacent property discharging into ditch with leaves.

View of a drain pipe on cliff.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the drain around south side of cottage blocked with leaves, branches and rubbish. Downpipes discharging into this drain. Note that the flashing over floor slab is too flat and is missing on the far corner of the building.

View of the drain from house to street blocked with leaves, branches and rubbish.

View of new underfloor vent on verandah. These attempt to solve the underfloor ventilation problem but are not adequate.

Front verandah post showing detail of the chamfered edge. This indicates that there were formerly decorative elements here.

The battens (arrowed) indicate the location of the earlier partition separating the entrances when the building was a duplex.

View of the rear with bathroom on the right. The original top of the chimney has been removed.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the entablature mouldings over a door.

View of the former brick kitchen fireplace. The mantle shelf is at the original height.

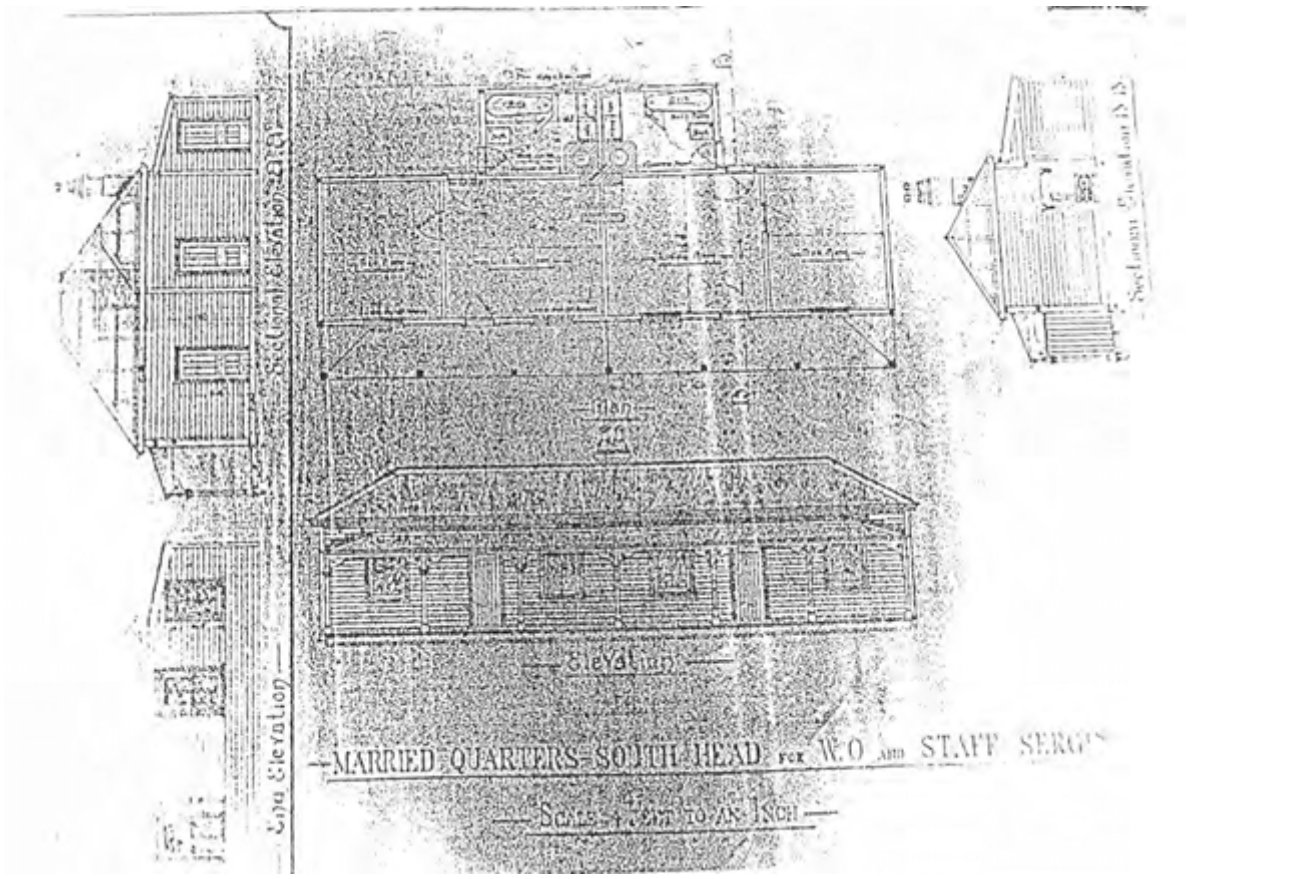
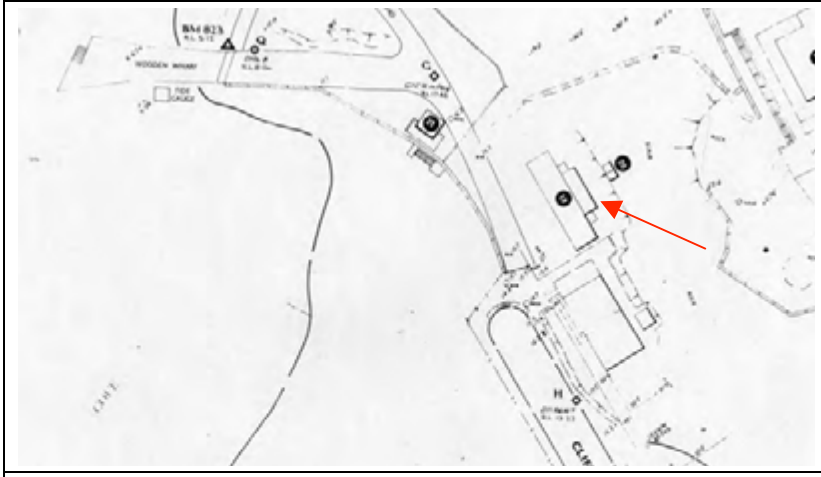
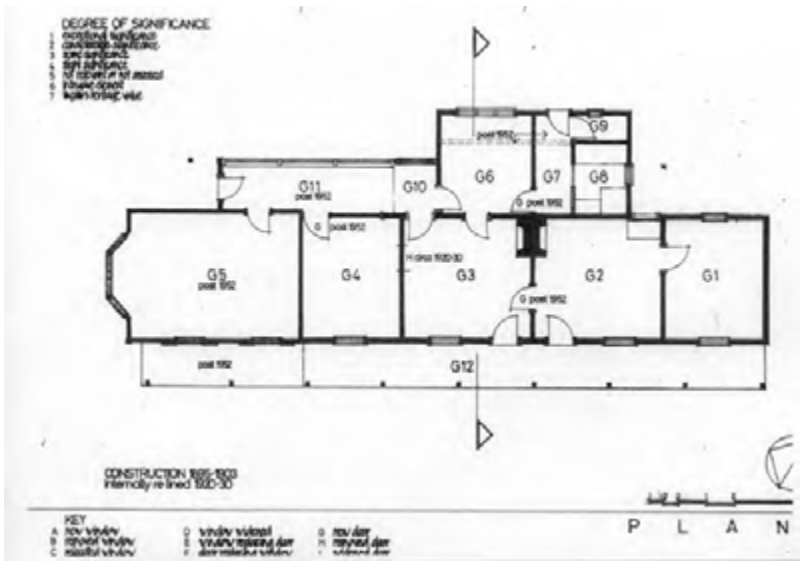


Image of original plan of cottage. A legible copy should be sourced and used to guide conservation works. This is probably the plan referred to in the State Heritage Inventory listing (which also refers to a study of the building by Graeme Aplin). Wilson notes that the plan entitled 'South Head Quarters for W. O. and Staff Sergeants 23 July 1895' is held at Victoria Barracks VBM 1390 293.30

ADDITIONAL IMAGES (STAGE 2) *Source: OCP March – December 2009*

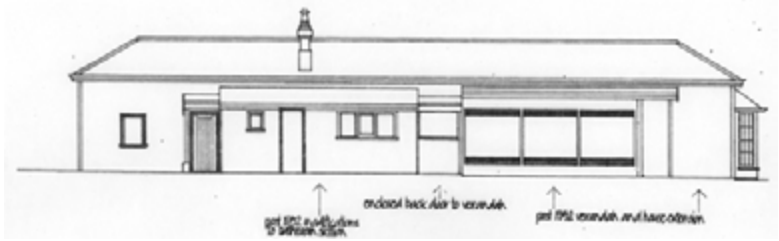


Survey detail showing Constables Cottage (arrowed) prior to the north addition and showing the road in front of the building, the stair to Cliff House on the north and the wharf. Source: Plan drawer, Greycliffe.



Plan. Architectural drawing of Constables Cottage from Greycliffe. The drawings indicate the phases of development.

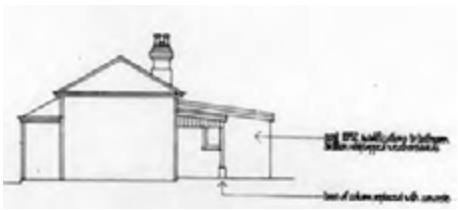
Section.



East Elevation.

North Elevation.

West Elevation.



South Elevation.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: 33 Cliff Street – Ref: 3.2		**LOCATION**: Camp Cove	
HHIMS ID:3291	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Leased as holiday accommodation		**FORMER USE:** Constructed late 1950s as a residence on a site previously occupied by a late 1890s Staff Sergeants residence	

Photograph

View of 33 Cliff Street behind its high timber fence looking east from Cliff Street. The photograph taken during the extensive stormwater drainage works undertaken by Woollahra Council in Cliff street. Source Author October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

The North end of Camp Cove within the Sydney Harbour National Park is historically significant as the site of Sydney's second Water Police Station, which was in-situ from 1840 until the late 1800s.

33 Cliff Street is a mid twentieth century residence constructed sometime in the late 1950s on a site previously occupied by a late 1890s timber residence constructed for Staff Sergeants.

National Theme/s:	**State Theme/s:**
4. Building settlements, towns and cities	Accommodation - Domestic life - Activities associated with creating, maintaining, living in and working around houses and institutions – living and working for Colonial and Commonwealth defence forces

DESCRIPTION

33 Cliff Street is immediately south of Constables Cottage. It is a mid twentieth century residence and it is a single storey face brick residence with metal tiled roof and timber windows constructed sometime in the late 1950s on a site previously occupied by a late 1890s timber residence constructed for Staff Sergeants. The 1950s residence is positioned tight on its block with a single car carport on its northern end. The residence is in reasonable condition, is aesthetically undistinguished and is generally typical of its period with similar residences throughout Sydney's suburbs.

33 Cliff Street was recorded as site N20 by Denis Gojak in c1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** Possible archaeology in the vicinity associated with the former Water Police Station from 1840 although likely disturbed.

SUMMARY STATEMENT OF SIGNIFICANCE

33 Cliff Street is an undistinguished example of a mid twentieth century residence, generally typical of its period with similar residences found throughout Sydney.

The site of the building at 33 Cliff Street is historically significant as the site of Sydney's second Water Police Station, which was in-situ from 1840 until the late 1800s. The site has some possible historical significance, as it was the location of the former Staff Sergeants residence in the 1890s, and because of its relationship to Constables Cottage adjacent. Both buildings have had a historical relationship with a number of other buildings in the former HMAS Watson precinct. There is possibly archaeology in the vicinity of 33 Cliff Street associated with the former Water Police Station although it is likely to be disturbed.

High	Moderate	Low	None	State	Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Ayre, Jodi, Statement of Heritage Impact, Proposed road reconstruction and drainage improvement works, prepared for Woollahra Council, March 2006

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and remove building as required. Continue to use as residence associated with park management or for visitor accommodation. May be redeveloped as park entry and in association with trail linking Gap Bluff and Inner South Head. Repair drain at base of cliff behind house and divert water currently flowing into Constables Cottage rear yard directly to the street.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

The Cliff Street cottage is a modern building but it retains a similar form to the historic building that was on this site and is not intrusive. It is currently used as a NPWS staff residence. There is potential for it to be used for rental as it is in a desirable location near the beach. This would be appropriate however there is a management advantage in having the house as a NPWS residence as staff act as defacto caretakers and regulators. This results in enhanced policing of the rental use of Constables Cottage eg. where there are excessive numbers of people, excessive noise or too many cars.

Subject to NPWS park and region priorities this site could also be redeveloped as part of an enhanced site entry to South Head including access from the carpark to the south. The completion of the Heritage Trail requires a link past this site between Gap Bluff and Inner South Head and this should be considered in any planning for the site.

General policies for the Camp Cove area that are relevant to the Cliff St cottage are:
In the long term
- *maintain the car park and identify it as NPWS parking*
- *consider redeveloping site of Cliff Street Cottage with new visitor facilities*
- *develop an entrance from the car park to the National Park(may be via 33 Cliff St)*

At the cottage
- *remove weeds and re-establish native vegetation or low maintenance garden*
- *clear drains at base of cutting, rework drains to falls and maintain*

The Cliff Street Cottage

The Cliff St cottage is considered to be an item of 'neutral' significance. Neutral items can be retained while they are useful but may be removed when they are not. The Cliff Street cottage is a modern building of no heritage significance. It replaced a timber heritage building so there may be remains underneath but these are unlikely to be substantial as there would have been significant excavation for the footings of the new brick building. This building can be retained or removed as required. General maintenance is necessary especially to the dish drain to the cutting at the rear which discharges into Constables Cottage. This should be rectified and piped to the street separately.

Policies for the cottage are:

Retain the residential use and manage the use of adjacent spaces, eg turning and parking areas, associated with this use. The modern Cliff St cottage may be retained or removed as required. If removed investigate archaeological remains of the former building on the site. Retain the cutting in the stone cliff behind.

The building may be altered or added to as required but the overall scale and simple form should be retained.

Clear and investigate drainage to the base of the cliff behind the cottage and pipe it to stormwater drains or to the street.

Clear weeds from the area at the top of the cliff and below the boundary walls with HMAS Watson and investigate remaining historic features. Revegetate with low growing species so views from the rifle walls above are not obscured.

Stabilise any retaining walls above the cottage.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works to minimise deterioration:
- Remove vegetation encroaching on stormwater drains,

- clean and repair stormwater drains,
- install new pipe to street to direct storm water away (instead of current drainage into Constables Cottage adjacent,
- connect all downpipes to drains,

Medium Term (1-5 years)
Undertake remediation works:
- clear weeds from area above cliff at rear of house,
- revegetate with low growing vegetation and
- investigate stone retaining and "rifle" walls above.

Long term
Undertake conservation works:
- conserve stone walls above in conjunction with HMAS Watson and
- consider redevelopment for park entry with access from carpark.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. As the building is not a heritage item the full maintenance requirements for the residence are not detailed rather aspects relating to drainage which impacts on the heritage items in the vicinity. Check:

- fire hazards,
- vermin entry and nesting,
- damage to roof, water entry,
- storm water flow in drain behind house and encroaching vegetation,
- gutters, spreaders and downpipes are clean and functioning,
- function of drain from rear to kerb,
- termite damage or infestation,
- instability of stone cliff behind house
- weed invasion when area above has been revegetated,
- when stone walls above have been exposed open mortar joints or fretting or cracks in stonework and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Retain building as residence in private yard with viewing from walkway outside fence. No interpretation required.

CURRENT PHOTOGRAPHS (STAGE 1 CMP)

View of 33 Cliff Street behind its high timber fence looking south east from Cliff Street. October 2006.

View of 33 Cliff Street behind its high timber fence looking north from the Cliff Street car park. October 2006.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan	**Year of Study/Report:** 2008 & 2009

Item inspected by:	**Form completed by:**	**Date:**
Ed Beebe Government Architect's Office NSW Department of Commerce	Ed Beebe	January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the rear yard facing the cliff with vegetation above. At the base of the cliff and running behind the outbuilding is a drain.

View of the south east corner and a retaining over the cliff. There is a drain at the base.

View, from the elevated rear yard, of the building tiled hipped roof looking northwest towards harbour. The area, behind the photographer, is generally weeds.

View of the building rear yard looking north towards the car space. The roof after the car space is Constables Cottage (arrowed).

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Camp Cove Gun Emplacement – Ref: 3.3 9-inch rifled muzzle-loading cannon on iron carriage – Ref: 3.3A		**LOCATION**: Camp Cove	
HHIMS ID: 3318	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** Gun emplacement	

Photographs

View of the gun emplacement and muzzle-loading gun. October 2006.

View of the gun emplacement and muzzle-loading gun. February 2007.

HISTORICAL SUMMARY

Immediately on the west side of the 'Cobblestone Road' (Inventory item 3.4) are the remains of a gun emplacement excavated out of a rock bluff with low stone blocks walls. The date of this emplacement is unknown.

The pit currently accommodates a 9-inch RML Mark V gun (on a carriage) relocated from elsewhere at South Head in the early twentieth century, probably as a training exercise for the Gap Bluff School of Artillery/Gunnery. This gun was one of six brought to NSW from the Royal Gun Factory in England in 1872. Of the other five, two were placed at Bare Island, Botany Bay, two at Fort Scratchley near Newcastle, and one at the Victoria Barrack School of Artillery/Gunnery (McNamara Soder Associates 1989: 7-8).

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The Camp Cove gun emplacement consists of a U-shaped pit, facing west and accessed from the north by steps and a shallow open passage. Gojak (Site Notes 1985) notes that the pit has an unfinished appearance, there is no evidence of gun mounting and the pit has no associated buildings or magazines. The structure suggests that it was part of the late nineteenth century construction programs. Gojak notes that there is some evidence to indicate that a 68-pounder gun was mounted at Camp Cove in 1891.

The pit is associated with three narrow open passages, which lead from the road and pit to the cliff and end at a sandstone block rifle wall. Gojak suggests that these features may indicate that the structure was abandoned and reused for another purpose. The pit and its associated structures are weathered with little evidence of original finish on the stonework but are in reasonable condition and are structurally stable.

As the remains are close to the main walking path they are subject to intense visitor activity and the weathered surfaces are starting to scour. The Camp Cove Gun Emplacement was recorded as site N12 by Denis Gojak in c1985.

CONDITION EMPLACEMENT: Good Fair Poor **Ruinous**	**CONDITION GUN:** Good **Fair** Poor Ruinous Site Only
INTEGRITY EMPLACEMENT: High **Moderate** Low **INTEGRITY GUN:** **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** There may be drainage, areas of paving or structural evidence associated with the emplacement, but generally this was a simplistic structure and most of the evidence is likely to be visible.

SUMMARY STATEMENT OF SIGNIFICANCE

This gun emplacement above Camp Cove is of unknown historical significance as definite references to its construction have yet to be sourced. However it is likely to date from the second half of the 1800s either connected with the 1870 proposal to construct a 'Boom' from George's Head to Sow and Pigs Reef and from the Reef to Camp Cove or in connection with c.1880 defence works which included the construction of the adjacent section of Cobblestone Road (Inventory Item 3.4). There is some evidence to indicate that a 68-pounder gun was mounted at Camp Cove in 1891.

The 9-inch RML Mark V gun is of high heritage significance as one of six brought to NSW from the Royal Gun Factory in England in 1872. The repositioning of this gun within the Camp Cove Battery from elsewhere on South Head in the early 1900s is of moderate heritage significance as it demonstrates one of the principal exercises of the School of Artillery/Gunnery at Gap Bluff in relocating heavy artillery across relatively difficult terrain.

High	**Moderate**	Low	None	State	Local	Not Assessed

Further research into Battery is required.

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Openheimer, Peter, The Fragile Forts: The Fixed Defences of Sydney Harbour 1788–1963, Army History Unit, Department of Defence, Canberra ACT, 2004.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p.

McNamara Soder Associates, Officers' Mess, Gap Bluff, 1989.

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve the gun, gun emplacement, rock cut passages and sandstone defensive walls. Use to interpret the Inner South Head batteries. Maintain and improve drainage, removing damaging growth and repoint and apply sacrificial render to stonework to slow deterioration. In long term repair stonework and consider relocating sewer and rearranging modern stairs to better interpret the place.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

General policies for the Camp Cove precinct relevant to the gun pit and associated structures are:

Conserve & interpret across tenure the batteries and associated items in partnership with HMAS Watson.

In area of stone road, emplacements and rifle walls [defensive walls with loop holes]

- *identify Aboriginal middens and rifle walls [defensive walls with loop holes]*
- *remove large trees close to features and figs etc growing out of stone walls*
- *clear debris and silt and reopen drains*
- *repoint stonewalls and apply sacrificial render to gun slots*
- *clear lantana and figs from battlements, etc.*
- *reassess when clear and if possible arrange access from above.*

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel).

Military Installations and Ruins Generally

Policies for these items relevant to the gun pit and associated structures are:

Preservation treatment should be according to the fabric to be preserved and may include roofing, fencing, stabilisation treatments, propping etc. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms and major public events. Adjust ground levels around pits and underground structures so that water drains away from them.

Remove large trees and shrubs from the vicinity and protect fabric from physical damage from erosion and visitors, etc.

Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review

condition and fill voids according to professional advice.

Monitor rusted metal elements and continue to treat to minimise damage. Re-support if necessary.

Stabilise structural cracks in stonework using helical ties and grout according to engineers recommendations.

Do not completely fence pits but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study.

Interpret military structures primarily at the easily accessible Camp Cove Battery and with signage, self guided tours and occasional guided tours to Inner South Head batteries and in accordance with an interpretation plan.

Maintain the gun in situ in the gun emplacement at Camp Cove but interpret that it was originally used to practice moving guns and was moved to this location in the 1970s.

The Camp Cove Gun Emplacement and Associated Items

Specific policies in addition to the above are:

Clear drainage to the rifle walls [defensive walls with loop holes] below the emplacement and repair and maintain.

Desalinate salt affected areas of walls particularly gun slots. Sacrificial render may be required as a long term protective measure.

Repoint mortar joints using mortar to match original. Investigate the composition of the original mortar.

Investigate seepage into the gun emplacement and drain away.

Redesign interpretation for site in short term and medium term.

Seek expert advice on the conservation and display of the cannon.

RECOMMENDED WORKS (CMP STAGE 2)

Maintenance works are required primarily to drains and repointing and improved interpretation. The design of the stairs and visitor access in the area needs review when the rifle walls [defensive walls with loop holes*]* above the site are cleared and further investigated. The possible provision of ramp access to the picnic area beyond should be considered.

Immediate

Undertake works to stabilise structures and minimise deterioration:

- Remove vegetation encroaching on structures and drains, particularly large fig tree shown in photographs below,
- direct storm / ground water away, for example so water does not run down entry stairs and into the pit,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed and
- clear growth, silt and waste from base of passages and spaces behind stone walls.
-

Medium Term (1-5 years)

Undertake fabric conservation works:

- Improve surface drainage especially from path and road (see separate inventory sheet) and seepage into gun pit. Consider installing sub-soil drainage or changing ground levels to create a swale or similar to discharge surface water and seepage clear of the pits and associated passages and spaces,
- treat exposed ferrous metal elements for rust, in particular the joggles and gun mounts and any other original or early metal elements such as doors,
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, then repair masonry,
- repoint open joints to exterior and interior stonework using lime mortar
- fill cracks in concrete with grout according to engineers advice,
- remove any modern graffiti,
- fill open joints in top of stone walls, between two skins of stonework and where exposed in loop holes with lime mortar ensuring joints are fully filled with mortar (arranged where applicable to discharge water to the exterior) and
- install safety fencing or other surface treatment at pits or hazards (refer Forts Study).

Long term

Undertake complex conservation works:

- Repair eroded stone at loop holes by limited replacement or artificial stone (epoxy) patching (as recommended by appropriately experienced heritage architect or engineer),
- Stabilise cracked stones as detailed in policies,
- Consider relocating sewer so access can be gained to open passages,
- Consider rearranging modern stairs to north and modern retaining walls to better interpret the rifle walls, gun pit and old road

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check for:

- Vandalism, graffiti and damage,
- water entry,
- storm water flow away from structures and encroaching vegetation,

- drains clear and functioning,
- damp in spaces,
- condition of gun and carriage,
- progressive rust in ferrous metals,
- open mortar joints or fretting or cracks in stonework or other masonry, and
- operation of services (sewage).

INTERPRETATION (CMP STAGE 2)

The Camp Cove gun emplacement is not in as spectacular a setting nor is it as extensive as the Hornby Battery but it is much more accessible to the public including school groups, the elderly, families with prams and to some extent wheelchair users. It is recommended as the primary place to interpret the batteries and defence features at South Head in the medium term. The dated and deteriorated interpretive sign has been removed and in the short term should be replaced with a basic but correct interpretive sign. Improved access from Cliff St is recommended with relocation of the toilet block and council kiosk.

Considered also providing additional interpretive material electronically or in a brochure.

Manage vegetation so the harbour can be viewed from loop holes and their function interpreted.

In long term assess whether sewer can be relocated to allow access along passages cut in rock

Further research regarding the set of Rifled Muzzle Loading (RML) MK V guns supplied by the Royal Arsenal at Woolwich to the Australian Colonies in 1872 may indicate where the guns were originally placed. Examples of similar ordnance survive in the UK and Hong Kong however the MK V guns were soon replaced by a more efficient model, which is probably why they were used for manoeuvres at the School of Gunnery rather than being permanently mounted. Additional information regarding the operation of the guns may also be contained in the *Correspondence book (technical correspondence on various guns), with index, Master Gunner's Department and Artillery Staff Office*, HQ NSW Artillery. (Mainly on 80 pounder, rifled, muzzle loading guns, but also includes 9 pr RML, 12 pr RML, 16 pr RML and 5 inch breech loading guns) held at the AWM (AWM 1). This detailed information should be used when developing new interpretive signage.

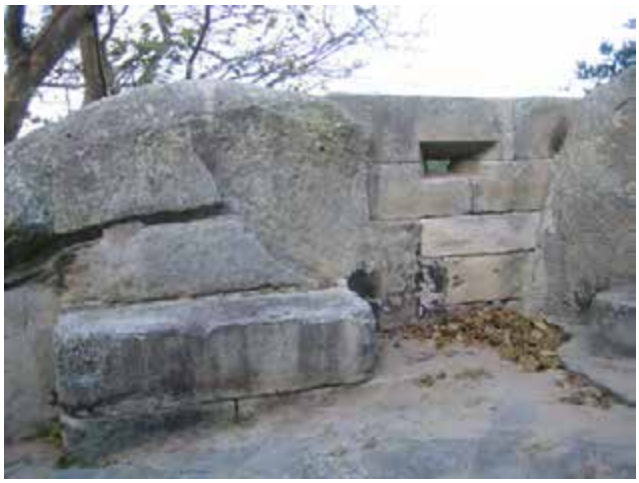
SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos & Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the north section of the gun pit excavated out of the rock. There is a modern retaining timber wall above the walking path supporting the slope.

View of one of the three narrow open passages, cut into rock between the gun and rifle walls. This one provides access from south and has later sewer pipes blocking the passage.



View of the sandstone block rifle wall.. These walls are located in a line at the cliff edge west of the gun pit. Note that they are at different levels.

View of the sandstone block firing wall featuring a gun slot or loop hole, looking towards west. The wall was built between the rocks. These walls are located at the cliff edge west of the gun pit.

View of a sandstone block firing wall with two gun slots [loop holes]. Note the cut into the rocks creates a seat.

View of the cliff looking northwest behind the firing walls. The cuts in the rocks (arrowed) are evidence of a former structure over.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the stair access to area behind firing wall. The passage was cut into stone and the steps are stone blocks.

View of a firing wall with a fig tree growing over it.

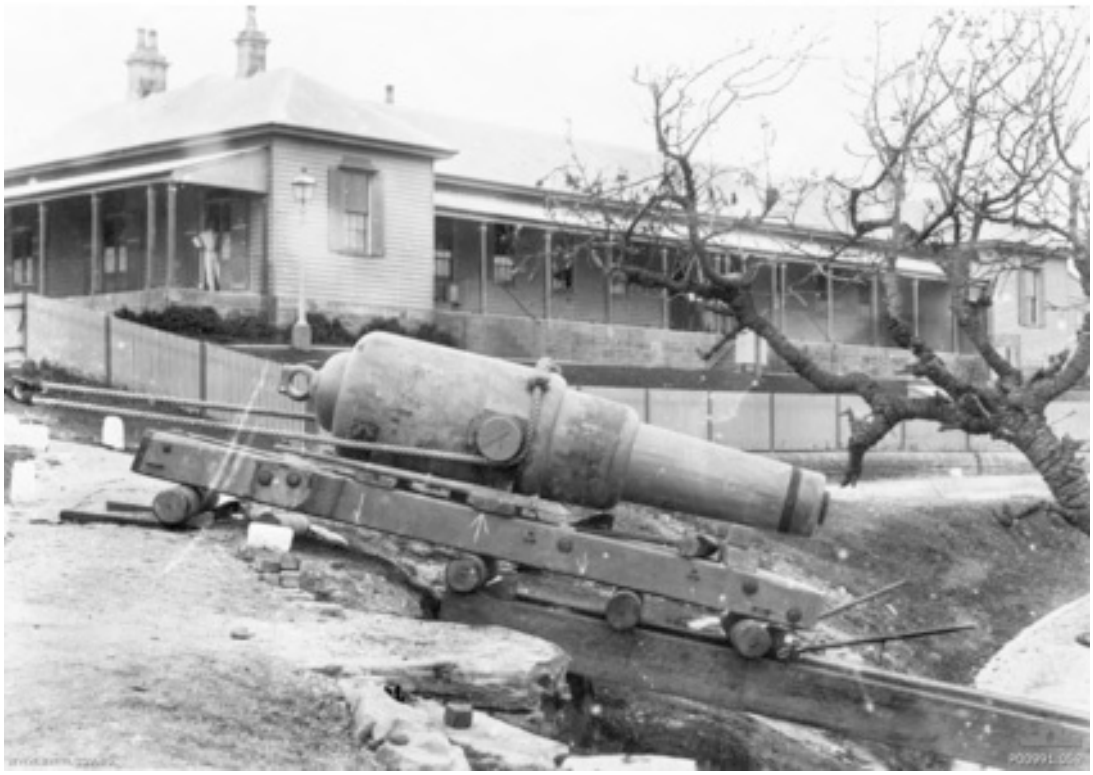
View of the stone drain, blocked with silt and leaves.

View of kerb to the access road with a missing stone block. Note the iron joggles projecting from the remaining stones. (arrowed)

View of firing window [loop hole], showing detail of eroded stone.

View of firing window [loop hole], showing detail of eroded stone.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2)



Sydney, NSW 1895, A 9 inch, 12 ton rifled muzzle loading (RML) gun being moved at the Long Course of the NSW School of Gunnery at South Head. The main barrack block is in the background. Source: AWM P00991.059

Sydney, NSW 1910. Members of the Short Course (April 24 1910 – July 23 1910) at the South Head Commonwealth School of Gunnery moving a 6 inch Mark V gun barrel towards its mounting position. A 9 inch 12 ton rifled muzzle loading (RML) gun is in the background. Note that this carriage for the 9 inch gun looks similar to the carriage that survives today. Source: AWM P00991.108

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Cobblestone Road – Ref: 3.4		**LOCATION**: Camp Cove	
HHIMS ID:3610	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: thoroughfare		**FORMER USE:** cobblestone road	

Photograph

View to the north, with the beginning of the cobblestone road at the end of the path. October 2006.

Historic photograph

View of Camp Cove c1880. Note that the headland has been denuded of vegetation. The boatsheds and slipways are in the middle distance, and the line of the cobblestone road curves above them, leading to the gun emplacement. (Source: Mitchell Library, SPF/811).

HISTORICAL SUMMARY (STAGE 1 CMP)

The first road across South Head was built to the lighthouse (this now passes through HMAS Watson). A second road was constructed in the late 1870s or early 1880s, leading from the landing area at Camp Cove, adjacent to the old Water Police Station, and joining up with the Hornby Road after running along the cliff tops between Camp Cove and Lady Bay. Its primary purpose was the transport of stores and ordinance delivered to the landing at Camp Cove up to the military sites.

This road was paved with sandstone and provided with drainage as it ascended the steep slope from Camp Cove. This section of the road survives within the study area and is known as the Cobblestone Road. In the 1890s the Camp Cove landing was supplemented with a jetty and boat shed for military use. These facilities were overlooked by a single gun emplacement on the cliff top adjacent to the Cobblestone Road, constructed prior to 1890, and a complex of rifle walls. Other tracks and roads were probably constructed at this time linking the major facilities within the area of the present HMAS Watson, and may have been formalised as the facilities were extended in the early 1900s. By 1890, a complex of ditches, rifle walls and moats had been constructed to protect the batteries from being overtaken from behind, most of them within the area of the present HMAS Watson (Gojak c1985; McNamara Soder Associates 1989: 7).

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The access road curves east and just before it enters HMAS Watson, the walking path branches off and leads to Camp Cove. As the walking path descends to Camp Cove, it coincides with the c1880s cobblestone road, which was constructed to connect the landing area and the Water Police at Camp Cove to South Head and the Hornby Light. The road was excavated out and benched into the side of the cliff in a curve below the 80-pounder Battery. It was paved with sandstone blocks to assist travel as it negotiated the steep rise from Camp Cove. The road appears to have degenerated into a track by the early 1930s. A good length of the sandstone pavement remains and is in use now as part of the walking path around the tip of Inner South Head. The road is flanked on the east by large stone block retaining and rifle walls.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** Extant drain visible down side of road leading to sump. Possible archaeology in the vicinity of the southern end of the road associated with the former Water Police Station from 1840 although likely disturbed.

SUMMARY STATEMENT OF SIGNIFICANCE

The Cobblestone Road at the Northern end of Camp Cove is significant as part of the Harbour Defence infrastructure works built in the period 1870 – 1900 at South Head and at other prominent Harbour locations. It is possibly a rare example of such a road for Defence purposes which retains its original surface paving and drainage exposed.

The Road and associated archaeology have State Significance as part of the Camp Cove Precinct within Sydney Harbour National Park at South Head which includes evidence of Sydney's Second Water Police Station (1850 – late 1800s) and with coastal Defence use of the area, particularly during the key period 1870 – 1900 when the Harbour's outer defences were strengthened indicating the growth of Sydney from a small convict outpost to a substantial colonial port city.

The site has State Significance as part of the collection of Sydney Harbour Defence installations within or adjacent to the Sydney Harbour National Park at South Head.

High	**Moderate**	**Low**	**None**	**State**	**Local**	**Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

McNamara Soder Associates, Officers' Mess, Gap Bluff, 1989.

Paul Davies Pty Ltd, The NPWS Fortifications of Sydney Harbour and Botany Bay - A Strategic Plan, 2007.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve the road, drains and sandstone defensive walls above the road. Use the road as part of the walking trail providing access to the Camp Cove gun emplacement thence to Inner South Head. Maintain and improve drainage, removing damaging growth and repoint and apply sacrificial render to stonework to slow deterioration. In long term repair stonework.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

The sequence of historic maps shows a path or track from Cliff Street that initially terminated adjacent to the Trig Station south of Lady Bay and not the path from the wharf area that can be seen in photographs of the same dates. The area surrounding the Hornby Lighthouse is shown fenced and no connecting path is shown. The construction of the "cobblestone road" is likely to co-incide with the upgrading of the battery at South Head in the mid 1870s and was to enable supplies and equipment to be taken up the hill to the various emplacements &c. The barrels of the large guns were laboriously moved along the military roads to the defence reserves at the heads of Sydney Harbour. Photographs of the guns being moved along Military Road to Middle Head and a drawing of one of the military roads associated with the Sydney Harbour Defences in the early 1870s show the character of these military roads. There is a neat edging however the surface appears to be stone chips or gravel. The sandstone was generally used to form a base (as can still be seen in the later Telford-type roads constructed at North Head). In contrast portion of road that survives at South Head appears to have been flagstones, possibly to give a better gripping surface. Only limited sections of the purpose built 'military roads' survive, as the routes were later upgraded and used for general traffic. The surviving sections that provide evidence of the original construction methods of the military roads to the heads are now largely within the Sydney Harbour National Park.

Throughout Inner South Head and the Camp Cove Precinct major groundworks were carried out to construct access roads and make building platforms, drainage channels and defence installations. The materials are likely to have been obtained on site. There is visible evidence of cuttings in the rock at various locations as well as buried features. The stone paved road from Constables cottage along the cliff top is an historic route cut into the rock and lined by defensive stone walls with loopholes. A section has been dug up to lay a sewer and been poorly relaid. The section of road in front of Constables cottage is now enclosed by fencing and access is by stairs from the beach.

Where possible the character of the 'military roads' should be continued. The original surfacing of early paths and roads is has not been fully identified however there is evidence of stone cuttings and neatly paved sections. Some sandstone drains also survive. The current character of these early paths and roads should be maintained. Modern formally engineered roads, paths and drains are not in keeping with the character of the area, and should be avoided. In particular the roads were made of materials obtained on site and the palette of materials was limited to sandstone, sandstone chips, gravel and timber for trestle type bridges.

General policies for the Camp Cove precinct relevant to the "cobblestone road" and associated structures are:

On foreshore

- *Remove coral trees and other weeds*
- *Regenerate areas where appropriate and possible using locally sourced seeds*
- *Maintain remainder cleared and grassed or paved and with low growing shrubs*

On the historic route

- *Retain evidence of significant groundworks and cuttings when carry out mowing, modern earthworks, maintenance activities and stabilisation work.*
- *Restablish the early route in front of Constables Cottage, continuing to the former wharf and along the cobblestone path to the north. Remove and relocate the toilet and kiosk.*
- *Use historic routes for paths and walking routes.*
- *Use the current historic road pattern and minimise the introduction of new routes.*
- *Retain the character of the road system, improving the surface only as necessary for use while retaining the width and low key character.*
- *Maintain grassed verges and historic stone edging and gutters and do not introduce formal concrete kerbs and gutters.*

In area of stone road, emplacements and rifle walls

- *Identify Aboriginal middens and rifle walls*
- *Remove large trees close to features and figs etc growing out of stone walls*
- *Clear debris and silt and reopen drains*
- *Repoint joints in stone walls and apply sacrificial render to gun slots*
- *Clear lantana and figs from battlements especially overgrown area above*
- *Reassess when clear and if possible arrange access from above*

Military Installations and Ruins Generally

Throughout the sites are gun pits, defensive walls and associated items. Some are intact, and some are partial remains and the extent and location of many and associated drains etc are not known. They range from footings and bases, rock cuttings to high sandstone walls. The treatment of each should be according to the needs to preserve fabric and should be assessed on a case by case basis. Many are affected by poor drainage and damaging vegetation growth. Initial efforts should be stabilisation followed by restoration and interpretation in the future.

Policies for military installations and ruins relevant to the "cobblestone road" and associated structures are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg stainless steel pins instead of mild steel). Preservation treatment should be according to the fabric to be preserved and may include stabilisation treatments. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Remove silt from base of pits and clear drains and maintain at six monthly intervals and after storms and major public events. Adjust ground levels around pits and underground structures so that water drains away from them.

Remove large trees and shrubs from the vicinity and protect from physical damage from erosion, vehicles and visitors, etc. Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Monitor rusted metal elements and continue to treat to minimise damage. Re support if necessary.

Stabilise cracks in sandstone blocks using stainless steel helical ties and grout and apply mortar to top of walls to discharge water (subject to detailed advice of appropriately skilled engineer and architect)

When stabilised consider whether any alternate uses are feasible such as for events, installations or other use.

Interpret military structures primarily at the easily accessible Camp Cove Battery and with signage, self guided tours and occasional guided tours to Inner South Head batteries.

The "Cobblestone Road" and Associated Items

The rifle walls above the road, above Constable cottage and above the path between them are not identified in the Stage 1 and previous studies. They are substantial structures and are clearly evident on historic aerial photos. They are intact but badly overgrown with lantana, camphor laurels and other weeds. Some have figs growing in the structures. The areas above the walls are inaccessible but the drains are likely to be blocked with silt and weeds. Some walls form the boundary between HMAS Watson and the park (above Constables Cottage) and a joint approach is necessary. Growth in front of the walls now obscures views. The growth is mostly camphor laurels that should be removed. The areas between the walls and the views to the water should be maintained with low growth. Camphor laurels are also growing very close to the stone road and will eventually lift the paving. They should be removed.

The wall immediately above the road has some cracked stones and open joints. When weeds and drains are cleared above this should be investigated in detail and engineering advice sought.

The north part of the wall is an *adhoc* garden wall, part of the Heritage Trail construction. It should be reviewed when this area is further developed. The historic road continued further and there would have been stair access in the area. Further detail of the original defence structures will be revealed when the rifle walls are cleared and investigated. The possibility of exposing more of the road and other defence structures in this area should be considered in any replanning.

Further detailed research into the construction of the 'military roads' to the batteries on the heads of Sydney Harbour is likely to provide more information regarding their method of construction (in the records of the PWD and at the National Archives in particular). Smaller sandstone blocks were more commonly used as a base, with a smoother surface over (sandstone chips or gravel), with sandstone blocks also used for the side margins and drains. This section at South Head appears to have been paved in sandstone, which may indicate that there was a source of good quality sandstone nearby. A comparative survey of the surviving elements of the military roads to the heads has not been undertaken however this surviving section is likely to be a rare surviving example of nineteenth century building techniques. Following more detailed research the description of the road should be altered to more accurately reflect its construction. Cobblestones are generally smaller; this stonework is more accurately described as sandstone flagging. It is a construction method that had been used for centuries, a method that was abandoned in the nineteenth-century in favour of engineer-designed cambered roads with a base course.

Specific policies for the "cobblestone road" and associated structures are:

Clear and investigate drainage to the rifle walls above the road, the road and below the road and repair and maintain.

When weeds are clear investigate the structural stability of the walls and repair according to engineering advice.

Carefully investigate areas behind the upper rifle walls and clear features such as steps and passages likely to be found here. Assess their condition and conserve and interpret them. (see above re repairs to stone).

Desalinate salt affected areas of walls particularly gun slots. Sacrificial render may be required as a long term protective measure.

Repoint mortar joints using mortar to match original. Investigate the composition of the original mortar.

Monitor the stone road. If joins between stone become washed out investigate the original material between the stones and replace washed out material to match. If stones are dislodged or to uneven to be trafficable carefully remove and relay.

RECOMMENDED WORKS (CMP STAGE 2)

Maintenance works are required primarily to drains and repointing and improved interpretation. The design of the stairs and visitor access in the area needs review when the rifle walls [defensive walls with loop holes] above the site are cleared and further investigated. The possible provision of ramp access to the picnic area beyond should be considered.

Immediate
Undertake works to stabilise structures and minimise deterioration:
- Remove vegetation encroaching on road, stone walls and drains, particularly large coral trees, some fig trees and lantana (see examples in photographs below),
- direct storm / ground water away, for example so water does not accumulate above stone walls,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- clear growth, silt and waste from spaces behind stone walls and
- investigate sandstone walls in detail and review approach and works required.

Medium Term (1-5 years)
Undertake fabric conservation works:
- Improve surface drainage especially onto and from the path and road and seepage in the vicinity of stone walls. Consider installing sub-soil drainage or changing ground levels to create a swale or similar to discharge surface water and seepage clear of the walls and associated spaces,
- treat exposed ferrous metal elements for rust, in particular any metal cramps or similar in stonework,
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, then repair masonry,
- repoint open joints to exterior and interior stonework using lime mortar,
- repair cracked stones in stone wall above road using helical anchors (according to engineers advice),
- fill cracks in concrete with grout (according to engineers advice) (small items only associated with drains and walls),
- remove any modern graffiti,
- fill open joints in top of stone walls, between two skins of stonework and where exposed in loop holes with lime mortar ensuring joints are fully filled with mortar (arranged where applicable to discharge water to the exterior) and
- install safety fencing or other surface treatment at pits or hazards (refer Forts Study).

Long term
Undertake complex conservation works:
- Repair eroded stone at loop holes by limited replacement or artificial stone (epoxy) patching (as recommended by appropriately experienced heritage architect or engineer),
- stabilise cracked stones as detailed in policies,
- if sewer is relocated in gun pit associated works may be required in the vicinity of the road,
- consider rearranging modern stairs to north and modern retaining walls to better interpret the rifle walls, gun pit and old road
- consider providing entry to the spaces above the stone walls from above should investigation find this is practical.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage,
- water entry,
- storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces,
- structural condition of stonework, any settlement or cracking, dislodged stones,
- excessive wear of stone “cobbles” in road,
- open mortar joints or fretting or cracks in stonework or other masonry,
- progressive rust in ferrous metals, and
- operation of services (lighting, sewage).

INTERPRETATION (CMP STAGE 2)

The “Cobblestone Road” and associated items and the Camp Cove gun emplacement are not in as spectacular a setting nor are as extensive as the Hornby Battery but they are much more accessible to the public including school groups, the elderly, families with prams and to some extent wheelchair users. It is recommended as the primary place to interpret the batteries and defence features at South Head in the medium term.

Interpret the defence of Sydney Harbour and batteries on South Head, road access via the ‘military roads’ and artillery training for gunners, especially moving guns by hand. Interpret and demonstrate the function of the remaining defensive structures including defensive walls by providing access to the upper side of walls and maintaining views from them. Manage vegetation so the harbour can be viewed from loop holes and their function interpreted. Carry out research on the construction and the function of elements and use historical documents in interpretation including signage.

Improved access from Cliff St is recommended with relocation of the toilet block and council kiosk.

Considered also providing additional interpretive material electronically or in a brochure.

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan	**Year of Study/Report:** 2008 & 2009	
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos & Mary Knaggs	**Date:** March 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of rifle walls above pathway between Constables Cottage and Cobblestone Road. Note the fig tree in the wall at left.

View of the rifle walls above pathway, between Constables Cottage and Cobblestone Road.

View of the rifle walls above pathway, between Constables Cottage and Cobblestone Road.

View of the rifle walls from above the Cobblestone Road. Note Lantana and other weeds.

View of the cement path below Cobblestone Road looking south towards Camp Cove Beach. Noted drain on left side of the path.

View of the Cobblestone Road, showing where sewer crosses the road on the diagonal.

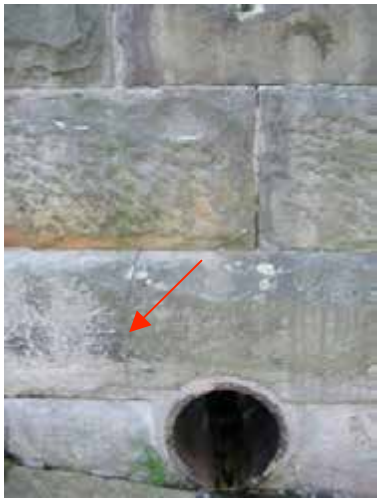
ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the rifle wall above Cobblestone Road. Noted two drains that should be inspected for blockages from above.

View of the rifle wall. Note the two stages of construction.

View of the modern garden retaining wall above Gun Pit.

View of the pathway above Gun Pit with stone blocks that may indicate a drain under path.



View of the rifle wall showing crack in the stone indicating some movement of the wall.

View of the rifle wall with a young fig tree growing in a mortar joint.

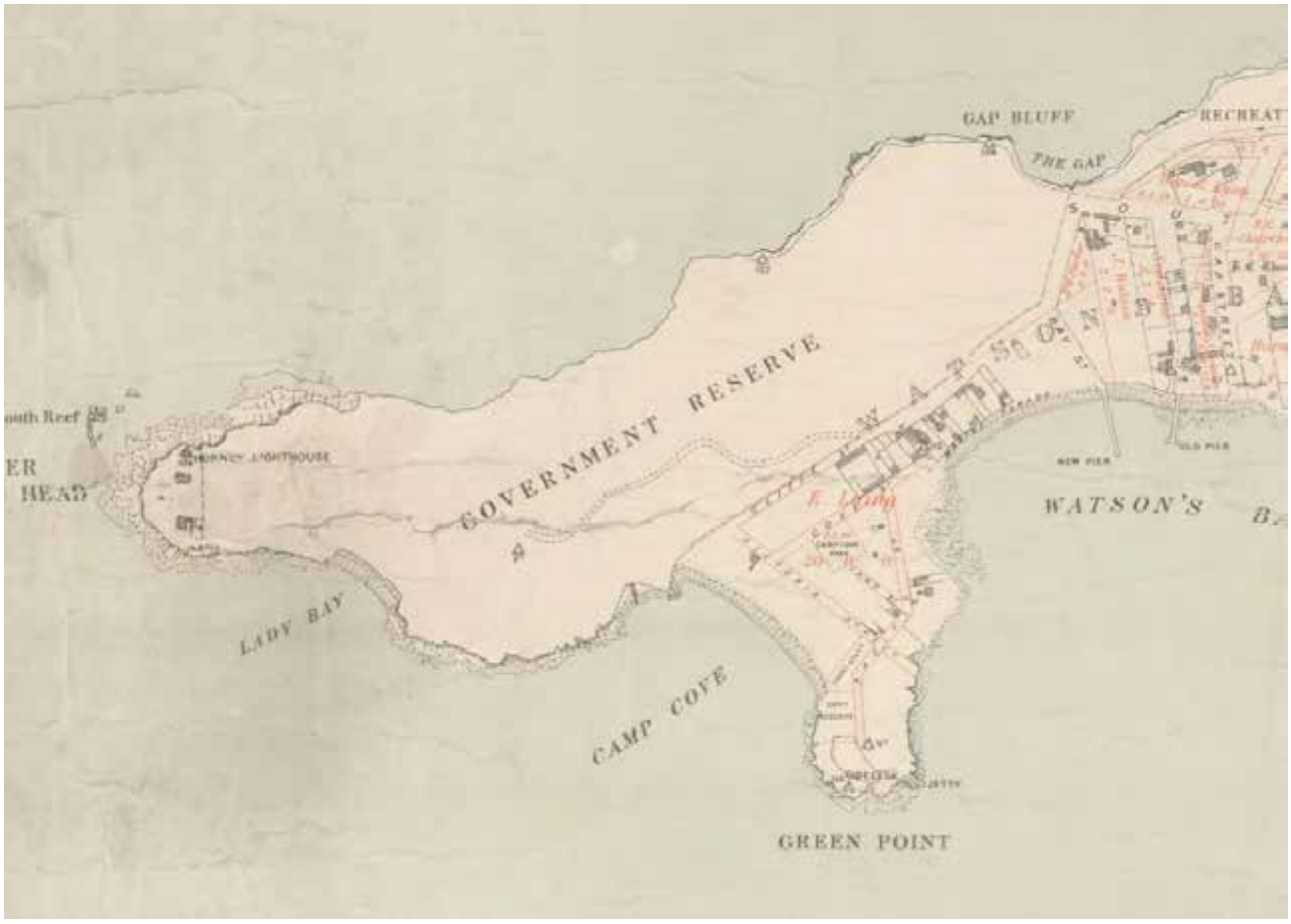
ADDITIONAL ARCHIVAL MATERIAL (CMP STAGE 2) *Added December 2009*

Sketch entitled a Military Road, from a series of drawings of the defences of Sydney Harbour published in the early 1870s (SLVIC)

Extract from the Marine Survey of Port Jackson undertaken in the 1850s showing the access road via the Signal Station.

Maine Survey of Port Jackson undertaken by Captain Denham and the HMS Herald published by the Admiralty,

Copy in NLA Maps British Admiralty Special Map Col./33



Extract from a survey of the Parish of Alexandria undertaken 1888-89 showing the path from Cliff Street. Note that no path is shown between the fenced area adjacent to the Hornby Lighthouse through the Government Reserve at South Head or up from Camp Cove. NLA Maps F133 tile3

Extract from an 1894 Map of Sydney Harbour showing the track had been extended to the Hornby Light. NLA rm 1283

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Camp Cove Slipways – Ref: 3.5		**LOCATION**: Camp Cove	
HHIMS ID:11094	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** slipways for the former life boat sheds at the site	

Photograph

View of the slipways in the foreground, and the tidal gauge to the south. October 2006.

Historic Photograph

View of Camp Cove c1880. Note that the headland is clear of vegetation. The boatsheds and slipways are in the middle distance, and the line of the cobblestone road curves above them, leading to the gun emplacement. Source: Mitchell Library, SPF/811

HISTORICAL SUMMARY (STAGE 1 CMP)

The north end of Camp Cove within the Sydney Harbour National Park is historically significant as the site of Sydney's second Water Police Station, which was in-situ from 1840 until the late 1800s.

Just around the northern headland of Camp Cove beach are the relics of slipways hewn out of the rock platform and the evidence of the two boatsheds which stood over them. A Life Boat shed was erected in the late 1850s subsequent to the wrecking of the *Dunbar* and *Catherine Adamson* and a second boat shed was added in the 1890s to serve the Permanent Artillery. The sheds themselves no longer stand. It is thought that they were demolished in the mid twentieth century.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Industry - Activities associated with the manufacture, production and distribution of goods

DESCRIPTION

Two former boat sheds were located at the northern end of Camp Cove, at the waters edge, just before the end of the walking path to Inner South Head. These boat sheds were built in the nineteenth century, the first boatshed in 1850s and the second in the 1890s. The boatsheds were demolished, possibly in the mid twentieth century. Gojak suggests that they were still standing in the 1950s, but their location is evidenced by the level platforms at the water's edge excavated out of the cliff and other remains including slipway iron rails, sandstone base blocks and post holes (Gojak 1985).

The Camp Cove Slipways were recorded as site N17 by Denis Gojak in c1985.

CONDITION: Good Fair **Ruinous** Poor Site Only	
INTEGRITY: High Moderate **Low**	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low

SUMMARY STATEMENT OF SIGNIFICANCE

The Camp Cove Slipways have historic significance because of their associations with the establishment of the Sydney Water Police and with life saving in NSW. Two boat sheds were built on the site; the first was constructed in the late 1850s in response to the wrecking of the Dunbar and Catherine Adamson at this time. The slipways, and the archaeological remains of the boat sheds on the site, have associations with the development of infrastructure for water police and lifesaving, to deal with maritime accidents on the harbour, particularly through the treacherous harbour entrance. Other associated Harbour infrastructure at South Head includes Hornby Lightstation and the navigation obelisk at Green Point, which were also constructed in the 1850s.

The slipways and associated archaeology have State Significance as part of the Camp Cove Precinct within Sydney Harbour National Park at South Head which includes evidence of Sydney's Second Water Police Station (1850 – late 1800s) and with coastal Defence use of the area.

The site also has State Significance as part of the collection of early Sydney Harbour infrastructure works within or adjacent to the Sydney Harbour National Park at South Head.

High **Moderate** **Low** **None** **State** **Local** **Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p.

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Establish ownership and responsibility for management of the slipway remains in consultation with the Maritime Authority. Manage the slipways as a ruin associated with the Water Police Station and the later defence use of the area. Remove weeds (including coral trees) in the vicinity and maintain a view of the site from a public area. Record the remaining fabric of the slipways and stabilise where possible. Interpret former Water Police use from walking track adjacent. (Note that no separate inventory entry has been prepared for the Water Police landing steps nearby but some comments are included in the policies below).

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

More detailed research may reveal additional plans or surveys of the individual structures within the area. In 1901 a Sydney Harbour Trust was established and the responsibility for the design of wharves and jetties in Port Jackson was transferred to their control. A large number of plans prepared by the SHT and its successor the MBS are now held at State Records, which includes plans of structures now within Sydney Harbour National Park. These drawings have been accessioned but most are not included in the computer catalogue and there is no index. The drawings remain in bundles. In 1903 surveys of the defence and coastal sites that were to be transferred to the Commonwealth was undertaken. The plans prepared for this survey are held at State Records (6/5544 1 volume). These archival series are likely to contain additional information regarding the facilities at South Head in use during the twentieth century.

Specifications for works to the wharves at South Head (including Camp Cove) dating from 1905-10 are held at National Archives (NAA SP 155/1 Box 30)

Camp Cove Precinct and Ruins Generally

General policies applicable to the Slipway remains are:

Use the foreshore as informal picnic, day use area.

Preserve the original fabric and repair using matching materials or tested modern materials (eg stainless steel pins instead of mild steel). Preservation treatment should be according to the fabric to be preserved. When deciding on preservation treatment consider the purpose to retain as a ruin, and adjust the approach accordingly.

Remove large weed trees and shrubs in the vicinity to preserve views of the site from the walkway above.

The Slipways

The slipway remains where not inspected in detail by the Stage 2 CMP authors. They appear to be stable viewed from above but should be inspected in detail and assessed. They are in the intertidal zone and the Maritime Authority may have

responsibility for them. The wharf remains were inspected. They now appear as a series of stone steps leading to the water and rock platform (Water Police landing steps Item No. 3.6, no inventory). It is not known of this was the original configuration or whether it was altered when the wharf was demolished. There are now voids behind stones and open joints. The area is used by picnickers and the stone steps should be monitored for movement and undermining and an engineering inspection is recommended. Voids should be filled and joints repointed.

Specific policies for the slipways and associated structures in addition to the above are:

Investigate the stability of the slipway remains and stone walls of former wharf and repair according to engineering advice.

Fill voids behind stones at former wharf and repoint mortar according to engineering advice.

Liaise with the Maritime Authority re responsibility for the maintenance of the slipway and wharf remains.

Archivally record the slipway remains.

Stabilise, by refixing any loose elements of the slipway with durable fixings.

Manage vegetation in the vicinity to preserve views of the site from nearby public areas.

RECOMMENDED WORKS (CMP STAGE 2)

This list below refers to the slipway only. The landing steps mentioned above are not included below.

Immediate
Undertake works to stabilise structures and minimise deterioration:
- Remove vegetation encroaching on view of slipway and cliff edge,
- investigate slipway in detail, including archival research, and
- prepare an archival photographic record of the slipway remains.

Medium Term (1-5 years)
Undertake fabric conservation works:
- refix any loose elements using marine grade stainless steel fixings of lime mortar.
- install interpretation off walking track or at Water Police landing steps.

Long term
Manage as a ruin.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Whether any timbers or metal members have been dislodged,
- vandalism and damage,
- structural condition, any movement,
- progressive rust in ferrous metals.

INTERPRETATION (CMP STAGE 2)

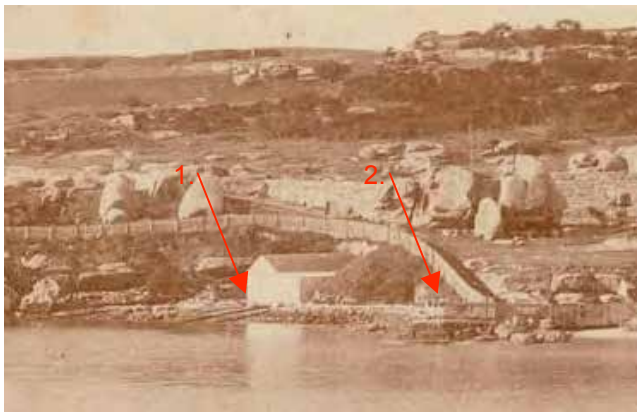
The slipway remains should be interpreted as part of the Water Police occupation of the site, predating defence use. It is recommended the associated documentary evidence be researched and the remains be interpreted as the slipways for the Water Police facility.

Considered also providing additional interpretive material electronically or in a brochure.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*



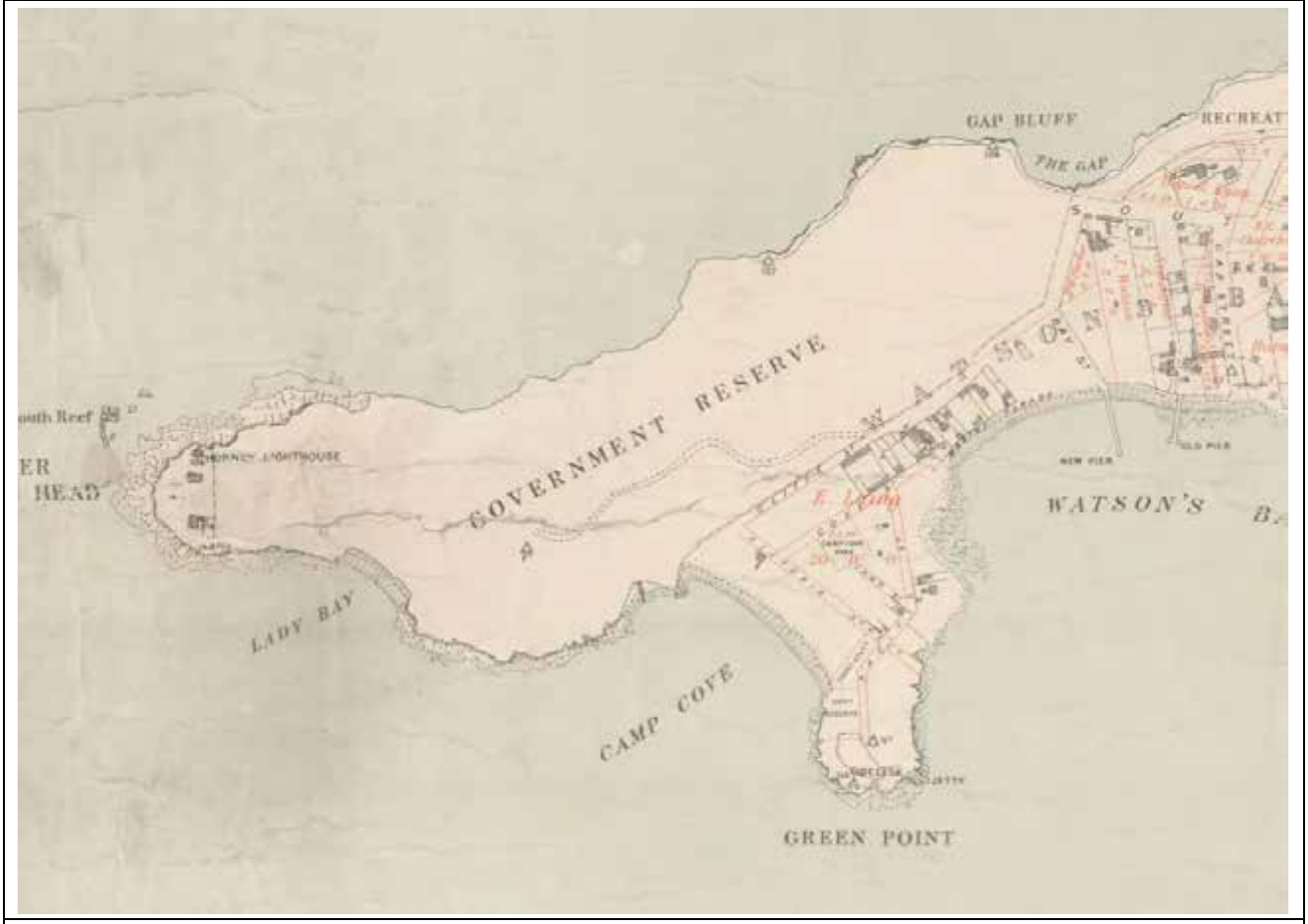
View of the Camp Cove c1880 photograph, showing the location of the slipway (1.) and the wharf (2.).

View of the Camp Cove 1929 aerial photograph, showing the location of the slipway (1.) and the wharf (2.).

Current view of the Camp Cove headland, showing the location of the remains of slipway (1.) and the wharf (2.).

Current view of the Camp Cove headland, showing the location of the remains of slipway (1.)

Current view of Camp Cove headland, showing the location of the remains of slipway (1.) The steps in the foreground where part of the wharf. The fissures (F.) are natural features not related to a former structure at that location.



Extract from a survey of the Parish of Alexandria undertaken 1888-89 showing the path from Cliff Street. Structures are shown in Camp Cove but are not labelled. There is also a jetty at Green Point. NLA Maps F133 tile3

Detail from a 1951 aerial of the eastern end of Camp Cove. The vegetation conceals the end of the wharf.
Source: SHFT aerials North Head (which includes part of South Head) 1951_r11_2

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Gap Bluff Precinct – Ref: 4.0 (including significant plantings)

LOCATION: Gap Bluff

HHIMS ID: 1348 **MAP:** **ZONE:** **GPS:**

CURRENT USE: Part of Sydney Harbour National Park at South Head

FORMER USE/S: School of Artillery, School of Gunnery, Navy's Radar Communication Centre, part of HMAS Watson.

Photograph

Entrance to the Gap Bluff Precinct. February 2007.

Photograph

The Norfolk Island Pine Avenue viewed from the Officer's Mess Garden. February 2007.

HISTORICAL SUMMARY (STAGE 1 CMP)

Gap Bluff was set aside as defence land from the mid nineteenth century, but underwent little change until the Middle Head School of Gunnery was relocated to there in 1894–5. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894. A workshop building constructed between 1895 and 1903 served the practice battery and is still extant although modified as a residence.

Changes to the scheme of Australia's Defence flowing from Federation, and the institution of compulsory military service on Lord Kitchener's recommendation, saw a dramatic increase in the number of people undergoing military training. The 1912 School of Gunnery/Artillery Barracks consisted of two double-storey blocks with associated offices and latrine, the latrine to the rear of the two buildings still being extant. Approval was given in 1935 for the construction of the adjacent Officers' Mess.

After 1941, the School of Artillery was relocated back to Middle Head, the site at Gap Bluff being seen as too close to potential active combat. The Gap Bluff complex was taken over by the Army and functioned to support the defence activities at South Head. The Officers' Mess continued to be used in that capacity, and the School of Artillery Buildings to the north functioned as an administrative block and barracks. Two further barrack blocks were constructed at this time flanking the main school buildings to the north and south, as well as a canteen and two miniature ranges. A large garage and separate Motor Transport Office were constructed adjacent to the Officers' Mess, and sleeping quarters were built on its northern side. All of these structures were constructed in weatherboard or asbestos cement. The Navy's Radar Communication Centre was accommodated in the former school at Gap Bluff from 1941.

From the 1950s, the defence reserve at South Head was used as a training and barrack establishment. The 1950 National Service Bill resulted in a sustained expansion of military depots and camps. The Army-held section of the South Head Military reserve at Gap Bluff was appropriated for National Servicemen. Thirteen barrack and service blocks were constructed on the western side of the reserve, overlooking Camp Cove (now mostly within the area of HMAS Watson), and additions and alterations were made to several of the former School of Artillery buildings. In 1955 the original asbestos cement parapet roof of the Officers' Mess was reconstructed as a pitched roof with Marseilles tiles and overhanging eaves. This was likely to have been in response to problems of leakage and flooding inherent in the original, fashionably functionalist design. Following the cessation of compulsory National Service in 1959, the complex functioned

as a transit depot for officers and military serving overseas, and in the period 1965–72 as a transit depot for those leaving for service in Vietnam (Wilson 1985: 1.5; McNamara Soder Associates 1989: 10, 16. Compulsory National Service was introduced in 1951, and terminated in 1959. Compulsory selective National Service was reintroduced in 1965 and terminated in 1972).

HMAS Watson was formally established in 1945 having grown out of the Radar Communications Centre of WWII. It has not been possible to clarify the changing boundaries of the HMAS Watson site however it is assumed that it included most of the Gap Bluff area from c1972 to when it was acquired by NPWS in 1982.

In 1984 all standing structures were demolished except the Officers' Mess and garage, the Artillery Workshop, Store, and School of Gunnery latrine. In the last two decades much of the landscape has revegetated and lookouts have been formalised along the cliff edge. The Officers' Mess was altered and added to in the 1990s for NPWS staff offices and the Armoury has been adapted as a function centre.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

Vegetation Assessment (prepared by Robert Newton, DECC)

Historical photographs indicate that much of the area has been cleared and modified, however there has been natural regeneration of *Banksia integrifolia*. Remnant bushland consists of coastal heath, namely *Melaleuca armillaris / Kunzea ambigua* and *Banksia integrifolia* heath. There are varying levels of weeds within the remnant vegetation.

The area contains two species classified as endangered under the Threatened Species Conservation Act:
Acacia terminalis subsp. *terminalis* (Sunshine Wattle) is located on rocky slopes within and around HMAS Watson. *Acacia terminalis* subsp. *terminalis* is restricted to rocky bushland areas in the eastern suburbs, North Head and Middle Head.

Several planted specimens of *Allocasuarina portuensis* (Nielsen Park She-Oak) are located down-slope of the Armoury and along a drain line to the north. *Allocasuarina portuensis* is restricted to plantings in Nielsen Park and three other sites. The sites of the plantings at Gap Bluff are inappropriate in terms of habitat type, soil disturbance and range and in the event of their senescence they would not be replaced.

Cultural Heritage

The Gap Bluff area makes up the south half of the National Park at South Head abutting the southern boundary of HMAS Watson. Unlike the north part of South Head, the Gap Bluff area was relatively underdeveloped until the early twentieth century. From that time, it (along with the area now occupied by HMAS Watson) was almost exclusively used by the Army first for the Artillery Practice Battery and its Workshop from 1895 onwards, the School of Gunnery from 1912, the Navy's Radar School and finally as the Army's National Service depot from the 1950s. Gap Bluff was transferred from the Defence forces to the NPWS in 1982.

The Gap Bluff area is roughly oval in shape with an arm stretching north, and is bordered on the west by Cliff Street. The area is edged to the north by HMAS Watson and on the east and south by the 40m towering cliffs, which rise dramatically out of the South Pacific Ocean. The heart of the area is sited on a series of broad vegetated terraces falling towards the west.

No Aboriginal sites have been recorded in the Gap Bluff Precinct.

At the height of its use from the 1950s to 1980s the area accommodated a dense array of masonry and timber structures covering the mostly level north eastern part of the area interlinked by numerous roads and paths (see Figure 3.43).

Although many former building sites were reclaimed and concealed by revegetation after the site was transferred to the NPWS in the 1970s, the entire precinct contains a wealth of archaeological evidence and a number of standing buildings from both the late 1800s School of Gunnery period and the more intensive use during and after WWII. A basic and preliminary archaeological survey undertaken for this CMP identified a number of substantial structural remains and large areas of debris from the demolition of the buildings shown in Figure 3.43. Despite the heavy vegetation cover, it is still possible to see the various terraces and understand the arrangement of building, roads, equipment and terraced gardens. The development of the military landscape of training facilities from the 1870s to the 1980s is still readable although the sense of openness and connection between the different areas has been obscured.

The Eastern edge of Gap Bluff includes a well-maintained, narrow stretch of coastal heath. It has full sun and is exposed to strong winds. The walking track is cut into the rock and winds around boulders close to the cliff edge with fenced lookouts. Low heath species in the area includes Dianella and Lomandra.

The site of the former Army Depot in the Central section of Gap Bluff is heavily overgrown with tall shrubs and dense groundcovers. Paths terminate in tangles of vines and branches, and weeds emerge through patches of bitumen. The highly disturbed landscape has benefited introduced species more than the indigenous coastal heath. Phoenix palms

have become a management issue due to spreading of seed by birds. Other weeds include Oleander, Asparagus fern, and Kikuyu grass.

In the Lower Gap Bluff precinct is an avenue of Norfolk Island Pines which line the formal entrance to what was the School of Artillery and later the entrance to HMAS Watson. In front of the Officer's Mess is a formal garden centred on a stone fountain and with crazy paving and stone edged garden borders and drains. Also in Lower Gap Bluff are Phoenix Palms which once fronted the two 1912 School of Artillery Barrack Buildings (footings and latrine now remaining). None of these formal plantings are visible in the 1929 aerial of Gap Bluff. It is likely that they all date from c.1930s/40s after the construction of the Officer's Mess. Some of the planting of this time evident as mature plantings in the aerial photo of 1955-60 have since been removed.

Elsewhere in Lower Gap Bluff are expanses of lawn edged in bushland that includes Banksia. Along the Cliff Street edge is a thick vegetation screen of Coral trees, Phoenix palms, Banksia, Fig and Brush Box. Weeds in this area include Lantana and Asparagus fern.

There are a number of buildings and historical archaeological elements in the Gap Bluff Precinct [IS 4.0].

In the Lower Gap Bluff Precinct [4A.0] Inventory Sheets are provided for:

- Officers' Mess and Garden [IS 4A.1]
- Armoury [IS 4A.2]
- Cottage / former Workshop [IS 4A.3]
- Site of the former 1812 Barracks [IS 4A.4] including remaining Latrine [4A.4A] and footings of the two barrack buildings [4A.5 and 4A.6] and the following elements are covered in the Archaeology Table in Volume 2
- Water Tank [4A.7]
- Cement Slab [4A.8]

In the Upper Gap Bluff Precinct [4B.0] an Inventory Sheet is provided for:

- National Parks Lookouts [IS 4B.1]
  and the following elements are covered in the Archaeology Table in Volume 2
- Practice Battery [4B.2]
- Concrete pad [4B.3]
- L-shaped shelter wall [4B.4]
- Small concrete plinth [4B.5]
- Large dump of demolition rubble [4B.6]
- Various rings and bolts in bedrock [4B.7]
- L-shaped shelter wall [4B.8]
- Small cement slab (paving) [4B.9]
- Small cement slab – 2 roomed structure [4B.10]
- Curved cement slab (paving) [4B.11]
- Cement slab (structural) [4B.12]
- Terrace garden, various features [4B.13]
- Possible dump [4B.14]
- Small brick building [4B.15]
- Steps and section of pathway [4B.16]
- Small telephone or telegraph pole [4B.17]

The stone entrance piers are noted on the precinct plan but not given an item number.

NOTE

There are footings throughout Upper Gap Bluff of the military buildings demolished by NPWS in 1984.

See page 9 for a survey showing the former buildings.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	ARCHAEOLOGICAL POTENTIAL: **High** Moderate Low

SUMMARY STATEMENT OF SIGNIFICANCE

The remnant bushland at Gap Bluff is of high significance as it provides habitat for Acacia terminalis subsp. terminalis[1].

Gap Bluff has historical importance as Australia's premier School of Artillery from 1894 through to 1941 and for its significant Army and Navy uses during and after WWII.

Gap Bluff has historical associations with Defence Schools of Artillery, Radar Training Schools and, since the 1950s, with National Service Men.

The Gap Bluff precinct has high archaeological potential for its ability to contribute to our understanding of military operations carried out in the area particularly the School of Artillery from 1894 and Defence uses during and after WWII until the handing over of the site to the DEC in 1982.

This heritage significance of Gap Bluff is likely to be at a State level however further historical, archaeological and social values research and assessment is required.

High Moderate Low None	State	Local **Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	There is bonded asbestos from building demolition on the ground in some places throughout the site.
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Killick & Conyers, Officers Mess Conservation Plan, Prepared for NPWS, March 1989.

McNamara Soder Associates, Officers Mess Gap Bluff – A Research Study, Prepared for NPWS, 1989.

Peddle Thorp & Walker Architects, Specification – Refurbishment & Addition to Existing Buildings at Gap Bluff, Prepared for NPWS, June 1989.

Wilson, G.C., Archival Study Sydney Harbour Fortifications, 1985.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Manage for tourism and as a recreational area with the loop walk, viewing areas and picnic areas at the former barracks site, locking at night as necessary. Consider providing wheelchair and limited mobility access including on part of walking track from Officers Mess car park. Improve public safety in conjunction with Woollahra Municipal Council with new fencing at The Gap. Continue the conservation and adaptive reuse of the Armoury and Officers Mess and a residential presence on the site for security. Retain key defence remains as ruins and control vegetation at where damaging or interrupting views from batteries. Interpret the defence history of the site.

Manage cultural plantings, remove senescent coral trees and revegetate areas that are not required for operational reasons as open areas; use with endemic species. Protect and record Aboriginal site including midden above Cliff St carpark. Complete the link between the walking track and Camp Cove.

[1] Vegetation assessment by Robert Newton of the DECC September 2006.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Additional Historical Information

There appears to be some confusion regarding the sequence of transfers of the School of Gunnery. Victoria Barracks only included limited training facilities, both in terms of classroom space and areas for (safe) target practice. Public pressure resulted in shooting practice being progressively moved away from the barracks. The Middle Head location, utilised from 1885, proved to be too far from Barracks, where some of the instructors were based. The School of Gunnery was returned to the Barracks in 1891, with practice facilities built at South Head from 1894. South Head was more convenient, and could easily be reached via Old South Head Road.

New facilities in the 1890s, and in the years leading up to World War I, coincided with war threats that were distant from Australia. With the increasing threat of war in the Pacific new substantial training facilities were proposed at Middle Head and North Head, adjacent to existing Commonwealth facilities. The School of Fortress Engineering occupied new facilities built on the golf course (just outside of the moat to the fort on Middle Head and below the battery at George's Heights and the WWI Military Hospital). Manly Council had finally managed to obtain access to the Commonwealth Lands, allowing public access to North Head and had created the Parkhill Reserve. One year after the official opening the majority of the reserve was revoked and a large School of Artillery and North Fort were built. The term "school of gunnery" was amended to "school of artillery" in the mid 1930s. Due to the war, and the increased demand for the training of recruits, artillery training courses were held in a number of locations including Holsworthy, Greta and at the School of Musketry at Randwick (which was enlarged). The Land Headquarters of the School of Artillery (Coast) remained at South Head for the duration of the war. The nature of the training changed from the nineteenth century to the twentieth century, from relocating and firing the big guns to encompass tasks such as operating searchlights and the training complexes evolved from a barracks-type of layout, to a complex with numerous classrooms.

Once the war was over, sections of the extensive area of North Head (which was enclosed by the walls of North Fort), were used for target practice by the School of Artillery. South Head was too close to residential areas and was used primarily for naval communications, further developing from the pioneering Australian radar installations first employed at Dover Heights during the war. HMAS Watson was established in 1945. The School of Artillery is now located at Puckapunyal, and is now a national school.

Gap Bluff Policy Background

Note: See other inventory sheets for further detail and policies for buildings.

Though Inner South Head is the most spectacular an historically interesting part of the park Gap Bluff is the most accessible and the most suitable for large numbers of visitors, education activities. It provides access for buses and parking facilitating equitable access and school group visits. There are also high numbers of visitors arriving by bus to see The Gap. The adaptively reused Gap Bluff Centre and the Armoury provide facilities that can be further utilised for visitor services and education. It is recommended that visitor facilities and education activities be concentrated in this part of the park.

There is extensive tourist use of the Gap Bluff precinct especially the cliff walk in conjunction with the adjoining council owned walk and viewing areas. Many overseas and out of town visitors come to this site often arriving by bus or ferry. There is regular use of the "Heritage Trail" to South Head. There are peaks of visitor numbers to watch events such as sailing races and ships entering and leaving the harbour. Special event arrangements are made at these times. There is potential to work with other related sites such as Middle and North Head to develop linked tours with water access. This type of activity could be developed by tourist operators as a day tour. At the same time this area is notorious as a site for suicide and tracks, lookouts and facilities need to be developed to minimise the risk and discourage attempts. Council is working on this in the adjoining area. People associated with those who have died here often leave floral and other tributes. These end up as litter. Consideration should be given to making provision for tributes.

The Gap Bluff area was previously developed, cleared and had numerous buildings. Most were demolished in 1984. See separate inventory sheets for the remaining buildings. Major ground-works were carried out to construct access roads and make building platforms. Where possible the old road pattern should continue. The early stormwater drains and road kerbs were constructed in stone. The current character of early paths and roads should be maintained. Modern formally engineered roads, paths and drains are not in keeping with the character of the area, and should be avoided. There is combination of historic and modern walking paths and fences.

The precinct has been partly revegetated but much of the area is infested with weeds. Revegetation is limited by the heritage items and their curtilages that need to be retained as a clearing and by the remaining bitumen and demolition materials in the soil. The slope below the former barracks site to the west is infested with weeds including escaped cultural plantings. Invasive species need to be removed including self seeded palms and morning glory.

Along the entrance road to HMAS Watson are planted and self-seeded Coral trees. Many are senescent. One has recently fallen at the public parking area off Cliff St exposing a midden at its base. Nearby water continually flows over rock shelves above the public parking area and may indicate a leaking pipe or similar above. Some of the overhangs look like those sketched in the Aboriginal site recording forms in the past and should be further investigated.

There are various cultural plantings throughout the site however several species have spread through bird and wind dispersed seeds. Though these are the same species as the cultural plantings they are not significant and should be removed. Only deliberately planted specimens should be considered to be significant cultural plantings. In Gap Bluff this

is the palm row, the Norfolk Island pine row, the Officers Mess garden and oleanders on the main path at Upper Gap Bluff. Any new plantings should be of similar but non-invasive species and should avoid locations that could endanger structures in the future. Some trees are growing in locations that will eventually endanger people, structures or impede views. Dangerous senescent trees should be removed and replanted only if they are significant. Trees damaging significant structures should be removed.

Revegetation is recommended generally for this area with identified culturally significant areas maintain as cleared as well as the defensive wall and paths. Some bitumen may need to be removed and it should be noted that there are bonded asbestos fragments as well as bricks remaining on and in the ground remaining from the demolition of buildings in this area and appropriate procedures should be observed.

Military Installations and Ruins Generally

The following policies for these structures as they apply to the Gap Bluff Precinct are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg stainless steel pins instead of mild steel). Preservation treatment should be according to the fabric to be preserved and may include roofing, fencing, stabilisation treatments, propping etc. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Adjust ground levels around structures so that water drains away from them.

Remove large trees, shrubs and garden beds from the vicinity of heritage items and protect from physical damage from erosion, vehicles and visitors, etc. Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Monitor rusted metal elements and continue to treat to minimise damage. If structure is endangered cut metal elements back and cover with mortar or remove. Resupport if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Tourist Activities

The following are policies for tourism activities relevant to Gap Bluff:

Promote ferry access day trip, in conjunction with others, with loop walk, barracks area picnic and consider Officers Mess for refreshments/café suitable for large groups.

Work to develop mutually beneficial partnerships between tourism operators, heritage managers and related sites to build sustainable tourism operation. Encourage development of cultural tourism activities linking other related sites such as Middle and North Heads.

Work with others to ensure accurate and appropriate presentation of the place to tourists. Consider developing training and information packages to tourist operators or others presenting the place to tourists to ensure informed and accurate presentation. Encourage participation in guided activities that allow a more in depth understanding of the place.

Provide a loop walk through upper part of site that interprets the defence values. Use low key directional and interpretive signs and block off paths not part of walk. Complete walk by building stairs and track to Camp Cove carpark
Provide improved walking track on cliffs and provide safe viewing and photographing areas. Upgrade fencing, maintain steps and manage vegetation keeping it low near path and cliff.

Interpret the site using signs, the current style and format is appropriate. Use higher quality materials in interpretive signs and replace them as required.

Seek to develop walking tours that are cross-referenced to the interpretive signage with the guidebook or brochure.

Use other languages as well as English in key site information and brochures.

Provide fencing at The Gap the same as that developed by Council for visitor safety and to discourage suicide attempts. Consider providing space or loops or clips to hold floral and written tributes.

Continue to provide temporary fencing to the cliff tops and for crowd control for special events.

Landscape, Paths and Parking

The following are policies for landscape, paths and parking at Gap Bluff:

Support recreational use by providing amenities and upgrade as necessary.

Manage significant plantings by secession planning, removing senescent plants and replanting.

Maintain the grassed areas at the barracks site, Gap Bluff by slashing or mowing or introduce endemic ground cover species where pedestrian use is not required. Continue ornamental plantings at the officers mess. Maintain palm row in front of the barracks site, single palm in front of toilet and oleanders adjacent to main path only.

Retain evidence of significant ground works and cuttings when carry out mowing, modern earthworks, maintenance activities and stabilisation work.

Use historic routes for paths and walking routes. Use the artillery school paths as the loop walk maintaining original surface finish and stone edging. Review extent of paths required for walking trail and around significant features and remove bitumen elsewhere to assist revegetation.

New landscaping can be added to the HMAS Watson entrance replacing the senescent coral trees with endemic specimen plantings along entrance road only. Remove coral trees progressively and weeds and regenerate.

Screen intrusive modern structures, roads and carparks with planting.

Retain the character of the road system, improving the surface only as necessary for use while retaining the width and

low key character. Maintain grassed verges and historic stone edging and gutters and do not introduce formal concrete kerbs and gutters.

Designate informal parking areas at Gap Bluff in barracks area by surface treatment, planting or low scale barriers rather than signage or fencing.

Investigate the source of water over the Cliff Street carpark and rectify if it is a leak (liaise HMAS Watson).

Further research the rock overhangs above the Cliff St carpark to identify any further middens and whether the overhangs contain the Aboriginal sites that where not able to be located as part of the CMP Stage 1.

RECOMMENDED WORKS (CMP STAGE 2)

See individual inventory sheets for works to buildings.

Immediate
Undertake investigation and works to minimise deterioration and for public safety:
- Investigate and record Aboriginal midden and rock overhangs above Cliff St carpark,
- remove dangerous senescent trees
- remove vegetation encroaching on stormwater drains and structures,
- direct storm water and ground water away from structures,
- clean and repair stormwater drains especially at the top and base of retaining walls,
- clear growth and waste from base of structures and
- check downpipes are connected to drains

Medium Term (1-5 years)
Undertake conservation works:
- Improve surface stormwater drainage using swale drains or similar discharging surface water clear of walls, defensive structures and buildings,
- treat exposed ferrous metal elements for rust and fill cracks in concrete with grout,
- remove soil built up on upper side of structures and grade so water is shed around item,
- repair stone edging, drains, retaining walls and gateposts, use lime mortar when repointing stonework,
- repair and further develop walking track
- install safety fencing in conjunction with WMC at cliff edge and
- upgrade services including electricity and water.

Long term
Undertake adaptive reuse and conservation works:
- conserve practice battery and shelter wall and
- add waterproof membrane to roof of item 4B.15.

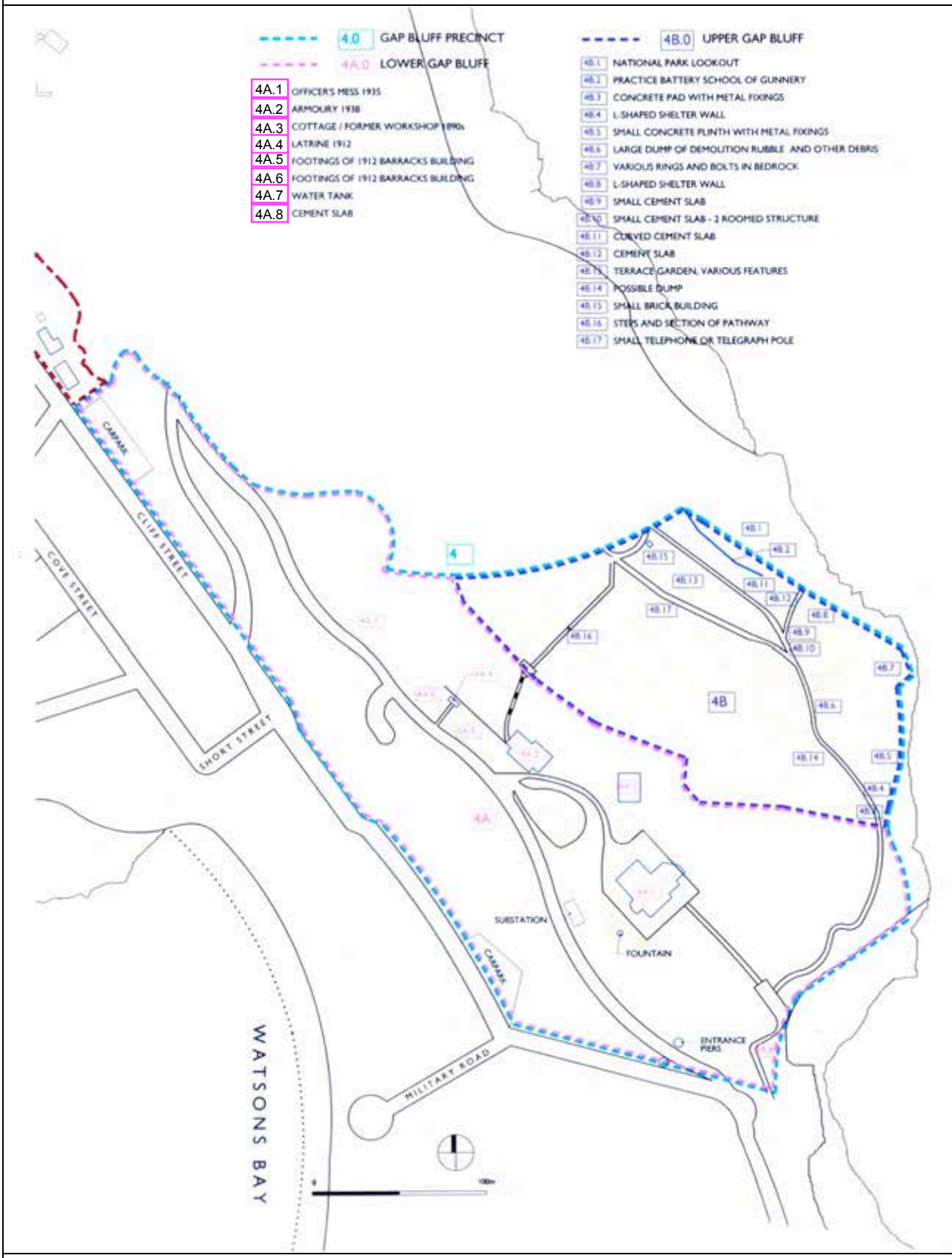
MAINTENANCE (CMP STAGE 2)

Inspect using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage,
- fire hazards,
- vermin entry and nesting,
- structural security of fencing at lookouts,
- storm water flow away from buildings and encroaching vegetation,
- drains functioning, especially on uphill side of buildings adjacent retaining walls,
- damage to roofing materials, flashings, water entry,
- downpipes etc. are clean and functioning,
- damp in spaces,
- condition of paint,
- progressive rust in ferrous metals
- termite damage or infestation,
- open mortar joints or fretting or cracks in masonry,
- door and windows close and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

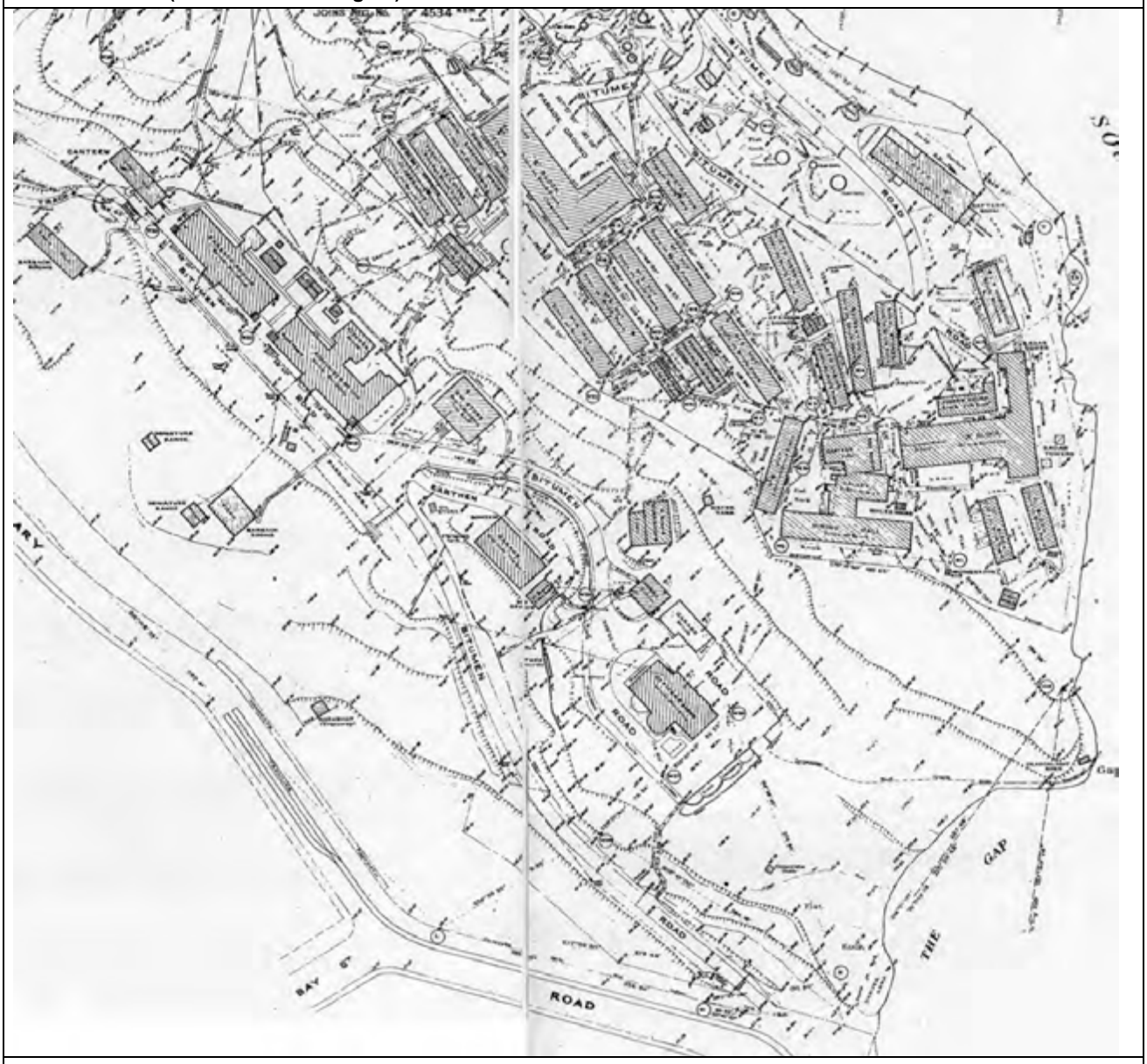
Interpret the phases of the defence occupation of the site on the walking track using signage and a brochure. This should include: the School of Gunnery use from c1895 with the shelter walls and practice battery extending into HMAS Watson and the development of the barracks, the Army and Navy Communications use after 1941 and development of the Upper Gap Bluff area and the post 1950s use for National Servicemen and the 1984 demolition. Maintain the Barracks site as open and grassed to indicate the former extent of the buildings. Interpret the original use of the remaining buildings at each building. Considered providing additional interpretive material electronically or in a brochure. Use the buildings and associated car parks as a base for education and interpretive activities for South Head generally. Link to adjacent Council facilities and tourist activity.

PLAN / PHOTOGRAPHS



Sketch Plan showing key features of the Gap Bluff Precinct. Source: GAO Heritage Group

SURVEY PLAN (added in CMP Stage 2)



Part of a survey of the Gap Bluff Precinct prior to NPWS ownership showing the uses of the buildings. Source: Greycliffe plan drawers.

PHOTOGRAPHS (Historical views added 2009)

Historic image of Gap Bluff prior to development. (Source: DECC).

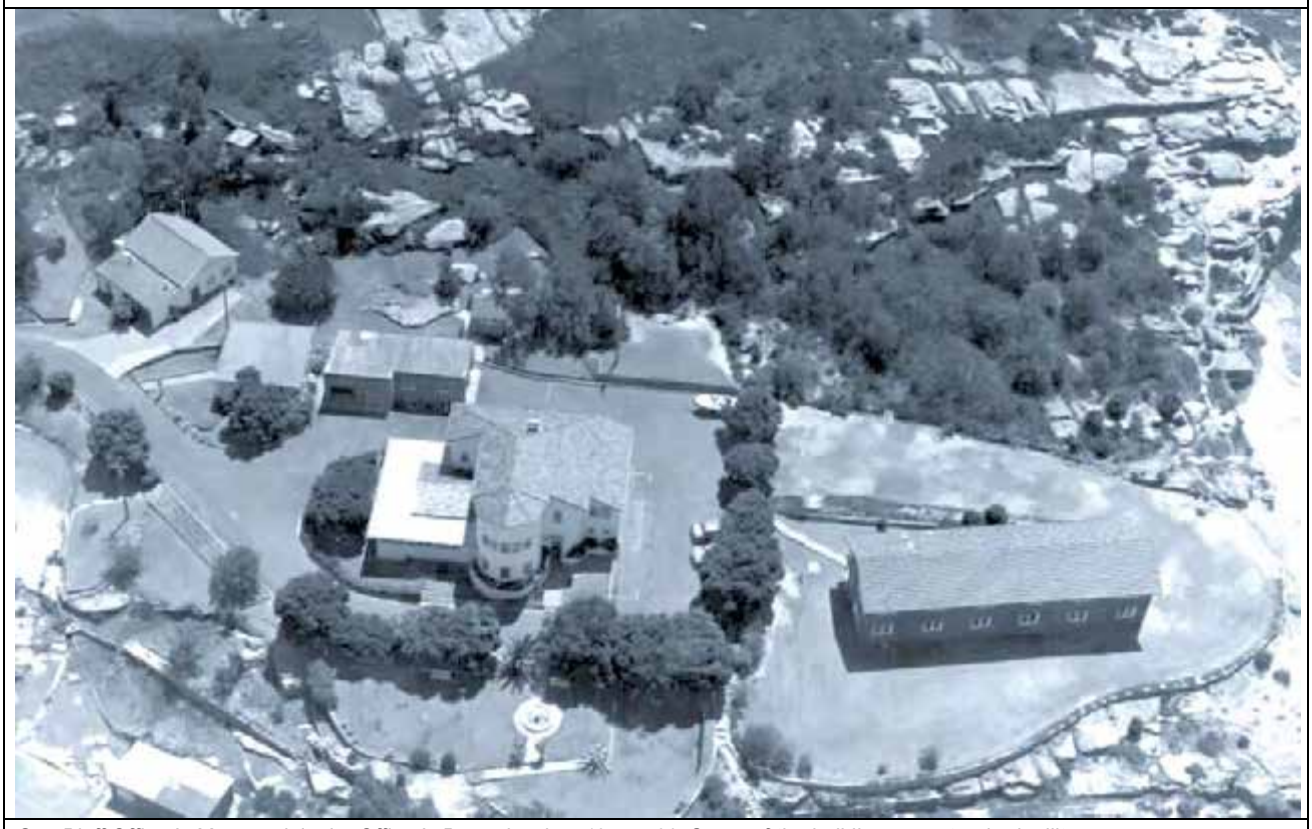
	*Historic image of South Head prior to development. Originally published in a calendar. (Source: ML PXE 711/9).*
	*Gap Bluff Aerial Photograph 1929. Note that the existing formal plantings of the Avenue, Officer's Mess garden and Palm trees in front of the 1912 Barracks site were not present in 1929. Also the gateposts are shown in their original position (Source: DECC, originally from NLA maps section, aerial photos I56 – 5 – 423, 1929).*
	*Aerial Photo c.1990 (Source: DECC)*

ADDITIONAL HISTORICAL IMAGES (Added 2009)

Detail from the 1943 aerial showing the Gap Bluff area. Source: DMR From The Skies

Detail from the 1951 showing the Gap Bluff area and the extensive complex to the east of the 1912 facilities, built after 1943. Source: SHFT aerials North Head (which includes part of South Head) 1951_r11_2

DETAILED AERIAL VIEWS



Gap Bluff Officer's Mess and Junior Officer's Barracks circa 1955 – 60. Some of the buildings are standard military buildings (eg the hut to the RHS) (Source: HMAS Watson Library)

Detail of aerial showing significant historical planting areas and garden features (Source: DECC).

PHOTOGRAPHS

View of Gap Bluff precinct from the south on Military Road showing the noticeable tiled roof of the Officers Mess surrounded by the dense revegetated heathland. Foreground trees are not within the site. February 2007.

View of the Upper Gap Bluff area, with the views to North Head in the distance. Part of the practice battery is in the foreground. February 2007.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View down slope from the barracks site looking west. Weeds and invasive species need to be removed including self seeded palms and morning glory.

View of the cultural plantings, Phoenix Palms connected with site of 1912 Barracks, should remain.

View of one of the stormwater drains, with stone walls.

View of the entrance to the HMAS Watson. Noted Coral trees on left side of gate.

Water continually flows over this rock at the public parking area and may indicate a leaking pipe or similar above.

View of the senescent Coral tree that has fallen at the public parking area exposing a midden at its base.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Officers Mess & Garden – Ref: 4A.1		**LOCATION**: Gap Bluff	
HHIMS ID:3604	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Parks and Wildlife Division offices and a venue for conferences		**FORMER USE:** Constructed 1935 as an Officer's Mess.	

Photograph

View from the first floor rooms of the garden to the west of the Officers Mess centred on a small fountain with stone "crazy paved" path and with remnant walling probably from the 1950s. October 2006

Photograph

View of the Officers Mess from the southwest. October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

Gap Bluff was set aside as defence land from the mid nineteenth century. The Middle Head School of Gunnery was relocated to South Head in 1894–5. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894.

Changes to the scheme of Australia's Defence flowing from Federation, and the institution of compulsory military service on Lord Kitchener's recommendation, saw a dramatic increase in the number of people undergoing military training. The 1912 School of Gunnery/Artillery Barracks consisted of two double-storey blocks with associated offices and latrine, the latrine to the rear of the two buildings still being extant. A new wing was added to the southern barrack; and further additions were made to the northern block in 1935–36.

Approval was given in 1935 for the construction of the adjacent Officers' Mess.

After 1941, the School of Artillery was relocated back to Middle Head, the site at Gap Bluff being seen as too close to potential active combat. The Gap Bluff complex was taken over by the Army and functioned to support the defence activities at South Head. The Officers' Mess continued to be used in that capacity, and the School of Artillery Buildings to the north functioned as administrative block and barracks. Two further barrack blocks were constructed at this time flanking the main school buildings to the north and south, as well as a canteen and two miniature ranges. A large garage and separate Motor Transport Office were constructed adjacent to the Officers' Mess, and sleeping quarters were built on its northern side. All of these structures were constructed in weatherboard or asbestos cement. The Navy's Radar Communication Centre was accommodated in the former school from 1941. It is likely that much of the formal planting dates from the 1940s.

From the 1950s, the defence reserve at South Head was used as a training and barrack establishment. The November 1950 National Service Bill resulted in a sustained expansion of military depots and camps. The Army-held section of the South Head Military reserve at Gap Bluff was appropriated for National Servicemen. Thirteen barrack and service blocks were constructed on the western side of the reserve, overlooking Camp Cove (now within the area of HMAS Watson), and additions and alterations were made to several of the former School of Artillery/Gunnery buildings.

In 1955 the original asbestos cement parapet roof of the Officers' Mess was reconstructed as a pitched roof with Marseilles tiles and overhanging eaves. This was likely to have been in response to problems of leakage and flooding inherent in the original, fashionably functionalist design. Following the cessation of compulsory National Service in 1959, the complex functioned as a transit depot for officers and military serving overseas, and in the period 1965–72 as a transit depot for those leaving for service in Vietnam (Wilson 1985: 1.5; McNamara Soder Associates 1989: 10, 16).

Gap Bluff was acquired by NPWS in 1982. In 1984 all standing structures were demolished except the Officers' Mess and garage, the Artillery Workshop, Store, and School of Gunnery latrine. The Officers' Mess was altered and added to in the 1990s for NPWS staff offices and as a function centre.

Site recorded as N21 by Denis Gojak and in later studies.

National Theme/s:	**State Theme/s:**
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The most prominent surviving building in the Gap Bluff Area is the former Officers Mess to the south of the area set slightly back from the western edge of the level area and sited high enough to look west over the trees to Watsons Bay and the Harbour. The Officers Mess is a large impressive two-storey building. It was constructed in the "Inter-War Functionalist" style, its design featuring an asymmetrical and horizontal composition with severe presentation and little ornamentation. The building, particularly the exterior, is in good condition, mostly due to the fact that it is currently occupied by staff for the National Park.

The building was originally constructed with face brick and featured low-pitched roofs edged with parapets and drained by boxed gutters. In the 1950s the building's original roof and boxed gutters, which were plagued by leaks and damp, was covered by the current low pitched Marseille tiled roof edged with projecting eaves. The face brick was also refinished with render. The work fundamentally altered the building's presentation. Nevertheless, the buildings most prominent feature still remains, being the bold, two storey, semi circular bay looking out over the Harbour to the west. A wide low pitched single storey verandah encircles the northern end of the building. The centre of the verandah is an odd gabled ended pitched roof, which may have been a simple hipped roof shown in early photos. The building's painted external joinery including doors and windows appear to survive and are in good condition. In the 1990s a two storey building, two thirds the size of the Officers Mess was added to the rear, east side, of the building to accommodate lecture rooms for a School of Business. The design of the addition was intended to complement the Officers Mess by the use of block volumes topped with parapets, strong horizontal string courses and plain exterior. The exterior of the Offices Mess had been rendered by the 1990s and the addition copied this painted and rendered finish.

The interior of the original Officers Mess is spartan but impressive and features extensive use of good quality 1930s timberwork, shown off by the impressive timber floors in the ground floor main rooms. Work in the 1990s altered some of the internal layout. However, the original pair of large function rooms linked to the verandah on the ground floor survives. Also, parts of the service areas such as the toilets still retain original finishes including wall and floor tiles. The original entry is redundant and original main stair has been closed with a door. Instead, the 1990s work added a large entry atrium between the original building and the new lecture rooms, in which was placed a large stair accessing the first floor. Interior is mostly in good condition and well presented, particularly the ground floor. The first floor rooms are reasonable but less well presented and the large room behind the bay has been divided with lightweight partitions. There are some cracks in the wall and areas of damp.

Large asphalted areas for driveways and parking surround the building flanked by dense vegetation. There is a simple garden in a clearing to the west of the building centred on a small fountain with stone "crazy paved" path and with remnant walling probably from the 1950s.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low Stone lined drains are evident in the formal gardens below the building. Footings and artefacts associated with former buildings are likely to be present under the carpark to the north and the bitumen road looping around the rear of the building.

SUMMARY STATEMENT OF SIGNIFICANCE

The Officer's Mess is important as part of the site the former Gunnery School on Gap Bluff and is one of only a few remaining buildings from that establishment, although there are landscape, archaeological and other structures which allow the site to be interpreted. The Officer's Mess and its landscaping play an important symbolic landmark role as the focus of the former Gunnery School, dominating the Lower Gap Bluff precinct.

The building is a reasonable representative example of an Officer's Mess in the 'Inter-War Functionalist' architectural style. Many original architectural elements survive such as the timber joinery; however the rendered walls, altered roof and more recent alterations and additions prevent the building form being a fine example of this period and type of defence building. The presence of the surrounding plantings and other landscape features contemporary to the 1930s building increase the aesthetic significance of the place. There are many original 1930s elements in the interior including the staircase, bathroom finishes and joinery.

The building likely has social value to officers and their families who served at the School of Gunnery, although this has not been verified by consultation.

The Gap Bluff precinct as a whole is of likely State heritage significance however further historical and archaeological research and assessment is required.

High	Moderate	Low	None	State	Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Killick & Conyers, Officers Mess Conservation Plan, Prepared for NPWS, March 1989.

McNamara Soder Associates, Officers Mess Gap Bluff – A Research Study, Prepared for NPWS, 1989.

Includes reference to plans held by ACS in 1989 (possibly now with GHD)

South Head Officers' Mess for School of Artillery 4 December 1935 DEF 18447

South Head Officers' Block Plan and Elevation Officer's Mess 8 March 1936 DEF 18648

South Head School of Artillery New Store Building 29 June 1938 DEF 20846

Australian Construction Services no longer exists as an architectural office and their drawing collection is believed to have been purchased by GHD.

Peddle Thorp & Walker Architects, Specification – Refurbishment & Addition to Existing Buildings at Gap Bluff, Prepared for NPWS, June 1989.

Wilson, G.C., Sydney Harbour Fortifications, 1985.

Note: Army correspondence files relating to alterations to the School of Artillery at South Head in the 1930s are held in Melbourne

NAA Series B1535 item 781/3/142. Some specifications for repair works held at NAA Sydney SP 155/1 series

Drawings held in the plan cabinet at Greycliffe House.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve the building and continue to use as a function centre and office or for other compatible use such as education and interpretation associated with national park purposes or for visitor services and amenities (this may include as a café or similar). In the short term repair and replace deteriorated roofing, gutters and downpipes and replace rusted arch bars. Improve drainage in the medium term and treat salt damp in masonry and conserve original building. In long term major work is required to the modern addition to the building (theatrettes) and to provide facilities to support the use of the original building. Interpret the original design of the building.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Use

Use the Gap Bluff Centre (former Officers Mess) as follows:

- *continue use for function centre and NPWS corporate activities and market it*
- *explore other sympathetic commercial opportunities e.g. rental office space on first floor*
- *consider use for education centre with minor redesign including natural ventilation and light and BCA complaint egress*
- *interpret as the former Officer's Mess (when South Head interpretation plan complete)*

If education usage is not feasible consider alternate use of the Gap Bluff Centre such as

- *demolishing theatrettes and adding storage and service rooms for function centre,*
- *café/refreshment room use in association with cliff walk and open up access from walk.*

Conserving the former Officers Mess

The Gap Bluff Centre was built as an Officers Mess in 1936 in the interwar functionalist style. It is a two-storey masonry building that originally had cream coloured face brickwork and featured flat roofs and parapets and a prominent semi-circular bay. It is likely that the building was designed by the NSW Works and Services Branch of the Department of Interior who also designed the School of Artillery on North Head (including the Officer's mess) and the barracks for the Battery on Rottnest Island WA circa 1934-36 in a similar style. Drawings of the officer's mess at South Head were located during the 1989 study, held by Australian Construction Serviced (ACS). This architectural office has now been disbanded (refer information sources).

In the 1950s the building was reroofed with a tile roof and the brickwork was rendered and painted. In the 1990s a School of Business, who leased the building, built a major addition of two lecture theatres with raked seating separated from the original building by an atrium with a stair. The original building is now used as a function centre utilising primarily the ground floor mains rooms. The lecture theatres are disused except for ad hoc use as storerooms. The rooms are not currently habitable as they are damp, the air-conditioning has failed and there is no natural ventilation. The lower lecture theatre is sunken half a level below ground. Lessees added a temporary floor at ground level that blocked the alternate means of egress from the lower lecture theatre. There is limited access to the upper levels as there is no lift.

The design of the original building has been spoiled by the additions to it, in particular the roof. Internally it retains fine 1930s joinery in excellent condition in well-designed spaces. Original bathrooms and stairs remain in good condition with period tiles and fittings. The walls are believed to be cavity brickwork plastered internally with fibrous plaster ceilings and decorative cornices. Some pendant light fittings appear to be original. There are superb sliding and folding doors and original fireplaces. The double hung windows have horizontal glazing bars. There are modern pelmets and curtains and the main upstairs space is subdivided by a plasterboard partition introduced by lessees to create office space. The original interiors are generally in good condition. Arch bars have rusted in some locations including the ladies toilet and should be replaced with non-ferrous metal and the render and tiles repaired.

The new wing of the building suffers from defects associated with rising damp. Water draining from up hill affects the building and downpipes may be contributing to this. There is also cracking of beams over openings in the new sections. The original section has damage to ceilings of the one storey north west wing due to the failed roof membrane over and there is salt damp deterioration of a small area of brickwork in the vicinity due to this and an adjacent cracked and possibly blocked downpipe.

The original part of this building has heritage value but the new wing is something of a white elephant as it is in poor condition and is disused and is not of cultural significance. Before major repairs are undertaken use should be reviewed. If the lecture theatres can be used for an educational function then it may be economically feasible to repair them. The works are likely to include removing structures blocking egress, adding BCA compliant alternate egress, alterations to include natural ventilation, providing some areas in each theatre suitable for wheelchairs, adding data cabling and modern teaching and display aids, adding toilets (including disabled) and adding storage spaces. The facility needs detailed review and such review should include:

- whether the lecture theatres can be used for education purposes,
- whether they can be adapted to be naturally ventilated,
- how difficult they will be to waterproof,
- how easy it is to remove additions blocking egress,
- what are the storage an other needs of the function centre,
- what is necessary for equitable access and fire safety upgrading and
- what other visitor facilities could be provided here (café?).

Function centre use suits the spaces of the original building but it is underutilised and there is a need for storage and service areas. Improved marketing linked with review of the business plan will improve utilisation and the income stream from the use generating funds for works to the building. The function centre use is not strictly consistent with the aims of the act except that it is adaptive reuse of a heritage building. The theatres and foyer could be made more usable by introducing natural light and ventilation and installing a deep strip drain on the exterior of the building discharging to each side to intercept ground water and by clearing and repairing drains. Alternatively the theatres could be stripped out and one ground level space created that could have a range of uses. Otherwise this wing could be demolished and other necessary spaces for storage and services or other purposes built.

The kitchen and toilets in the building may need upgrading to suit continued use but alterations to significant fabric to cater for use should be avoided. It is preferable to locate such facilities in the new sections of the building. Policies follow for new building construction and additions and alterations to heritage buildings and should be followed if considering upgrading of facilities.

Policies for the Officers Mess are:

Retain the authentic fabric of the original officers mess particularly the interiors.

Retain the configuration of the internal spaces of the original officers mess and remove modern plasterboard partitions.
Retain the original bathrooms and ancillary spaces including tiles.

Repair the roof of the single storey wing including replacing the roof membrane over the verandah.

Clear and repair to stormwater drains and downpipes to the whole building and maintain clear.

Replace rusted arch bars and repair damaged finishes adjacent.

Maintain fire protection and suppression equipment.

Use oil based paints to exterior joinery.

Paint colours should preferably be based on research on site, or on typical colours of the period. External render could remain as a modern colour scheme or be painted the colour of the original blond bricks. The joinery was originally a similar colour to the walls. Interior colours can be modern as at present or light creams and pastels typical of the period, and generally matt. Joinery should remain clear finish (to match and not modern epoxy) and NOT be painted.

The terra cotta tiled roof of the Gap Bluff officers Mess is not significant. It may be retained or removed and flat roof reinstated or replaced with other material.

Provide safe egress in case of fire from the upper floor of the Officers Mess in a manner that does not result in an unacceptable loss of significant fabric nor require obtrusive additions.

Policies for the existing additions to the former Officers Mess are:

The modern additions to the may be retained and used or altered or removed as required.

Review the use before committing funds to repair the lecture theatres. Refer to the Business Plan and market the function centre to improve utilisation of the building.

Improve sub-surface drainage to the theatres by installing a minimum one metre deep "Stripdrain" on the upper side. (If building is not demolished, refer above discussion).

Replace fixed glazing in foyer with opening windows and form additional opening windows to lecture theatres for light and cross ventilation. (If building is not demolished).

Repair suspended plaster ceilings in lecture theatres damaged by leaking air conditioning. (If building is not demolished)

Provide appropriate storage facilities if required for use.

Additions and New Work

Additions and alterations have been made to the interiors of many of the buildings particularly for kitchens and bathrooms. There is a recent major addition to the Gap Bluff Centre of a lecture theatre by a previous lessee. They are compatible but not significant and may be altered or removed as required. The Burra Charter does not prohibit the use of modern materials and techniques. Using modern materials and techniques can be an effective way in distinguishing new work from original but must be used with care and design excellence. New work will continue to be required to adapt the place to the requirements of existing and new uses. All new work should be reversible allowing removal without damaging original fabric. New work should not dominate the existing structure and should be kept within the building envelope. It should be carefully designed and well built. Existing spaces should be retained; subdivision of large spaces should be avoided but may be necessary. Removing original walls to make small spaces into larger spaces is inappropriate, as it requires removal of significant fabric.

Design of new work must also take into account the construction and structural capacity of the original. It should not overload or weaken existing elements. Change is allowed to reconstructed fabric and this can be taken advantage of when planning new work. Minor alterations should be within the overall volume of a building and not be visible externally and any major additions should be at the rear.

General policies for new work applicable to any future additions and alterations at the former Officers Mess are:

New work or changes are to be compatible with heritage significance, i.e. minimise impact, be distinguishable from the original, and be reversible.

Assess the heritage impact of any new work to existing heritage structures. If alteration to accommodate use requires major alteration to significant fabric consider changing the use rather than the fabric.

Make the minimum necessary change to accommodate use while retaining significance.

Reflect the original design concept and spatial arrangements in new work. The existing building is to be a starting point for the design of new work. Derive the design and arrangement of new elements from an understanding of the construction and structure of the building. Any external additions must be essential for conservation or continued use and should be at the rear.

New work should not obscure significant fabric, or overwhelm the existing building.

New additions and alterations should address but not mimic the existing in terms of scale, materials, colour, texture and quality.

Utilise new work as an opportunity to enhance or recover significance.

Retain the spatial qualities of rooms as follows:

- *retain large spaces including the verandahs, mess room and ante room on the ground floor and the billiard room, lounge hall and sitting room on the upper floor and minimise their subdivision,*
- *if adding partitions is unavoidable use transparent materials or other design detail to allow an appreciation of the original space*
- *make no additions in halls or stairwells,*
- *use the original doorways for access rather than making new openings,*

• *do not remove original walls to make small rooms into a large room.*

RECOMMENDED WORKS (CMP STAGE 2)
Immediate Undertake works to minimise deterioration: • Replace roof membrane to flat roof including flashings and repair any broken tiles, • repair or replace associated gutters • direct stormwater and ground water away, • trace stormwater drains to outlets, clean and repair, • reconnect downpipes to drains, • assess underfloor ventilation and clear all underfloor vents, • replace or repair rusted steel archbars and repair plaster and tiles adjacent, • investigate air conditioning and ventilation options, • investigate use options for theatrettes and • structural engineer to assess cracks in beams in theatrettes. Medium Term (1-5 years) Undertake conservation works: • Improve stormwater drainage, design system, • improve surface drainage especially from road above and adjust ground levels around building so water drains away from building especially near entrance, • install ground drainage such as “Stripdrain” on uphill side of building, • apply poultice to salt affected brick and render / plaster walls then repair walls, • repoint brickwork where mortar is missing, treat mould on plaster and repaint, • paint / polish interior and exterior joinery, • remove modern partitions from main first floor space in original building, • repair and recondition air conditioning and / or introduce natural ventilation particularly to theatrettes and hall and external sun shading to east and west facing curtain wall glazing in hall. Long term Demolish theatrettes and build new wing to support adaptive reuse of the Officers Mess OR Undertake adaptive reuse and conservation works: • remove room blocking egress from lower theatrette, • bring theatrettes into operation, • provide additional toilets and kitchens if required for use, preferably not in the original building, and retaining original fabric in toilets etc. • add lift in new wing if required for use, • consider removing tiled roof and installing flat roof.
MAINTENANCE (CMP STAGE 2)
Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check: • fire hazards, • vermin entry and nesting, • damage to roof tiles of membrane or loose or missing tiles or flashings, lifted roof membrane, water entry, • storm water flow away from building and encroaching vegetation, • gutters, spreaders and downpipes and clean and functioning, • external drain function, • damp in rooms, • condition of paint, • termite damage or infestation, • open mortar joints or fretting or cracks in brickwork or render, • door and windows close, glass intact and • operation of services such as fire protection, lighting and power, water.
INTERPRETATION (CMP STAGE 2)
Retain building in public use with interpretive sign outside. Consider opening for occasional guided tours. Interpret original design of the building by displaying original plans in the hall. Considered providing additional interpretive material electronically or in a brochure.

HISTORIC PHOTOGRAPHS

The Officer's Mess c. 1940 (Source; State Library of NSW Image).

Aerial Gap Bluff Officer's Mess and gardens c. 1955-60 (Source: HMAS Watson Library)

CURRENT PHOTOGRAPHS

View of the north west elevation of the Officers Mess showing the original 1936 building on the right fronted by the single storey. verandah in the foreground. The two-storey 1990s extension is on the left. August 2006.

The interior of the Officers Mess showing the Ground Floor function rooms. October 2006

The interior of the Officers Mess showing the Ground Floor enclosed verandah. October 2006

The 1930s floor and wall tiling in the Toilet lobby on the Ground Floor. October 2006

View of Gap Bluff precinct from the south on Military Road showing the noticeable tiled roof of the Officers Mess surrounded by the dense revegetated heathland. October 2006

Interior of the First Floor Hall showing the half flight of stairs up to the former function rooms. October 2006

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the front (west) entrance of building. The addition to the building is on left in the picture. Glazing of the windows above door is fixed, precluding natural ventilation.

View of the rear (east) elevation. Addition to the building is on the right side of picture. Glazing of larger windows is fixed, precluding natural ventilation.

View of the lower floor theatrette interior, an addition to the building, used only for storage and suffering from damp.

View of door in theatrette, egress route is blocked by construction of new room.

View of room adjacent to the theatrette used for storage associated with function centre.

View of downpipe, outside building. As the room is damp drains such as this should be checked for blockages and correct function.

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of flat roof where membrane needs replacement.

View of water damaged ceiling under flat roof.

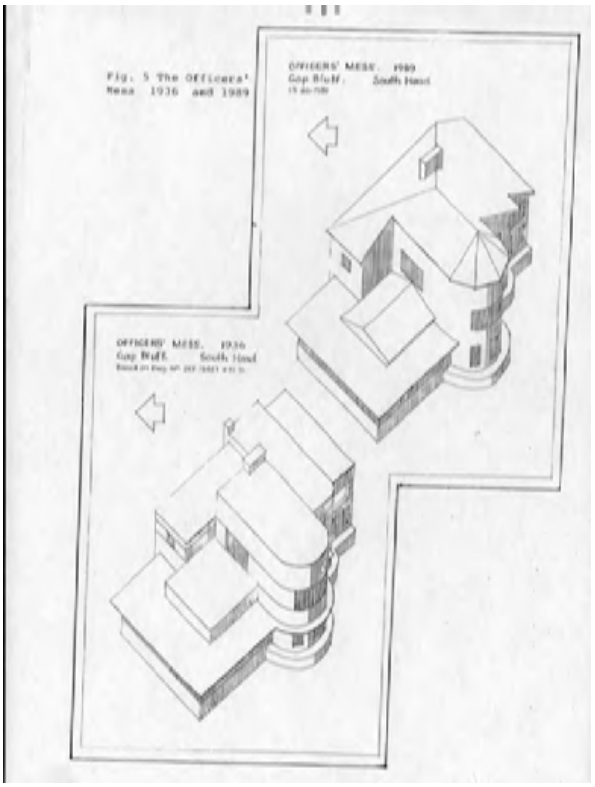
View of building interior, showing brick damage by rising damp. Note the colour of the brickwork.

Water ponds outside door, adjacent to main entrance, causing rising damp.

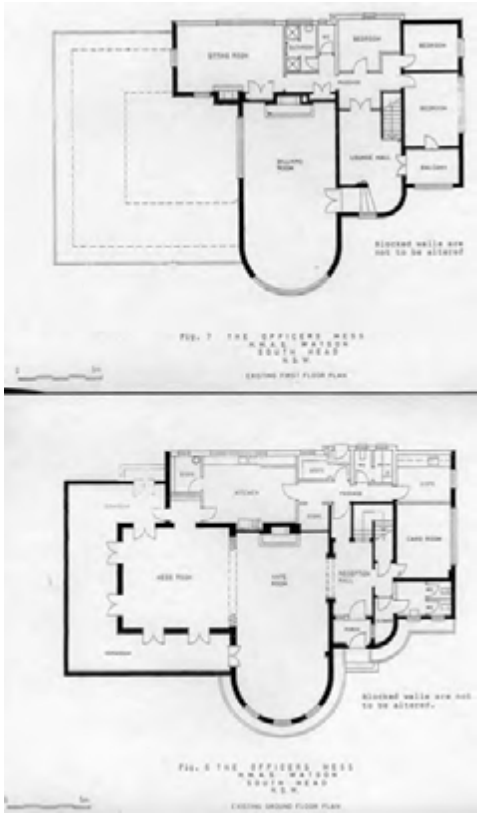
View of the junction between gutter and downpipe, not connected. Located over area where water ponds (above right).

In the female toilet on ground floor, the wall is cracked over window caused by rusted arch bar that needs replacement.

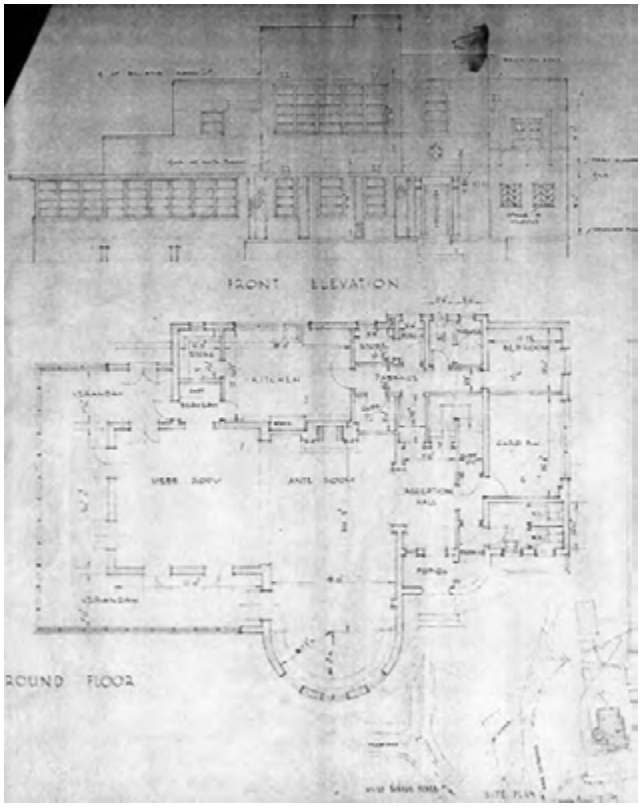
PLANS *Source: NPWS DECC Greycliffe plan cabinet and library.*



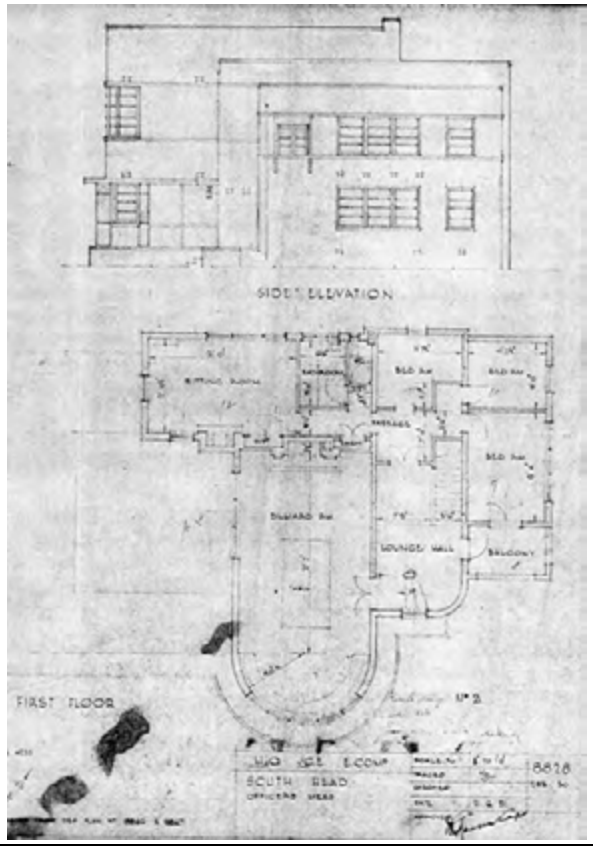
Drawing from CMP indicating how the building has been altered.



Plans from CMP showing original fabric and spaces.



Copy of the original architectural drawings of building drawn in 1951. Ground floor plan. Source: Plan cabinet at Greycliffe House.



1950s copy of the architectural drawings of building. First floor plan. Source: Plan cabinet at Greycliffe House.

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Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Armoury – Ref: 4A.2		**LOCATION**: Lower Gap Bluff	
HHIMS ID:3606	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Function and conference venue		**FORMER USE:** An armoury from 1938 for the School of Artillery. Became a Quartermaster's store to service the National Service depot. In the 1990s the building became a function centre for the School of Business.	

Photograph

View of the southern end of the front of the former Armoury building. Source: Author October 2006

Photograph

View of the part of the side elevation of the former Armoury building looking from the south east with the form of the original building on the right and the wide verandah on the left which was added in the 1990s. Source: Author October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

The Middle Head School of Gunnery was relocated to Gap Bluff at South Head in 1894–5. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894. The Gap Bluff facility seems to have been used for practical demonstrations, with formal teaching undertaken at Victoria Barracks.

Changes to the scheme of Australia's Defence flowing from Federation, and the institution of compulsory military service on Lord Kitchener's recommendation, saw a dramatic increase in the number of people undergoing military training. More extensive training facilities were planned at Gap Bluff School of Gunnery in 1912. All of this development took place within the largely undeveloped Gap Bluff area within the Inner South Head defence reserve (McNamara Soder Associates, 1989: 8-9). There was little further development within the Gap Bluff School of Gunnery through the 1920s. Following WWI, compulsory military service was maintained at a lower level until is discontinuation in 1929 (Wilson 1985: 1.11; Oppenheimer 2004: 207-10, 211, 215; McNamara Soder Associates 1989: 9).

In 1912 two blocks of barracks were added to the School of Gunnery/Artillery with the latrine to the rear of the two buildings still being extant. A new wing was added to the southern barrack; and further additions were made to the northern block in 1935–6. Approval was given in 1935 for the construction of the adjacent Officers' Mess (Inventory Item 4A.1).

After 1941, the School of Artillery was relocated back to Middle Head, the site at Gap Bluff being seen as too close to potential active combat. The Gap Bluff complex was taken over by the Army and functioned to support the defence activities at South Head. The Officers' Mess continued to be used in that capacity, and the School of Artillery Buildings to the north functioned as administrative block and barracks. Two further barrack blocks were constructed at this time flanking the main school buildings to the north and south, as well as a canteen and two miniature ranges. A large garage and separate Motor Transport Office were constructed adjacent to the Officers' Mess, and sleeping quarters were built on its northern side. All of these structures were constructed in weatherboard or asbestos cement. The Navy's Radar Communication Centre was accommodated in the former school from 1941.

From the 1950s, the defence reserve at South Head was used as a training and barrack establishment. The November 1950 National Service Bill resulted in a sustained expansion of military depots and camps. The Army-held section of the South Head Military reserve at Gap Bluff was appropriated for National Servicemen. Thirteen barrack and service blocks were constructed on the western side of the reserve, overlooking Camp Cove (now within the area of HMAS Watson), and additions and alterations were made to several of the former School of Artillery buildings.

Following the cessation of compulsory National Service in 1959, the complex functioned as a transit depot for officers and military serving overseas, and in the period 1965–72 as a transit depot for those leaving for service in Vietnam (Wilson

1985: 1.5; McNamara Soder Associates 1989: 10, 16. Note: compulsory National Service was introduced in 1951, and terminated in 1959. Compulsory selective National Service was reintroduced in 1965 and terminated in 1972).

The former Artillery Store was originally constructed in 1938. The original building was divided in to four rooms for storage, instruction, issue and a workshop. When the School of Artillery relocated, the building was converted into a Quartermaster's store to service the National Service depot. The building was extended on its north side in the 1940s in work to match existing details and a loading dock was added in the 1950s. In the 1990s the building was comprehensively altered as a function centre as part of the works for the School of Business and is now referred to as the Armoury building.

National Theme/s:	**State Theme/s:**
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The Armoury is a wide and long single storey cavity brick building with a low-hipped corrugated "Colorbond" steel roof. The construction of the building as a utilitarian store is typical for its time. The Armoury building shares Officers Mess alignment (which was the alignment of most of the School of Artillery buildings) roughly parallel to Cliff Street.

The building has timber framing with timber floors on bricks piers. The building was originally finished with face bricks, which are now painted and was originally roofed with asbestos sheeting. In the late 1980s the building was considered to be one of the most intact survivors of the School of Artillery (McNamara Soder Associates 1989). When the building was comprehensively was altered as a function room as part of the works for the School of Business. The building's interior was gutted and relined. Suites of French doors were fitted in new large openings in the front (west) elevation replacing the original configuration. A commercial Kitchen, storage and toilets were added in the rear rooms. A wide steel framed verandah with a concrete floor paved in quarry tiles was also added to the west elevation. Some of the earlier joinery survives such as the 1940s boxed framed windows on the rear (east) elevation. The building is also benched into the hill and backed by a rough stone retaining wall. The area at the rear of the building is drained with spoon drains cut into the rock shelf. Revegetated bush grows close to the top of the retaining wall and its large trees overhang the building. A set of concrete stairs rises north of the Armoury up the hill and links with a walking path to the cliffs to the east. The Armoury building was recorded as site N24 by Denis Gojak in c1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High Moderate **Low**	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low** Potential within the building likely to be low due to level of conservation works undertaken. Stray artefacts and some original services may be found in the area around the building.

SUMMARY STATEMENT OF SIGNIFICANCE

Because of its extensive alterations this building has only low heritage significance in its own right, however it has moderate significance as part of the cultural landscape of Gap Bluff and as one of the few extant buildings. Its original use as an Armoury from 1938 adds to this significance.

The Gap Bluff precinct as a whole is of likely State heritage significance however further historical and archaeological research and assessment is required.

High **Moderate** **Low** **None**	**State**	**Local**	**Not Assessed**

RISK ASSESSMENT		
Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Killick & Conyers, Officers Mess Conservation Plan, Prepared for NPWS, March 1989.

McNamara Soder Associates, Officers Mess Gap Bluff – A Research Study, Prepared for NPWS, 1989.

Includes reference to plans held by ACS in 1989 (possibly now with ACS)

South Head School of Artillery New Store Building 29 June 1938 DEF 20846

Oppenheimer, Peter. The Fragile Forts, 2004.

Peddle Thorp & Walker Architects, Specification – Refurbishment & Addition to Existing Buildings at Gap Bluff, Prepared for NPWS, June 1989.

Wilson, G.C., Sydney Harbour Fortifications, 1985.

Note: Army correspondence files relating to alterations to the School of Artillery at South Head in the 1930s are held in Melbourne

NAA Series B1535 item 781/3/142. Some specifications for repair works held at NAA Sydney SP 155/1 series

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve the building and continue to use as a function centre or other compatible use. In the short term repair or replace deteriorated modern handrails, rectify stormwater drainage and encroaching vegetation and continue to maintain building. In long term major consider adding a ramp to provide wheelchair access. Interpret the original design of the building.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

See also general policies for Gap Bluff precinct on separate inventory sheet.

The Armoury was built as an artillery store in 1938. The original drawings were located during the 1989 study (DEF 20846) and were held by ACS (refer to Information sources) but have not been sighted during this study. It is likely that the building was designed by the NSW Works and Services Branch of the Department of Interior. In its original configuration the building had face brick walls and a hipped asbestos cement roof. It was intact in the late 1980s but was gutted by the School of Business when it was altered as a function room. The walls are now rendered, the roof Colorbond, the internal walls removed, the front wall replaced with French doors and a concrete verandah added. No further original fabric should be removed. The buildings integrity is now low and not recoverable. Its original purpose and configuration can only be understood through interpretation.

The additions to the Armoury are considered to be neutral items (that is: not heritage significant and not intrusive) and can be retained while they are useful but may be removed when they are not. The building is in reasonable condition except the new verandah handrail that has rusted damaging the concrete and tiles. The modern work is not of high quality and is already deteriorating. Defects that pose a safety risk such as corroding handrails should be prioritised in repairs. The building however provides a resource for park interpretation, education and visitor facilities particularly as it is easily accessible by vehicle, including buses, and consideration should be given to adding a ramp.

Policies for the Armoury are:

Use as a function centre or other compatible use such as education and interpretation associated with national park purposes or for visitor services and amenities (this may include as a café or similar).

Reconstruction is not generally necessary for conservation and repair and preservation should have priority.

Do not remove any further original fabric, modern fabric may be altered.

The modern verandah additions may be retained and used or removed as required for use.

Connect downpipes to drains and clear drains and spoon drain behind building. Manage vegetation above retaining wall at rear and inspect condition of wall when clear. Repair as necessary.

Maintain and paint original and new joinery.

Repair or replace new handrail to verandah and damaged and loose tiles (safety issue).

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration:

- Remove vegetation encroaching on stormwater drains and building at rear,
- direct storm water and ground water away,
- trace stormwater drains to outlets, clean and repair,
- reconnect downpipes to drains,
- check sub-floor space and clear all underfloor vents,
- replace or repair handrail and damaged tiles on front verandah.

Medium Term (1-5 years)
Undertake conservation works:
- Paint interior and exterior and
- consider adding ramp for disabled access.

Long term
Undertake adaptive reuse works:
- Upgrade bathrooms and kitchens if required for use.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- fire hazards,
- vermin entry and nesting,
- damage to roof or lead flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes and clean and functioning,
- rear drain function (at base of retaining wall),
- damp in rooms,
- condition of paint,
- termite damage or infestation,
- open mortar joints or cracks in brickwork,
- door and windows close, glass intact and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Interpret origins of building as an Artillery and later Quartermasters store. Interpret its original configuration and use.

CURRENT PHOTOGRAPHS

View of the northern end of the front of the former Armoury building from the south west. The verandah added in the 1990s complete conceals the building's elevation. October 2006.

View of the interior of the building gutted in the 1990s. October 2006.

View of the inside of the verandah. October 2006.

View of the rear of the building showing the building benched into the hill, backed by a rough stone retaining wall. Revegetated bush grows close to the top of the retaining wall. October 2006.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OC+P March – April 2008*

View of the building interior, looking from function room towards verandah. All doors are modern in this elevation (west)

View of the building interior, looking from function room towards north. Sample of original window.

View of the commercial kitchen interior, at the rear part of building, associated with the function centre.

View of the furniture storage room, associated with function centre.

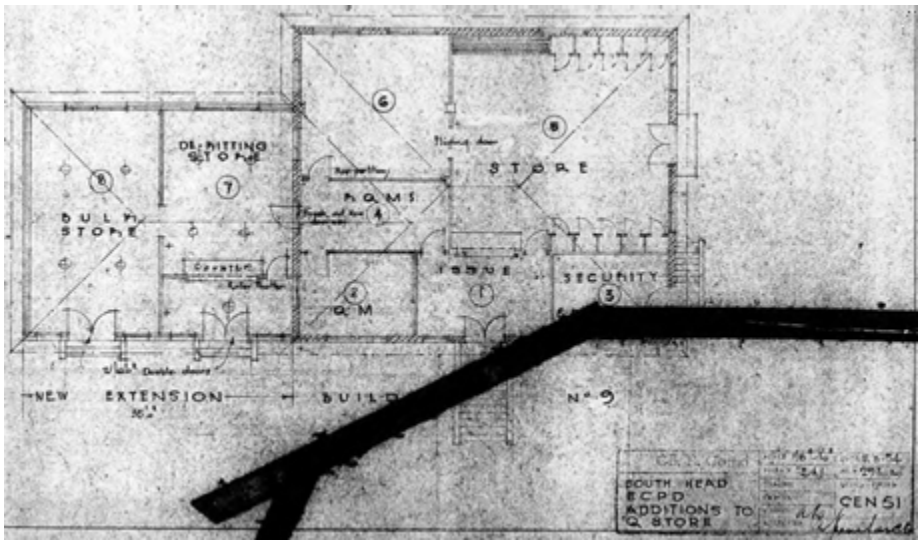
View of the downpipe discharging in open drain, blocked by leaves, at side wall.

View of the modern verandah, front elevation (west), damaged rusting steel.

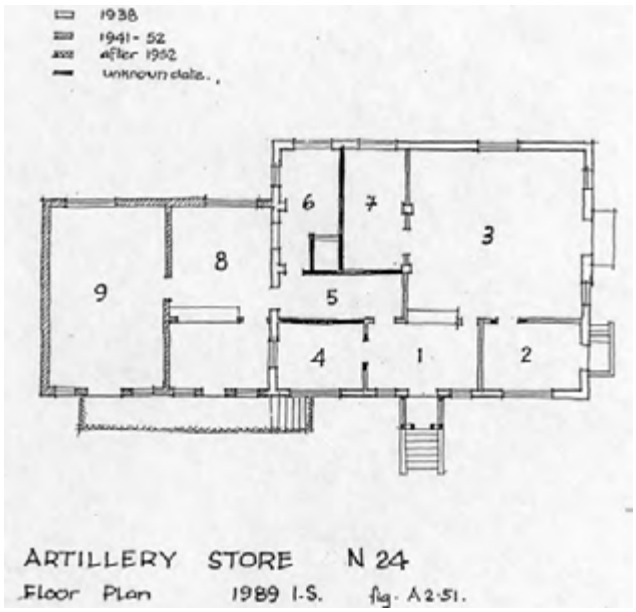
ADDITIONAL IMAGES (STAGE 2) *Source: from NPWS library and plan drawers at Greycliffe.*

Photo from southwest showing building before it was altered to be a function centre.

View of the building from the southeast.



Plan showing an early addition to the Armoury (or Q store). Labelled CEN 51.



Plan showing phases of development of the Armoury. Dated 1989

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Cottage/Former Workshop for the School of Gunnery – Ref: 4A.3		**LOCATION**: Gap Bluff	
HHIMS ID:3605	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Staff Residence		**FORMER USE:** Originally constructed as the **Workshop** for the Practice Battery in 1895	

View of the former Artillery Workshop from the south showing the lean-to addition now a verandah. Source: NPWS Greycliffe library, "The Officers Mess, Gap Bluff, CMP", 1989, p.6.

Photograph

View of front (west) elevation of the former Workshop. October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

Gap Bluff was set aside as defence land from the mid nineteenth century. The Middle Head School of Gunnery was relocated to South Head in 1894–5. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894. This former workshop building constructed between 1895 and 1903 served the practice battery and was connected to it by a path from the northern side of the building (path also still extant?).

Changes to the scheme of Australia's Defence flowing from Federation, and the institution of compulsory military service on Lord Kitchener's recommendation, saw a dramatic increase in the number of people undergoing military training. More extensive training facilities were planned at Gap Bluff School of Gunnery in 1912.

The Battery/Artillery Workshop is the oldest building remaining on the Gap Bluff site. Its original construction, a hardwood frame clad in weatherboard, with Marseille tile roof on a sandstone plinth, is similar to other such buildings designed by the Military Works Branch, and the design may be attributable to Lt Col F.R. de Wolski, Director of the Military Works Branch. Similar structures are located at Chowder Bay and Green Point. The Chowder Bay examples suggest a standard design formulated by de Wolski in 1889-91 (McNamara Soder Associates 1989: 13).

The building is the earliest remaining in the Gap Bluff area and was originally constructed as the Workshop for the Practice Battery erected in 1895 on the top of the nearby eastern cliffs. The Store/Armoury (also referred to as the former workshop) was extended to function as a Quartermaster's store in the 1950s *(see CMP Stage 2 Policy Background for further information)*. The Workshop was further altered from the 1980s for use a residential cottage for National Parks staff.

National Theme/s:	**State Theme/s:**
7. Governing – Governing	Defence – Activities associated with defending places from hostile takeover and occupation – Defending Sydney Harbour

DESCRIPTION

The former workshop is north-west of the Officers Mess and is a small single-storey, timber framed gabled building. The workshop was originally constructed with a hardwood frame on a sandstone plinth and clad with painted rusticated weatherboards. The style of the building, as a simple gabled box, is similar to the former Officers Quarters and it still retains vestiges of its Arts and Crafts origins with its bold bargeboard and vented gables despite the extent of the later alterations. Both buildings are similar to buildings designed by the Military Works Branch (McNamara Soder Associates 1989). The workshop is still roofed with Marseille tiles and clad with rusticated weatherboards (most of them added recently). It had a skillion roofed lean-to added on its north side and later in the 1950s a large low pitched skillion roofed extension was added to the front (west) side of the building.

The extension was clad with corrugated iron until the 1990s when the building was altered and converted to a residence. The extension was stripped of its cladding and much of its structure and its envelope is now a wide verandah (survival of any 1950s fabric has not been ascertained). A lean-to also was also built against the south elevation. It has been removed and is now evidenced by the surviving concrete slab. All joinery including the flush and glazed doors, casement windows and architraves appear to be late twentieth century work. An earlier pair of casement windows on the east elevation may survive from the original building. The original interior of the building has been altered and now features plasterboard walls, flush timber doors and simple skirtings and architraves. Carpet on a concrete slab finishes the floor. It appears that the slab was laid over earlier slabs, which can be seen beneath the latest layer and the bottom plate of the interior walls in now encased in the latest slab.

The building is well presented within a small clearing in the revegetated bush alongside the road, which follows part of the alignment of the 1890s road connecting the workshop northwards to South Head. The road now continues on to the Officers Mess. The rear of the building is benched into the hill, backed by a rough stone retaining wall. The building's site in the hill is protected by a wide, open stone drain, which wraps around the rear of the building at the top of the retaining wall to catch ground water and drain it down the north side of the building into the site's stormwater system. The revegetated bush now contains substantial trees. Some of the trees are perched precariously on top of the retaining wall with one large tree collapsed recently across the back of the site. The access road in front of the Workshop continues to the north-west and connects to the former Artillery Store.

The Former Workshop for the School of Gunnery was recorded as N24 by Denis Gojak in c1985.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: High Moderate **Low**	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low Potential within the building likely to be low due to level of conservation works undertaken. Stray artefact and some services may be found in the areas around the building.

SUMMARY STATEMENT OF SIGNIFICANCE

The former Workshop from the Gap Bluff School of Gunnery is of historical significance as an important representative example of the array of semi-industrial buildings from various periods which once stood across Gap Bluff during its various uses including the School of Gunnery established in 1894–5 (Commonwealth Department of Defence form 1901); the Navy's Radar Communication Centre from 1941; a training and barrack establishment from the 1950s; through to a transit depot for those leaving for service in Vietnam and culminating in the decommissioning of the site from 1982.

The site has moderate archaeological potential because of the possible artefact deposits associated with the various defence uses of the site.

Although somewhat altered it is the earliest remaining building (1899–1905) associated with the Gap Bluff Artillery School and one of the few buildings remaining.

The Gap Bluff precinct as a whole is of likely State heritage significance however further historical and archaeological research and assessment is required.

High **Moderate** **Low** **None**	**State**	**Local**	**Not Assessed**

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Killick & Conyers, Officers Mess Conservation Plan, Prepared for NPWS, March 1989.

McNamara Soder Associates, Officers Mess Gap Bluff – A Research Study, Prepared for NPWS, 1989.

Peddle Thorp & Walker Architects, Specification – Refurbishment & Addition to Existing Buildings at Gap Bluff, Prepared for NPWS, June 1989.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve remaining parts of the original workshop building. Continue to reuse as residence associated with park management or for visitors or for other use as required. Remove senescent trees from rear and maintain and improve drainage in the short term. Maintain the building and make alterations and additions as required for use.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

Maintain cottage / former workshop

- *as NPWS staff residence or consider for holiday accommodation or other park use in the future,*
- *remove dangerously overhanging trees east of the building & stabilise retaining wall,*
- *additions may be made in linked pavilion to the south,*
- *interpret as former workshop (when South Head interpretation plan complete).*

There is some confusion in the historical information between this building and that now known as The Armoury. The cottage is earlier, c.1895 or 1900 and was built as a workshop for the Artillery School and was known as the Artillery Workshop. It was also used as a store in part, the main room shown as used for "De-Kitting" in the mid 20th Century plan included at the end of this inventory. The building now known as "The Armoury" was built as a store for the Artillery School c.1938, and was later used as the Quartermasters store (Q store). A 1954 plan of that building shows the store and offices and an addition of a de-kitting and bulk store. The workshop is believed to be a standard building developed by Colonel de Wolski, the head of the Military Works Branch of the NSW Department of Public Works. Following criticisms of the fortifications designed by the Colonial Architect a separate Military Works branch was established within the PWD in 1889. Following Federation the Department of Home Affairs took over the responsibility for the design of Commonwealth facilities including Defence, appointing a NSW Works Director. More detailed research may be able to locate the standard plans utilised by Wolski. Similar gable vents were later used on Drill Halls, although these were often larger buildings. Due to lack of manpower, some structures continued to be designed by the NSW Public Works Department post Federation. Further investigation may reveal if the use of Marseille tiles was original or if this was a later modification. Corrugated iron was more commonly used for utilitarian public buildings (see the Green Point example though the roofing material is recent Colorbond). Very few timber military or institutional buildings of this period survive in NSW.

This cottage, a former workshop, has been extensively altered when it was adapted as a cottage c1990 and much original fabric removed. The extent of original fabric is not clear and there are fake heritage elements such as the verandah and the windows on the verandah. The fence is also not original and probably relates to the residential use phase. The verandah replaced a lean-to addition shown on the c1950 drawings as clad in asbestos cement. The entry to the building was originally to the north side via a porch and another entry was made on the south side c1950. These doors have now been removed and the west side made the front. It has a modern concrete slab floor and a tiled roof. It is not known if this was the original roofing material, its appears to have been tiles but the current tiles look new and were probably replaced c1990. Original fabric appears to be only the external wall and roof frames, some of the weatherboard cladding to the rear and side walls and the louvered screens and louvered wall panels to the gable ends. Most of the doors and windows are not original except the tall multi-paned casements at the rear, which match a pair in the Green Point building.

The relationship to Green Point Cottage is of interest. The Green Point and Gap Bluff cottages are both simple rectangular buildings with pitched roofs with gable ends and are of moderate significance. Both have similar skillion roofed rooms originally laundry and toilet, now a bedroom at Gap Bluff. Both are clad in weatherboards with a rusticated profile. They have similar details, particularly the louvred gable ends, but one was built as a Barracks and one as a Workshop. It is possible that this was a standard plan with prefabricated elements and this is an area of potential further research.

The building is used as a NPWS staff residence allowing de facto supervision of the function centre and after hours use of the place (there have been incidents of hoons in cars entering the site). The building is small as a residence and the former laundry is damp and not ideal as a bedroom. The building is also exposed to noise particularly from late night and early morning cleanups at the function centre. Upgrading for use is acceptable within guidelines and without removing significant fabric. The cottage is cut into the hillside at the rear; with the hillside retained by a dry stonewall. The drains at the base of the cut are blocked and the building is affected by damp.

Conserving the former Workshop

Policies for timber cottages as they apply to the former workshop are:

Retain the remaining authentic fabric (see notes above).

Retain the configuration of the main original block and do not further obscure or alter the character of the original section. Only minor additions noted below are appropriate. The existing modern additions may be retained or removed.

Improve surface drainage by ensuring ground water from above around is diverted around the building.

Investigate, clear and repair stormwater drains and maintain regularly.

Monitor regularly for termite activity and rot and repair damaged sections of timber.

If replacing weatherboards match the existing profiles.

If roof replacement is necessary investigate the roof space to confirm original roofing materials.

If works expose the interior of walls or roof spaces take the opportunity to assess the structure in detail to ascertain more clearly the original configuration and fabric of the building. Record photographically and arrange for a heritage architect to assess areas in detail.

Improve the amenity of the cottage, when the opportunity arises, including adding items such as sarking under tiles, insulation over ceilings and fly screens. Ease and adjust windows and doors whenever painting is undertaken.

Use oil based paints to exterior joinery.

Paint colours should preferably be based on research on site, or on typical colours of the period. Research colours prior to any stripping of paint from old joinery if stripping is necessary. Subject policy above and as a guide external timber colours should generally light ochre or stone to the timber boards and dark colours to the joinery, particularly sashes and glazing bars.

Small scale pavilion additions may be made if required for use but should be distinct and separated from the original buildings or linked by walkways. The only suitable locations are to the south.

The existing kitchen and bathroom may be replaced as required and the opportunity used to improve building conservation. Works should be easily reversible and designed and supervised by an experienced heritage architect.

Maintain the garden as grassed keeping any plants away from building walls and the retaining wall. Remove the senescent banksias above the cottage.

Additions and New Work

Extensive additions and alterations have been made this building including a kitchen and bathroom. New work will continue to be required to adapt the place to the requirements of existing and new uses. All new work should be reversible allowing removal without damaging original fabric. New work should not dominate the existing structure and should be carefully designed and well built.

Design of new work must also take into account the construction and structural capacity of the original. It should not overload or weaken existing elements. Change is allowed to reconstructed fabric and this can be taken advantage of when planning new work. It is preferable for additions and alterations to be within the overall volume of a building and not be visible externally. However at the former workshop the verandah could be replaced by rooms in the known former configuration and the orientation of the front returned to its earlier location and any further additions could be pavilion addition to the south.

Policies for new work as they apply to any future addition or alterations to the former workshop are:

New work or changes are to be compatible with heritage significance, i.e. minimise impact, be distinguishable from the original, and be reversible.

Assess the heritage impact of any new work to existing heritage structures. If alteration to accommodate use requires major alteration to significant fabric consider changing the use rather than the fabric.

Make the minimum necessary change to accommodate use while retaining significance.

Reflect the original design concept and spatial arrangements in new work. The existing building is to be a starting point for the design of new work. Derive the design and arrangement of new elements from an understanding of the construction and structure of the building. Any external additions must be essential for conservation or continued use and should not be visually prominent.

New work should not obscure significant fabric, or overwhelm the existing building and should address but not mimic the existing in terms of scale, materials, colour, texture and quality.

Utilise any new work as an opportunity to enhance or recover significance.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works to minimise deterioration:
- Remove the senescent trees at the rear of the building and vegetation encroaching on drains,
- maintain and enhance drains to direct storm water and ground water away,
- clean and repair stormwater drains and
- check and if needed reconnect downpipes to drains.

Medium Term (1-5 years)
Undertake conservation works:
- Improve stormwater drainage and repair retaining wall behind,
- improve surface drainage especially at retaining wall above / behind house and adjust dish drain so water drains away,
- repair timber cladding and joinery (especially gable louvres) and
- paint interior and exterior.

Long term
Undertake adaptive reuse and conservation works:
- upgrade for use, may include alterations and additions, and
- upgrade bathrooms, kitchens and laundries if required for use.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- fire hazards,
- vermin entry and nesting,
- damage to roof tiles or loose or missing tile or flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes are clean and functioning,
- dish drain function at base of retaining wall at rear,
- damp in rooms,
- condition of paint,
- termite damage or infestation,,
- door and windows close, glass intact and
- operation of services such as fire detection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Retain building as residence in private yard or other use as required (may be a store) with sign in adjacent public area. Interpret as the earliest building remaining at Gap Bluff and as a former workshop and store. Interpret the original configuration and character of the workshop.

CURRENT PHOTOGRAPHS (CMP STAGE 1)	
	
View of front (west) elevation of the former Workshop. October 2006.	*View of detail of the northern gable that is similar to the detail at Green Point Cottage. October 2006.*
	
View of the rear (east elevation) of the building benched into the hill. Original c.1900 pair of tall casements in the foreground survives on this elevation. October 2006.	*View of the north end of the building showing the low retaining wall at the rear. October 2006.*
	
View of the living room looking north west showing the extent of alteration in the interior. October 2006.	*View of the open stone drain, which wraps around the rear of the building at its exit into the site's stormwater system. October 2006.*

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View of the casement windows (original), at rear.

View of the casement windows (later added), at bathroom.

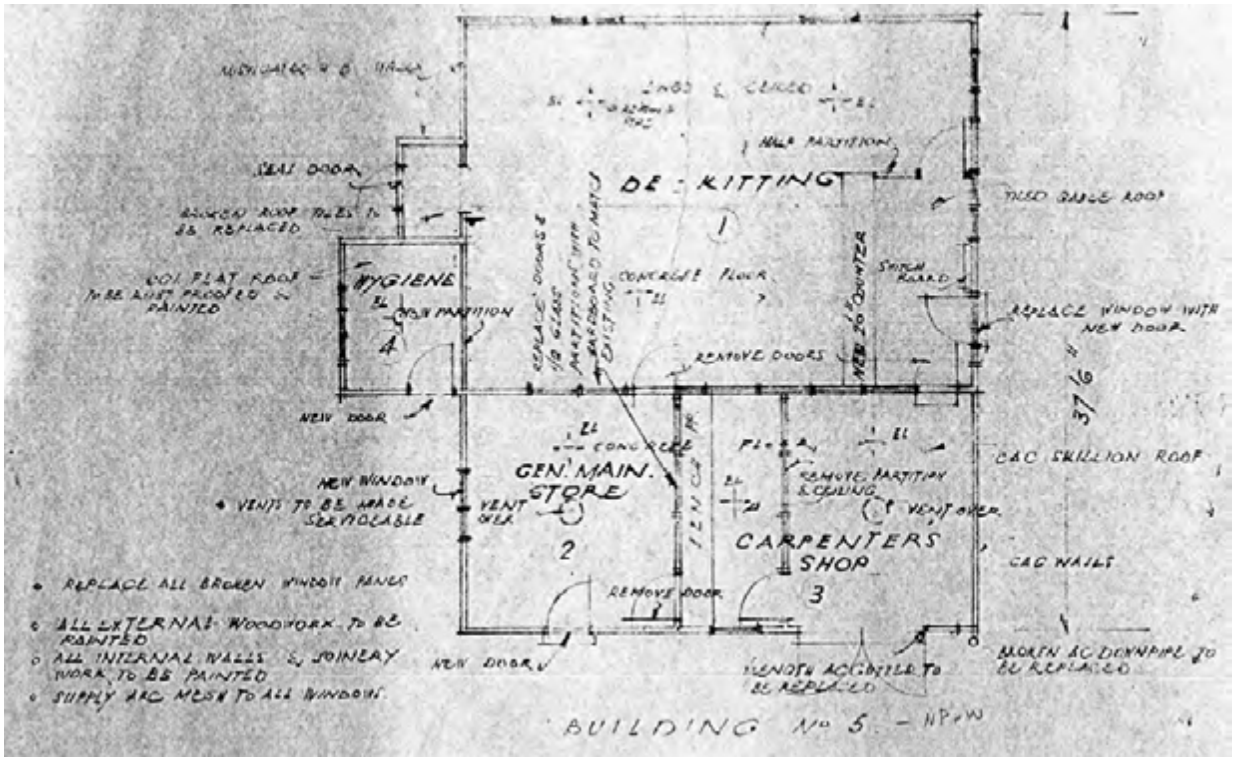
View of the building rear where drainage is blocked.

View of a section of earlier stone footing at building rear wall.

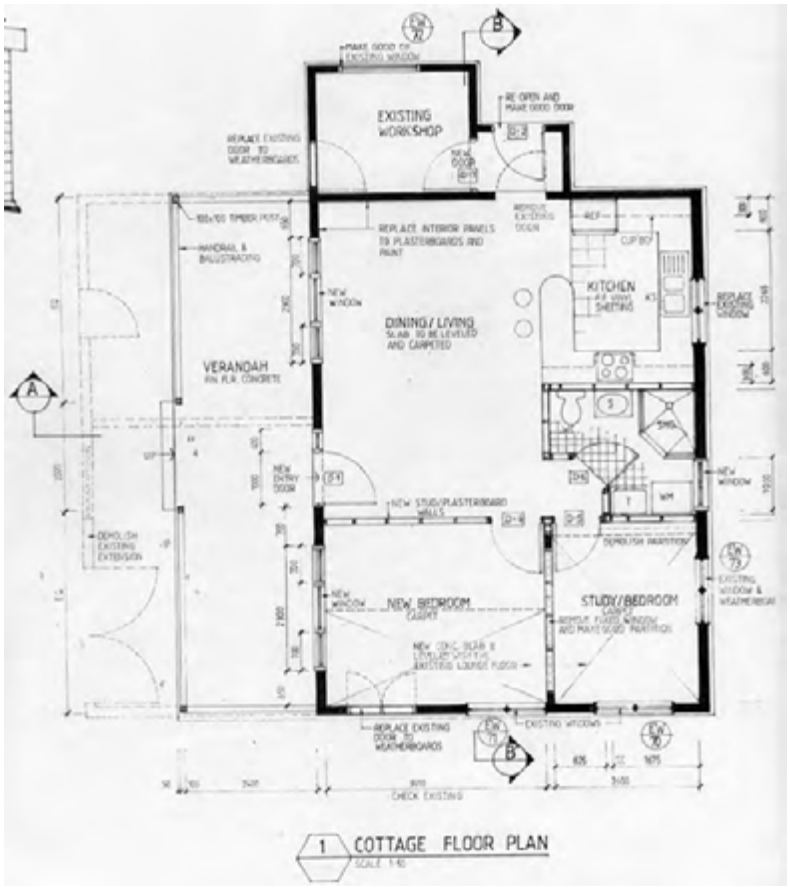
View of overhanging tree, at building rear, one trunk has fallen.

View of the double layer of louvres at the gable.

ADDITIONAL IMAGES (CMP STAGE 2) *Source: NPWS, library and plan cabinet at Greycliffe House.*



Plan showing earlier configuration of the building. Date not known but pre 1966 as measurements are Imperial. Notes refer to the lean-to addition being clad in CAC (corrugated asbestos cement) and refer to the main tile gable roof.



Plan showing alterations to adapt building as a residence. The plan indicates dotted the former extent of the lean-to addition demolished and replaced by the verandah

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Site of the 1912 School of Artillery Barracks Including Latrine – Ref: 4A.4.		**LOCATION**: Lower Gap Bluff	
HHIMS ID: Not found	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Open Space & Public Toilets		**FORMER USE:** Latrine for the School of Gunnery/Artillery	
Photograph		**Photograph**	
			
Detail from a 1928 aerial photo of the Former School of Artillery Barracks. The white arrow points to the Latrine (Source: DECC).		*View of front of the Latrine from the south west. October 2006.*	

HISTORICAL SUMMARY (STAGE 1 CMP)

The Middle Head School of Gunnery was relocated to Gap Bluff at South Head in 1894–5. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894. The Gap Bluff facility seems to have been used for practical demonstrations, with formal teaching undertaken at Victoria Barracks.

Changes to the scheme of Australia's Defence flowing from Federation, and the institution of compulsory military service on Lord Kitchener's recommendation, saw a dramatic increase in the number of people undergoing military training. More extensive training facilities were planned at Gap Bluff School of Gunnery in 1912. All of this development took place within the largely undeveloped Gap Bluff area within the Inner South Head defence reserve (McNamara Soder Associates 1989: 8-9). There was little further development within the Gap Bluff School of Gunnery through the 1920s. Following WWI, compulsory military service was maintained at a lower level until is discontinuation in 1929 (Wilson 1985: 1.11; Oppenheimer 2004: 207-10, 211, 215; McNamara Soder Associates, Officers 1989: 9).

The 1912 School of Gunnery/Artillery consisted of two double-storey blocks with associated offices and latrine, the latrine to the rear of the two buildings still being extant. A new wing was added to the southern barrack; and further additions were made to the northern block in 1935–6. Approval was given in 1935 for the construction of the adjacent Officers' Mess (Inventory Item 4A.1).

After 1941, the School of Artillery was relocated back to Middle Head, the site at Gap Bluff being seen as too close to potential active combat. The Gap Bluff complex was taken over by the Army and functioned to support the defence activities at South Head. The Officers' Mess continued to be used in that capacity, and the School of Artillery Buildings to the north functioned as administrative block and barracks. Two further barrack blocks were constructed at this time flanking the main school buildings to the north and south, as well as a canteen and two miniature ranges. A large garage and separate Motor Transport Office were constructed adjacent to the Officers' Mess, and sleeping quarters were built on its northern side. All of these structures were constructed in weatherboard or asbestos cement. The Navy's Radar Communication Centre was accommodated in the former school from 1941.

From the 1950s, the defence reserve at South Head was used as a training and barrack establishment. The November 1950 National Service Bill resulted in a sustained expansion of military depots and camps. The Army-held section of the South Head Military reserve at Gap Bluff was appropriated for National Servicemen. Thirteen barrack and service blocks were constructed on the western side of the reserve, overlooking Camp Cove (now within the area of HMAS Watson), and additions and alterations were made to several of the former School of Artillery buildings. The Store/Armoury (also referred to as the former workshop), constructed in c1895 to serve the practice battery on Gap Bluff, was extended to function as a Quartermaster's store. The Barrack Latrine was upgraded with the sewering of the area some time prior to 1950. It now contains high-level cistern flush toilets. In 1955 the original asbestos cement parapet roof of the Officers' Mess was reconstructed as a pitched roof with Marseilles tiles and overhanging eaves. This was likely to have been in response to problems of leakage and flooding inherent in the original, fashionably functionalist design. Following the

cessation of compulsory National Service in 1959, the complex functioned as a transit depot for officers and military serving overseas, and in the period 1965–72 as a transit depot for those leaving for service in Vietnam (Wilson 1985: 1.5; McNamara Soder Associates, Officers' Mess 1989: 10, 16. Compulsory National Service was introduced in 1951, and terminated in 1959. Compulsory selective National Service was reintroduced in 1965 and terminated in 1972).

Gap Bluff was acquired by NPWS in 1982. In 1984 all standing structures were demolished except the Officers' Mess and garage, the Artillery Workshop, Store, and School of Gunnery latrine. The larger buildings were demolished and are now only evidenced by the wide grassed area in front of the latrine and some exposed footings. The latrine still survives tucked in against the hill backed by a high, buttressed concrete retaining wall.

National Theme/s:	**State Theme/s:**
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The footings of the former School of Artillery appear to be largely intact and are in an open readily accessible area unlike other archaeological remains at Gap Bluff which are submerged in regenerated bushland.

The latrine is an open air single storey brick building on 6-inch concrete slab, roofed with a rafter and collar tie timber frame and sheeted with corrugated "Colorbond" steel sheet. In the late 1980s the building had corrugated asbestos roof sheeting which was replaced by the current "Colorbond" sheet. At the time, the building also still featured timber framed and corrugated iron sheet privacy screens in front of each entrance. The Latrine is divided in two parts, which were originally allocated for officers and enlisted men. The building has most of its early fabric surviving, particularly the timber and brick cubicles with their good quality boarded timber doors. High cisterns, which may date from the 1950s when the area was sewered, still feature in the cubicles flushing into mid twentieth century pans. The building is in reasonable condition, if a little dirty and neglected. However, the surface of the bricks on all elevations, except for parts of the more protected east elevation under the eaves, are weathered and have lost their case-hardened faces. Joints are also weathering. The combination of the two problems is likely to accelerate and advance the deterioration of the exterior. There is evidence of patching and some of the deteriorated bricks have been replaced. The current setting of the latrine, now standing solitary at the rear of the large open area created by the demolition of its larger neighbours accessed by a straight concrete path and fronted by a small garden, is very different to its original enclosed setting.

The row of Phoenix Palms to the south of the former Barracks site appear to date c.1930s contemporary with the adjacent Norfolk Island Palm Avenue and Officer's Mess garden. There were more extensive plantings in the 1930s which have since been removed. These remnant Phoenix Palm plantings should be considered an essential part of the former School of Artillery precinct. The latrine was recorded as N26 by Denis Gojak in c1985.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: High **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low

SUMMARY STATEMENT OF SIGNIFICANCE

The site of the former School of Artillery Barrack Buildings (1912 - 1985) is of historical significance as the site of a former barrack complex – a Defence building type which has have existed in many forms and from various periods across Gap Bluff during its various uses including the School of Gunnery established in 1894–5 (Commonwealth Department of Defence form 1901); the Navy's Radar Communication Centre from 1941; a training and barrack establishment from the 1950s; through to a transit depot for those leaving for service in Vietnam and culminating in the decommissioning of the site from 1982.

The site has high archaeological potential because of the obvious remaining earthworks and footings of the two School of Artillery Barrack Buildings and the potential for other associated archaeological material.

The remaining 1912 latrine building is of moderate heritage significance as the only remaining building standing above ground from the former School of Artillery Barracks.

The remnant Phoenix Palm plantings from the 1930s demonstrate the continuous and changing use of these buildings for defence purposes and should be considered an essential part of the former School of Artillery precinct.

The Gap Bluff precinct as a whole is of likely State heritage significance however further historical and archaeological research and assessment is required.

High	**Moderate**	Low	None	State	Local	**Not Assessed**

RISK ASSESSMENT		
Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Killick & Conyers, Officers Mess Conservation Plan, Prepared for NPWS, March 1989.

McNamara Soder Associates, Officers Mess Gap Bluff – A Research Study, Prepared for NPWS, 1989.

Peddle Thorp & Walker Architects, Specification – Refurbishment & Addition to Existing Buildings at Gap Bluff, Prepared for NPWS, June 1989.

Wilson, G.C., Sydney Harbour Fortifications, 1985.

SOURCE OF THIS INFORMATION		
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Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Mary Knaggs	**Date:** January – April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain site as an open grassed area interpreting the former barracks site and providing open space for recreation. Develop pedestrian links to the street and Camp Cove. Retain and conserve the toilet block and retaining wall. Manage cultural plantings and remove self sown descendents and weeds.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Generally

A number of segregated latrine blocks built for officers and rank and file at former military sites have been converted into male and female toilets. Examples retaining their signage can still occasionally be found eg on Cockatoo Island. Characteristically the buildings were very basic and were extremely well ventilated, often with no windows or timber vents. The need to provide fresh air was paramount. The privacy screens are likely to be a later addition, probably reflecting the presence of women on the site during World War II. The separation of the latrines from the barrack block is a remnant of colonial Georgian barrack planning by the British Army. For health reasons the latrines were separate in barrack complexes designed for hot climates. The separation was continued in Australia in the substantial barracks compounds such as the now demolished Wynyard Barracks. The latrines were usually located at the back of the barrack compound, well away from the main block (as can still be seen on Norfolk Island). As sanitation improved blocks became closer but still remained separate. Despite the widespread acceptance of the germ theory, rather than the miasma theory that disease was spread by foul air, latrines remained separate in the defence complexes built in Australia in the mid 1930s in preparation for war.

At the former Artillery Barracks site,

- *stabilise retaining walls and manage vegetation above,*
- *develop picnic use of 1912 barracks area, retain toilets, develop pedestrian route to street,*
- *maintenance required to buildings now in poor condition and*
- *manage cultural plantings including rows of palms and Norfolk Island pines and remove self sown introduced plants.*

There is extensive tourist use of the Gap Bluff precinct. There is regular use of the "Heritage Trail" to South Head however it is not completed between Gap Bluff and Camp Cove. The route will pass the former barracks site that is suitable to provide a picnic or resting area with a view and passive recreation facilities. There is also no direct pedestrian route to the main road.

Major groundworks were carried out to construct access roads and make building platforms, drainage channels and defence installations. Where possible the old road pattern should continue. Some road edges and drains are stone. The current character of early paths and roads should be maintained. Modern formally engineered roads, paths and drains are not in keeping with the character of the area, and should be avoided. There is combination of historic and modern walking paths and fences throughout the site.

The Gunnery School toilet block now provides public toilets at Gap Bluff. It is the last building standing of the group and is generally intact. It is useful and has some heritage value. However it has severe damage to its brickwork from what appears to be sand blasting. The hard external skin of the brick has been removed exposing the soft interior. There is very little that can be done to repair this except to replace bricks with matching bricks when they fail. The gutters are completely deteriorated and drains blocked. The toilet drainage has recently been replaced with modern plastic pipe with a new connection to the sewer. The work has damaged the original building and filled the spoon drain with spoil from the excavation.

Structures

Policies for the Gunnery toilet block and retaining wall are:

Remove the spoil from the rear of the building generally and from the spoon and stormwater drains. Salvage bricks for repairs, clear and repair the drains and the building.

Remove vegetation encroaching on retaining wall and associated drains.

Replace the gutters and downpipes in metal to match existing, clear drains and remove branches hanging over roof.

Source matching bricks and replace bricks as they fail using lime mortar. Remove cement pointing and replace with lime mortar.

Paint timber roof structure and joinery with oil based paint.

Landscape. Paths and Parking

Policies for landscape, paths and parking as they apply to the artillery barracks site are:

Support recreational use by providing amenities and upgrade as necessary.

Manage significant plantings by secession planning, removing senescent plants and replanting.

Maintain the grassed areas at the barracks site, Gap Bluff by slashing or mowing or introduce endemic ground cover species where pedestrian use is not required. Maintain palm row in front of the barracks site, single palm in front of toilet.

Retain evidence of significant groundworks and cuttings, particularly the retaining wall when carry out mowing, modern earthworks, maintenance activities and stabilisation work.

Use historic routes for paths and walking routes and use the current historic road pattern minimising the introduction of new routes.

Screen intrusive modern roads/carparks with planting.

Retain the character of the road system, improving the surface only as necessary for use while retaining the width and low key character. Maintain grassed verges and historic stone edging and gutters and do not introduce formal concrete kerbs and gutters.

Designate informal parking areas at Gap Bluff in barracks area by surface treatment, planting or low scale barriers rather than signage or fencing.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration:

- Remove soil and vegetation encroaching on stormwater drains,
- direct storm water and ground water away,
- trace stormwater drains to outlets, clean and repair,
- reconnect downpipes to drains and
- replace gutters.

Medium Term (1-5 years)

Undertake conservation works:

- Repair timber elements and paint,
- remove trees encroaching on retaining wall,
- repair retaining wall and
- upgrade services including electricity and water.

Long term

Undertake adaptive reuse and conservation works:

- Remove cement pointing and replace with lime mortar
- Replace badly deteriorated bricks
- add a sacrificial rendered dado to the exterior and
- upgrade fittings if required for use.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- fire hazards,
- vandalism,
- vermin entry and nesting,
- damage to roof or flashings, water entry,
- storm water flow away from building and retaining wall and encroaching vegetation,
- gutters, spreaders and downpipes and clean and functioning,
- dish drain function at base of wall,
- condition of paint,
- termite damage or infestation,
- open mortar joints or fretting or cracks in brickwork,
- door close and
- operation of services such as lighting and water.

INTERPRETATION (CMP STAGE 2)

Retain the barracks site as an open grassed area including retaining wall on the uphill side, indicating the extent of the former barracks complex. Conserve and retain building as a toilet block. Interpret open area and palms to indicate the barracks site and the toilet block's origins as the barracks latrine.

ADDITIONAL PHOTOGRAPHS

View of the latrine from the west. October 2006.

View of the rear of the latrine benched into the hill and backed with buttressed concrete retaining wall. October 2006.

View of the latrine from the west. October 2006.

View of one of the cubicles showing the concrete floor and boarded timber doors. October 2006.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of brickwork, with surface damaged by blasting or similar. Cement repointing is too hard hastening brick failure.

View of original brickwork with brick surface intact, under roof.

View of the deteriorated gutter and downpipe.

View of excavation and new connection for sewage.

View of the new sewage pipes, appearing to have compromised the stormwater drain.

View of the building rear, the work for the new sewage line has blocked the stormwater drainage.

ADDITIONAL ARCHIVAL MATERIAL (added 2009)

Detail of the 1951 aerial showing the barrack complex built in 1912, including all of the buildings to the rear.
SHFT Sequence of Army Aerials of North Head (including the northern part of South Head), 1951_r11_2

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: National Park Lookouts – Ref: 4B.1		**LOCATION**: Gap Bluff	
HHIMS ID:11092	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: lookouts		**FORMER USE:** military use	

Photograph

View of the Upper Gap Bluff area, with the views to North Head in the distance. Part of the practice battery is in the foreground. February 2007.

Photograph

View along the cliffs towards the Gap Bluff and its lookouts; North Head is in the distance. Source: Laila Ellmoos 2005.

HISTORICAL SUMMARY (STAGE 1 CMP)

The Upper Gap Bluff area makes up the south half of the National Park at South Head abutting the southern boundary of HMAS Watson. Unlike the north part of South Head, the Gap Bluff area was relatively underdeveloped until the early twentieth century. From that time, it (along with the area now occupied by HMAS Watson) was almost exclusively used by the Army first for the Artillery Practice Battery and its Workshop from 1895 onwards, the School of Artillery/Gunnery from 1912, then the Radar School and the Army's National Service depot from the 1950s. Gap Bluff was transferred from the Defence forces to the NPWS in 1982.

The Middle Head School of Gunnery was relocated to South Head in 1894–95. South Head appears to have been selected due to its proximity to Victoria Barracks. It also had an uninterrupted firing range over the Tasman, unlike Middle Head, and thus training exercises would pose little danger to shipping activities within the harbour. It was also close to hospitals. Although this last reason for its location remained unstated, a number of accidents on the North Shore during the 1880s had emphasised the importance of easy access to medical attention. A practice battery was mounted on the seaward side of South Head, at Gap Bluff, in 1894. The Gap Bluff facility seems to have been used for practical demonstrations, with formal teaching undertaken at Victoria Barracks.

It is unclear whether 'lookouts' existed along the top of the Gap Bluff cliff prior to NPWS management in 1982. The current railings have been installed since that time.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour
8. Culture - Developing cultural institutions and ways of life	Leisure - Activities associated with recreation and relaxation

DESCRIPTION

The Gap Bluff area is roughly oval in shape with an arm stretching north, and bordered on the west by Cliff Street. The area is edged to the north by HMAS Watson and on the east and south by the 40m towering cliffs, which rise dramatically out of the South Pacific Ocean. The heart of the area is sited on a series of broad vegetated terraces falling towards the west. At the height of its use from the 1950s to 1980s the area accommodated a dense array of masonry and timber structures covering the mostly level north-eastern part of the area interlinked by numerous roads and paths.

Although many former building sites were reclaimed and concealed by revegetation after the site was transferred to the NPWS in 1982, the entire precinct contains a wealth of archaeological evidence and a number of standing buildings from both the late 1900s School of Gunnery period and the later, more intensive use during and after WWII. A number of substantial structural remains and large areas of debris from the demolition of the buildings have been identified. Despite the heavy vegetation cover, it is still possible to see the various terraces and understand the arrangement of buildings, roads, equipment and terraced gardens.

The surfaces of the cliff lookouts are riddled with evidence of this past military use– the postholes in the rock, markings on the ground were gun emplacements had been, concrete batteries and steps cut into the rocks. The development of the military landscape of training facilities from the 1870s to the 1980s is still readable although the sense of openness and connection between the different areas has been obscured.

A number of individual archaeological elements have been located during fieldwork for this CMP and are listed in the Archaeological Table at the beginning of Volume 2. Many of them could not be identified without further documentary research and physical investigation, but are likely to relate to the operation of the 1870s School of Gunnery as well as the WWII and post WWII operation of the Radar and Artillery Schools (see Figure 3.48). A number of smaller archaeological elements associated with operation of the batteries and searchlights spread around the peninsular are likely to be present (such as bases for DRFs) and would add to our understanding of how the larger structural elements worked. Elements located during the preliminary fieldwork included cement slabs, footings and areas of demolition debris associated with former buildings, cement slabs and metal fixings for equipment, garden beds, dry-stone retaining walls, drains and shelter walls. Many of these could not be specifically identified without further research and/or field survey.

Other potential archaeological evidence includes: footings, services, artefact deposits, demolition rubble, garden features, equipment platforms, fixings (for the types of activities shown below in Figure 3.49), rock cut features, evidence of fence lines, terraces and walls and the remains of “Engine Room” shown on 1890 Telephone System Chart (reproduced in Mider 1998).

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low See Upper Gap Bluff Archaeological analysis for further details.

SUMMARY STATEMENT OF SIGNIFICANCE

The lookout area along the top of the cliffs at Gap Bluff has high aesthetic and historic values as a rich cultural landscape enriched by its cliff top ocean exposure and sense of isolation from the densely populated city. The dramatic views out to the ocean are important in understanding the historic significance of Gap Bluff as a School of Gunnery from 1984 providing an uninterrupted firing range over the ocean.

The aesthetic landscape values share characteristics with many open space areas on Sydney’s headlands including rugged cliffs with projecting sandstone platforms and outcrops, nestling sandy beaches and coastal heath land, all set against a stunning maritime environment. At Gap Bluff these values are enriched by the Aboriginal and subsequent European use of this prominent coastal landform.

The Gap Bluff Lookout areas have high archaeological potential. Little historical archaeological assessment has been undertaken in this area to date. Archaeological evidence of the lookouts has high potential to add to our understanding of the military operations carried out in this area and could be used as a focus for site interpretation in the future.

Inner South Head (including the Harbour foreshore to Camp Cove Beach, Gap Bluff and Green Point) demonstrates the principal characteristics of Sydney Harbour Foreshore land that has been reserved from private development and utilised for key navigational and defence purposes since 1788. Because of these previous Government uses the NPWS land at South Head and elsewhere within Sydney Harbour National Park is today important for its ability demonstrate the geomorphology of Sydney Harbour and to support native flora and fauna, in addition to its rich cultural heritage.

High **Moderate** Low None	**State** Local	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Caitlin Allen Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain firing wall remains as ruins and control vegetation at where damaging or interrupting views from these. Revegetate areas not required to be retained as open areas, with endemic species. Interpret the defence history of the site. Manage for tourism and as a recreational area with the Heritage Trail walk and viewing areas. Consider providing wheelchair and limited mobility access including on part of walking track from Officers Mess carpark. Improve public safety in conjunction with Woollahra Municipal Council with new fencing at The Gap.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

See Gap Bluff Precinct inventory for general policies about the precinct.

There is extensive tourist use of the cliff walk in conjunction with the adjoining council owned walk and viewing areas. Many overseas and out of town visitors come to The Gap often arriving by bus or ferry for brief visits. There is potential to improve their experience and bring them on the loop walk (at least). The route to this is currently unclear in the Upper Gap Bluff area and the trail needs development. There is potential to provide further visitor facilities in the Gap Bluff Centre and associated buildings and links from the walking trail to the centre could be further developed.

At the same time this area is notorious as a site for suicide and tracks, lookouts and facilities need to be developed to minimise the risk and discourage attempts. Council is working on this in the adjoining area. People associated with those who have died here often leave floral and other tributes. These end up as litter. Consideration should be given to making provision for tributes.

The Gap Bluff area was previously developed, cleared and had numerous buildings. Most were demolished in 1984. Ground-works were carried out to construct access roads and make building platforms. Where possible the old road pattern should continue. The early stormwater drains and road kerbs were constructed in stone. The current character of early paths and roads should be maintained. There is combination of historic and modern walking paths and fences.

At Upper Gap Bluff most of the early defence features are in HMAS Watson but there is one wall that is a significant remain that should be preserved. It also functions as an informal lookout. Throughout the Upper Gap Bluff area there are building footings however these have moderate archaeological significance and need to be recorded if disturbance is unavoidable but are not essential to preserve. There are retaining walls, stone-lined drains and paths recommended to be retained as part of the loop walk through the area. Drains also need to be retained where they function to protect areas and buildings below and are part of an overall drainage system

The precinct has been partly revegetated but much of the area is infested with weeds. Revegetation is limited by the heritage items which need to be retained in a clearing and by the bitumen and demolition materials that remain in the soil.

There are various cultural plantings throughout the site however several species have spread through bird and wind dispersed seeds. Though these are the same species as the cultural plantings they are not significant and should be removed. Only deliberately planted specimens should be considered to be significant cultural plantings. This includes the oleanders on the main path at Upper Gap Bluff. Some trees are growing in locations that impede paths, access to the firing wall or impede views. Trees damaging significant structures should be removed.

Revegetation is recommended generally for this area with identified culturally significant areas maintain as cleared as well as the defensive wall and paths. Some bitumen may need to be removed and it should be noted that there are bonded asbestos fragments as well as bricks remaining on and in the ground remaining from the demolition of buildings in this area and appropriate procedures should be observed.

Military Installations and Ruins Generally

The following policies for these structures as they apply to Upper Gap Bluff are:

Preserve the original fabric and repair using matching materials or tested modern materials (eg stainless steel pins instead of mild steel), treatment should be according to the fabric to be preserved and the purpose of the retention.

Adjust ground levels around structures so that water drains away from them.

Remove large trees and shrubs from the vicinity of heritage items particularly the firing walls. Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Fill any resulting voids.

Monitor rusted metal elements and continue to treat to minimise damage. If structure is endangered cut metal elements back and cover with mortar or remove. Resupport if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Tourist Activities

The following are policies for tourism activities relevant to Upper Gap Bluff:

Improve walking track on cliffs and provide safe viewing and photographing areas. Upgrade fencing, maintain steps and manage vegetation keeping it low near the path and cliff.

Interpret defence values on the loop walk. Use low key directional and interpretive signs and block off paths not part of walk. The current style and format of signs is appropriate but higher quality materials are needed and replacement them as required.

Seek to develop walking tours that are cross-referenced to the interpretive signage with the guidebook or brochure.

Use other languages as well as English in key site information and brochures.

Provide fencing at The Gap the same as that developed by Council for visitor safety and to discourage suicide attempts. Consider providing space or loops or clips to hold floral and written tributes.

Continue to provide temporary fencing to the cliff tops and for crowd control for special events.

Landscape, Paths and Parking

The following are policies for landscape and paths at Upper Gap Bluff:

Support recreational use by providing amenities and upgrade as necessary.

Manage significant plantings by secession planning, removing senescent plants and replanting.

Retain evidence of significant ground-works and cuttings when carry out and earthworks, maintenance activities and stabilisation work.

Use historic routes for paths and walking routes. Use the artillery school paths as the loop walk maintaining original surface finish and stone edging. Review extent of paths required for walking trail and around significant features and remove bitumen elsewhere to assist revegetation.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration and for public safety:

- Remove vegetation encroaching on stormwater drains and structures,
- direct storm water and ground water away from structures,
- clean and repair stormwater drains especially at the top and base of retaining walls and paths,
- clear growth and waste from base of structures and
- check downpipes are connected to drains

Medium Term (1-5 years)

Undertake conservation works:

- Improve surface stormwater drainage using swale drains or similar discharging surface water clear of walls, defensive structures and lookouts,
- treat exposed ferrous metal elements for rust and fill cracks in concrete with grout,
- remove soil built up on upper side of structures and grade so water is shed around item,
- repair stone edging, drains and retaining walls, use lime mortar when repointing stonework,
- repair and further develop walking track and install safety fencing in conjunction with WMC at cliff edge.

Long term

Undertake adaptive reuse and conservation works:

- conserve practice battery and shelter wall.

MAINTENANCE (CMP STAGE 2)

Inspect using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- Vandalism, graffiti and damage,
- fire hazards,
- structural security of fencing at lookouts,
- storm water flow away from buildings and encroaching vegetation,
- drains functioning, especially adjacent to retaining walls,
- progressive rust in ferrous metals and
- open mortar joints or fretting or cracks in masonry.

INTERPRETATION (CMP STAGE 2)

Interpret the phases of the defence occupation of the site on the walking track using signage and a brochure. This should include: the School of Gunnery use from c1895 with the shelter walls and practice battery extending into HMAS Watson and the development of the Upper Gap Bluff area and the post 1950s use for National Servicemen and the 1984 demolition. Considered providing additional interpretive material electronically or in a brochure. Link to adjacent Council facilities and tourist activity.

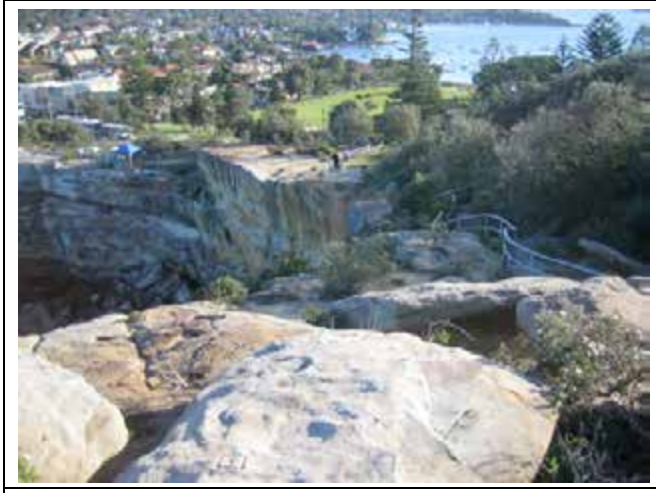
ADDITIONAL PHOTOGRAPHS (STAGE 1 CMP)

The RAN Radar Training School, looking south towards The Gap, c 1944. (Source: AWM p00444.018).

Sydney, NSW, 1898. Members Of The Long Course Of The NSW School Of Gunnery At South Head In The Process Of Erecting Shear Legs On A Cliff Top (Source: AWM P991.076).

Part of a photograph taken of Gap Bluff Royal Australian Navy radar training school in 1951. (Source: AWM Ref: P03815.006)

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*



View of the fencing and lookouts at the Gap, looking to the southwest from the cliff edge along the track.

View of the fencing line around lookout track, looking towards south from grassed garden mid way walking from access road.

View of a lookout area, with cement path and grass, and fence on cliff edge, from the north side of the Gap, looking to the south. Note interpretative sign and the Council managed area at the Gap in the distance.

People leave flowers and objects in memory of suicide victims at the Gap, offering are placed outside fencing line near the cliff edge.

View of the fence across steep cliff, looking east from the track at the Gap. Fencing is intrusive and ugly.

View of lookout area, looking east. Noted remains of vandalised interpretative sign.

ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

View of the remaining firing walls, at the east of the Gap Bluff area. Note interpretative sign and intrusive vegetation.

View of the remaining firing walls and cement paved area. Related to activities of the Gunnery and Artillery Schools.

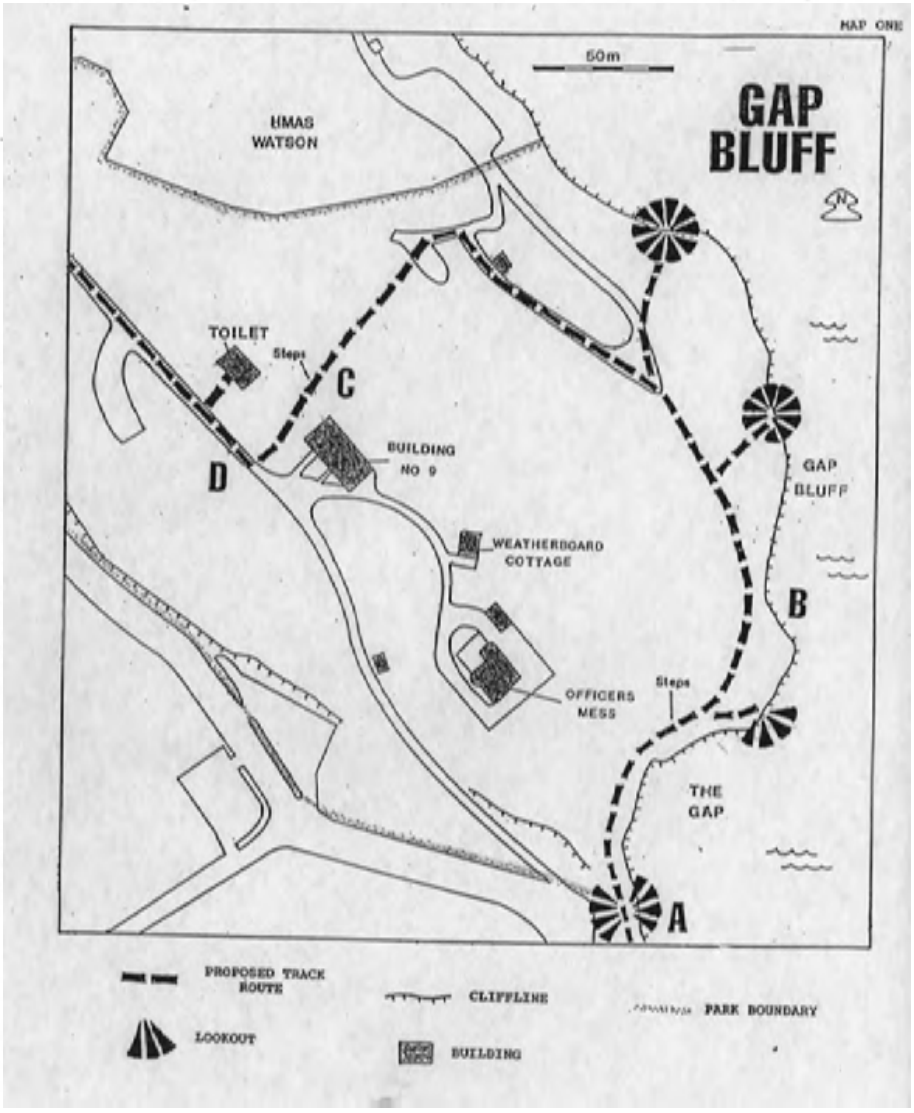
View of stone retaining walls.

View of cement pathway and stairs in the Upper Gap Bluff area.

View of one drain, along the track above right, completely blocked by vegetation.

View of the building interior 4B.15, currently used for storage. In poor condition with deterioration of slab roof.

ADDITIONAL MATERIAL *Added 2009*



The Gap Bluff Track Proposal shows the route of the partly completed track. Source: Greycliffe library (SHR10)

Nineteenth century view of South Head and the Gap showing the panoramic views that could be obtained. Note that the area is already fenced. Source: ML Album of Views of Sydney [ca. 1875 - 1878] PXE 618

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Green Point Cottage – Ref: 5.1		**LOCATION**: Camp Cove	
HHIMS ID:3553	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Leased as holiday accommodation		**FORMER USE:** Constructed between 1895 and 1903 as a residence for military staff altered in the 1960s.	

Photograph

Looking along the cottage's enclosed verandah to the south west, taking in the harbour views. October 2006

Photograph

View of Green Point Cottage looking south west from the parking area at the end of Pacific Street. October 2006.

HISTORICAL SUMMARY (STAGE 1 CMP)

Green Point was acquired by the Crown for military use in the 1850s. Some time between 1872 and 1885, a battery was constructed at Green Point, but little is known about it, and no physical remains of it have been identified. A Submarine Miners Firing Station was active at Green Point between 1878 and 1903. The underground firing station and searchlight base remain from this time. Although there was little active defence of the Harbour during WW1, Green Point was a key location in Harbour defences during WWII including the eastern point where the submarine boom net was attached. A 6-pounder Anti-Torpedo Boat gun was mounted at Green Point during 1941, covering the boom. Its location and form are unknown, but it was most likely similar to the corresponding guns covering the net at Obelisk Bay and Georges Head. A three storey, square concrete Observation/Electric Light Tower, 'E.L.S. 17', was also constructed. No remains of the tower are extant, but local tradition states that it was situated in the rock outcrop next to the Officers Quarters (Woollahra History and Heritage Society Inc 1995; Oppenheimer 2004: 262, 272, 273; Gojak 1985).

As with Constables Cottage at Camp Cove, Green Point Cottage was constructed between 1895 and 1903 as a residence for military staff. The original cottage, particularly the interior, was altered in the 1960s. Other alterations have been made to the cottage and it is now used as holiday accommodation.

National Theme/s:	**State Theme/s:**
4. Building settlements, towns and cities	Accommodation - Domestic life - Activities associated with creating, maintaining, living in and working around houses and institutions – living and working at a public lighthouse station
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

A prominent surviving feature at Green Point is the former Officers Quarters sited adjacent to the rock outcrop at the apex of the hill. The building is now referred to as Green Point Cottage. The Cottage is a single storey timber framed residence. It is modest but has Arts and Crafts pretensions evidenced by its good-sized pitched roof featuring decorative vented gables and deep bargeboards. The main cottage is fronted with a wide simple posted skillion verandah, now enclosed. It is low set with suspended timber floors on piers over a reasonable underfloor space over the ground which slopes up from south to north. The cottage's surviving details are modest and generally typical of a simple Federation era cottage. It has similarities with the former workshop at Gap Bluff. Overall the cottage is in excellent condition and the c1900 exterior retains much of its original finishes and linings.

The west of the cottage has lower skillion roofed service wing. The main roof is sheeted with light grey Colorbond corrugated sheeting with Colorbond gutters and painted steel downpipes. The enclosed verandah is roofed with trimdeck-profiled metal sheeting. The external walls on the main cottage are clad with painted rusticated 8" weatherboards and the enclosed verandah is sheeting with painted sheeting (mostly likely asbestos sheet). The cottage

features a range of windows all timber and painted. Original windows on the north elevation are unusual being pair of tall multi-paned casements. Other windows include vertical sliding sashes, single sash casements and top hung hopper windows in the enclosed verandah.

The cottage's interior has been comprehensively refurbished. The work does not appear to have altered the room layout or door locations. The internal walls were relined with plasterboard/AC sheeting throughout. The ceilings feature cover battens, which suggest that they may be early if not original. It is not clear if any early sheeting remains concealed. All doors have flush leaves with plain narrow architraves. The kitchen is recent and the bathroom appears to date form the 1960s. Although the interior has been altered, of interest are the exposed stop chamfered ceiling beams in the living room and main bedroom. The rear service wing now contains the laundry. The old rear external WC is unusual as it retains some early finishes and timber wall boarding. The twentieth century changes are typical of the time and undistinguished.

The areas immediately around the cottage are covered by a number of concrete slabs, which vary in height according to the slope. The rear of the cottage is nestled into the rock outcrop, which is the highest point of the peninsula, around which are dry stone garden walls. The cottage and its garden are bounded on the front by a recently erected painted picket fence which is in good condition, a cyclone chain mesh fence and, at the rear, by a tall lapped and capped hardwood paling fence which was collapsing in some areas (replaced 2009). The cottage has an undistinguished low set garage.

CONDITION: **Good** Fair Poor Ruinous Site Only	
INTEGRITY: **High** **Moderate** Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low

SUMMARY STATEMENT OF SIGNIFICANCE

Green Point has high historic significance as the first landfall of Governor Arthur Phillip in 1788. It has historic and social significance for its association with Edward Laing, surgeon in the NSW Corp, and original grantee in 1793 of land at Camp Cove, after whom Laings Point was named. Green Point has historic and social significance as a key point in Harbour defence, dating from the late 1870s onwards.

Green Point Cottage (1895 – 1903) has historic value as a contributor to the use of Green Point and South Head generally as a key Military site from the 1870s to1945. The cottage has aesthetic value as a reasonably intact example of Officer's Quarters from the Federation period when Australia's defence force was set up. Locally it is a good example of the simple weatherboard Federation period seaside cottage and garden, a style that was once more prevalent in the Watsons Bay and Camp Cove areas.

High **Moderate** Low None	State	**Local**	Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**Low**	
Other		

INFORMATION

REFERENCES:

Ayre, Jodi, Statement of Heritage Impact, Proposed road reconstruction and drainage improvement works, prepared for Woollahra Council, March 2006.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Oppenheimer, Peter. The Fragile Forts, 2004

Woollahra History and Heritage Society Inc., Onsite interpretation - "WWII Anti-Torpedo Boom", October 1995, Australia Remembers 1945-1995 Program

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve building and continue to use for tourist accommodation or as residence associated with park management. Alternate use as a café or similar would also be compatible. Maintain and improve drainage and remove plants too close to the building. Provide additional interpretation to building users.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

Green Point Cottage is one of three timber cottages at in the national park at South Head that are military in origin. The others are Constables Cottage, a former duplex, and Gap Bluff cottage, a former workshop. The workshop at Gap Bluff and the Green Point Cottage are believed to be a standard building developed by Colonel de Wolski, the head of the Military Works Branch of the NSW Department of Public Works. Following criticisms of the fortifications designed by the Colonial Architect a separate Military Works branch was established within the PWD in 1889. Following Federation the Department of Home Affairs took over the responsibility for the design of Commonwealth facilities including defence, appointing a NSW Works Director. More detailed research may be able to locate the standard plans utilised by Wolski. Similar gable vents were later used on Drill Halls, although these were often larger buildings. Due to lack of manpower, some structures continued to be designed by the NSW Public Works Department post Federation. Few substantially intact timber military or institutional buildings of this age survive; many of which are now within National Parks or the areas fronting Sydney Harbour managed by the Sydney Harbour Federation Trust (particularly at George's Heights/Chowder Bay).

Green Point is similar to the Gap Bluff cottage physically but is more intact with its overall frame, timber flooring and cladding. The roof is modern Colorbond corrugated steel. It is not known what the original roof cladding was. The gable has a louvered panel at each end but the outer louvered panel (evident at the Gap Bluff Cottage), in the line of the barge, has been removed. The chamfers on the barge indicate where it was. It is not known if the verandah is original but it may be from the 1950s or have been enclosed then.

The interior subdivisions appear original but are now sheeted in plasterboard and asbestos cement sheeting as is the verandah. There is a range of timber windows from various periods. The floors are cypress pine T & G boards and may not be original. The laundry and former toilet appear to be original and are lean-to rooms on the west. In principle it would be acceptable to add windows in the west wall to give harbour views but the early laundry and toilet are in the way. Further research may uncover original plans that may indicate whether the laundry is original and the significance could be reviewed. The bathroom floor is a step down and the construction is not known. The structure adjacent may be vulnerable to water damage depending on the construction. The bathroom is adequate but not of a high standard. If replaced the construction should be reviewed to protect original fabric and discharge water correctly.

Samples of the current house colour scheme are painted on the inside of the timber ledged and braced door. The exterior colour scheme is appropriate (but it is not based on research into the original colour scheme) and the interior is plain light colours (similar for Gap Bluff).

The area immediately to the east and north of the building is drained and paved and there are drains under taps. However the area is damp and the drains need careful maintenance to ensure there is not water damage. The building has an elevated timber floor with a subfloor space. The underfloor space was not inspected, nor were the other concealed spaces such as the roof space. The ground level is close to the floor so the sub-floor space is small on the uphill side.

The house is cut into the hillside at the rear, and the cut is retained by a dry stone wall. The drains at the base of the cut are functional but need to be regularly maintained and are vulnerable to blockage. Vegetation grows right up to the edge of the wall and overhangs. A young tree planted in the bed immediately north east of the cottage is too close to the edge of the retaining wall and to the house and should be removed as it will grow too large.

The garden is grassed with specimen plantings that is appropriate but plants should be kept away from building walls. Kitchen garden plantings are also appropriate. The growth along the south fence includes a self sown or inappropriately planted date palm that should be removed. The Norfolk Island hibiscus planted here is appropriate and should remain but weeds including lantana should be removed and a clear strip left on the outside for fence maintenance. There are 'Cheese trees' on the mound north of the cottage and a mature turpentine to the west which overhangs the house and has been recently trimmed. The fence is not significant but is appropriate to maintain to create a yard for the cottage. The fences are a new lapped and capped timber paling fence to the north, a timber picket fence to the west and a pipe and chain wire fence to the street and south. The paving to the east of the cottage uses bricks from the demolition of the hospital block at Gap Bluff (information from NPWS staff).

Generally

Conserve the cottage and use as public accommodation or NPWS residence or alternately as a café/refreshment room or restaurant.

Limited alterations are acceptable to improve amenity for uses as above. Any change should be based on the historic plan and the original layout should be interpreted in the fabric itself.

Further research the area and cottage particularly for historic plans of the cottage and review significance if such plans are found.

Manage the surroundings for small group self guided activities with a loop walk around the foreshore linked, via the

beach, to Constables Cottage precinct and for picnicking overlooking Camp Cove and on foreshore looking west. Interpret defence and navigation features (including WW2 boom) and the cottage as a former barracks.

Garden

Policies for the garden are:

Maintain the garden as grassed with specimen plantings keeping plants away from building walls. Kitchen garden plantings are also appropriate.

Remove the small tree from the bed immediately north east of Green Point Cottage, as it will grow too large.

Maintain the fence to create a yard for the cottage.

Remove date palm and weeds from south fence an establish a cleared strip on the outside for fence and garden maintenance. Continue to trim the turpentine where it overhangs the house.

Building

The following are policies for timber cottages as they apply to Green Point Cottage.

Retain the authentic fabric. Maximise the retention of original fabric by patching, repairing or splicing in preference to replacement.

Retain the configuration and character of the building. Small scale pavilion additions may be made if required for use but should be distinct and separated from the original building or linked by walkways. The only suitable location is where the site of the garage.

Existing kitchens and bathrooms may be replaced as required and the opportunity used to improve building conservation. Works should be easily reversible and designed and supervised by an experienced heritage architect.

Maintain surface drainage to ensure ground water from above around is diverted around the building. Investigate, clear and repair stormwater drains and maintain regularly.

Monitor regularly for termite activity and rot and repair damaged sections of timber. If replacing weatherboards match the existing profiles.

If roof replacement is necessary investigate the roof space to determine original roofing materials or replace existing.

If works expose the interior of walls or roof spaces take the opportunity to assess the structures in detail to ascertain more clearly the original configuration and fabric of the building. Record photographically and arrange for a heritage architect to assess areas in detail.

Ease and adjust windows and doors whenever painting is undertaken and use oil based paints to exterior joinery.

Paint colours should preferably be based on research on site, or on typical colours of the period. Research colours prior to any stripping of paint from old joinery if stripping is necessary. As a guide external timber colours should generally light ochre or stone to the timber boards and dark colours to the joinery, particularly sashes and glazing bars.

Leave asbestos cement sheeting in situ and maintain painted finishes as encapsulation. If necessary to remove take appropriate precautions and dispose of according to regulations.

Manage the use of adjacent spaces, eg turning and parking areas, associated with use for accommodation.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate

Undertake works to minimise deterioration:

- Remove vegetation encroaching on stormwater drains and retaining wall (including small tree to northeast),
- ensure storm water and ground water is directed away,
- trace stormwater drains to outlets, clean and repair,
- check connections of downpipes to drains,
- install floor access hatches and clear all underfloor vents and
- ensure asbestos cement sheeting is encapsulated.

Medium Term (1-5 years)

Undertake conservation works:

- repair timber structure and cladding and paint and
- upgrade services including electricity and water.

Long term

Undertake adaptive reuse works:

- upgrade bathroom, kitchen and laundry if required for use.

MAINTENANCE (CMP STAGE 2)

Inspect the building and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- fire hazards,
- vermin entry and nesting,
- damage to roofing or flashings, water entry,
- storm water flow away from building and encroaching vegetation,
- gutters, spreaders and downpipes and clean and functioning,
- rear drain function,

- damp in rooms,
- condition of paint,
- termite damage or infestation,
- door and windows close, glass intact and
- operation of services such as fire protection, lighting and power, water.

INTERPRETATION (CMP STAGE 2)

Retain building as residence in private yard with viewing from outside the fence. Provide interpretation of the original use as a barracks from a public place in the vicinity and more detailed interpretation within the building directed towards building users. Considered providing additional interpretive material electronically or in a brochure.

ADDITIONAL PHOTOGRAPHS

View of Green Point Cottage looking south west from the parking area at the end of Pacific Street. Source Author August 2006.

View of part of the north wall of the cottage showing the surviving c1900 original windows on the north elevation which are unusual being pair of tall multi-paned casements. Source Author October 2006.

View of the northern area of the rear garden looking south towards the cottage showing the stone walls and steps. The west wall of the garage is on the left. Source Author October 2006.

View of the western area of the garden looking north-west towards along the western fence with the large rock outcrop. The west wall of the garage is on the left. Source Author October 2006.

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Ed Beebe Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*

View through the rear passage to the northern east picket fencing. There is a retaining wall to the right with vegetation over. There is a concrete pathway and drain which needs regular clearing. Vegetation needs to be kept well away from building.

View of southern west front elevation, showing detail of ventilation louvres in the gable. Note modern services. There is a chamfered detail on the fascia indicating the location of the external louvres the same as those remaining at Gap Bluff Cottage.

View of garage from southern west, located between the house and the street. It is used for storage and as a garage and is accessed by concrete pathway. It is screened by the garden, the building is not obtrusive and has no heritage value.

View of colour scheme, painted and described, on the rear of the storeroom door.

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Arthur Phillip Memorial – Ref: 5.2		**LOCATION**: Green Point	
HHIMS ID:3554	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: memorial		**FORMER USE:** memorial	

Photograph

Arthur Philip Memorial at Green Point. February 2007

Photograph

View of the Arthur Philip Memorial at Green Point, from the bottom of the stair. February 2007

HISTORICAL SUMMARY (STAGE 1 CMP)

The Arthur Phillip Memorial at Green Point, on the north side, commemorates first landing of the First Fleet in Port Jackson. The Royal Australian Historical Society (RAHS) erected the memorial in 1938 to mark Captain Arthur Phillip's 'Port Jackson Landing Site'. It is a replica of a memorial erected at Bath, Phillip's former residence (Henderson 1988).

National Theme/s:	**State Theme/s:**
9. Phases of Life - Marking the phases of life	Events - Activities and processes that mark the consequences of natural and cultural occurrences

DESCRIPTION

The small marble commemorative plaque is set on a short, cement-rendered obelisk at the top of a short flight of concrete steps set into the ground. It is a 'White marble tablet, moulded top with projected footing (two missing), with raised letters and border, enclosed by relief frame and flanked by raised scroll work, affixed to the face of a tapering pillar, with stepped base and pyramidical cap. A metal plaque, with indented sides, incised letters and border, is mounted on the rear face of the pillar. Marble tablet 46x61 cm.' (Henderson 1988).

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low**

SUMMARY STATEMENT OF SIGNIFICANCE

Green Point has high historic significance as the first landfall of Governor Arthur Phillip in 1788. It has historic significance for its association with Edward Laing, surgeon in the NSW Corp, and original grantee in 1793 of land at Camp Cove, after whom Laings Point was named. Green Point has historic significance as a key point in Harbour navigation since 1788. The Point has historic significance for its long association with the Australian Military in NSW and the defence of the Harbour.

The Arthur Phillip Memorial at Green Point is a modest sandstone structure erected by the Royal Australian Historical Society (RAHS) in 1938 to commemorate first landing of the First Fleet in Port Jackson. The memorial has historic and likely social significance to the local community and to Australian historians.

High **Moderate** Low None State **Local** Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Henderson, Beryl, Monuments and Memorials: A tribute to their worth, RAHS, Sydney 1988

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and conserve the memorial. Reconsider access and either repair stairs or construct new access. Provide additional interpretation.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The memorial is set in the grassed northeast area of the Green Point Reserve. It is in a small cutting with concrete retaining walls behind and on the sides. The memorial is a rendered shaft with a low pyramidal top. The base is two steps and is concrete. The aggregate is visible in photographs. The plaque is white marble. A broad flight of concrete steps leads to the memorial from the path below.

The construction /opening of the memorial may have coincided with the Sesquicentennial celebrations held in January 1938. Photographs of large crowds in Camp Cove in December 1937/January 1938 survive in the GPO Collection. Additional photographs and other archival material might be held by the RAHS. The design of the memorial is based on the tablet erected in Phillip's parish church of Bathampton, a memorial that Henry Parkes arranged to have restored in the 1890s. The memorial placed in Bath Abbey in 1937 is somewhat larger.

The memorial is in good condition but the paving and steps around are cracked and uneven. The stairs mean that the memorial cannot be accessed by the disabled. An alternative would be to provide access on grade from the east and remove the stairs. The memorial itself does not adequately interpret where Phillip landed and the significance and additional interpretation is desirable.

General policies for the area and memorial are:
Manage northeast area as
- *picnic area and area for outdoor functions eg. weddings,*
- *interpreting first contact at Camp Cove (when South Head interpretation plan complete),*
- *review Phillip memorial structure and location in consultation with community and Council,*
- *maintain and upgrade toilet block, alterations eg roof over, are acceptable,*
- *as coral trees become over mature remove and replace with local species eg angophora,*
- *maintain area as trees with grass.*

RECOMMENDED WORKS (CMP STAGE 2)

Immediate - None.

Medium Term (1-5 years) - Undertake conservation works by repairing cracks in shaft, stairs and surround (if possible).

Long term - Construct new access from east along the contour from the main path if stair is beyond repair.

MAINTENANCE (CMP STAGE 2)

Inspect the monument and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events. Arrange maintenance work as required and update and file maintenance record. Check:

- vandalism
- water lying on surround or stairs and encroaching vegetation,
- cracks in render or concrete and
- uneven ground surfaces.

INTERPRETATION (CMP STAGE 2)

Retain the memorial that commemorates an important Australian historical event. Provide additional interpretive material on site or in a brochure and electronically that outlines both the 1788 landing and the substantial sesquicentennial celebrations held on the site in January 1938.

ADDITIONAL IMAGES ADDED 2009

Celebrations in Camp Cove in January 1938 ML GPO Collection

Tablet in the Australia Chapel, St Nicholas Church, Bathampton near Bath England. The tablet the memorial is based on is on the wall in the RHS of this view (Wikipedia).

Sydney Harbour National Park, South Head – Historical Inventory

NAME: Navigation Obelisk – Ref: 5.3		**LOCATION**: Green Point	
HHIMS ID:	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** Navigational obelisk	

Historic Photograph

Detail from an historic photograph dating to c1890s showing Green Point in the distance. The whitewashed navigation obelisk can be seen at the tip of the point (Source: Mitchell Library, SPF/749).

Notes

The Obelisk is currently listed in the Marine Ministerial Holding Corporation S170 Register 1999 but is within the National Park.

The Obelisk is included as a heritage item (#48) in Schedule 4 of the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

HISTORICAL SUMMARY (STAGE 1 CMP)

In the late 1850s, two aids to harbour navigation were constructed within the study area, the Hornby Light Station on the tip of South Head and a navigation obelisk on Green Point. South Head and Green Point were recognised as important harbour navigation points by Europeans settlers in 1788. William Bradley, First Fleet Naval Officer and diarist, had noted Green Point as early as February 1788 as a useful visual aid to navigating past the Sow and Pigs Reef at the entrance to the harbour. The 1790s saw the establishment of a signal station at Signal Hill and a pilot station at Watsons Bay (both at South Head but outside the study area). Other navigational aids constructed on the South Head peninsula in the first half of the nineteenth century included the Macquarie Lighthouse, and from 1836, a manned light ship which marked the Sow and Pigs Reef at the entrance to the harbour and helped ships to find the southern channel leading to Sydney Cove (Stephensen 1966: 7–8, 24).

The navigation obelisk at Green Point was one of four constructed on Sydney Harbour to aid navigation others were erected at Obelisk Bay, between Georges and Middle Heads and at Parsley Bay). The construction of additional navigation aids was seen to be necessary in the 1850s with the general boom in Sydney Harbour's ship traffic, as immigrants flocked to take their chances in the goldfields. The tragedy of the Dunbar in August 1857 probably provided a catalyst for these improvements.

In 1857, Captain Denham and the Officers of the Herald prepared a plan for the siting of a number of obelisks, which would provide leading marks to assist in the navigation of channels within the harbour. In November 1857, £500 was allocated for four obelisks. In January 1858 the original contractor pulled out of the arrangement, but another, a Mr Hugh Murphy proceeded with the work. The stone navigation obelisk on Green Point provided a leading mark for the Eastern Channel to be lined up with the back mark, also still standing, on the west side of Parsley Bay (William Bradley, facsimile 1969: 78; Stephensen 1966: 24; Wilson 1985: 4, 20).

National Theme/s:	State Theme/s:
3. Economy - Developing local, regional and national economies	Communication - Activities relating to the creation and conveyance of information
3. Economy - Developing local, regional and national economies	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements

DESCRIPTION

The navigation marker constructed at Green Point in 1858 is a stone obelisk. It is a simple 3m high, tapered shaft of dressed sandstone blocks with chamfered top. The shaft sits on a stepped sandstone base. The Green Point navigation obelisk has fair-faced stone and its mortar joints are in good condition. The footings of Searchlight No. 4 (constructed at Green Point prior to 1903) and possibly also the Boom Net Winch House, survive adjacent to the Green Point navigation obelisk.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** High **Moderate** Low

SUMMARY STATEMENT OF SIGNIFICANCE:

The NPWS land at Green Point has high historic significance as the first landfall of Governor Arthur Phillip in 1788. It has historic significance for its association with Edward Laing, surgeon in the NSW Corp, and original grantee in 1793 of land at Camp Cove, after whom Laings Point (now Green Point) was named. Green Point has historic significance as a key point in Harbour navigation from 1788 and in Harbour defence, from the 1850s. The Point has historic and social significance for its long association with the Australian Military in NSW.

The Green Point obelisk has significance of one of group of four navigation obelisks built within Sydney Harbour in c1858. This group of navigation obelisks has historical significance as relics of the navigational aids used in the harbour during the nineteenth century.

High Moderate Low None	**State**	Local	Not Assessed
	As part of a group of four navigation obelisks built within Sydney Harbour in c1858		

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Bradley, William, A Voyage to New South Wales, 1786–1792, facsimile of original manuscript, Trustees of the Public Library of New South Wales and Ure Smith Pty Ltd, 1969

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

Marine Ministerial Holding Corporation S170 Heritage and Conservation Register 1999

Robertson & Hindmarsh, North Fort, North Head Conservation Management Plan, (Final Draft 2009)

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Stephensen, P. R., The History and Description of Sydney Harbour, Rigby Lit., 1966

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

Wilson, G.C., Sydney Harbour Fortifications, 1985

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Establish ownership and management responsibility. Removing inappropriate repairs and repoint joints. Interpret on loop walk through area.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The navigational obelisks are located on the marine survey of Port Jackson undertaken by the HMS Herald in 1857 and published on the resulting chart issued by the British Admiralty. It shows the obelisk on North Head, two Obelisks in Obelisk Bay (near Middle Head), Green Point, Parsley Bay and Vaucluse as well as the Hornby Light and the site of the wreck of the Dunbar. Four of these obelisks had only recently been constructed: the two in Obelisk Bay, one at Green Point and one at Vaucluse. The Parsley Bay Obelisk and the North Head Obelisk were earlier structures, as they also appear on Thomas Mitchell's trigonometrical survey (1853). All were constructed of sandstone. The new Obelisks were designed by the Colonial Architect, Alexander Dawson in 1857; hence their elegant form, continuing a tradition of the use of the form as a geographic marker begun by Francis Greenway with the Obelisk in Macquarie Place. Notes regarding their construction are held in the Colonial Architect's papers in the NSW State Records (2/616 Papers are Alphabetical, see O for Obelisk). The Obelisks were to aid shipping within the outer reaches of Sydney Harbour. The two in Obelisk Point were to be lined up to give safe passage into the harbour.

The Navigational obelisk at Green Point is dressed coursed sandstone with a chamfered top and a stepped sandstone base. The sandstone blocks are tapered, there are two blocks in each course. The top edge of the top course has a chamfer about 100mm deep at 45 degrees. The faces of the blocks have a dunted (reeded) finish. The stones at the top of the obelisk are in good condition. The stone in the lower part is more deteriorated and weathered and most of the mortar has eroded from the joints in the lower sections of the obelisk. Some mortar joints have been roughly repaired with patches mortar. Some blocks are defaced with carved initials. Note that the obelisk was originally whitewashed and this finish could be reapplied as protection. The treatment of the remaining other obelisks on other Sydney sites should be considered before making a decision to reapply whitewash as they should continue to be perceived as a group. A shrub is growing close to the obelisk to the north east. Photographs dating from 1858 show how well the white Obelisks stood out against the surrounding bush (William Stanley Jevons *Album of Photographs of Sydney*, John Rylands Library Manchester).

Policies for the area generally are:
Manage for small group self guided activities with a loop walk around the foreshore linked via the beach to Constables Cottage precinct and picnicking overlooking Camp Cove and on foreshore looking west. Interpret defence and navigation features (including WW2 boom).

Policies for the obelisk are:
Maintain the area around clear including removing the shrub close to obelisk and cutting the grass around it (do not damage the stone with a "whipper snipper" or other grass cutting tool).

Repoint the open joints. Work to be undertaken by a stone mason and mortar mix to be researched and specified.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works to minimise deterioration by removing vegetation encroaching on monument.

Medium Term (1-5 years)
Conservation by repointing open joints in stone.

Long term
Consider whitewashing depending on approach taken to navigation obelisks group.
Replace base stone if they become too deteriorated to support obelisk over.

MAINTENANCE (CMP STAGE 2)

Inspect the monument and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:

- vandalism,
- encroaching vegetation and
- open mortar joints or fretting or cracks in stonework.
-

INTERPRETATION (CMP STAGE 2)

Interpret obelisk as one of a group just inside the heads of Sydney Harbour. Interpret on loop walk through area using signage and / or a brochure. Considered providing additional interpretive material electronically.

ADDITIONAL PHOTOGRAPHS

View of the Obelisk from the Harbour (SHI)

View of the Navigation obelisk with the footings of the Searchlight No. 4/ Boom Net Winch House in the foreground. February 2007

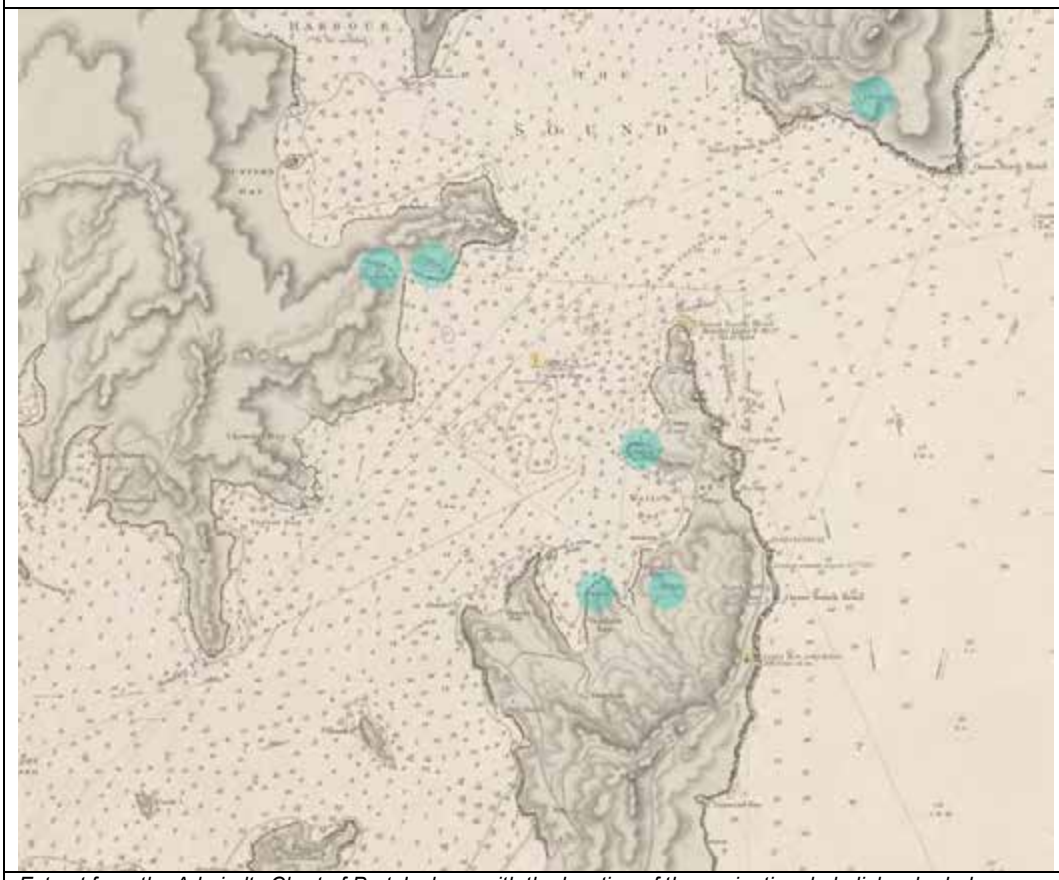
ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OCP March – April 2008*

Above left: View of the top of the Navigation obelisk where stone is better preserved. The sandstone blocks are tapered, there are two blocks in each course and the top course has a chamfered edge. The blocks' faces have a dunted (reeded) finish. Some mortar joins have been patched. Some blocks are defaced with carved initials.

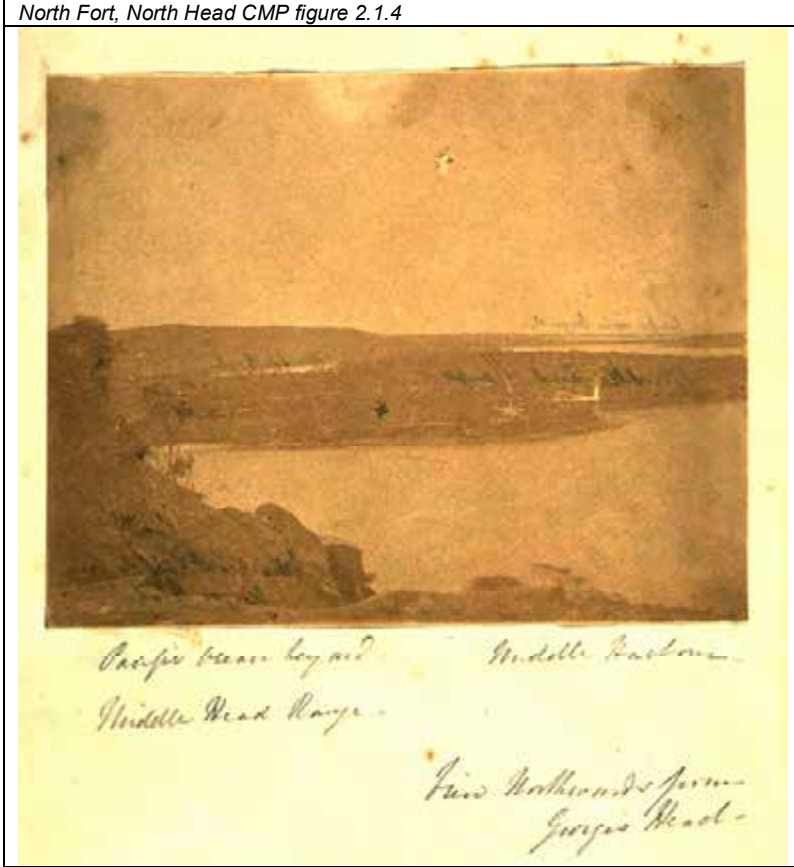
Above right: View of the lower part of the Navigation obelisk where stone is more deteriorated. Most of the mortar has eroded from the joints in the lower sections of the obelisk. Some mortar joints have been roughly repaired with patches mortar.

Left: View of the Navigation obelisk with chamfered top and its stepped sandstone base. The footings of Searchlight No. 4 (constructed at Green Point prior to 1903), are seen on right side background. A shrub is growing close to the obelisk at left.

ADDITIONAL IMAGES ADDED 2009



Extract from the Admiralty Chart of Port Jackson with the location of the navigational obelisks shaded.
North Fort, North Head CMP figure 2.1.4



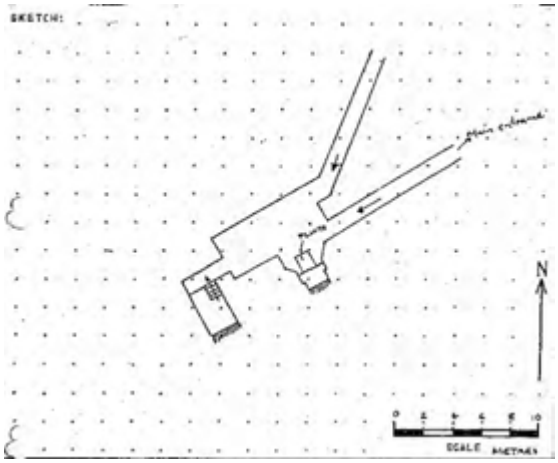
Jevon's photograph of Middle Head taken circa 1858 showing the newly whitewashed Obelisk. Note how well it stood out from a distance.
North Fort, North Head CMP figure 2.1.6

Larger extract from the 1890s view of Camp Cove, showing the Green Point Obelisk in the foreground, additional obelisks can also be seen to the west, including one directly above the residence on Green Point. Gun emplacements at South Head can be seen in the foreground. ML SPF 749

Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Submarine Miners Firing Station – Ref: 5.4		**LOCATION**: Green Point	
HHIMS ID:3552	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: no use		**FORMER USE:** Submarine Miners Firing Station	

Plan



Sketch plan of the Submarine Miners Firing Station, prepared by Denis Gojak (Source: Gojak 1985).

Photograph

Entrance to the Submarine Miners Firing Station. August 2006

HISTORICAL SUMMARY (STAGE 1 CMP)

Green Point was acquired by the Crown for military use in the 1850s. Some time between 1872 and 1885, a battery was constructed at Green Point, but little is known about it, and no physical remains of it have been identified.

The Submarine Mining Firing Station was constructed at Green Point between the late 1870s and early 1880s, as part of a program of defensive works overseen by the Colonial Architect, James Barnet. The Submarine Mining Firing Station operated the electronic minefield across the harbour and was used until 1903 when it was abandoned. The Submarine Mining Firing Station was sealed in the 1960s when the main entrance at the southern end of the main passage was blocked. Access is now provided by a circular shaft, which is capped with concrete.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The Submarine Miners Firing Station is located to the west of Green Point Cottage. It occupies most of the slope of the hill and is aligned roughly north south. There is minimal above ground evidence of the station, because most of the infrastructure is below ground. The Submarine Miners Firing Station consists of two underground chambers, a central north south passage about 50m long with a subsidiary passage running 40m to the southeast before it dives beneath the water line (Gojak suggests that this passage was intended to take electrical cables, see Gojack, Site Notes 1985). The station was sealed in the 1960s and a circular shaft capped with concrete now provides access.

CONDITION: Good **Fair** Poor Ruinous Site Only	
INTEGRITY: **High** Moderate Low	**ARCHAEOLOGICAL POTENTIAL:** **High** Moderate Low

SUMMARY STATEMENT OF SIGNIFICANCE:

The NPWS land at Green Point has high historic significance as the first landfall of Governor Arthur Phillip in 1788. It has historic and social significance for its association with Edward Laing, surgeon in the NSW Corps, and original grantee in 1793 of land at Camp Cove, after whom Laings Point (now Green Point) was named. Green Point has historic and social significance as a key point in Harbour navigation from 1788 and in Harbour defence, from the 1850s. The Point has historic and social significance for its long association with the Australian Military in NSW.

The Submarine Miners Firing Station, in conjunction with associated c1870s structures and artefacts at South Head, Green Point and at Middle Head is of historical and technical heritage significance as an important development in the story of Sydney's harbour defences. Other evidence is the Searchlight No 4 foundations / Boom Net Winch House at Green Point (CMP Inventory Item 5.5), and installations at Chowder Bay, Georges Heights, Middle Head and Inner South Head (Lady Bay Precinct).

The overall importance of the Submarine Miners Firing Station is as part of the collection of Defence structures and artefacts found at Green Point which in turn is part of the rich legacy of the Harbour Defence installations found throughout Sydney Harbour National Park and surrounding areas still in Government ownership. The setting of these installations in relatively undeveloped land and the strong relationships to the geography of the Harbour greatly increases their significance.

High Moderate Low None Further research is required into the heritage value of Sydney's Submarine Mining Facility (1878 – 1903) and the electrification of defence installations including searchlights c.1890.	State	Local Not Assessed

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

Openheimer, Peter, The Fragile Forts: The Fixed Defences of Sydney Harbour 1788–1963, Army History Unit, Department of Defence, Canberra ACT, 2004

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

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

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Research and identify the location and nature of the structure in the short term. Stabilise the structure in the medium term. Stabilisation work should prioritise structural support, drainage and ventilation. Catalogue and store moveable items including building elements found. In the long term conserve the structure including: install new waterproof membranes over the roof, treat "concrete cancer" rusted ferrous metal elements and salt affected masonry and conserve internal finishes. After conservation consider reopening doorways and passages to provide access for maintenance and occasional guided tours. Provide interpretation on loop walk with signage and brochure and additional interpretation in publications and electronically and possibly temporary art or other installations and occasional events in the long term.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

The Submarine Miner Firing Station Generally

The main underground part of this structure has not been inspected during the preparation of this report. These comments rely on information from others. It is also not clear if this is the same structure as, or incorporates, the Torpedo Station drawn by the architect George A. Morell in 1878 (see drawings at end of this inventory).

The extent and location of the submarine miners firing station has not been confirmed. It is clearly not located as shown in the Stage 1 CMP plan and it appears that the north point on the Gojak plan has been reversed. There are above ground structures that are not identified and mapped in the Stage 1 CMP plan but appear to be part of the station or subsequent military structures and are consistent with other historical descriptions. Further investigation and research is needed to clearly understand and locate these features that are highly significant. There are likely to be further historical documents relating to these structures and further searching of archives is recommended.

The station is sealed and inaccessible and photos taken in 2004 and 2006 indicate that there is rust and spalling concrete associated with damp. It appears that there is no ventilation and that drainage is poor.

General policies for Green Point relevant to the Submarine Miners Firing Station are:
Control weeds including lantana and manage as regenerating bushland or open areas associated with heritage items or current use. Clear around defence features (including lantana), maintain northeast area as grass with trees, revegete elsewhere while maintaining views from defence features.

Manage for small group self guided activities with a loop walk around and picnicking overlooking Camp Cove and on foreshore looking west. Interpret defence and navigation features (including WW2 boom).

Military Installations and Ruins Generally

The following policies are general policies that apply to the Submarine Miner Firing Station:

Preserve the original fabric and repair using matching materials or tested modern materials (eg marine grade stainless steel pins instead of mild steel). Preservation treatment should be according to the fabric to be preserved and may include, stabilisation, propping etc. When deciding on preservation treatment consider the purpose of the retention of each site and adjust the approach accordingly. Preservation measures should use the original form but be distinguishable as a preservation measure and not a reconstruction.

Do not completely fence pits and other hazards but make them obvious to prevent accidental falls by surface treatment or partial fencing as recommended in forts study.

Remove large trees and shrubs from the vicinity and protect from physical damage from erosion, vehicles and visitors, etc.

Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them. Review condition and fill voids according to professional advice.

Adjust ground levels around pits and underground structures so that water drains away from them.

Remove silt from floors and clear drains and maintain at six monthly intervals and after storms and major public events.

Seek detailed engineering and architectural advice and document stabilisation of underground structures. Partially remove overburden, reinstate ventilation, clear drains, regrade so overland waterflow is away from structures, install "Stripdrain" or similar groundwater drainage and protect drying masonry from salt activity all as advised by the engineer and architect.

Monitor rusted metal elements and continue to treat to minimise damage. Resupport if necessary.

Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

In long term reduce water ingress by installing waterproof membranes over and drainage adjacent to structures. Note the main rooms probably had waterproof membranes originally that have deteriorated.

Underground Structures Generally

Policies for the interpretation and use of underground structures generally that apply to the Submarine Miners Firing Station are:
Interpret underground structures in short term using signage and brochures with photos or periscope style viewers. When stabilised allow access on guided tours and consider whether any alternate uses are feasible such as for events, installations or other use.

Identify and list movable items within the underground structures, conserve them. Review their suitability for display or

storage. Interpret them.

Catalogue collected building components. Identify fragile elements, items which can be returned to their original location, be re-used, items which no longer require retention and items which could form part of an interpretive display or museum exhibit.

Submarine Miners Firing Station
Policies for the Submarine Miners Firing Station are:
Research historic plans and photos that may indicate the nature of the building.

Physically research the location and configuration of the underground remains and map and draw them and identify and record any moveable heritage.

Monitor for public safety and reconsider treatment if considered unsafe.

Stabilise and conserve the Submarine Miners Firing Station and bunker/lookout by
- *cutting poisoning and removing figs and other trees growing in and adjacent to structures,*
- *cut grass in vicinity and manage vegetation to maintain view lines clear,*
- *stabilise cracked masonry wall, reopen and secure underground entry,*
- *investigate drainage and vents in detail (engineer & architect,)*
- *remove overburden, repair or replace roof membranes and improve ground drainage to reduce water ingress,*
- *clean, drain and ventilate underground spaces*
- *undertake any structural repairs needed and*

conserve fabric including masonry, ferrous metal elements.

RECOMMENDED WORKS (CMP STAGE 2)

Immediate
Undertake works for public safety and to minimise deterioration:
- Remove vegetation encroaching on structures and drains,
- investigate and clear ground water drainage to direct water away from underground structures,
- clear and repair stormwater drains, trace to outlets and ensure these are unobstructed,
- investigate whether any vents exist and if found clear them,
- knock off loose concrete from ceilings ("concrete cancer") to minimise risk to people in spaces,
- establish a secure entrance for workers through original entry portal,
- ensure all entry doors and concrete covers are secure against unauthorised entry (consider installing security system if levels of unauthorised entry and vandalism are excessive and
- investigate existence of any moveable items / collection including building materials and if found catalogue and store.

Medium Term (1-5 years)
Undertake stabilisation and fabric conservation works:
- Design system to improve stormwater drainage and ventilation,
- improve surface drainage especially in vicinity of underground structures so water is directed away. Consider installing "Stripdrain" or similar to drain subsoil or changing ground levels to create a swale discharging surface water clear of the underground structures,
- reinstate original vents or install new vents. Design to resist vandals and prevent water entry.
- treat "concrete cancer" by treating rusted ferrous reinforcing to limit further deterioration and patching masonry,
- treat exposed ferrous metal elements for rust, in particular and exposed rail track supports, machinery mounts, handrails and other original or early metal elements such as doors,
- desalinate using poultice or sacrificial render as necessary to stone and other masonry affected by salt damp, particularly during drying out period, then repair masonry,
- repoint open joints in masonry, exterior and interior, using lime mortar
- fill cracks in concrete with grout according to engineers advice,
- undertake any structural repairs found necessary and
- fill any exposed and uneven tops of walls with mortar arranging to discharge water to the exterior.

Long term
Undertake complex conservation works:
- Remove overburden from top of roofs of underground structures and repair or install new water proof membrane
- repair / conserve any timber elements,
- conserve any painted signage or evidence of colour schemes with Paraloid or similar treatment,
- remove modern graffiti,
- upgrade services including electricity and lighting and,
- open entry passage and develop access, lighting etc. for interpretation.

MAINTENANCE (CMP STAGE 2)

Inspect the structures and surroundings using CMP maintenance proforma at intervals recommended in proforma including extra inspections after major events and adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check:
- Vandalism, graffiti and damage to entry gates and covers,

- water entry,
- storm water flow away from structures and encroaching vegetation,
- drains clear and functioning,
- damp in spaces,
- termite damage or infestation, rot in timbers,
- progressive rust in ferrous metals,
- open mortar joints or fretting or cracks in stonework or other masonry,
- structural movement and
- operation of services such as lighting and power.

INTERPRETATION (CMP STAGE 2)

Interpret as a rare surviving Submarine Miners Firing Station with later additional military installations with viewing from exterior and interpretive signage on adjacent walk for self guided tours. Maintain view lines from firing station. Provide interpretive material in a brochure about underground structures utilising photos of inaccessible spaces. Consider providing additional interpretive material in a publication or electronically (refer South Head interpretation plan when complete).

In medium term consider periscope style or video viewers for underground spaces. When stabilised and conserved consider opening for occasional small group guided tours.

In long term consider if alternate uses are feasible such as for interpretative displays, events, art or other installations. Review suitability of any movable items found for display or storage and if possible, interpret them.

ADDITIONAL PHOTOGRAPHS

The current access to the Submarine Miners Firing Station opened for inspection in November 2006 (Source: Paul Davies Pty Ltd November 2006).

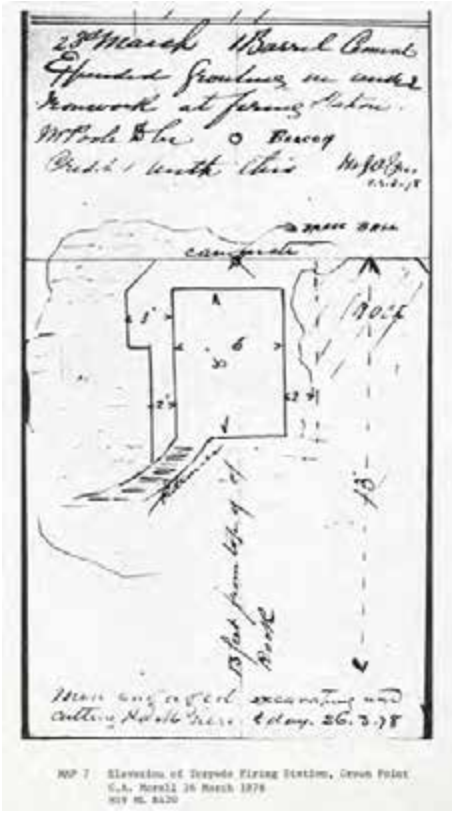
Interior of the Submarine Miners Firing Station. View of plinth. (Source: Paul Davies Pty Ltd 2004)

Interior of the Submarine Miners Firing Station (Source: Paul Davies Pty Ltd November 2004).

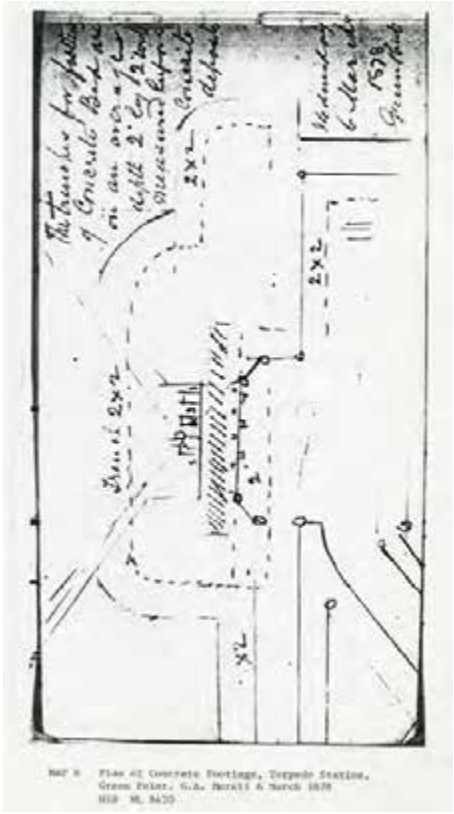
Interior of the Submarine Miners Firing Station (Source: Paul Davies Pty Ltd 2004)

SOURCE OF THIS INFORMATION		
Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

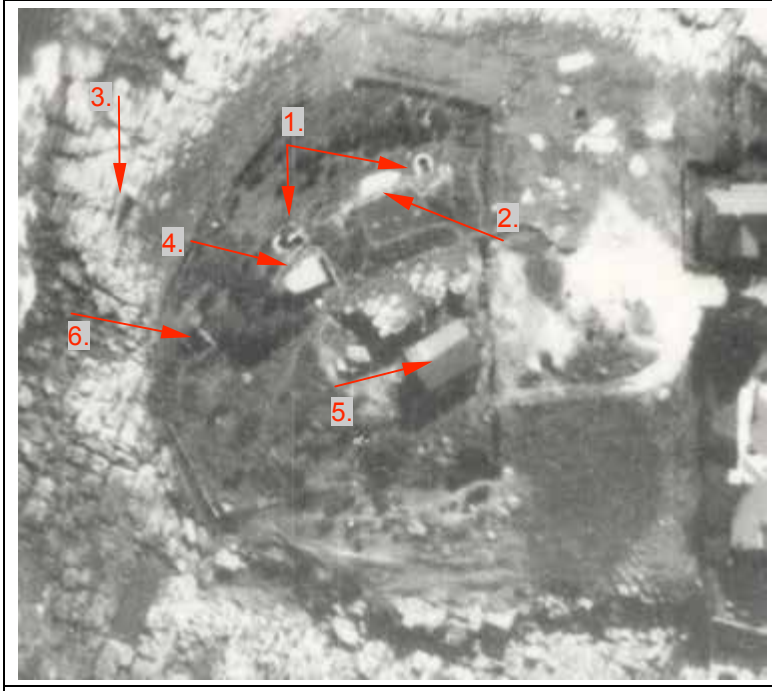
ADDITIONAL PHOTOGRAPHS (CMP STAGE 2) *Source: OCP March – April 2008*



Copy from field notebook, G.A. Morell 26 March 1878 (M19 ML B420). It shows a diagram of excavation for the Torpedo Station, at Green Point. Approx. transcription: 23rd March. 1 barrel cement expended grouting in under ???work at Firing Station. Mr? Poole to be credited with this 23.03.78. Casemate, beacon, brass ball, 6'x 8', 2', 3', rock, 13 feet from ?? of rock. Men engaged excavating and cutting rock here today. 26.03.78.



Copy of page of field notebook, G.A. Morell 26 March 1878. (M19 ML B420) It shows a plan of footings for the Torpedo Station, at Green Point. Approx. transcription: Trenches for foot(t)ings for concrete bed are an average depth 2' by 2' width measured before concrete deposit?. Trench 2x2. Wednesday 6th March 1878. Green Point.



1929 Aerial view of Green Point showing: 1. Possible gun emplacements & other features, 2. parts of the Miners Submarine Station above ground, 3. Navigation Obelisk, 4. Building (not present today), 5. Barracks Building and 6. entry to underground rooms.

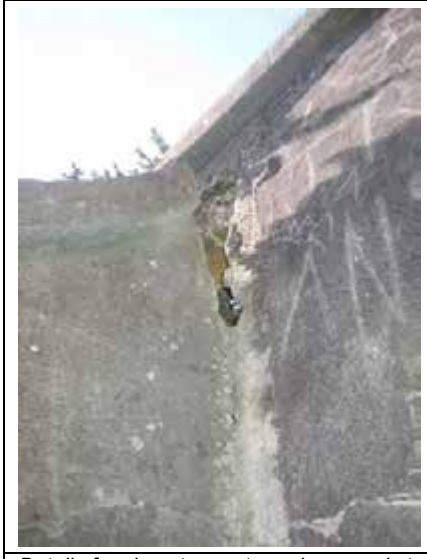
ADDITIONAL PHOTOGRAPHS (STAGE 2) *Source: OC+P March – April 2008*

View of structure assumed to be part of the Submarine Miners Firing Station or later additions to it.

Closer view of the above ground remains assumed to be part of the Submarine Miners Firing Station. The observation opening is blocked.

View of concrete structure, possibly part of an emplacement. Rubbish and vegetation accumulated over and in structure.

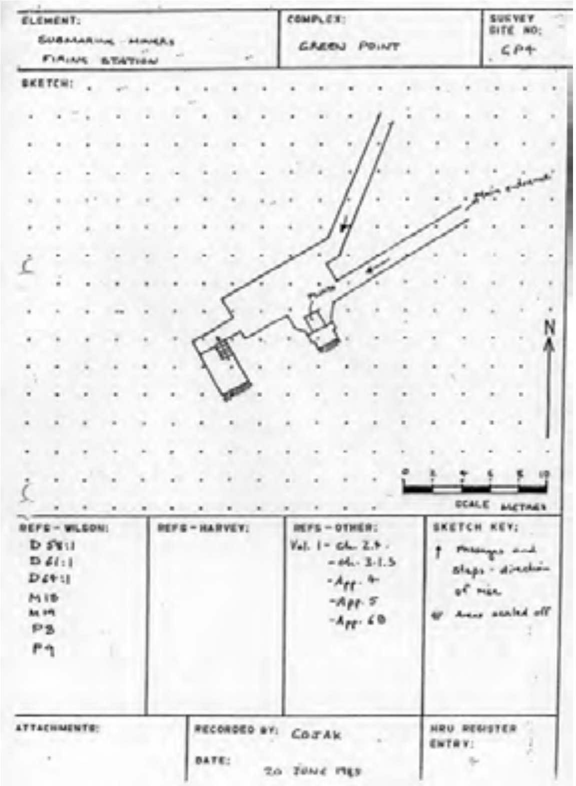
View from above of same concrete structure in left picture.



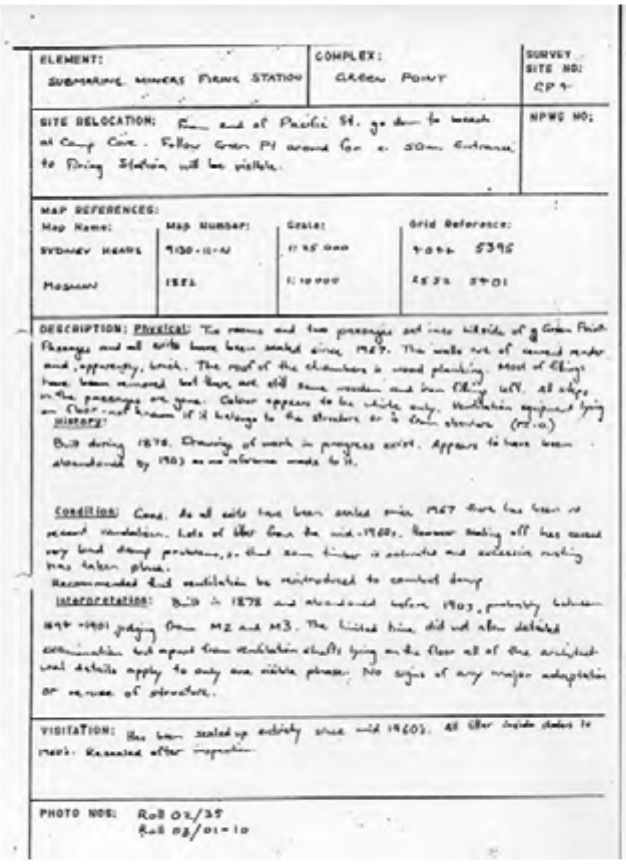
Detail of main entrance to underground structures. A large structural crack has open up between the side and end walls. There has been movement in the structure.

View of the same location shown in left picture. Vegetation and soil has built up above the walls.

ADDITIONAL IMAGES (STAGE 2) *Source: NPWS*



Archaeological record plan prepared by Denis Gojak 1985. The plan may have the north point incorrectly labelled



ELEMENT: SUBMARINE MINERS FIRING STATION

COMPLEX: GREEN POINT

SURVEY SITE NO: GP4

SITE RELOCATION: From end of Pacific St. go down to beach at Camp Cove. Follow Green Pt around for c. 50m. Entrance to Firing Station will be visible.

NPWS NO:

MAP REFERENCES:

Map Name:	Map Number:	Scale:	Grid Reference:
SYDNEY HEADS	9130-II-N	1:25 000	4044 5395
Mosman	1881	1:10 000	2532 5401

DESCRIPTION: Physical: Two rooms and two passages set into hillside of Green Point. Passages and all exits have been sealed since 1967. The walls are of cement render and, apparently, brick. The roof of the chambers is wood planking. Most of fittings have been removed but there are still some wooden and iron fitting left. All steps in the passages are gone. Colour appears to be white only. Ventilation equipment lying on floor – not known if it belongs to the structure or is a later structure. (cont.)

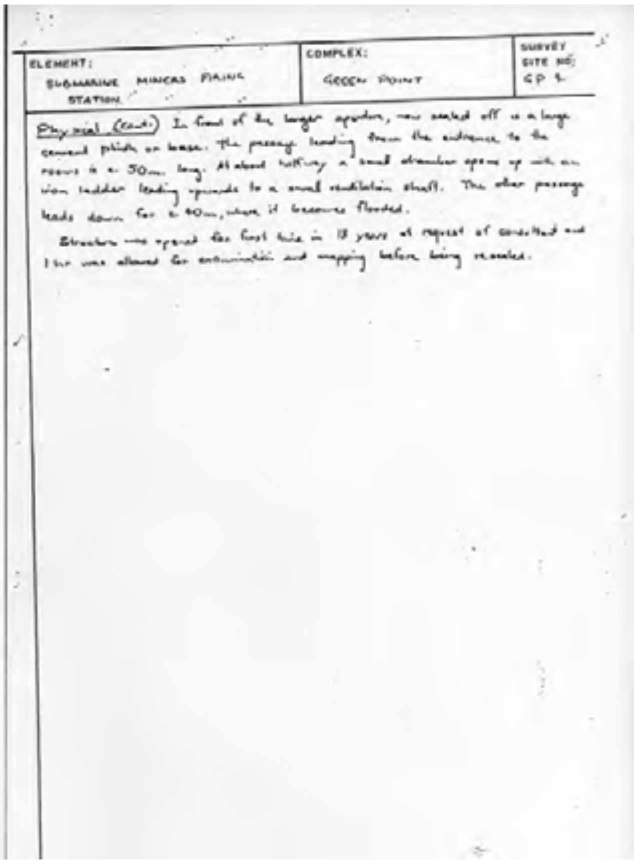
History: Built during 1878. Drawings of work in progress exist. Appears to have been abandoned by 1903 as no reference made to it.

Condition: Good. As all exits have been sealed since 1967 there has been no recent vandalism. Lots of litter from the mid-1960s. However sealing off has caused very bad damp problems, so that some timber is saturated and excessive rusting has taken place.
Recommended that ventilation be reintroduced to combat damp.

Interpretation: Built in 1878 and abandoned before 1903, probably between 1894–1901 judging from M2 and M3. The limited time did not allow detailed examination but apart from ventilation shafts lying on the floor all of the architectural details apply to only one visible phase. No signs of any major adaptation or re-use of structure.

VISITATION: Has been sealed up entirely since mid 1960s. All litter inside dates to then. Resealed after inspection.

PHOTO NOS: Roll 02/35
Roll 03/01–10



ELEMENT: SUBMARINE MINERS FIRING STATION

COMPLEX: GREEN POINT

SURVEY SITE NO: GP4

Physical (cont.) In front of the larger opening, now sealed off is a large cement plinth or base. The passage leading from the entrance to the rooms is c. 50m. long. At about halfway a small chamber opens up with an iron ladder leading upwards to a small ventilation shaft. The other passage leads down for c. 40m, where it becomes flooded.

Structure was opened for first time in 18 years at request of consultant and 1 hr was allowed for examination and mapping before being resealed.

Archaeological record of site prepared by Denis Gojak 1985.

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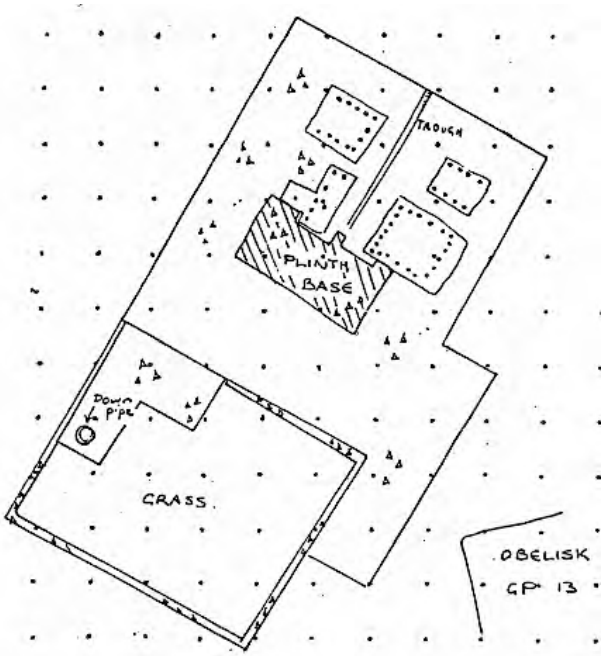
Sydney Harbour National Park, South Head – Heritage Inventory

NAME: Searchlight No. 4 Boom Net Winch House Remains – Ref: 5.5		**LOCATION**: Green Point	
HHIMS ID:3555	**MAP:**	**ZONE:**	**GPS:**
CURRENT USE: Relic		**FORMER USE:** Searchlight No. 4 / Boom Net Winch House	

Plan



Sketch plan of the Searchlight No. 4 footings, prepared by Denis Gojak in 1985 (Source: D. Gojak, 1985).

Photograph

View of the footings of the Searchlight No. 4 in the foreground. The navigation obelisk is to the right (out of picture). February 2007

HISTORICAL SUMMARY (STAGE 1 CMP)

Green Point was acquired by the Crown for military use in the 1850s. Some time between 1872 and 1885, a battery was constructed at Green Point, but little is known about it. A small battery was constructed at Green Point after 1892, perhaps using the previous battery on the point. No physical remains of either battery have been identified. The footings of Searchlight No. 4 (aka Electric Light Station No. 4) at Green Point (constructed prior to 1903) survive adjacent to the navigation obelisk; it is likely that this site incorporated the Winch House for the World War Two Anti-Submarine and Torpedo Boom Net.

Technical developments in the 1880s resulted in changes to the fortifications of Sydney Harbour, including the use of telephone lines in the late 1880s, and the construction of a Submarine Miners Observing Station in 1878 at Chowder Bay. In this same year, a Submarine Miners Firing Station was built into the hillside at Green Point looking across to Middle Head. An electronic minefield was installed across the shipping channels, and a similar firing station was built on the other side of the harbour at Georges Head. Green Point is part of the first Submarine Mining installation in Australia. The works were overseen by the Colonial Architect, James Barnet. The Submarine Miners Firing Station was abandoned in 1903.

A series of searchlights were installed at Inner and Outer South Head, as well as Green Point, following the construction of the Engine Room and generator in 1890 (at Inner South Head). Searchlight No. 4, the footings of which are still in-situ, was part of this program and is dated between 1890 and 1903. Early searchlights were 90-cm projectors, with Schukett arc lamps and controls (Oppenheimer 2004, p306)

In 1925 it was recommended that the 1–30 degrees searchlight at Green Point be abandoned. Minefields were not laid in Port Jackson during WW1. A new searchlight was installed at Green Point in September 1939 as part of the rapid expansion of Sydney's defences when WWII was declared.

An Anti-Submarine and Torpedo Boom Net was constructed between Green Point and Georges Head to restrict entry to Sydney Harbour in early 1942 (see Figure 2.22). The boom was 1,480 metres long and constructed of clusters of piles and net made of wire and interlocking steel rings, supported by a series of concrete dolphin piles. It had two openings for the entry of ships and another opening for small craft. The section of the net closest to Green Point was suspended by buoys. All but the very largest of ships used the eastern (Green Point) gate, which was controlled by a boom gate vessel (HMAS Kuramia), and opened by hauling back to a dolphin located off Green Point using winches housed on Green Point adjacent to the navigation obelisk. A 6-pounder Anti-Torpedo Boat gun was mounted at Green Point during 1941, covering the boom (Woollahra History and Heritage Society Inc. 1995; Oppenheimer 2004: 262, 272, 273; Gojak, Dennis c1985).

The war in the Pacific reached crisis point in 1942, and the period of greatest risk to Sydney was the first half of that year. On the night of 31 May 1942, three Japanese midget submarines attempted to enter the harbour. One became entangled in the boom net, and the crew destroyed the vessel, but the other two penetrated the net. Submarines also fired from outside the heads at the Woollahra area. Newspaper reportage attributed a major role to the coastal defences in repulsing the submarine attacks. However, Oppenheim finds that, although the submarines' entries to the harbour were observed on the Indicator Loop System and recorded by the staff at South Head, no action was taken.

The Pacific crisis had faded by mid-1944 and the manning of Sydney's coastal artillery was reduced to a partial Voluntary Defence Corps basis. Work commenced on dismantling the boom net in August 1945 and by early 1946 all but the large dolphins had been removed.

National Theme/s:	**State Theme/s:**
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences - Technologies of constructing military buildings and structures
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation - Defending Sydney Harbour

DESCRIPTION

The foundations of Searchlight No. 4 / Boom Net Winch House consist of concrete slabs and strip footings with numerous protruding rusting locating bolts. The remains are positioned in from the low rocky reef, just above high water mark. The bolts in the slabs are arranged in four sets for locating machinery and there is a distinctive plinth/base. A grassed rectangular area is boarded by a low kerb within which is the base for a WC. The remains are easy to discern but their condition is reasonable to poor, with the concrete badly weathered in parts and the iron bolts badly rusted.

A small stone memorial with an interpretative plaque is located alongside and south of the Searchlight / Boom Net Winch House footings. The memorial was erected in 1995 to record the World War II Anti Torpedo Boom Net, which was installed between Green Point and Georges Head in early 1942.

CONDITION: Good Fair Poor **Ruinous** Site Only	
INTEGRITY: High Moderate **Low**	**ARCHAEOLOGICAL POTENTIAL:** High Moderate **Low**

SUMMARY STATEMENT OF SIGNIFICANCE

Green Point has high historic significance as the first landfall of Governor Arthur Phillip in 1788. It has historic and social significance for its association with Edward Laing, surgeon in the NSW Corp, and original grantee in 1793 of land at Camp Cove, after whom Laings Point was named. Green Point has historic and social significance as a key point in Harbour defence, dating from the late 1870s onwards. The Point has historic and social significance for its long association with the Australian Military in NSW.

The foundation remains of Searchlight No 4 at Green Point are important as part of the collection of structures that make up the first Submarine Mining installation in Australia (1878–1903). Other evidence is the Submarine Miners Firing Station at Green Point (CMP Inventory Item 5.4), and installations at Chowder Bay, Georges Heights, Middle Head and Inner South Head (Lady Bay Precinct). Submarine Mining was obsolete by 1914 largely due to improvements in the design of submarines which were no longer readily discernible from shore-based observation posts. The foundation of the searchlight is also evidence of the early use of electrification in defence technology (c1890) and is part of the assemblage connected to the creation of the engine room at Hornby Battery in 1890 (steam powered until replaced by diesel engines in WW1) (CMP Inventory Item 1.3B).

The overall importance of the searchlight is as part of the collection of Defence structures and artefacts found at Green Point that in turn is part of the rich legacy of the Harbour Defence installations throughout Sydney Harbour National Park and surrounding areas still in Commonwealth ownership. The setting of these installations in relatively undeveloped land and with strong relationships to the geography of the Harbour greatly increases their significance.

High **Moderate** Low None	State Local	Not Assessed
Further research is required into the heritage value of Sydney's Submarine Mining Facility (1878 – 1903) and the electrification of defence installations including searchlights c1890.		

RISK ASSESSMENT

Structural	**Low**	**Risk Assessment Summary**
Fire risk	**Low**	
Wind Loading	**Low**	
Visitor risk & safety	**High risk**	
Other		

INFORMATION

REFERENCES:

Gojak, D., Sydney Harbour Fortifications Study Stage II Archaeological Survey Vol 1, Prepared for NPWS, June 1985.

Gojak, Dennis, Site notes on South Head c1985, courtesy NPWS, n/p

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

Openheimer, Peter, The Fragile Forts: The Fixed Defences of Sydney Harbour 1788–1963, Army History Unit, Department of Defence, Canberra ACT, 2004

Sheedy, David, Head Lightkeeper's Cottage, Hornby Light, Inner South Head, Port Jackson, N.S.W., prepared for the National Parks and Wildlife Service, May 1988

Thorp, W., Archival Report, Hornby Lighthouse and Associated Structures, South Head, Sydney, prepared for the National Parks and Wildlife Service, NSW, June 1983

Woollahra History and Heritage Society Inc., Onsite interpretation - "WWII Anti-Torpedo Boom", October 1995, Australia Remembers 1945-1995 Program

SOURCE OF THIS INFORMATION

Study/Report: South Head Conservation Management Plan		**Year of Study/Report:** 2008 & 2009
Item inspected by: Laila Ellmoos & Ed Beebe Government Architect's Office NSW Department of Commerce	**Form completed by:** Laila Ellmoos Mary Knaggs	**Date:** April 2007
Jean Rice (Stage 2) Otto Cserhalmi & Partners PL	Jean Rice	March – May 2008 September 2008 December 2009

MANAGEMENT OBJECTIVE (CMP STAGE 2)

Retain and manage as a stabilised ruin. Interpret on loop walk around Green Point.

POLICY BACKGROUND AND CMP POLICIES (CMP STAGE 2)

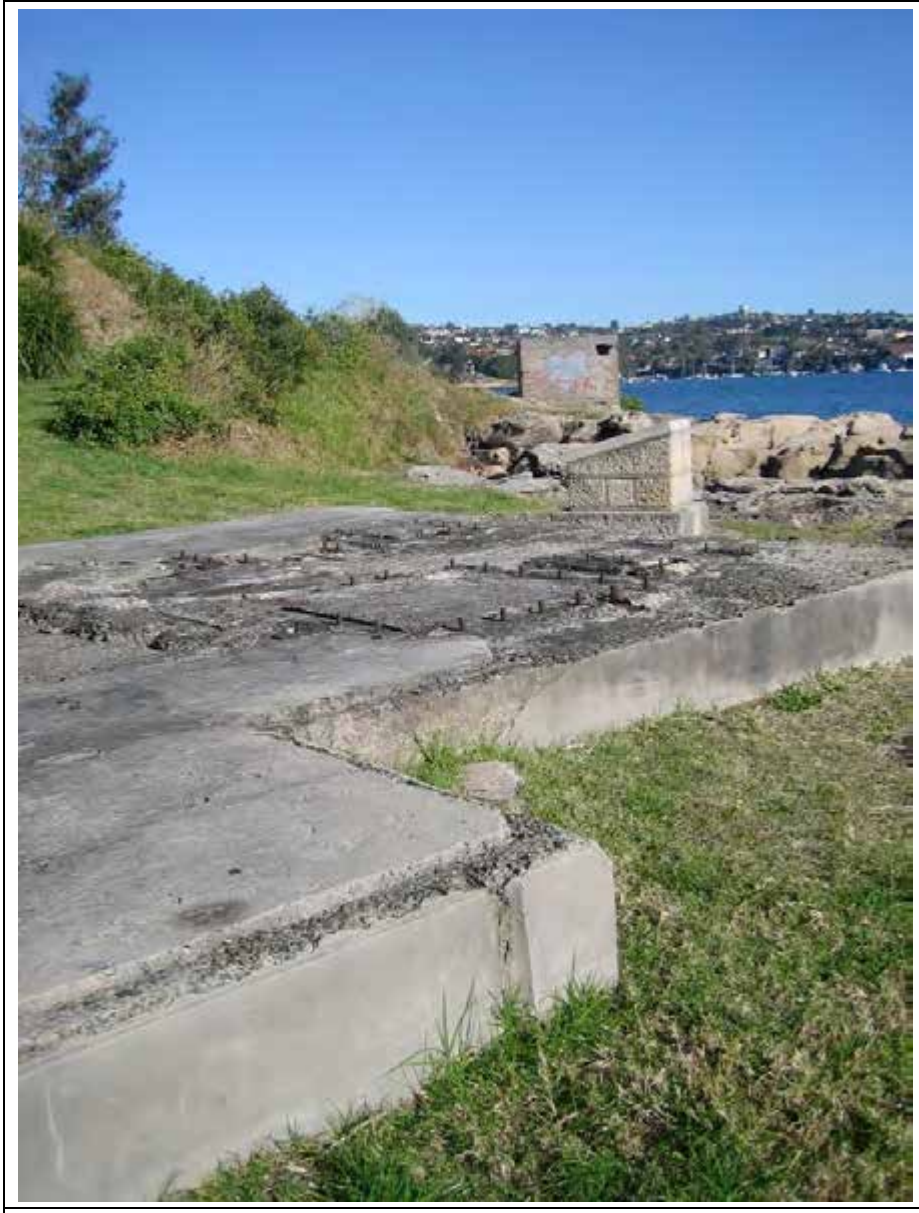
No historical documentation has been sighted for this structure. If any is found it may provide information on what the remains are. The site may be outside the NPWS boundary but this has not been established.

The general policies for Green Point are:
Manage for small group self guided activities with a loop walk around foreshore linked via the beach at Constables Cottage precinct and picnicking overlooking Camp Cove and on foreshore looking west. Interpret defence and navigation features (including WW2 boom).

The general policies for ruins as they apply to the Searchlight No. 4 remains are:
Preserve the original fabric by stabilisation.
Adjust ground levels around so that water s not directed onto the remaining floor slab.
Remove large shrubs from the vicinity and protect from physical damage from erosion.
Kill plants growing in ruins by cutting and poisoning, treating with biocide or hot water before removing them and filling voids where necessary.
Monitor rusted metal elements and treat to minimise damage. If structure is endangered record and then cut metal elements back and cover with mortar or remove.
Stabilise cracks in concrete using helical ties and cementitous grout and apply mortar to top of walls to discharge water.

Detailed policies for the Searchlight No. 4 remains are:
Establish who is responsible for maintenance (Maritime Authority or NPWS) and adjust management.
Research historic plans and photos that may indicate the nature of the building here.
Preserve the remains by removing growth, capping water entry points and treating metal for rust.
Monitor for public safety and reconsider treatment if considered unsafe.
Liaise to replace interpretive sign when it is no longer legible.

RECOMMENDED WORKS (CMP STAGE 2)
Immediate Minimise deterioration by removing vegetation encroaching on remains and directing ground water away. Medium Term (1-5 years) Stabilise remains by treating corrosion of rusted steel elements and apply preservative treatment and capping masonry elements holding water with mortar so water runs off. Long term - None
MAINTENANCE (CMP STAGE 2)
Inspect the ruin using CMP maintenance proforma at intervals recommended including extra inspections after adverse weather conditions. Arrange maintenance work as required and update and file maintenance record. Check: • water flow away from ruin and encroaching vegetation, • rusted metal elements and • loose or cracked concrete.
INTERPRETATION (CMP STAGE 2)
Interpret ruin on the loop walk as part of Sydney Harbour defences and the site of the south end of the WW2 boom net.



View of remains of the floor slab with evidence of former features such as the Searchlight and associated items. Immediately to the rear is the small stone memorial with interpretative plaque. In the background is small brick structure, item 5.6, a WWII observation post. The 1850's Navigation obelisk, item 5.3, is behind the photographer and to the right.

Mines used for the defence of Sydney Harbour in the 1890s, photographed on shore at Chowder Bay. The mines were attached to cables that ran under the water to the other side of the harbour. Source: AWM *A04386*

View of the boom net. Green Point is on the far side of the harbour and net. Source: AWM P03338.005.

The British aircraft carrier HMS Formidable going through the anti-submarine boom in Sydney Harbour. The blackened funnel was the result of a kamikaze aircraft which crashed on deck. The photograph was taken from George's Head and looks towards Green Point. Source AWM P00444.047

View of the boom net (from the Green Point end). Vessels sailed out to check the credentials of ships who wanted to enter the harbour. AWM 304574