



Office of
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BARRENJOEY HEADLAND CONSERVATION MANUAL

Prepared by GAO Heritage Group
May 2012

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1. INTRODUCTION

1.1 BACKGROUND

Barrenjoey Lighthouse is located on Barrenjoey Headland, approximately 120km north of Sydney. The headland projects northwards into Broken Bay and forms the southern entrance to that large waterway and to Pittwater. The precinct which is formed by: the buildings of the Lighthouse; the Lighthouse Keeper's cottages; the Boatman's Cottage and outbuildings; the two former Fishermen's Cottages; historical archaeology and Indigenous heritage; access road and smugglers path (walking access track); are of State heritage significance as one of a collection of lightstations which combine the natural values of a rugged coastal environment with the cultural values of a prominent landmark.

This Conservation Manual should be read in conjunction with the Conservation Management Plan (CMP) for the Barrenjoey Headland Precinct, also prepared by GAO Heritage in 2011.

1.2 PURPOSE OF THIS DOCUMENT

The aim of this Conservation Manual is to provide guidance for the Park Rangers and other Officers of NSW National Parks and Wildlife Services (NPWS) responsible for the day-to-day management of the Barrenjoey Headland Precinct.

The Conservation Manual comprises individual inventory sheets that have been developed for each building within the Precinct (see Figure 1.1). The inventory sheets identify:

- catch-up maintenance works.
- refurbishment works; and

Cyclic maintenance needs for the site have been developed based on templates provided by NPWS and are provided at Appendix A.

Read in conjunction with the CMP for the site, the Conservation Manual will enable NPWS to:

- meet its statutory responsibilities to the Heritage Act 1977 (NSW) by responding to the minimum maintenance requirements;
- achieve best practice in the management of heritage assets; and
- manage the heritage values of the site in a cost effective and structured manner.

1.3 STUDY TEAM

This Conservation Manual was prepared by Amy Chew (Heritage Specialist) and Danielle Hynard (Project Assistant) from the Government Architect's Office Heritage Group. The overall project review was undertaken by Mary Knaggs, Senior Heritage Architect, GAO Heritage Group.

2. SUMMARY OF INVENTORY SHEETS

2.1 RATING SYSTEMS

2.1.1 Condition

The rating system used to describe the condition of fabric in the inventory sheets is summarised in the table below.

Figure 2.1 Rating System used in the Inventory Sheets to describe the condition of fabric

Condition Rating	Description
Excellent	Condition and appearance as new.
Good	Element exhibits superficial wear and tear, minor defects, minor signs of deterioration to surface finishes.
Moderate	Element is in average condition. Some deteriorated surfaces/services that require attention.
Poor	Element is in deteriorated condition. General appearance is poor with eroded protective coatings. Elements/services may be defective.
Very Poor	Element has failed. It is not operational and is unfit for normal use.

2.1.2 Priorities

The catch-up maintenance works identified in this report have been prioritised and should be undertaken as budget is available.

Priority 1 works are urgent and would ideally be executed within 6 months.

Priority 2 works would ideally be completed in 1-2 years.

Refurbishment works have not been given priorities as they should be undertaken as a package of conservation works.

2.2 TYPES OF WORKS

Some of the conservation works identified in this Manual fall under the category of a “standard exemption”, in which case approval by the Heritage Council for the works is not required. Some standard exemptions require an exemption notification form to be completed and submitted to the Executive Director of the Heritage Branch. Works not covered by the Standard Exemptions will need approval under section 60 of the Heritage Act.

2.2.1 Catch-up Maintenance

Catch-up maintenance works include ‘one-off’ works to bring the building up to an acceptable standard of maintenance and repair, and to ensure that further damage or deterioration is not caused. These works are required to bring the building and its fabric to a functional state regardless of their future use. eg. Repairs to joinery, repairs to roofing etc. Generally, these works would also improve the appearance and add value to the heritage significance of the item. It includes the removal of intrusive elements.

Such conservation works require input from relevant specialists experienced in their field.

2.2.2 Refurbishment Works

These works specifically relate to the refurbishment of the buildings for tourism and accommodation purposes eg. Installing bathroom facilities, lighting etc.

2.2.3 Cyclic Maintenance

Cyclic maintenance is a system of providing regular inspections and repairs to a place. Cyclic maintenance is critical to the conservation of the place, particularly when parts of the Precinct are uninhabited. The cyclic maintenance works identified at Appendix A have been developed based on templates provided by NPWS.

2.3 SUMMARY OF WORKS

Overall, the complex of buildings within the Barrenjoey Headland Precinct are in good condition and appear to be well maintained, although some catch-up maintenance is required. This section provides a summary of the works required within the Barrenjoey Headland Precinct. Individual inventory sheets summarising the condition of fabric for each building have been prepared and are provided in Section 3.

2.3.1 Catch-up Maintenance Works

Where elements of fabric are missing, eg windows, door hardware, mantelpieces, their replacement should aim to match existing fabric elements of the same kind elsewhere in the building.

Catch-up maintenance works to the exterior relate to:

- the removal of overgrowth affecting sandstone structures;
- cleaning of gutters and surface drains;
- new roofs to some outbuildings/privies;
- removal of rubbish;
- repointing of loose/defecting joints to sandstone;
- rust treatment of metal items; and
- repairs to verandahs areas.

Catch-up maintenance works to the interior relate to:

- minor repairs to ceiling and floor surfaces; and
- repainting of joinery.

2.3.2 Refurbishment Works

Refurbishment works are specific to each structure and are listed in the individual inventory sheets in Section 3. However, there are some refurbishment works which are common to all areas. These include:

- repainting;
- sanding and polishing of timber floors;
- upgrades to bathrooms/kitchens;
- increased security; and
- installation of stainless steel mesh security/fly screens.

3. INVENTORY SHEETS

The following Inventory Sheets have been prepared based on site visits undertaken by Amy Chew and Danielle Hynard on the 10th and 11th May 2011.

Assessment of the Fishermen's cottages were made using photographs and plans supplied by Phil Bennett, formerly of NPWS.

Inventory Sheets have been prepared for the various buildings as follows:

A: Lighthouse Precinct

A1: Lighthouse

A2: Head Keeper's Cottage

A3: Assistant Keeper's Cottage (Lot 3) South End

A4: Assistant Keeper's Cottage (Lot 4) North End

B: Customs House Precinct

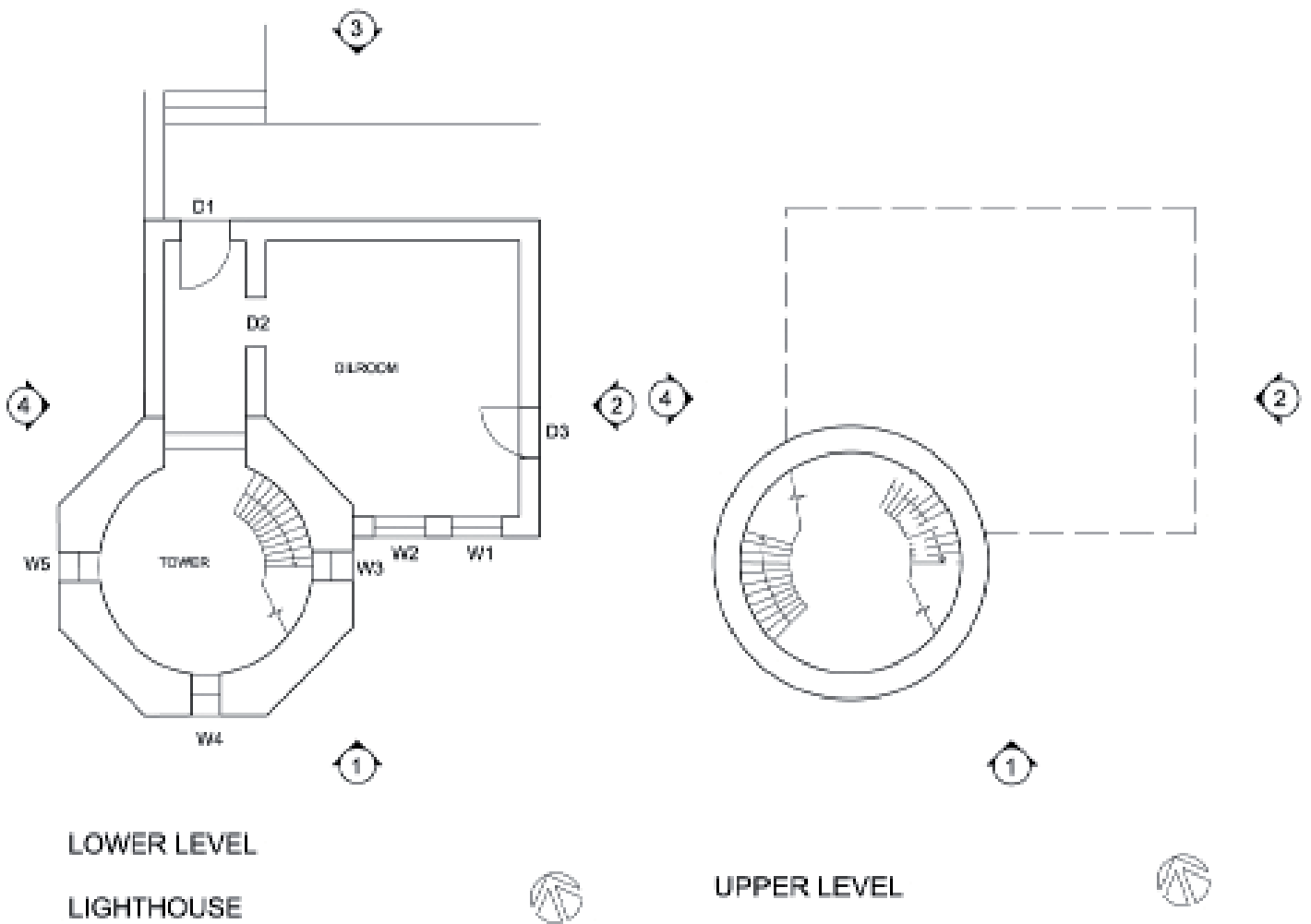
B1: Boatmen's Cottage

B2: Fishermen's Cottage (1928)

B3: Fishermen's Cottage (1938)



FLOOR PLAN



LOWER LEVEL

LIGHTHOUSE

UPPER LEVEL

OVERALL CONDITION

External:

Overall the lighthouse and associated oil room are in moderate to good condition however it has been noted by NPWS staff, Col Brown, that water ingress occurs below the top gallery level following inclement weather. The sandstone fabric and metal elements generally appear to be in sound condition.

Internal:

Overall the lighthouse and associated oil room are well maintained and in good condition. However corrosion is observed to part of the iron shelving to the perimeter of the lantern.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Immediate surroundings to Lighthouse Perimeter</p> <p>a) Remove grass growing around perimeter of lighthouse</p> <p>b) Remove sandstone rubble and rubbish</p> <p>c) Investigate water leak in external copper tank. Provided tank is superfluous, disconnect.</p> <p>d) Clear debris from existing downpipes and ensure rainwater drains away from building</p>	<p>Adjacent to sandstone walls</p> <p>Just south of lighthouse</p> <p>Just south of lighthouse</p> <p>Perimeter of Lighthouse</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>
<p>External Fabric</p> <p>a) Repoint open/defective sandstone joints using lime mortars to address water ingress problem; Specialist heritage advice to be sought to confirm lime mortar mix design and application. Re-pointing of bed joints to be completed by experienced stonemason or masonry restoration specialist.</p> <p>b) Treat corrosion to metal window frames; Remove and treat frame corrosion by removing rust to bright metal, applying protective paint system, where removal is not possible treat in-situ using same method</p> <p>c) Repaint dome, repair dome wind vane, treat corrosion to external catwalk, repaint catwalk and re seal lantern room top sill plate, remove lantern door skin; treat corrosion, rust proof, service lock mechanism and paint.</p> <p>d) Consider extending subsoil drainage for downpipe on NE corner of oil room.</p> <p>e) Consider installing lead flashing with a lip to encourage run-off on parapet above the slit openings to slow down deterioration of stonework below.</p> <p>f) Discuss feasibility with mason and/or glazier of replacing glazed openings to Head Keeper's stair in order to slow down deterioration of surrounding stone; Clean out existing glass remnants from openings and retain for sampling. Glass size must be smaller than total width of opening including recesses to allow fitting – do not remove any stonework to fit glass. Replace with 12mm laminated glass as per original. Putty into position; do not silicone into position.</p>	<p>Upper lantern level</p> <p>Throughout Lighthouse</p> <p>Upper lantern level</p> <p>Adjacent to Oil Room</p> <p>Adjacent to Oil Room</p> <p>Adjacent to Head Light Keeper's stair</p>	<p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p>
<p>Internal Fabric</p> <p>a) Treat corrosion to shelving, and repaint; Engage stonemason to remove stone from around corroded cast iron on the top step/landing. Treat corrosion by removing rust to bright metal, applying protective paint system and then providing a new block of stone to match original</p> <p>b) Complete works to light house lantern room including reseal glazing, paint glazing astragals, paint blocking plates, repaint floor, de-mould room.</p>	<p>Lower lantern level</p> <p>Lower lantern level</p>	<p>1</p> <p>2</p>

REFURBISHMENT WORKS

WORKS

LOCATION

None identified

REGULAR MAINTENANCE FOR ALL BUILDINGS

WORKS

- Wash down all surfaces, stairs, handrails and balustrades and touch up paint as required
- Polish brass work
- Oil locks

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION

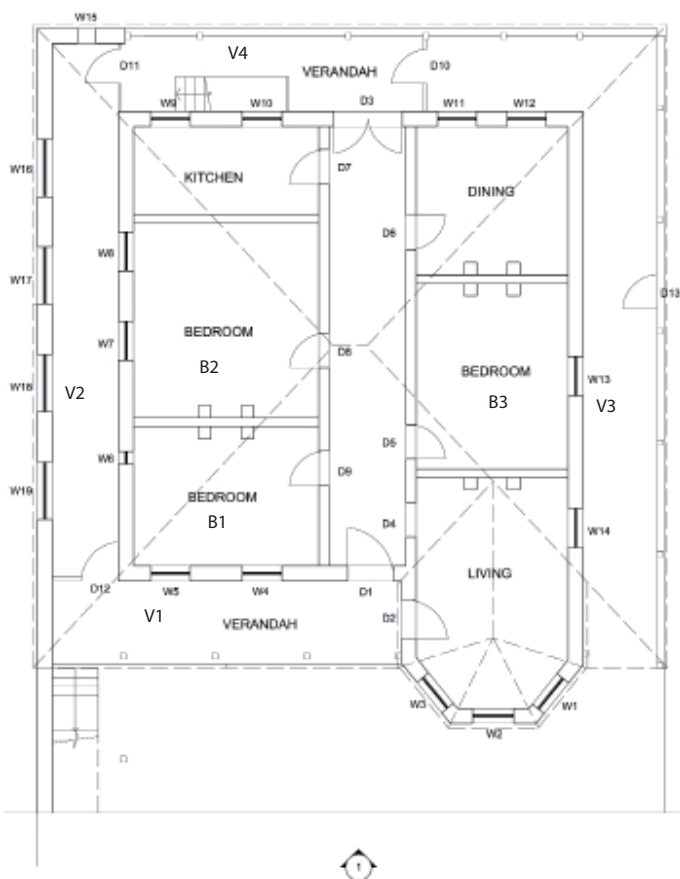


HEAD LIGHTKEEPER'S COTTAGE

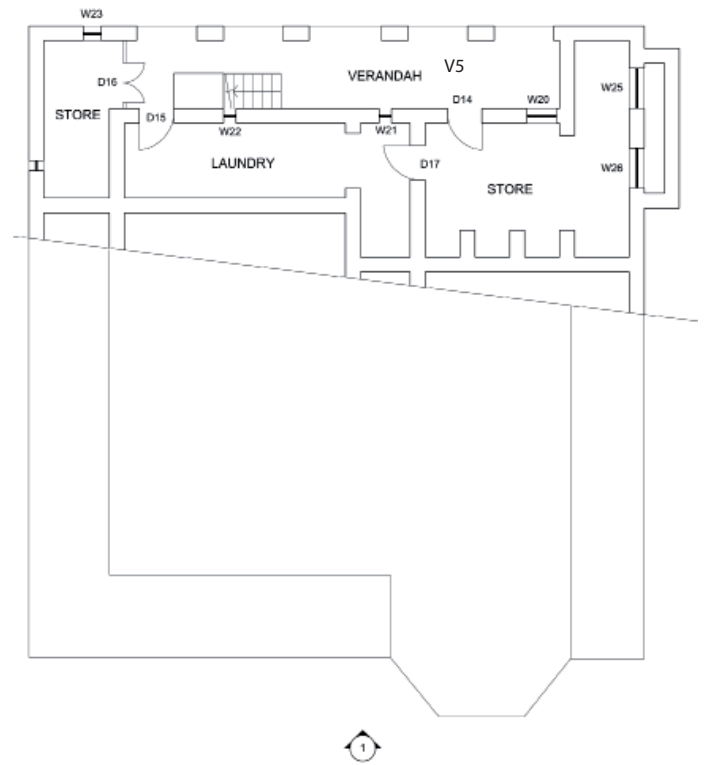
A2



FLOOR PLAN



HEAD KEEPER'S COTTAGE (GROUND)



HEAD KEEPER'S COTTAGE (BASEMENT)



OVERALL CONDITION

External:

Overall the cottage is in moderate condition and appears to be watertight. The sandstone and timber fabric generally appear to be in sound condition, although there is one crack in the sandstone wall and movement to the south corner of the cottage that is of some concern. The external staircase is corroded and a number of works are required to reinstate missing elements and remove intrusive elements to the cottage.

The outdoor privy appears to be in poor condition with repairs required to the roof.

Internal:

Overall the cottage to the main level is in moderate condition, however the basement level is in poor condition with a number of repairs required to the walls, floors and windows.

The outdoor privy is also in poor condition.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear Courtyard</p> <p>a) Clean out all surface water drains ensuring correct operation; Drains to be cleaned by hand using hand tools only ie. shovel / broom.</p> <p>b) Remove vegetation growing from sandstone wall mortar joints, carefully remove to protect stone joints and mortar. Re-instate northern courtyard surface drainage system by removing garden located in this area. Cut back ficus and other vines as close as possible without damage to stone, remove all new growth; Hand remove stems and attachments to stonework, where roots are firmly embedded in joints, cut and poison, do not pull from wall removing excessive mortar.</p> <p>c) Structural Eng. to assess crack in boundary wall and movement in southern corner Note: Check standard exemptions for permissibility of any ground disturbance under the Heritage Act and seek approval as required.</p>	<p>Front and rear courtyard</p> <p>Adjacent to sandstone walls</p> <p>Rear courtyard</p>	<p>1</p> <p>1</p> <p>1</p>
<p>External Fabric</p> <p>a) Remove leaf litter from gutters</p> <p>b) Roof flashing (above living room) north / west corner - complete the sealing of zincalume flashings into stonework; Application of lime mortar or polyurethane sealant to seal flashing to be confirmed by specialist heritage consultant.</p> <p>c) Remove open/defective pointing and repoint using a lime based mortar of the cottage.</p> <p>d) Cut back the vegetation to the access way and remove the vine growing on the structure; Removal of vine to be carefully undertaken to protect stone joints and mortar. Cut back vine as close as possible without damaging stonework, remove all new growth, hand remove stems and attachments to stonework, where roots are firmly embedded in joints, cut and poison, do not pull from wall removing excessive mortar.</p> <p>Remove defective roof sheeting, white ant damaged fascia boards, roof sheeting battens and roof rafters; Replace roof rafters and battens with new seasoned hardwood timbers to match original timber section sizes. Supply and install new fascia board in new materials to match original fascia section & profile. Stainless fixings to be used in connection of all timbers. Roof battens to be fixed to new rafters in accordance with AS 1684 Light Timber Framing Code.</p> <p>e) Replace missing scotia timber mould under eaves around bay window removed to fit guttering.</p> <p>f) Stabilise retaining wall where Coral tree was removed</p> <p>g) Remove lattice enclosing part of the verandahs where missing and current domestic entry door and replace with new security lattice and/or glazing panels that is sympathetic to building architecture. Extend the timber balustrade from the rear verandah around to the side verandah</p> <p>h) Reinstall missing corner frieze details to verandah posts</p> <p>i) Reinstall missing sections of skirting to match existing</p> <p>j) Repair joinery and repaint 3 windows to exterior wall of verandah</p> <p>k) Repair top of balustrade where timber has deteriorated as discreetly as possible to match existing profile and timber grade</p> <p>l) Replace window with new window to match existing size, type and profile</p> <p>m) Replace timber baserail under glazed screen to verandah matching existing profile and timber grade.</p>	<p>Gutters</p> <p>Roof</p> <p>To sandstone joints (particularly to rear facade)</p> <p>WC</p> <p>Above W1 to W3</p> <p>Front courtyard</p> <p>V3 & V4</p> <p>V1, V3 & V4</p> <p>Living</p> <p>V2</p> <p>V4</p> <p>W24</p> <p>V2</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>

CATCH-UP MAINTENANCE CONT...

WORKS	LOCATION	PRIORITY
n) Remove existing metal balustrade and balusters by carefully chiselling out the holding binders and wedges. Retain balustrade handrail and newel post for refurbishment (ie sand blasting and application of epoxy painting coatings). Repair defective stone stair treads using a combination of replacement, indent or synthetic repairs as specified by consulting Structural Heritage Engineer; Replace balusters with new balusters constructed from stainless steel to match existing profile and section size, however increase the length of balustrade to a height of 1000mm. Paint new balusters in same paint system as that of balustrade handrail and newel post. Upon completion of stair tread repairs set out and re-assemble the balustrade ensuring that all balusters are plumb. Refix into stone steps by pouring molten lead to finish flush with the stone.	External staircase to south elevation	1
o) Reinstate missing metal vents to ventilation openings along northwestern façade with new cast iron materials to match original vents (approximately 20 missing)	Below V3	2
p) Treat for rust and paint 2 metal rings to sandstone pillars of verandah.	V5	2
q) Remove gradually open/defective pointing and repoint using a lime based mortar as funds allow. Pointing to be done wall by wall matching existing colour and profile	To all facades	2
Internal Fabric		
a) Repair and repaint ceiling linings throughout except in Bed3 & Store1, replace with plasterboard ceiling with cornice detail to match existing profile; Suggested paint is enamel for joinery and acrylic for plaster, and consider using distemper for walls and ceilings that have not been painted with acrylic in the past.	All ceilings	2
b) Stabilise remaining lath and plaster ceiling and replaster with harder plaster mix.	Bed3	2
c) Reinstate missing section of cement skirting	Bed1	2
d) Repaint underside of verandah	V2	2
e) Remove rubbish/relocate material, remove metal pipe and patch hole in wall	Store2	1
f) Remove all loose render to ceiling and install new timber panelled ceiling with v-joint finish to match those on this floor	Store1	1

REFURBISHMENT WORKS

WORKS	LOCATION
External Facade	
a) Remove rusted section of roof flashing to wall	Above W23
b) Remove infill section dividing the rear verandah into two areas. Consider removal of the later section enclosed with glass or replace with compliant glazing.	V4
c) Remove the three infill sections and doors	D11, D12 & D16
d) Install 2 new doors with door hardware and top lights	D7 & D8
e) Replace 4 doors with door hardware to match existing size, profile & grade of material.	D2 to D4, D6
f) Install/replace 3 doors with door hardware	D14, D15 & D17
g) Replace steel windows with timber windows and architraves	W7 & W8
h) Replace windows to double hung type with glazing bars to match elsewhere	W4 & W5
i) Replace windows to match existing configuration	W20 & W23
j) Install stainless mesh flyscreens to non-fixed windows	W1, W2, W4 to W11
k) Reinstate missing metal vents to ventilation openings	To all facades
l) External lighting is required to the courtyard areas.	Front and rear courtyard
Internal	
a) Repaint walls & joinery except where substrate is sandstone with suitable product	Throughout
b) Install 1 new door locking mechanism	D3
c) Lightly sand and oil all timber floors to conserve the timber	To all timber floors
d) Install new kitchen facilities	Kitchen
e) Remove later timber shelves adjacent to fireplace	Bed3
f) Remove paint from sandstone walls with heritage number one	V3, Bed3, Dining
g) Install new laundry facilities	Store2
h) Upgrade existing bathroom facilities	Laundry or upstairs room
i) Upgrade existing toilet facilities	WC or include in new Bathroom
j) All lighting fixtures and powerpoints to be upgraded	All rooms

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION

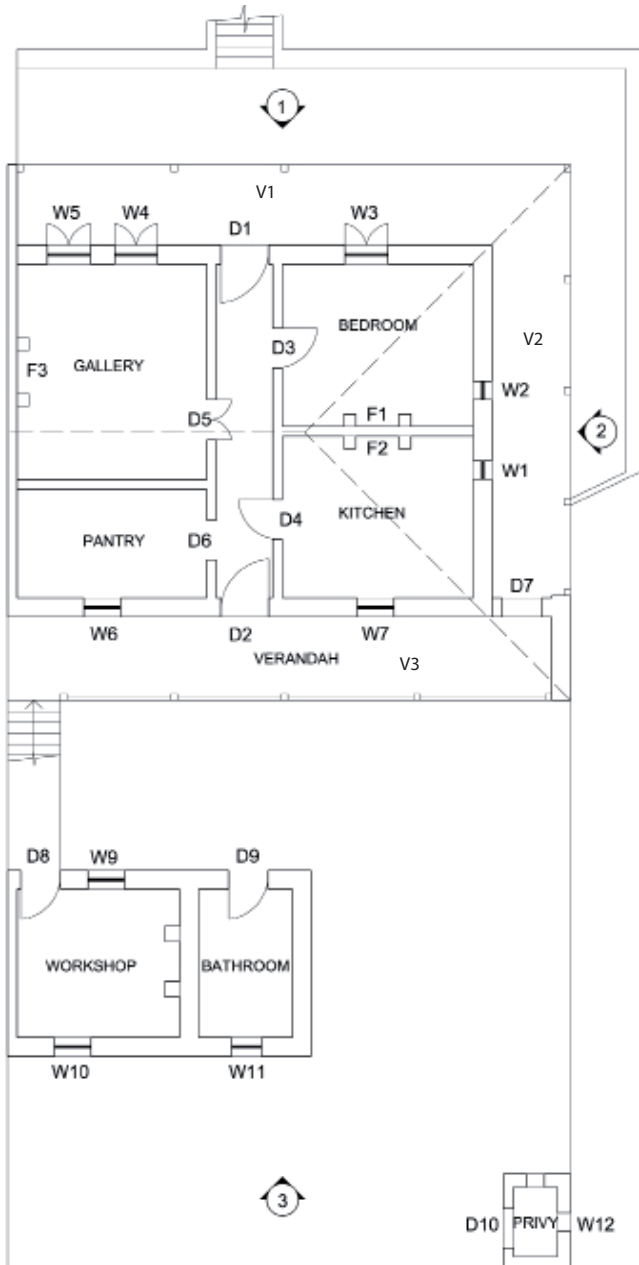


ASSISTANT KEEPERS' COTTAGE (LOT 3) - SOUTH END

A3



FLOOR PLAN



OVERALL CONDITION

External:

Overall the cottage is in moderate condition and appears to be watertight. The sandstone and timber fabric generally appear to be in sound condition although the balustrade is missing to the rear verandah and repairs are required to the external staircase. The outbuilding appears to be in poor condition although it requires a new roof and drainage system. The outdoor privy is in a semi-ruinous state.

Internal:

Overall the cottage and outbuildings are in moderate condition. Some of the internal sandstone walls are painted and there are a number of more recent modifications made by more recent residents.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear Courtyard</p> <p>a) Remove vegetation growing from sandstone wall mortar joints, carefully remove to protect stone joints and mortar. Cut back ficus and other vines as close as possible without damage to stone, remove all new growth, hand remove stems and attachments to stonework, where roots are firmly embedded in joints, cut and poison, do not pull from wall removing excessive mortar.</p> <p>b) Remove rubbish and debris</p> <p>c) Clean out all surface water drains ensuring correct operation</p> <p>d) Treat for rust and repaint hand water pump and lid to ground water tank</p> <p>e) Remove redundant pipework to exterior</p> <p>f) Ease and adjust courtyard entry gates ensuring 5 mm clearance below door. Treat exposed timber with oil based primer and recoat complete timber gate in paint system to match existing on completion.</p>	<p>Adjacent to sandstone walls</p> <p>Rear courtyard & Outbuilding</p> <p>Rear courtyard</p> <p>Rear courtyard</p> <p>Rear courtyard</p> <p>Front courtyard</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>
<p>External Fabric</p> <p>a) Install lining to underside of cottage verandah and above external staircase to match existing timber paneling with v-joint finish</p> <p>b) Extend end of downpipe and ensure stormwater drains away from verandah post. Consider installing subsoil drainage if needed.</p> <p>c) Remove leaf litter from cottage gutters</p> <p>d) Remove defective pointing and repoint using a lime based mortar of the cottage wall</p> <p>e) Remove roofing and stormwater drainage system to the outbuilding and install a flat roof similar to that of the adjacent duplex with gutter installed to the western facade</p> <p>f) Remove downpipe attached to the eastern facade of the outbuilding and divert the drainage from the covered area over the staircase to the new outbuilding roof (refer (d)).</p> <p>g) Reinstate missing glazing bar to top sash</p> <p>h) Pin and repair the top two treads of the external staircase</p> <p>i) Reinstate corrugated roof to former privy and stabilise structure</p> <p>j) Repair defective verandah post to south elevation by either cutting and removing defective section of post and installing new scarfed section of timber to match existing section size and profile or completely replace post with new hardwood post that is similar in section size and profile to original item. Replace or repair end verandah post and introduce a new balustrade between the two posts to match existing in size, profile colour and timber grade. Balustrade may need amendment to meet current BCA standards eg a higher rail above recreated timber balustrade.</p> <p>l) Remove steel reinforcement mesh (security screen) and replace with new security lattice and/or glazing panels sympathetic to building architecture</p> <p>m) Treat the metal fixture adjacent to the main entrance</p> <p>n) Treat metal grill to windows</p> <p>o) Refix the loose metal fixing used to hold window shutter into mortar joint</p> <p>p) Treat as per stairs in Head Keepers cottage A2 above, external fabric - n).</p> <p>q) Remove all flaking/defective paint coatings of all external timber building elements. Prepare timber surfaces in accordance with Australian Standard 2311 and on completion apply timber primer and two coats of finishing paint.</p>	<p>V1 to V3 & above staircase</p> <p>V1</p> <p>Gutters</p> <p>To sandstone joints</p> <p>Outbuilding</p> <p>Outbuilding</p> <p>W9</p> <p>External staircase</p> <p>Privy</p> <p>V2, V3</p> <p>V1</p> <p>D1 & D2</p> <p>W1 & W2</p> <p>Adjacent to W9</p> <p>External staircase</p> <p>To exterior throughout</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>2</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>1</p> <p>2</p>

CATCH-UP MAINTENANCE CONT...

WORKS	LOCATION	PRIORITY
Internal Fabric a) Repair/replace and repaint ceiling linings throughout to match existing	All ceilings	2

REFURBISHMENT WORKS

WORKS	LOCATION
<p>External Facade</p> <p>a) Remove 2 roller shutters from windows and install fly screens</p> <p>b) Remove metal screen to window</p> <p>c) Remove open/defective pointing of the privy and repoint using a lime based mortar.</p> <p>d) Rebuild roof structure and replace corrugated iron roof to privy and install fascia board, gutter & downpipe with materials to match the likely original quality, profile and dimension to match existing</p> <p>e) Repaint windows and doors</p> <p>f) Install 2 new door jambs</p> <p>g) Install 4 windows and architraves</p> <p>h) Install architraves to 2 windows</p> <p>i) Install new door and door frame</p> <p>j) Treat for rust and paint the metal fixture adjacent to the main entrance</p> <p>k) Treat for rust and paint the metal grill to 3 windows</p> <p>l) Refix the loose metal fixing used to hold window shutter into mortar joint</p> <p>m) Remove sliding metal security door. Make good any fixing positions with mortar to match surrounding stonework.</p> <p>n) Remove metal ladder attached to exterior of outbuilding and store elsewhere in storage on-site</p> <p>p) Install stainless mesh flyscreens to non-fixed windows</p> <p>q) External lighting is required to the courtyard areas.</p>	<p>W6 & W7 W9 & W11 Privy Privy</p> <p>W1 to W7, W9 to W11, D1 to D6, D8 & D9 D4 & D5 W3 to W5, W10 W6 & W7 D9 Adjacent to D1 W1, W2 & W10 Adjacent to W9 D1</p> <p>Outbuilding</p> <p>W3 to W7, W9 to W11 Front and rear courtyard</p>
<p>Internal</p> <p>a) Install 2 new door locking mechanisms</p> <p>b) Repair and repaint ceiling linings throughout, replace missing ceiling linings with plasterboard ceiling with cornice detail to match existing profile</p> <p>c) Lightly sand and oil all timber floors to conserve timber</p> <p>d) Record and remove all later joinery to wall. Consider providing a plaster finish to internal walls. This may be as per original (plaster and lath) or plasterboard.</p> <p>e) Infill opening in wall with timber or glazing</p> <p>f) Remove existing furniture and fixings from the walls and ceilings to this room and install modern kitchen facilities</p> <p>g) Relocate electricity metering system into cabinetry of the kitchen</p> <p>h) Infill gap between timber floor and walls with floor board cut to fit</p> <p>i) Install 4 new internal doors/toplights & door hardware</p> <p>j) All lighting fixtures and powerpoints to be upgraded</p> <p>k) Replace missing mantlepieces in main living spaces to match existing in building A4</p> <p>l) Bathroom & Toilet Works</p> <p>1) To prevent further spalling of sandstone walling remove corroding steel security bars. Supply and install 18 mm plywood cut to window opening size to provide interim security measure. Plywood to be fixed directly into timber window frame with stainless fasteners. No fixings to be placed into sandstone wall.</p> <p>2) Remove old windows and replace with new to match.</p> <p>3) Remove security door and store / retain on site.</p> <p>4) Remove all old tiles; shower recess / fittings, sink and hot water system.</p> <p>5) Covered walkway link replace timber roof beam and rafters that has been damaged by white ants. Supply and install new hardwood timbers to match existing section size and profile. All fasteners used in the works to be stainless steel</p> <p>6) Replace roof on the toilet building to match other toilet building</p> <p>7) Install new bathroom and toilet facilities</p>	<p>D1 & D2 Throughout</p> <p>To all timber floors Gallery Room & Pantry</p> <p>Gallery Room Kitchen</p> <p>Kitchen Pantry D3 to D6 All rooms Bedroom and Kitchen Bathroom / Workshop</p> <p>Bathroom / workshop or upstairs room as appropriate. eg. pantry</p>

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION

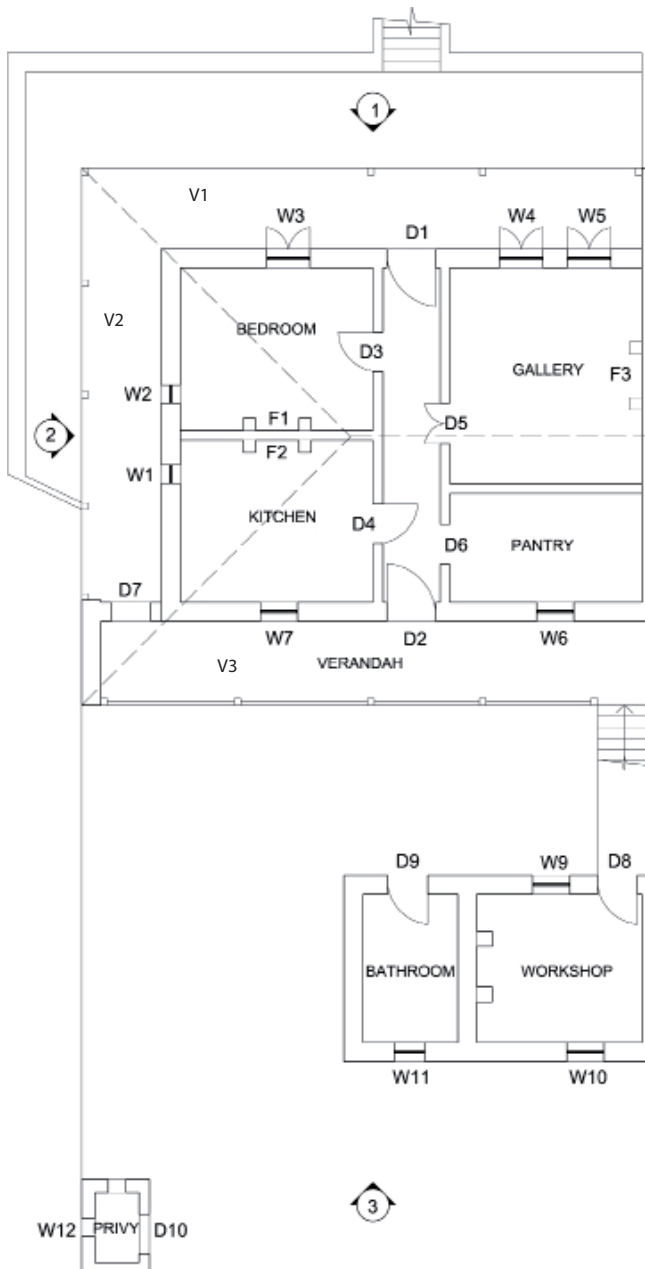


ASSISTANT KEEPERS' COTTAGE (LOT 4) - NORTH END

A4



FLOOR PLAN



OVERALL CONDITION

External:

Overall the cottage is in moderate condition and appears to be watertight. The sandstone and timber fabric generally appear to be in sound condition although repairs are required to the sandstone treads to the external staircase. The outbuilding appears to be in moderate condition and the outdoor privy is in poor condition (although difficult to assess due to the amount of rubbish stored within it).

Internal:

Overall the cottage and outbuildings are in moderate condition. Some of the internal sandstone walls are painted and there are a number of more recent modifications made by more recent residents.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear Courtyard</p> <p>a) Remove vegetation growing from sandstone wall mortar joints, carefully remove to protect stone joints and mortar. Cut back ficus and other vines as close as possible without damage to stone, remove all new growth, hand remove stems and attachments to stonework, where roots are firmly embedded in joints, cut and poison, do not pull from wall removing excessive mortar.</p> <p>b) Remove rubbish and debris</p> <p>c) Even out grassed area</p> <p>d) Clean out all surface water drains ensuring correct operation</p> <p>e) Treat for rust and repaint hand water pump and lid to ground water tank</p> <p>f) Remove redundant pipework to exterior</p> <p>g) Ease and adjust courtyard entry gates ensuring 5 mm clearance below door. Treat exposed timber with oil based primer and recoat complete timber gate in paint system to match existing on completion.</p>	<p>Adjacent to sandstone walls</p> <p>Rear courtyard & Outbuilding</p> <p>Rear courtyard</p> <p>Rear courtyard</p> <p>Rear courtyard</p> <p>Rear courtyard</p> <p>Front courtyard</p>	<p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>
<p>External Fabric</p> <p>a) Install lining to underside of cottage verandah and above external staircase to match existing timber paneling with v-joint finish</p> <p>b) Remove leaf litter from cottage gutters</p> <p>c) Remove defective pointing and repoint using a lime based mortar of the cottage wall</p> <p>d) Rebuild and stabilise end stone wall adjacent to D7</p> <p>e) Install downpipe to the eastern facade of the outbuilding to divert the drainage from the covered area over the staircase.</p> <p>f) Repaint joinery to verandah</p> <p>g) Reinstate missing elements and repaint joinery to balustrade</p> <p>h) Install new window</p> <p>i) Treat as per stairs in Head Keepers cottage A2 above, external fabric, m)</p> <p>j) Treat metal grill to windows</p>	<p>V1 to V3 & above staircase</p> <p>Gutters</p> <p>To sandstone joints</p> <p>Adjacent to D7</p> <p>External staircase</p> <p>V2</p> <p>V3</p> <p>W11</p> <p>External staircase</p> <p>W11</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>1</p> <p>1</p> <p>2</p>
<p>Internal Fabric</p> <p>a) Repair and repaint ceiling linings throughout. Replace missing ceiling linings with plasterboard ceiling with cornice detail to match existing profile.</p> <p>b) Minor repairs to floorboards where loose/missing</p>	<p>All ceilings</p> <p>Bed1 & Living</p>	<p>2</p> <p>2</p>

REFURBISHMENT WORKS

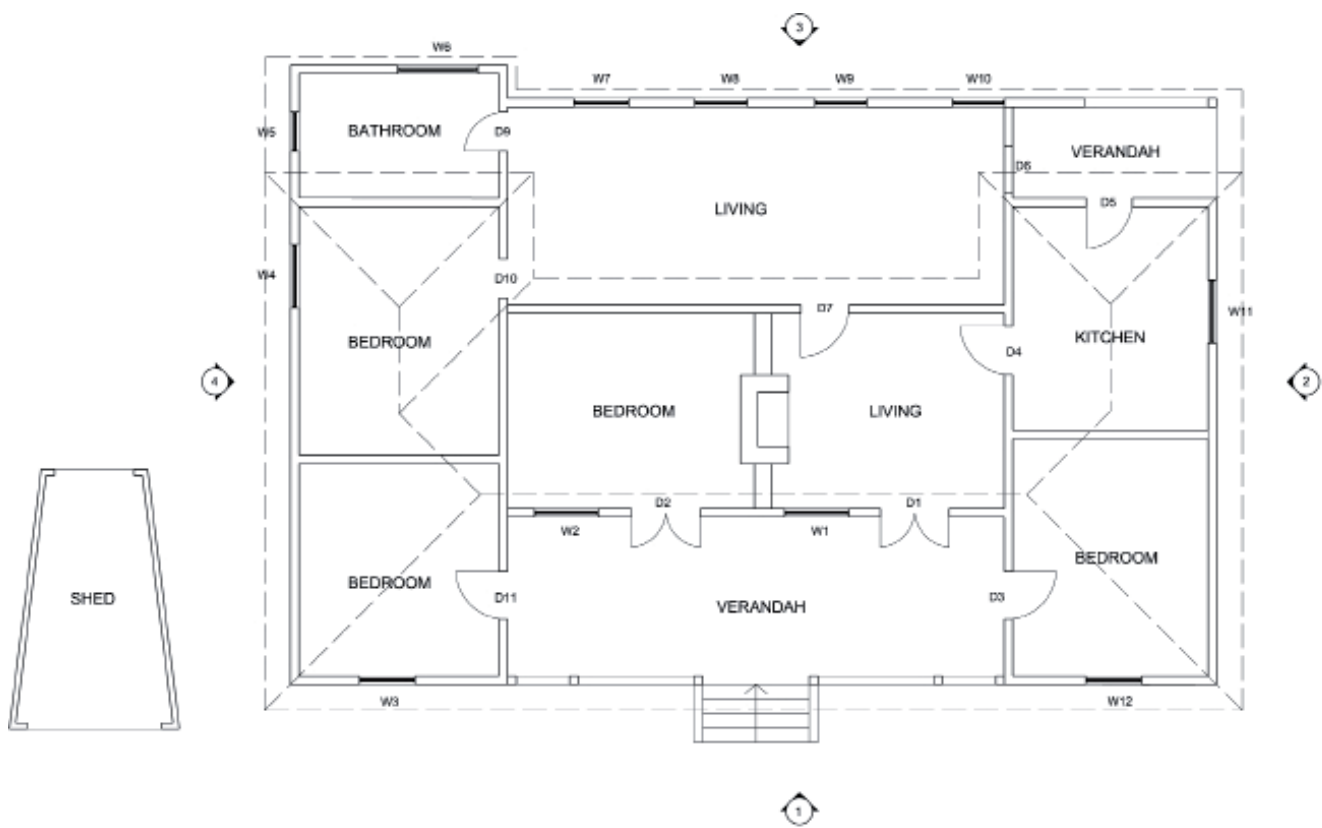
WORKS	LOCATION
<p>External Facade</p> <ul style="list-style-type: none"> a) Reinstate door opening at the base of the external staircase b) Remove open/defective pointing of the privy and repoint using a lime based mortar. c) Rebuild roof structure and replace corrugated iron roof to privy and install fascia board, gutter & downpipe with materials to match the likely original quality, profile and dimension to match existing d) Repaint windows and doors e) Install 5 new doors/toplights & door hardware to match existing in building A3 f) Install 5 new door jambs and architraves to match existing g) Install 7 new windows and architraves to match existing h) Install 2 new doors and door hardware to match existing i) This balustrade needs to be modified to meet BCA requirements of a minimum 1000mm height so that a 125mm sphere cannot fall through the balustrade. Consider fixing Perspex or glass on inside face of balustrade. j) Install stainless mesh security/fly screens to non-fixed windows k) Remove metal ladder attached to exterior of outbuilding and store elsewhere in storage on-site l) External lighting is required to the courtyard areas. 	<p>Adjacent to D8</p> <p>W1 to W7, W9 to W11, D1 to D9 D2 to D6 D2 to D6 W2 to W7, W10 D8 & D9 V3</p> <p>W3 to W7, W9 to W10 Outbuilding</p> <p>Front and rear courtyard</p>
<p>Internal</p> <ul style="list-style-type: none"> a) Install 2 new door locking mechanisms b) Repair and repaint ceiling linings throughout, replace missing ceilings with plasterboard ceiling with cornice detail to match existing profile c) Lightly sand and oil all timber floors to conserve timber d) Infill gap between timber floor and perimeter walls with timber trim e) Infill opening in wall with timber or glazing f) Install modern kitchen facilities to this room including electricity metering system into cabinetry g) Remove existing bathroom appliances and install new bathroom facilities h) All lighting fixtures and powerpoints to be upgraded 	<p>D1 & D2 Throughout</p> <p>To all timber floors To all rooms Living Living</p> <p>Bathroom or upstairs room as appropriate. eg.pantry All rooms</p>

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION





FLOOR PLAN



BOATMAN'S COTTAGE FLOOR PLAN



OVERALL CONDITION

External:

Overall the cottage is in good condition and appears to be well maintained as it is currently tenanted to a NPWS staff member. The building appears to be watertight and the joinery is generally in sound condition.

Internal:

Overall the cottage is in good condition, however the shed is in moderate condition.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear yard</p> <p>a) Replace fallen sections of timber paling fence</p> <p>b) Remove rubbish and debris</p> <p>c) Stabilise retaining wall to rear of property and consider volume upgrade of rainwater tank</p> <p>d) Remove build-up of wind and tide-borne sand at regular intervals, back to original levels</p> <p>e) Remove coral trees from Customs House precinct beyond the yard that are having a negative impact on archaeological or natural heritage values of the site. Poison the stumps rather than removing them to avoid damage to archaeological deposit(s). Note that excavation in the front yard requires approval under section 90 of the NPW Act as it may have an impact on an Aboriginal midden in the vicinity.</p>	<p>Front yard north west</p> <p>Front & rear yard</p> <p>Rear yard</p> <p>Rear yard</p> <p>Front & rear yard</p>	<p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p>
<p>External Fabric</p> <p>a) Chock the swandstone blocks on isolated piers where there is minor subsistence in order to stabilise the timber sub-floor frame</p> <p>b) Remove leaf litter from cottage gutters, install guards to rear skillion and level gutters to ensure water is draining away from roof. Refix gutters as required.</p> <p>c) Repair gutter/downpipe to shed and ensure water drains away adequately</p> <p>d) Remove redundant conduits to rear facade</p> <p>e) Repair missing section of window hood.</p> <p>f) Investigate condition of all existing windows including sashes and make appropriate repairs</p> <p>g) Verandah</p> <ul style="list-style-type: none"> - Replace rotten boards with hardwood and replace defective timbers to match existing. - Replace decking with 65mm x 18mm pencil round hardwood decking with a gap of 3mm between each board. - Replace masonite boards on the verandah wall with 800mm high fibre cement/ blue boards. Reinstall framework by putting studs back in and then replace boards. Install a back cover sheet and paint boards. - Install shutters on verandah for sun protection using existing brackets and rope holders. 	<p>Under cottage</p> <p>Gutters</p> <p>Shed</p> <p>Rear facade</p> <p>W12</p> <p>All</p> <p>Verandah</p>	<p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>1</p>
<p>Internal Fabric</p> <p>a) Improve locking mechanism to back door</p> <p>b) Supply and install additional floor framing timber to subfloor area to ensure that floor boards are adequately supported. Apply construction adhesive between new floor timbers and flooring prior to final fixing of new floor framing.</p>	<p>D5</p> <p>Throughout</p>	<p>2</p> <p>2</p>

REFURBISHMENT WORKS

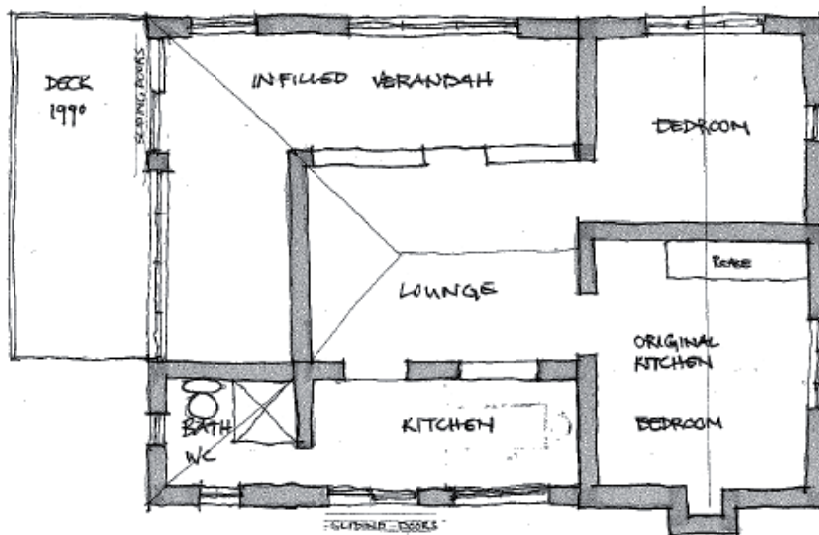
WORKS	LOCATION
<p>External Facade</p> <p>a) Install permanent fly screens to all windows throughout</p> <p>b) Replace cladding to exterior of shed</p> <p>c) Replace joinery-edge board (currently asbestos cladding) to rear verandah with fibrous cement sheet or similar</p> <p>d) Connection to town water supply should be a priority</p> <p>e) Consider adding another outlet to the main house gutter to empty into another tank, as the existing flow to the south/east tanks is too long and the gutter frequently overflows.</p> <p>f) Note that shed cladding is asbestos.</p>	<p>All windows</p> <p>Shed</p> <p>Rear verandah adjacent to kitchen</p> <p>N/A</p> <p>Roof</p> <p>Shed</p>
<p>Internal</p> <p>a) Replace carpets throughout</p> <p>b) Install a combustion firebox in existing hearth with flue in existing chimney stack</p> <p>c) Repaint windows/doors, window/door frames</p> <p>d) Upgrade existing kitchen facilities, including a new bench that is basic and neutral as per existing, overhead cupboards, taps for the sink off the wall, new 150mm tiles on the walls above the sink and next to the fireplace, replacement of vinyl flooring, replacement of light fittings with energy efficient fluorescent lighting, improve door hardware and security by providing a single entrance deadlock set. Remove all pad bolt locks, leave old lock in situ.</p> <p>a) Wedge bouncing floor boards</p> <p>f) Install insulation to cottage</p> <p>g) All lighting fixtures and powerpoints to be upgraded</p> <p>h) Renew joinery-edge board to back verandah</p> <p>i) Investigate the need for a new powerboard.</p> <p>j) Upgrade bathroom facilities as follows:</p> <ul style="list-style-type: none"> - Remove all the old bathroom fittings - Replace shower recess with a module unit that can be grouted and bedded in. - Reline the three walls with tiles - make a tray - Install a ceiling fan - Install a new vanity - Remove old sink and replace with sink and cupboard storage. - Preserve old header tank and pump in cupboard above shower. 	<p>All rooms</p> <p>Living</p> <p>Throughout</p> <p>Kitchen</p> <p>Throughout</p> <p>Throughout</p> <p>Throughout</p> <p>Rear verandah</p> <p>N/A</p> <p>Bathroom</p>

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION





FLOOR PLAN



- HARDWOOD FLOORS
- SOLAR
- CHEMICAL WC.

COTTAGE 1928
NOT TO SCALE



Source: NPWS

OVERALL CONDITION

External:

Overall the cottage is in moderate to good condition and appears to be watertight. The weatherboard has rotted in some instances and requires repair, as do some of the roofing sheets/gutters which appear to be dropping to some elevations.

Internal:

Overall the cottage interior appears to be well maintained and outbuildings are in good condition.

CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear Courtyard</p> <p>a) Carefully remove weeds and overgrowth</p> <p>b) Remove rubbish/debris</p> <p>c) Implement sand removal strategy to address sand build up at the front of the cottage</p>	<p>Around the property</p> <p>Around the property</p>	<p>2</p> <p>2</p>
<p>External Fabric</p> <p>a) Remove leaf litter from cottage gutters</p> <p>b) Refix roofing sheets/gutters and ensure that water is adequately diverted away from the cottage.</p>	<p>Gutters</p> <p>Gutters</p>	<p>1</p> <p>2</p>
<p>Internal Fabric</p> <p>None identified as access was not permitted.</p>		
<p>Joinery</p> <p>a) Repair ends to timber boarding underneath roof sheets and install fascia board to gable end</p> <p>b) Install ends to weatherboard where required and install edge corner trims to the cottage where missing</p> <p>c) Reinstate missing window architrave to the exterior of the small bedroom window</p>	<p>Gable to north facade</p> <p>To exterior</p> <p>Western facade</p>	<p>1</p> <p>1</p>
<p>Metal</p> <p>a) Replace vent to chimney</p>	<p>To bedroom chimney</p>	<p>2</p>

REFURBISHMENT WORKS

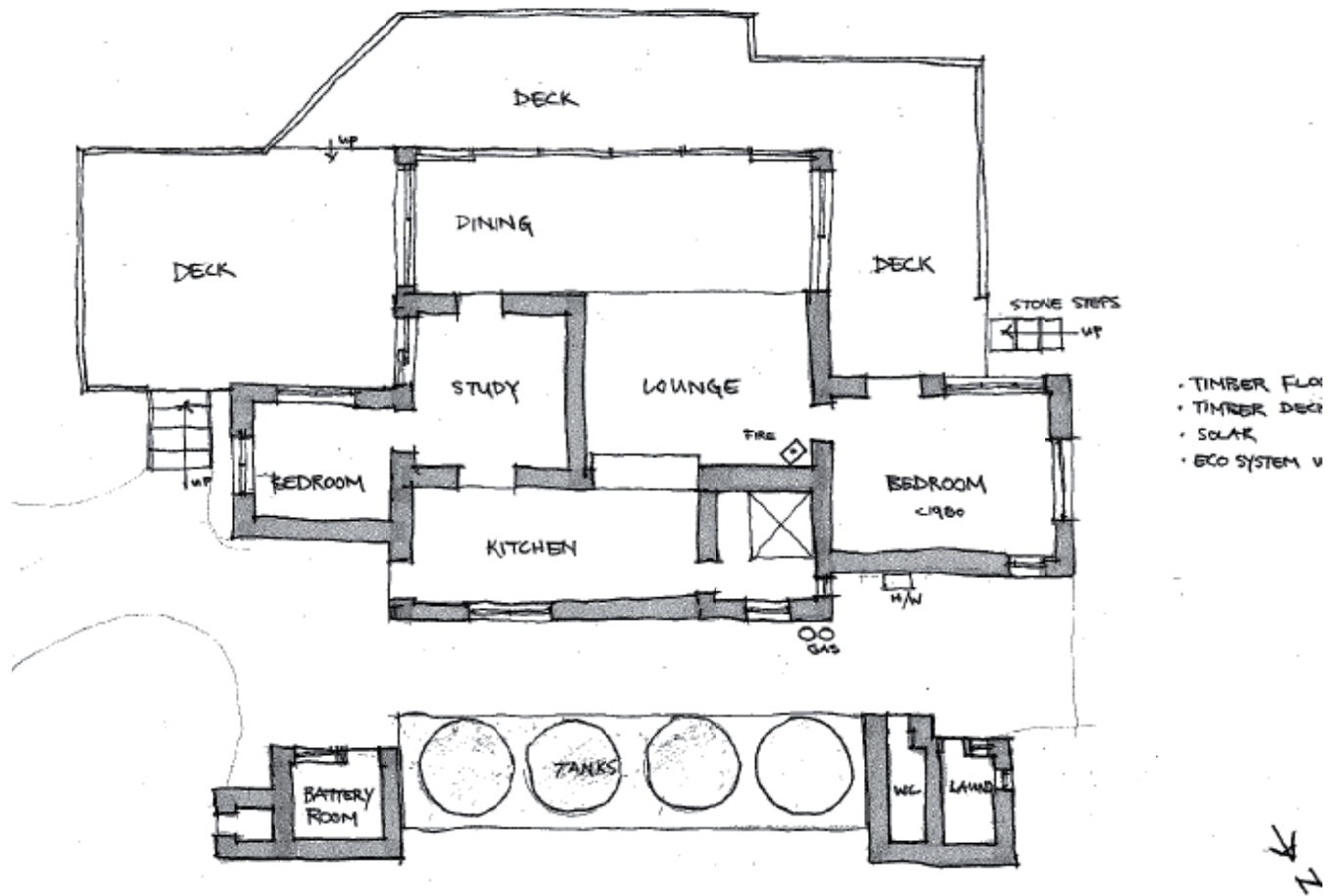
WORKS	LOCATION
Front and Rear yard a) Stabilise former water tank stand	In rear yard
External Facade a) Engage structural Engineer to assess stability of the tall sandstone footings supporting the cottage	Under building
Internal None identified as access was not permitted	

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION





FLOOR PLAN



Source: NPWS

OVERALL CONDITION

External:

Overall the cottage is in moderate to good condition and appears to be watertight. The weatherboard has rotted in some instances and requires repair, as do some of the roofing sheets/gutters which appear to be drooping to some elevations.

Internal:

Overall the cottage interior appears (from photographs) to be well maintained and outbuildings are in good condition.

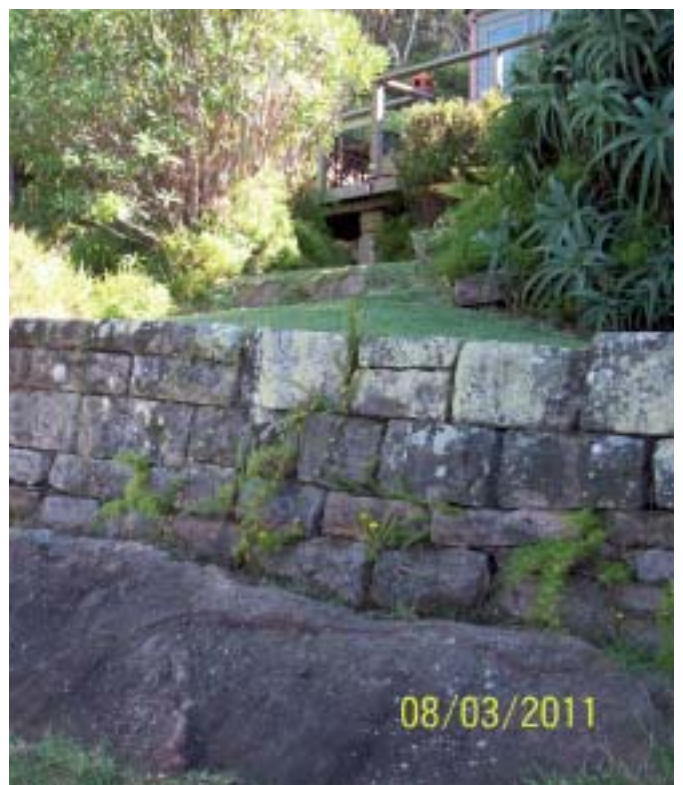
CATCH-UP MAINTENANCE

WORKS	LOCATION	PRIORITY
<p>Front and Rear Courtyard</p> <p>a) Carefully remove weeds and overgrowth</p> <p>b) Remove rubbish/debris</p>	<p>Around the property and to sandstone retaining wall</p> <p>Around the property</p>	<p>2</p> <p>2</p>
<p>External Fabric</p> <p>a) Remove leaf litter from cottage gutters</p> <p>b) Refix roofing sheets/gutters and ensure that water is adequately diverted away from the cottage.</p> <p>c) Repoint the sandstone retaining wall</p>	<p>Gutters</p> <p>Gutters</p> <p>Retaining wall</p>	<p>1</p> <p>2</p> <p>2</p>
<p>Internal Fabric</p> <p>None identified as access was not permitted</p>		
<p>Joinery</p> <p>a) Repair ends to timber boarding underneath roof sheets and install fascia board to gable end</p> <p>b) Install ends to weatherboard where required and install edge corner trims to the cottage where missing</p> <p>c) Reinstate missing window architrave to the exterior of the small bedroom window</p>	<p>Gable to north facade</p> <p>To exterior</p> <p>Western facade</p>	<p>1</p> <p>1</p>
<p>Metal</p> <p>a) Replace vent to chimney</p>	<p>To bedroom chimney</p>	<p>2</p>

REFURBISHMENT WORKS

WORKS	LOCATION
Front and Rear yard a) Stabilise the water tank stands b) Ensure adequate surface drainage	In rear yard In rear yard
External Facade a) Engage structural Engineer to assess stability of the tall sandstone footings supporting the cottage b) Assess whether connection to mains electrical power is cost effective (electricity is currently supplied by solar energy stored in generators).	Under cottage Cottage
Internal a) Replace flooring with timber or cover with linoleum	Study & Bedrooms

PHOTOGRAPHIC RECORD - EXTERNAL CONDITION



APPENDIX A: CYCLIC MAINTENANCE CHECKLISTS